

1 Discussion

1.1 Describe, to others, the broad aims of the project specifying possible limitations to the solution of the problem.

The Royal Scottish Pipe Band Association Northern Ireland Branch (RSPBANI) is a governing body who organise and deliver all Pipe Band Championships and Drum Major Contests in Northern Ireland. They represent approximately seventy pipe bands in full membership of the association in Northern Ireland and over three thousand individual members. A few of the competitions that they govern are: Champions of Champions (Portrush), All Ireland Championships and Antrim & Newtownabbey Championships.

WHAT IS THE RSPBANI?



The RSPBANI is a local branch of the RSPBA with their headquarters located in Lisburn.

They are a governing body that oversee and run all the local competitions across Northern Ireland during the summer months.

They have also just opened their new piping and drumming school in three locations – Belfast, Cookstown and Londonderry

HOW DOES THE CURRENT SYSTEM WORK?

- They use a paper based system to register new members and transfer members between bands.
 - These then need to be sent to HQ where admin staff process and manually enter the data on to their electronic spreadsheet.
- To enter competitions, the PM must contact the section secretary, who is running the local competition, either by email or telephone.
 - This data is recorded by the section secretary and passed to the admin staff once the entering period has closed.
 - This data is processed by them and then published on their website.

RSPBANI have seen a large increase in new members registering after the launch of their piping schools in Belfast, Cookstown and Londonderry. They have now realised that the paper-based system they are currently using to register members and transfer individuals within bands creates too much processing for the administration staff within the association.

At the current time they have a website which allows for everyone to access competition dates and a list of bands and Drum Majors who have entered them. They also can publish the results from the competition on their website however there is a delay in this due to the fact that the results need to be manually added to their website after the results and march past have taken place.

HOW DOES THE CURRENT SYSTEM WORK?

- Competition dates, draw and results for Pipe Bands are published directly on their website
 - However the dates, draws and results for soloists are published to the website as a PDF.
- Entrance fees must be payed on arrival at the competition by the Pipe Major.
- There are normally two piping judges, 1 drumming judge and an ensemble judge who each rank the band compared to its competitors.

HOW DOES THE CURRENT SYSTEM WORK?

- Judges use a marking sheet to write down their comments and improvements about the bands performance. Once all bands have competed in the grade then the judge must rank each band from first to last.
- After all bands have competed, the judges marks are collated and then published on the website once they have been announced during the finale.

Majors can enter competitions online. Currently the Pipe Major of the band or Drum Major must ring up the administrator in charge of that specific competition to enter. This means that the Pipe Major or competitor at the start of the season must ring a number of individuals to confirm their place in the individual competitions. Pipe Bands should also be able to pay for their competition fees through the application.

RSPBANI see this as a major problem and a hassle for all bands and the implementation of this feature would make this system all-inclusive and the central location to handle all of their processing requirements.

The solution would also allow for judges to enter their results onto the system directly after the bands have competed – this in turn would decrease manual processing at the end of each competition before the finale and results – thus speeding up the time between the competition finishing and the finale beginning.

The user interface must be user friendly and of a graphical nature. The interface must be intuitive and concurrently allowing the user to effectively use the program.

In the new completely digital solution, the President would also like to include improved existing features:

- View Results and Judges comments online and give the breakdown of the individual results from each judge and section of the pipe band. The Judges' sheet should also be made available to bands with their comments about the performance.
- Option of booking transportation – This will be done via an independent bus company and an initial email will be sent from RSPBANI and then the rest of the communication will be done between the company and the client.
- View a list of the competitions with dates and locations and who has entered each competition.
- Guest View where you do not need to log into your account – but only able to view minimal content i.e. just results, competition dates and registered bands for the specific competitions.
- The ability to print and send the results of each competition to all bands alongside each band individually receiving their own judging comments.

A major concern for any new solution is that of data protection with regards to sensitive information that the system must hold about all individuals. This information is required during the sign-up period but specific details about the individual should only be made available to specific groups of people depending on their role within the association.

AIMS OF THE NEW SYSTEM

- Register new member within a band or as a Drum Major.
- Transfer members between bands.
- The Pipe Major of Bands or Drum Majors will now be able log into the system to enter enter competitions.
- Option of booking transport.
- Judges will be able to log in and add their results after all the bands have preformed in the grade directly into the platform – this gets rid of the paper based part of the system.



1.2 Identify and describe, to others, the possible limitations of a solution to the problem.

Limitations of the new Solution

One of the major limitations of the implementing the new system will be time constraints to complete the project and my programming knowledge.

The payment of the entrance fee for all bands and drum majors will be a limitation of the project as I will not be able implement a payment gateway for credit or debit card transactions. Instead I plan to send an invoice via email at a later stage, which may not happen in this development due to the strict time frame.

I will not be able to implement my software over the internet as hosting my project as website on the internet or as packaged mobile application due to the additional cost of a domain name and the programming ability to implement my app online so that it has the ability to retrieve updated data respectively.

Another limitation of the project will be sending the PM of the Band a text message as a confirmation for entering a specific competition as this will incur a cost. As this is coursework and I will have a limited time to complete it, I am not sure whether I will be able to implement all functionality, I may decide to leave the solo competitions and drum majors out of the new system and completely focus on the pipe band side of competitions. The other features I have mentioned can be developed in a later build.

LIMITATIONS OF THE PROJECT

- Accounts will have to be made for administrators and judges as these accounts need to be given special access rights to add and update data on the system
- I will not be able to set up the online payment gateway due to the additional annual fee that comes with this.
- I will also not be able to implement the text message feature as this will incur an additional cost.

- 1.3 Consider and use feedback from others to refine understanding of the problem and proposed solution.

Figure 1.3.1

Daniel

RSPBANI Feedback Form

Do you think there is anything I have included in my proposed solution that I would not be able to implement, if yes please explain?

As you said in your limitations, you could struggle to implement text messages & also online features.

Do you think I should include any more functionality to my program to make it more useable for all stakeholders, if yes please explain?

Maybe allow for e-mail functionality?

Do you have any other comments, if yes please explain?

Very good solution but you may struggle to implement all of the features for all users in this solution time-frame.

Figure 1.3.2

RSPBANI Feedback Form

Do you think there is anything I have included in my proposed solution that I would not be able to implement, if yes please explain?

I believe that the online system could be a difficulty as you stated but also for payments online may be difficult.

Do you think I should include any more functionality to my program to make it more useable for all stakeholders, if yes please explain?

There could be the option for a news feed section with general updates on anything going on with RSPBANI or for a way for bands to request new band players or advertise for new players.

Do you have any other comments, if yes please explain?

Due to the amount of features it may be difficult to allow for all of these to work ~~together~~ in the time frame.

Figure 1.3.3

Rose

RSPBANI Feedback Form

Do you think there is anything I have included in my proposed solution that I would not be able to implement, if yes please explain?

- text facility - you can email
- import booking - outside of indication for requirement, will the process be handled outside of the system?

Do you think I should include any more functionality to my program to make it more useable for all stakeholders, if yes please explain?

- search for any member to see their band + role?

Do you have any other comments, if yes please explain?

- will the judge sheets be electronic for use during a competition or paperbased?
- members - how will you link them to a band?

RSPBANI Feedback Form

Do you think there is anything I have included in my proposed solution that I would not be able to implement, if yes please explain?

text messages - cost form a service provider;
email is a free alternative!

Do you think I should include any more functionality to my program to make it more useable for all stakeholders, if yes please explain?

No — in fact I think you are trying to include too much functionality. Registration & entries competing for Bands & Drum Majors is very similar so you could afford to leave Drum Majors out and focus on additional different functionality

Do you have any other comments, if yes please explain?

Feedback Evaluation

I have carefully considered all the feedback from my peers and competent third parties and have included my reasoning to why I have chosen to implement their feedback or not.

Feedback Point	Outcome from feedback & reasoning	Implications of implementing feedback	How will it affect Design and development?
Instead of the texting facility; email can be used as an alternative	Yes, I have chosen to go ahead with this amendment as it should be easier to implement, and it is also a free service	An email account will need to be created to send the emails from on behalf of the association	I will need to ask for email addresses instead of mobile numbers as a method of contact.
Search for any member to see their band or role	I will not be implementing this feature, at least not for the Guest View as this breaks the RSPBANI policy with regards to supply/release of members names to the public.		
A news feed/updates section	I don't think I will go ahead with this idea not because I don't like it but because they include that functionality on their Facebook page – whereas they want this system more centralised around bands and competitions.		
Too much similar functionality with regards to PM & DM registration and competition entrance.	I agree with this feedback. I will reduce the functionality by removing Drum Majors and soloists from the new system due to the time frame I have. Although this feature can easily be implemented as it is very similar to the Band processes, I will implement.	Very little implications are the PM & DM registration/entering do not affect each other as they would have run parallel.	This will make the development shorter but will not be removing any functionality as it will be already covered

Other comments from feedback:

Question	Answer
Will the judge's sheets be electronic for use during a competition or paper based?	All the judges will have access to the system on an electronic device where they can comment and grade as they go along to make the process more efficient and easier for all clients.
How will you link members to a band?	To Register a member to a band, the band must be logged into the system. When a member is registered, they will be registered to the band that is logged in and there will be a relationship between every member in the band with the band when the data is stored in the system.

2 Investigation

2.1 Carry out an investigation of the current system using a variety of appropriate methods.

To fully investigate how data is currently input, processed and output in the semi-automated system I must carry out a number of investigative methods on the company. These will allow me to gain a proper insight into how the whole system is currently being implemented by all users within the organisation.

2.1.1 Interview

I will need to have an interview with specific people within the association who use the system on a day to day basis and also highly regarded people within the association to ensure their views are properly considered so I can find out as much information about the association and system from them.

Firstly, I will need to arrange an interview with the President of the organisation and a member of the admin team to determine all the data that they collect from each band and all of their individual members and how they process and store their data. I will also need to find out if there are any major issues which need resolving in the new system.

President's Interview

Can I ask currently how do new members register to a band?

When a user registers in the current system, the Pipe Major must give a form to the person and they must fill out all of their personal details and the Pipe Major must complete the necessary details of the band. The form must be then signed by the new member, the Pipe Major and the Secretary or Treasurer of the band. Once fully complete this form must be then sent off by post to the RSPABNI and the admin must then process this information and add it to a database of members details.

What fields do you require the new user and Pipe Major to fill out in this registration form?

The Pipe Major must fill out the band's name, branch, band number and their current grade.

The user must then select which instrument within a specific section, whether it would be piper, drummer, bass drummer, tenor drummer etc. The new member is required to give their full name, street name, city/town and postcode and their date of birth along with the date of when the form was completed.

If members are registered to a specific band, how do they change band? Is this allowed or possible?

If a member decides that they wish to change bands whether to challenge themselves in a band in a higher grade or for any other reason, they must complete another form in whereby they are released from their current band and have the option of registering to a new band.

Again, what is involved in the completion of these forms? What information do you collect to be able to fully process this in your current system?

This form is split into two sections; the first section is to be completed by the releasing band and the second section by the receiving band. If the member is not wanting to join another band section two must be left blank.

In Section One, the member must state the band and the branch of the band which they wish to be released from, the band number and the grade at which the band competes at.

The releasing band must give the name, address and date of birth of the released member, provide which instrument the member plays and the band member's registration number which the band receives from headquarters when the member was first registered. The Pipe Major and the Secretary must then sign and by doing this they confirm that the releasing member has returned all equipment and uniform and has paid all current dues.

In section Two, the new band must complete their new information including: the band name, branch, band number and grade. The Pipe Major and Secretary of the receiving band then must sign to say that they are willing to take on this member and on which date and again which instrument they will be playing.

The transferring member must then sign to confirm all the information above is correct before the form is then sent to headquarters to be processed and the database once again updated.

Would you be able to run me through how the scoring system works?

For each competition, there are six grades with different difficulty ratings. Each band in each grade is judged by the same judges. There are two piping judges, one drumming judge and an ensemble judge. Each judge must complete a comment sheet about each band's performance noting down things they liked about the performance and things that the band could work on. After the individual band's performance, the comment sheets are all collected by admin staff and photocopied. This is because they must keep a copy of the comment sheet as the original is given to the band during the march past and awards. Once the last band has performed in the particular grade, each judge is then tasked with ranking the bands from best to last, giving the best band a '1' and the worst the highest number, specifically on the section of the band that they were marking. The results from each judge are collated and the results given by each judge

for a particular band are added up. The band which comes out with the lowest overall score is placed first and so on. If only a likely event of a tie between two positions where two bands have the same score, the band with the lowest ensemble score will be placed ahead of the other band.

Additionally, there are separate prizes for each section; best pipes, best drum core and best bass section along with best M&D (March and Deportment). The winner of best pipes is the band with the lowest overall piping score, the best drum core is the band who the judge ranked 1st for drumming, and the best bass section is also chosen by the drumming judge. The winner of the M&D award is chosen by the ensemble judge for the band that is dressed the best and displayed the best deportment.

Is there anything that you know of which doesn't currently work for the association in relation with the current semi-computerised system and is there anything you would like added or improved?

As I do not really get involved too much in the administration side of the association, I am not sure exactly what needs improved to save the admins time and effort collating the results and publishing them after the competition. I don't think ringing the coordinator in charge of each competition to enter it is the right solution so I would like to see some way that possibly each Pipe Major can log onto a system which would allow them to enter all the competitions in one place and be able to see which competitions they have entered and be able to pull out of competitions in advance, with a fee for a late notice within a specified time period. I would like to give the option for bands to organise transportation to and from competitions, however this would be provided through an external company. I would like to see the new system make the association paperless, making the registration/transfer forms electronic and the judges being able to enter their results directly into the system saving for all the manual process currently done by all the voluntary admin staff. You will need to speak with the lead admin Ian [REDACTED] to get all the technical information and to be able to get an insight into how they process and store all the details of bands and their members, as I am no use in that respect.

In my own opinion I would like to see the turnaround time reduced between the last band playing and the start of the march past and finale. I would just like to make the whole process of registration of members, entering competitions and recording and accessing results so much easier and more efficient for all my colleagues and bands.

Admin Leader Interview

Hello Ian, after speaking to Winston about the current system with regards the information that the association gather about its members and bands, I have been able to figure out

exactly all the information that you must store, but would you be able to give me a quick over view of how you actually go around storing the data?

At the minute, we use an excel sheet to store the data about each member. We do have a few features within the excel sheet which does allow us to search under different fields to find specific members.

We use another excel spreadsheet to store information about each band and their results from each competition. We have then another spreadsheet that we use to store all the results from every competition. This is very human intensive and requires a lot of manual processing and not the most efficient way of storing data due to the mass of data redundancy and time involved.

Are there any features that I could implement which would make your job easier and all for the most efficient way of processing the results from each competition?

With the new system you could create an auto rank/sort that is able to order the bands with respect to their total score which would decrease the turnaround time and give my colleagues less work to do.

What kind of outputs do you have once the member's/competition data has been processed?

Once the deadline for the competition has been reached, the list of entered bands is created and attached to their website, followed by the addition of their competing time and the competing circle they must go to.

We are able to use the results once they have been processed and stored in the excel spreadsheet to then produce a pdf document highlighting all the winners from each completion and this is then uploaded to our website where the public is able to view after the competition.

2.1.2 Questionnaire

My Questionnaire will target the Pipe Majors from different grades to ensure I get a wide range of opinions. It will also allow me to gather the opinions of all stakeholders within the association and get feedback from them on how good or bad they think the currently system is and what features they would like to see improved and if they would like to see any new features.

The image displays five mobile phone screens, each showing a different question from a questionnaire. The phones are arranged horizontally.

- Question 1:** "How do you find the current Transfer and Release of members using the current paper based forms?"
Options: Very Poor, Poor, Average, Very Good, Excellent, Other (please specify).
Additional comments: [Text area].
- Question 2:** "Would you prefer to be able to enter all competitions at once using a new system rather than ringing?"
Options: Very Satisfied, Satisfied, No opinion, Unsatisfied, Very unsatisfied, Other (please specify).
Additional comments: [Text area].
- Question 3:** "How do you find paying the entrance fee on arrival at a competition?"
Options: Like it, I don't mind, Too much hassle, Other; please specify.
Comments: [Text area].
- Question 4:** "Would you like the option of being able to book transport for your band to and from competitions?"
Options: Yes, No, I'm not sure.
Comments: [Text area].
- Question 5:** "If the results sheets were to become electronic, in a rating between 1 - 10 how likely would you like for them to be sent via email after a competition?"
Options: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
Comments: [Text area].

RSPBANI Pipe Major Questionnaire

Q1. How do you find the current Transfer and Release of members using the current paper based forms?

Poor

Q2. Would you like the option of being able to book transport for your band to and from competitions?

Yes

Q3. How satisfied are you ringing the co ordinator of each competition to enter?

Unsatisfied

What do you think about having an online platform which would allow you to enter all competitions in one central place?

Yes I think being able to enter all competitions at once is a brilliant idea and would save so much time and would be quicker for bands and organisers

Q4. How do you find paying the entrance fee on arrival at a competition?

Too much hassle

Comments:

When you are trying to gather a band to warm up and you are competing at the start it is very awkward to go and pay

Q5. If the results sheets were to become electronic, in a rating between 1 - 10 how likely would you like for them to be sent via email after a competition?

8

Comments:

I think this is a much better idea - they won't get damaged if it is raining

RSPBANI Pipe Major Questionnaire

Q1. How do you find the current Transfer and Release of members using the current paper based forms?

Average

Additional comments

I think currently it is okay as it means that's members can't officially leave until I have signed their form which means that the band has the opportunity to gather all their equipment from the releasing member.

Q2. Would you like the option of being able to book transport for your band to and from competitions?

Yes

Comments:

Yes - I struggle at the moment trying to get a coach provider for all competitions.

Q3. How satisfied are you ringing the co ordinator of each competition to enter?

Very unsatisfied

What do you think about having an online platform which would allow you to enter all competitions in one central place?

This would be so much less hassle and it would mean that less errors would be made as co ordinators are not necessarily making note of who rings them but instead try and remember it in their head before they send their final names off to headquarters.

Q4. How do you find paying the entrance fee on arrival at a competition?

I don't mind

Too much hassle

Comments:

I don't mind this method as my band always plays later on in the day.

Q5. If the results sheets were to become electronic, in a rating between 1 - 10 how likely would you like for them to be sent via email after a competition?

10

Comments:

This would be a great idea as it means I can forward it on to all my band members and post it up on my band groupchat

RSPBANI Pipe Major Questionnaire

Q1. How do you find the current Transfer and Release of members using the current paper based forms?

Poor

Q2. Would you like the option of being able to book transport for your band to and from competitions?

Yes

Q3. How satisfied are you ringing the co ordinator of each competition to enter?

Very Satisfied

What do you think about having an online platform which would allow you to enter all competitions in one central place?

I prefer ringing up because I'm not sure if I would be able to use the new system

Q4. How do you find paying the entrance fee on arrival at a competition?

I like it

Q5. If the results sheets were to become electronic, in a rating between 1 - 10 how likely would you like for them to be sent via email after a competition?

1

Comments:

I think having them on a system would be quite hard to be able to sort them where as paper is very easy for me

RSPBANI Pipe Major Questionnaire

Q1. How do you find the current Transfer and Release of members using the current paper based forms?

Poor

Q2. Would you like the option of being able to book transport for your band to and from competitions?

No

Q3. How satisfied are you ringing the co ordinator of each competition to enter?

No opinion

What do you think about having an online platform which would allow you to enter all competitions in one central place?

Good idea as long as it is easily accessible and simple and intuitive to use

Q4. How do you find paying the entrance fee on arrival at a competition?

Too much hassle

Comments:

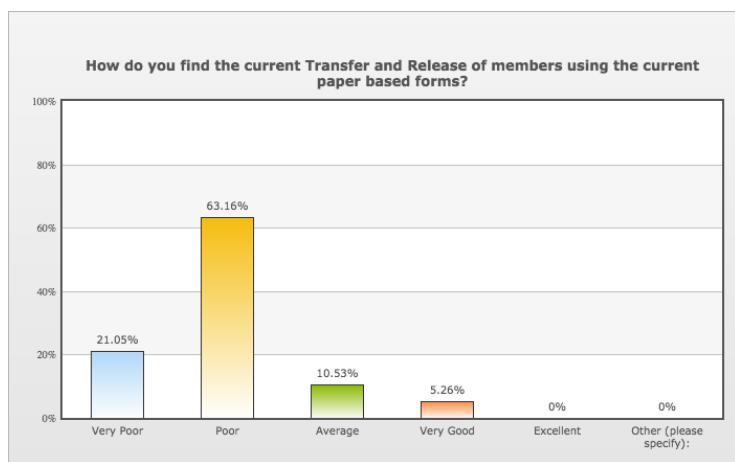
I would prefer to make an online payment or a payment all at once

Q5. If the results sheets were to become electronic, in a rating between 1 - 10 how likely would you like for them to be sent via email after a competition?

10

This Questionnaire was very useful to get a wide range of opinions from different Pipe Majors to get their views on the current system.

The addition for the Pipe Majors to also add any extra comments below each question came in more useful than first thought. It allowed them to explain their reasoning behind their choices and gave an insight into how band life is.

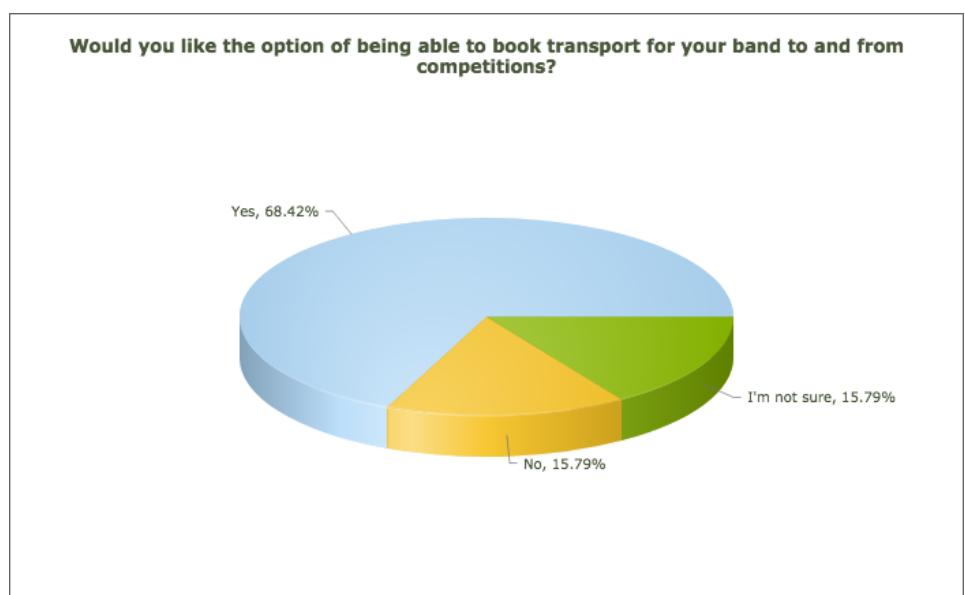


Most thought that the current transfer/release forms very poor with examples saying that it takes too long for the admin staff to process the request to change band and sometimes they don't do it in time and bands have been disqualified as they have had the new member playing before confirmation comes through.

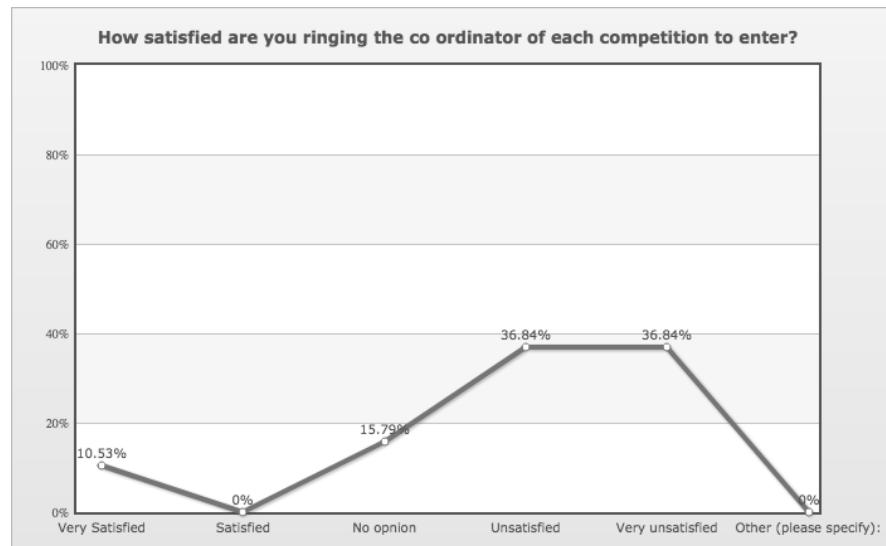
However, some thought it was a good idea as it means that the member leaving

can't leave before the pipe major signs the form off – this gives the opportunity for the old band to make sure they get all their equipment and uniform back from the leaving member before they move on. I will try and implement somehow that will allow the Pipe Major of the leaving band to confirm that the leaving member has returned everything whether it would be by adding a tick box that only the PM can tick or just simply an electronic signature to confirm.

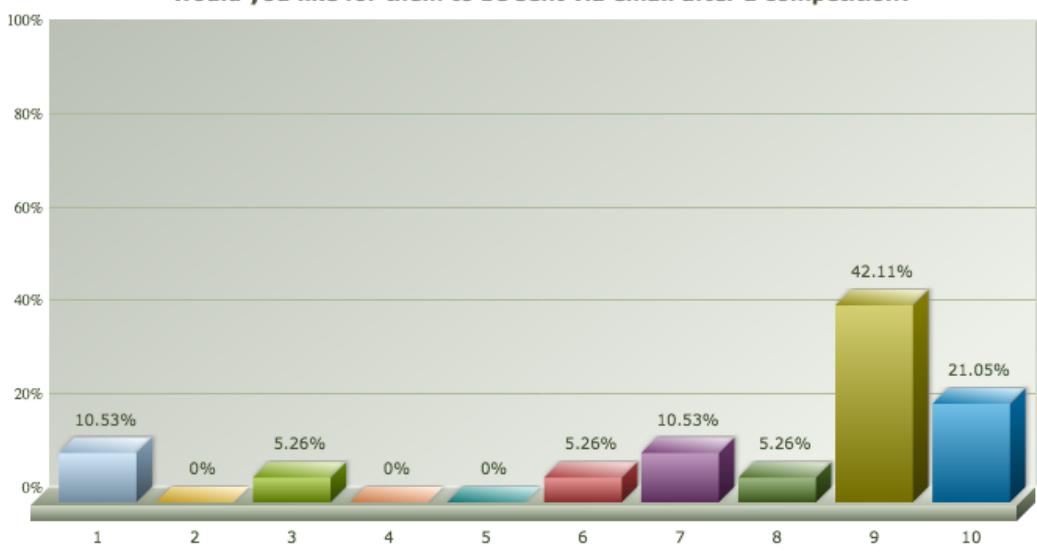
Statistically Pipe Majors would like to see the addition of the option of booking transport to and from competitions. Nearly seventy percent of Pipe Majors who completed out my questionnaire would like to see this feature in the new system as it would save them time getting quotes from lots of company's and finding the most suitable.



The vast majority of Pipe Majors thought that the current method of entering competitions was unsatisfying. To pick an example, an individual said that organisers get so many phone calls from Pipe Majors that it is very easy for them to forget to record a bands entry and this could lead to many issues down the line when bands aren't in the draw and the grade has to be redrawn or similar problems.



If the results sheets were to become electronic, in a rating between 1 - 10 how likely would you like for them to be sent via email after a competition?



Very little Pipe Majors disagreed with the idea of competitions being marked electronically which would lead to the results being sent out as an email attachment.

Several liked this idea as it would mean they were able to share it quickly and easily with the rest of their band.

2.1.3 Direct – Observation

I will spend a day with the Administration staff which will also allow me to observe how they use the system. This will make me aware on the limiting factors of the current solution and give me a direct opportunity to see how I can make the new system more efficient. The direct observation will also allow me to gather all documents that they currently use in current system which I will be able to analyse to understand how they process and then store their data. Throughout the direct observation and interview I was able to collect all the documents that are used in the system in a daily basis.

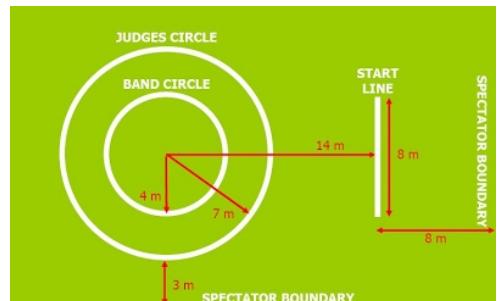
Registration and Transfer

I was able to get an example of a registration form (*figure 2.1.4.1*) and a transfer/release form (*figure 2.1.4.2*). These are filled in by the member and countersigned by the necessary people in the band(s). Once the registration has been received by headquarters, new members must be added to the members excel sheet with all their details under specific fields, with all their personal details and then the band that they registered with. Once this is done and they have received confirmation are they only allowed to compete with the band. A similar procedure occurs with the transfer form but only the member is searched for in the excel worksheet and the band that they are registered to is updated to the new band or ‘-’ if they did not join another band.

Entering competitions, making the draw and publishing

Each band if they (in most cases the Pipe Major or Secretary) wish to compete in competitions must ring up the competition organiser to put forward their band for each competition. Entries must be made by either text/call or in person before the closing deadline. Once the deadline is closed the organiser passes on their list of bands in each grade to headquarters and updates their current system so that the bands that have entered are listed before the draw takes place. The draw to see in what order each band plays takes place two weeks before each competition. The names of each band per grade are put into a bag and the president picks out the bands one by one. The first band picked out is first to play and the last band to be picked is the last to play. Once again, the current system must be updated so that the bands can then see when they have been drawn to play. Each band will be given a competing time where they must be at the start line ready to begin their set. Depending on the grade each band has a time slot that they must play in before the next band arrives at the line.

- All grade 4 (A & B) = 4mins, all grade 3(A & B) = 5mins, grade 2 = 6mins and grade 1 = 8mins



Judging and results

Each Judge for each performance will get a comments sheet (*Figure 2.1.4.3 – 2.1.4.6*) in which they must record what they liked and didn't like about each performance along with tips and improvements for next time. They must at the top of each sheet fill in details about the competition, the band they are judging and their details. Once the band has finished their set, an admin representative must then collect the comment sheets off all judges before the next band can begin.

The admin team must keep a photocopy of each comment sheet and then collate the sheets for each band, so they can be given out after/during the results and march past.

After the final band has finished their set, only can the judges start filling in their results sheet (*figure 2.1.4.7 – 2.1.4.10*) for the section that they were judging (Piping 1, Piping 2, Drumming and Ensemble), they must fill in the same details as before in the comments sheet and then fill out all the bands and the draw they played in along with the ranking that they have gave each band. Where for example if 11 bands competed, the best band would get '1' and the worst band would get '11'.

The admin staff then have the role of adding up the score of each band in each grade, and then they create the final results sheet for each grade. The rank given by each judge for each section and the band in each grade with the lowest overall score wins and the band with the second lowest comes in second place. In the event of two bands receiving the same score, the band with the lower ensemble score will be placed ahead of the band with the higher ensemble score.

The admin staff then must create a document with the results of every band for all grades. This is then published to the current system so that the public can see how every band did. (*Figure 2.1.4.12*)

2.1.4 Document Analysis

Figure 2.1.4.1



The Royal Scottish Pipe Band Association

15 Washington Street, Glasgow G3 8AZ. Telephone 0141 221 5414



REGISTRATION FORM

ALL SECTIONS TO BE COMPLETED IN BLOCK CAPITALS

PART ONE: ALL PARTS TO BE COMPLETED BY NEW MEMBER

INCOMPLETE FORMS WILL DELAY REGISTRATION

AS A CONDITION OF MEMBERSHIP, THE RSPBA WILL PROCESS THE DATA
CONTAINED IN THIS APPLICATION FORM WITH THE PUBLISHED PRIVACY POLICIES
AT WWW.RSPBA.ORG

BAND: Mc Neilstown
BRANCH: Northern Ireland

BAND NO. 72
GRADE: 3B

The above band has registered the following member as from (date): 14.9.17

Please tick as appropriate

P/M _____
L/Drummer _____
Drum Major _____
P/M Ass _____
Drummer Bass Drummer _____
Committee _____
Piper _____
Secretary _____
Tenor Drummer _____

MEMBER'S NAME

Andrew Cole

ADDRESS

44 ANNS STREET
CULLYBACKY

POSTCODE BT39 7XQ

DATE OF BIRTH

12.7.1979

MEMBER'S SIGNATURE

Acde

PIPE MAJORS SIGNATURE

O

SECRETARY / TREASURER'S SIGNATURE

R Stu

On completion of Part One, this form should be returned to RSPBA Headquarters for endorsement.

Figure 2.1.4.2



The Royal Scottish Pipe Band Association

45 Washington Street, Glasgow G3 8AZ. Telephone 0141 221 5414



RELEASE / TRANSFER FORM

ALL SECTIONS TO BE COMPLETED IN BLOCK CAPITALS

PART ONE: ALL PARTS TO BE COMPLETED BY RELEASING BAND

INCOMPLETE FORMS WILL DELAY REGISTRATION

AS A CONDITION OF MEMBERSHIP, THE RSPBA WILL PROCESS THE DATA CONTAINED IN THIS APPLICATION FORM IN LINE WITH THEIR PUBLISHED PRIVACY POLICIES AT WWW.RSPBA.ORG

BAND: Broughshane
BRANCH: Northern Ireland

BAND NO. 115
GRADE: 4B

The above named Band has released the following member as from (date): 25/2/16

Please tick as appropriate

P/M _____ P/M Ass. _____ Piper Secretary _____ Committee _____
L/Drummer _____ Drummer _____ Bass Drummer _____ Tenor Drummer _____ Drum Major _____

MEMBER'S NAME David Reed
ADDRESS 9 Belfast Road, Portrush, County Antrim NI

POST CODE BT67 4BL

DATE OF BIRTH 7/4/1986

BAND MEMBER'S REGISTRATION NUMBER: 774

We confirm that ALL equipment has been returned and all monies due have been paid.

PIPE MAJOR'S SIGNATURE [Signature]

SECRETARY / TREASURER'S SIGNATURE [Signature]

On Completion of Part One, this form should be given to the member concerned for submission to the new band the member is joining. If the member does not intend joining another band, a copy of this form should be forwarded to RSPBA Headquarters in order that their name can be removed from the releasing Band's membership list.

PART TWO: ALL PARTS TO BE COMPLETED BY RECEIVING BAND

INCOMPLETE FORMS WILL DELAY REGISTRATION

BAND: Field Marshall Montgomery
BRANCH: Northern Ireland

BAND NO. 97
GRADE 1

We confirm that we are prepared to accept the above named person as a member of our band as of (date):

PIPE MAJOR'S SIGNATURE [Signature]

SECRETARY'S SIGNATURE [Signature]

NEW MEMBER'S SIGNATURE David Reed

This member will act in the capacity as:- Please tick as appropriate

P/M _____ P/M Ass. _____ Piper Secretary _____ Committee _____
L/Drummer _____ Drummer _____ Bass Drummer _____ Tenor Drummer _____ Drum Major _____

On completion of Part Two, this form should be returned unseparated to RSPBA Headquarters for endorsement.

Figure 2.1.4.3

 RSPBANI Royal Scottish Pipe Band Association Northern Ireland Branch		Official Results Sheet
Championship: Ulsters	Date: 26 / 7 / 17	
Location: Antrim	Adjudicator: C Edgar	
Band: Walk of Atholl	Section: Piping	
Draw No.: 9		

Disappointing early e led to inconsistent playing throughout

low hand doublings were good, however as set continued it was noticeable that players were struggling as drones fluctuated in pitch as blowing weakened

Good Finish

- Flat e's
- Sharp High A's

Registered with The Charity Commission for Northern Ireland NIC103199

Figure 2.1.4.4

 RSPBANI Royal Scottish Pipe Band Association Northern Ireland Branch	Official Results Sheet
Championship: Ulster	Date: 26/07/17
Location: Ardscoil	Adjudicator: J. McAllister
Band: Vale of Atholl	Section: Piping
Draw No: 9	

A start & spoilt a good solid opening tune
Strong lower hand movements however top
hand lacked refinements
Strong finish
Chanters well tuned in most cases

Figure 2.1.4.5

 RSPBANI Royal Scottish Pipe Band Association Northern Ireland Branch		Official Results Sheet
Championship: Ulster	Date: 26 / 07 / 11	
Location: Antrim	Adjudicator: M. Wilson	
Band: Vale of Atholl	Section: Drumming	
Draw No: 9		

crisp rolls at beginning to open

Pitch of drums too high

Phrasing and integration between tunes was superb

Unclean finish

Bass section was strong providing added effect

flourishing was slightly untidy at times

Figure 2.1.4.6

 RSPBANI Royal Scottish Pipe Band Association Northern Ireland Branch	Official Results Sheet
Championship: ULSTER	Date: 26/07/17
Location: Antrim	Adjudicator: J. CAMPBELL
Band: Vale of Atholl	Section: Ensemble
Draw No: 9	

Good integration between all sections

Tempo too fast at beginning as it gradually decreased as set progressed

Both start and finish were untidy

Intonation was lacking

Figure 2.1.4.7



Official
Results Summary

Championship: Ulster
Location: Antrim

Date: 26 / 08 / 17
Adjudicator: J Mates

Grade 1 – Piping 1

Draw	Band	Piping 1
1	Gfield Marshal	1
2	St Laurence O'toole	2
3	PSNI	6
4	Scottish Police	8
5	Ravara	9
6	Closkelt	7
7	Scottish Rover	4
8	Inverary	3
9	Vale of Atholl	5

Figure 2.1.4.8



Official
Results Summary

Championship: Ulster

Date: 26 / 07 / 17

Location: Antrim

Adjudicator: C Edgar

Grade 1 – Piping 2

Draw	Band	Piping 2
1	Field Marshal	1
2	St Lawrence O'toole	3
3	PSNI	5
4	Scottish Police	8
5	Ravara	9
6	Closkelt	4
7	Scottish Power	6
8	Inverary	2
9	Vale of Atholl	7

Figure 2.1.4.9



Official
Results Summary

Championship: ULSTER

Date: 26/07/2017

Location: ANTRIM

Adjudicator: M. WILSON

Grade 1 - Drumming

Draw	Band	Drumming
1	FIRE MARSHAL	2
2	St Lawrence O'Toole	4
3	PSNI	3
4	SCOTTISH POLICE	9
5	RAVARA	6
6	CROSS KELT	7
7	SCOTTISH POWER	8
8	INVERARY	1
9	VALE OF ARHOLL	5

Best Bass Section: CROSS KELT **Draw:** 6

Registered with The Charity Commission for Northern Ireland NIC103199

Figure 2.1.4.10



Official Results Summary

Championship: U L S T E R

Date: 26/07/17

Location: ANTRIM

Adjudicator: I. CAMPBELL

Grade – Ensemble

Draw	Band	Ensemble
1	FIELD MARSHAL	1
2	ST-LAWRENCE O'TOOLE	3
3	PSNI	4
4	SCOTTISH POLICE	9
5	RAVARA	8
6	CLOSEKELT	7
7	SCOTTISH POWER	6
8	INVERARY	2
9	VALE OF ATHOLL	5

Best M&D: PSNI **Draw:** 3

Figure 2.1.4.11



Official Results Summary

Championship: Ulster

Date: 26/7/2017

Location: Antrim

Admin: I. BURROS

Grade 1 – Results

	DRAW	BAND
BEST PIPES	1	Field Marshal Montgomery
BEST DRUM CORP	8	Invincibay
BEST BASS SECTION	6	Closette
BEST M&D	3	Police Service of Northern Ireland

Figure 2.1.4.12



Ards And North Down Championships Results

Saturday 12th May 2018
Castle Park, Bangor

Grade 1:

Place	Band	Piping 1	Piping 2	Piping Total	Drumming	Ensemble	Total
1	Field Marshal Montgomery	1	1	2	1	1	4
2	St. Laurence O'Toole	2	2	4	2	2	8
3	Vale of Atholl	4	3	7	3	3	13
4	Police Service of Northern Ireland	3	4	7	4	4	15

Grade 2:

Place	Band	Piping 1	Piping 2	Piping Total	Drumming	Ensemble	Total
1 EP	Closkeit	2	1	3	3	1	7
2	Ravara	1	3	4	1	2	7
3	Mandurunningham	3	2	5	2	3	10
4	Marlisco & District (3a)	4	4	8	4	4	16
5	Colmcille	5	5	10	5	5	20

Grade 3A:

Place	Band	Piping 1	Piping 2	Piping Total	Drumming	Ensemble	Total
1	Thiopval Memorial	1	2	3	5	2	10
2	Marlisco & District	4	4	8	3	1	12
3	Matt Boyd Memorial	2	1	3	6	4	13
4 EP	Quinn Memorial	3	6	9	2	3	14
5	Drumloough	5	3	8	1	5	14
6	Upper Crossgar	6	5	11	4	6	21

Grade 3B:

Place	Band	Piping 1	Piping 2	Piping Total	Drumming	Ensemble	Total
1	Batdenhill (3a)	1	1	2	1	2	5
2	St. Mary's Derrytrasna (3a)	2	2	4	5	1	10
3	Glocher & District	3	3	6	2	4	12
4	Tullylagan	4	6	10	4	3	17
5	Major Sinclair Memorial	5	4	9	3	6	18
6	Raffrey	6	5	11	6	5	22
7	Cleland Memorial	7	7	14	7	7	28

Grade 4A:

Place	Band	Piping 1	Piping 2	Piping Total	Drumming	Ensemble	Total
1	McNeillstown (3b)	2	2	4	1	1	6
2	Raphoe Ulster-Scots	1	1	2	4	3	9
3	Kilcoag	3	3	6	7	2	15
4 EP	McDonald Memorial	5	4	9	5	4	18
5	Cullybackey*	4	5	9	3	6	18
6 EP	Augharban	6	8	14	9	5	28
7	Ballycoan*	7	6	13	8	7	28
8 EP	Tanlaght O'Cruy	8	7	15	6	8	29
9	Clytibret	9	9	18	2	9	29



The Royal Scottish Pipe Band Association

45 Washington Street, Glasgow G3 8AZ. Telephone 0141 221 5414



Grade 4B:

Place	Band	Piping 1	Piping 2	Piping Total	Drumming	Ensemble	Total
1	Bessbrook Crimson Arrow (4a)	1	1	2	6	1	9
2 EP	Broughshane & District	2	4	6	5	2	13
3	Gransha (4a)	3	3	6	1	6	13
4	Wicklow	4	2	6	4	5	15
5	Sgt Walker Memorial	5	5	10	3	3	16
6	Altnavagh Memorial	6	7	13	2	7	22
7	Major Sinclair Memorial*	7	6	13	7	4	24
8	Killeshin	8	8	16	8	8	32
9	Harry Ferguson Memorial	9	9	18	9	9	36
10	Kirkistown	10	10	20	10	10	40

From these findings, I have come to the conclusion, that the association require a system that is able to meet their current needs when grading competitions. If my system does not meet these very specific needs for judging and grading competitions, my system will not be successful. From gathering all these documents, I have been able to gather all the information I will need to start to design and prototype my processing stages that will be required to ensure my system will be as of an industrial standard that meets the criteria of their current system.

Currently, to complete a specific task, whether it is registering a band or member or judging a competition, an official form must be filled out. These forms can be accessed by the band through the headquarters. At a competition each judge will have a comments sheet for every band. These sheets are very generic and require the judge to write their name, the band name, and the competition details on every sheet. This is good as it means that less forms are needed as one form is able to be used for all grades.

In the current system, the integrity of the data is not great. There is no method of checking that the administrator has calculated the results correctly and hasn't made a mistake in the process. This could be improved by making two administrators' carryout this task and then checking that what they both matching results summaries with all bands having the same score after the process.

2.2 Research existing solutions to similar problems.

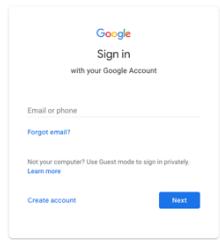
Due to the specific needs of the association and the fact that they are stand alone and have no market competitors, I have not been able to find identical examples with the exact functionality that I need must include in my new system. I began my research by looking at examples of registration forms that I could potentially adapt to use for the registration of new members. I will analyse and draw conclusions from explaining why I will make use of specific features and why I won't.

During my Document analysis / observation, I have been able to gather all the documents I need to be able to piece together the functionality of their current system and which functionality is important to them. Because of this my desk-based research is not critical to the success of my overall project. However, I still will find this research useful as it will allow me to see industry practice in developing forms and techniques to aid validating my program.

To allow for users to log into their account I will use a standard log in page that they will feel conformable using as it will be familiar to them from logging into other

account they may already have with other businesses. Most businesses ask for your username and password in one stage like the example to the left, however recently a few have been asking you to enter your username and password in two different steps (example on the right). I think the idea of two different steps but for the purpose of this system and with the wide range of computer literacy I think sticking to the standard one below the other will cause less issues and be less confusing for the less experienced users.

A screenshot of a standard two-step Google sign-in process. It shows a 'Sign in' button highlighted in blue, indicating the first step. Below the button are links for 'Text a temporary password' and 'Reset your password'. To the right, there is a second step showing a 'Next' button.



This organisation, Organ Donation Northern Ireland, uses a simple interface. They give a brief description to the end user to explain to the user exactly what filling out this form is achieving. The form takes the format of a comment to describe which information they are wanting the user to enter into a field textbox below. They have also included a red asterisk that distinguishes to the user which information they require to create the account and which is optional.

Their form is broken down into sections where one section asks the user to enter their personal details and the second their contact details. I like this idea due to the fact that it makes each part of the registration process self-explaining. I would adapt this form to have a section of the form on the details of the new user and another section on the band that they are registering to.

To navigate to different pages of my system I would like use a button menu like the one shown in the organ donation registration. It will be down the left-hand side and the current page that the user is on will be highlighting in a different colour. I like the idea of this feature as it makes navigating through the system simple, the user is always going back to the same place to move on.

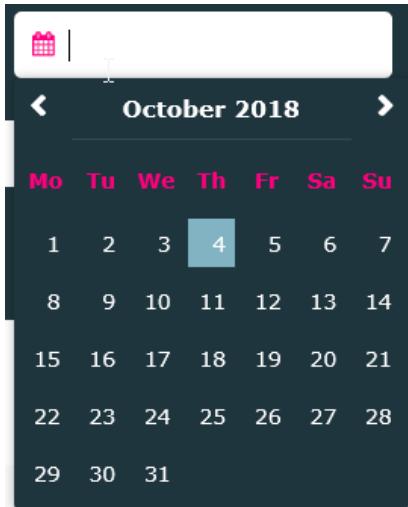
When a member is registering to a band or transferring from band to band, I could use a drop-down menu like shown in this example to the left. This will mean that they can only select an existing band and it will act as key validation and users could enter the name of the band in slightly different ways.

However due to the sheer number of bands, I may decide to incorporate this into two drop down menus. The first menu will ask the grade of the band and then only the bands in that particular grade will appear in the second drop down.

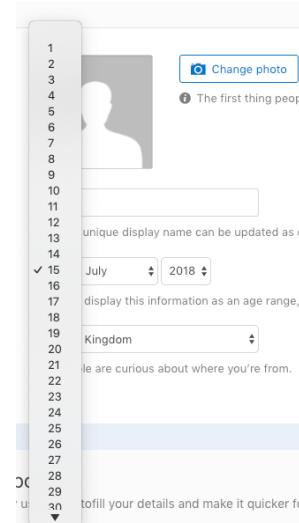
Booking transport:

The new system must allow for the pipe major to potentially book transport for their band to get to and from the competition.

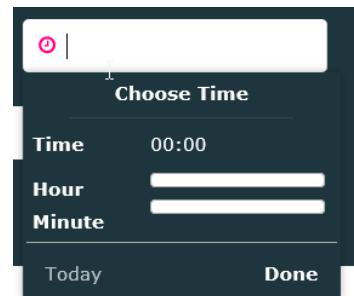
This design is again simple and easy for all experience end users to use.



The drop-down date feature of this booking form (left) is very intuitive and would be the best option for selecting a date rather than just a drop down for each day, month and year like seen in the example on the right. I think this because displaying the day along with the date would be less confusing for the Pipe Major when booking the transport as they can confirm that the day, they have selected is actually the Saturday (the only day the competitions are held on) and not another day of the week by accident.



I do not like this feature whereby the external entity selects their pick-up time using a scrolling time feature to select the pick-up time. This feature made it very difficult to select an exact time eg 8:00 due to the nature of the scroll.



From: [REDACTED]
Sent: 03 October 2018 09:45
To: [REDACTED]
Subject: [REDACTED] Quote Enquiry

Name: [REDACTED]
Email: [REDACTED]
Phone: [REDACTED]

Journey: One-Way
Party Size: 50

Pick Up: [REDACTED]
Departure Date: 04/10/2018
Departure Time: 08:12
Destination: [REDACTED]

Special Instructions: [REDACTED]

This is an example quote enquiry I received from a company after I gave them a few details of a bus that I would like to book. Once I filled in all the necessary details about where I would like to, where I'd be needing picked up from, the date and time of arrival and the size of bus needed, I received a quote back with a price. I would adapt this to allow a pre-formatted email to be sent to the bus company that offers to transport bands to and from competitions. I would format the email of interest in the same way with the necessary fields that are required to arrange a bus and the bands requirements for the bus.

Warehouse Deals Outlet Subscribe & Save Vouchers Amazon Family Amazon Prime Amazon Pantry Prime Video I

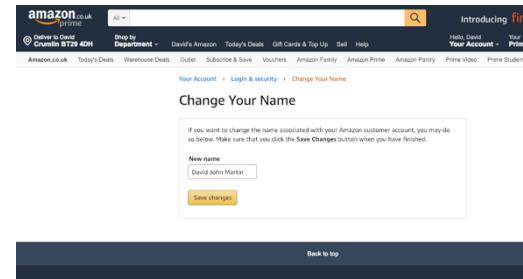
Your Account > Login & security

Login & security

Name:	David John Martin	Edit
E-mail:	dalidjohn.martin233@gmail.com	Edit
Mobile Phone Number:	+44-7881248217	Edit
	Verify your mobile number?	Verify
Password:	*****	Edit
Advanced Security Settings: Manage how and when you receive security codes		

Done

When you go into your account settings on your Amazon account and you wish to change a personal detail. They display your current details and give a button to the right which allows you to edit each individual field.



I prefer ITV's approach to solve the same feature. Being able to change all your details from the same screen from prepopulated fields, I think would be easier for the clients to understand and

also this method would take less time as the amazon solution is slightly overkill.

I also like their idea with regards to the password change functionality, whereby they show you the length of your current password in a disabled entry field and once you click on "change password" it nicely prompts you confirm your current password and then double enter your new password.

Title: Mr
First Name: John
Last Name: Appleased
Date of Birth: 14/11/1934
Postcode: BT11AA
Email: john.appleased@gmail.com
Save changes Cancel
Current password: ***** Change password

Email: [REDACTED]@gmail.cc Edit details
Current password
New password
Confirm password
Save changes Cancel

Looking into validation of data when it is entered into the system by an end user, while the password that the account holder enters does not meet the necessary criteria to pass as an acceptable password a message will be displayed for the reasoning behind it. In the example on the right, the user has entered a long enough password and a capitalised but hasn't included a number and special character, but they haven't. This example confirms with the user that when they enter their password for the second time that they match before they press to navigate to the next part of the process. This is a very nice feature however I doubt the GUI I will use will allow me to implement something as advanced like this.

The screenshot shows a 'Change your password' form with the following fields:

- Current password:** * (empty input field)
- New password:** * ⓘ (empty input field)
- Confirm password:** * ⓘ (empty input field)

Validation messages are displayed below the fields:

- A red warning message: "Your passwords do not match"
- A red warning message: "Weak" with the sub-instruction: "Include at least one number or special character" and example: "e.g. !@#\$%^*-+=

A red button labeled "Change my password" is at the bottom. A note at the bottom left says "* required fields".

In conclusion, the features that I have found in my research which I will include are:

- Double entry for passwords – this is almost a standard in any program to ensure valid entry
- Populating entry boxes on editing – this makes it easier for the user to edit details.
- An emailing feature that contacts the bus company. – This is a good feature because the form filled out will be sent which means that the bus company receives all the necessary information to provide the band with a true quote with no ambiguity

2.3 Consider the limitations of the current system.

Registration

- Forms could get lost in the post or misplaced once they arrive to headquarters.
- The paper-based registration currently is not as efficient as it should be as it takes too long for headquarters to receive the form in the post and to then process it and then add the new member to the system.
- Information could be misread and therefore entered wrongly by the administrator if the hand writing wasn't clear enough.
- Personal details about each band member is not kept up to date as the only way it can be updated is when the member gets into contact with headquarters

Transfer/Release

- The paper-based transfer/release forms currently take too long to complete as entities from both bands must sign to confirm the release.
- Forms could get lost in the post or misplaced once they arrive to headquarters.

Entering competitions

- There is no set way to enter competitions currently – contact just needs to be made with the coordinator
- Each competition must be entered individually
- There could be communication issues if a Pipe Major sends a message to the organiser and it is not received, and a band may not be entered. (There is no confirmation)

Judging/results:

- Weather conditions mean that it is very hard to judge bands when it is raining. Sheets of paper can be ruined when in contact with water.
- The current collation of results is a very time-consuming process due to the mass amount of manual processing, this leads to productivity issues.
- The time constraint of all this manual processing leads to a delay in the finale where the results are announced – this means that bands have to wait considerable amounts of time before they can get their results.

2.4 Identify stakeholders of the current system and their requirements for the proposed project.

Requirements of stakeholders using the current system:

Administrators:

- Maintain the system:
 - Adding new bands
 - Updating band details
 - Registering new members to bands
 - Transfer members between bands
 - Adjusting band gradings
 - Add list of competition dates
 - Update competition lists with draws once taken place
- Publish competition results once announced

Bandmembers:

- Register to the band by completing the registration form.
- Transfer between bands by filling out the Transfer/Release form.
- View a list of competition dates.
 - View the Draw.
 - View the Results.

Pipe Major:

- View a list of competition dates.
 - View the Draw.
- Enter competitions
 - View the Results

Guests:

- View a list of competition dates.
 - View the Draw.
 - View the Results.

With the new system, the roles of each stakeholder will slightly differ. The **new** requirements for each stakeholder in the system are as followed:

Administrators:

- Register a new Pipe Band and set up and be able to change their log on details.
- Enter, store and edit additional information about Bands including
 - Their grade
 - Location and time of practise
 - Tartan
 - Contact details of Pipe Major
- Read, register and edit a member within a band including:
 - Name
 - DOB
 - Address
 - Phone Number
 - Email address
 - Their instrument or role
- Be able to edit and add the results entered by the Judges
- Set and edit the competition dates and locations
- Send an email to confirm the entering of competitions to the PM.
- Update the competition entries once the draw for each grade has been drawn and include a time slot for each band and competition circle for the grade.
- Create and configure more admin accounts.
- Create and configure Judges accounts.

Guests /Band members:

- View competitions dates and locations
- View list of bands and their grade and be able to search for a band.
- View competing times and circle number once the draw has been made
- View the results of competitions

Pipe Majors:

- Register and transfer new and existing members
- Enter competitions
- View competing time and circle once the draw has been made
- Organise transport if required
- View the location of each competition

Judges:

- Chose the correct competition for judging.
- Choose the grade they are about to judge
- Select the band within the grade that has entered that specific competition
- Select the section within the band to judge
- Open the comments sheet
- Update the comments sheet with their comments
- Save the comments sheet
- Open the Grade's result sheet
- Score the bands from best to worst
- Save this results sheet

2.5 Specification of the new system

Now that I have fully investigated the current system, researched the market for existing solutions and made note of the limitations of the new system and can now produce my specification for my new system and its objectives:

User Interface

- GUI that is simple and intuitive, so all kinds of experienced users are able to use the system confidently.
 - Guest mode (minimal features) on start up.
 - Informative Buttons
 - Straightforward navigation between screens
 - Familiar format for admin
 - Self-documenting textboxes for input
 - Menu with Competition info, Results, Band Info etc down left-hand side
 - Log in along top bar

Functionality

Login

- A unique username and password will be required to log into any account on the new system.
 - Each password must be of a suitable strength and must meet specified criteria:
 - At least 8 characters in length
 - Contain at least 1 uppercase letter
 - Contain at least 1 lowercase letter
 - Contain at least 1 number
- Each Account will have section where they can change their username, name, email, password or security question.
- Depending on the username entered; the features for that kind of user will appear. For example, if a judge successful logs in, the additional features associated with judges will appear.

Judges specific features

- All Judges will be given their username and password – they will be given the opportunity to change their password when they log in for the first time.
- Judges must be able to search for competitions depending on their date.
- They must be given access to each grade and then each band but only the section of the band which they are marking.
 - They must press a tick box at the bottom of the page to confirm that they have completed each sheet to allow the admins to then begin to process it.

Pipe Major/Band specific features

- All Pipe Majors will be given their username and password – they will be given the opportunity to change their password when they log in for the first time.
- Once they log in, it will be possible for them to:
 - Edit the Bands Details – This will update the information displayed about the Band on the Bands page:
 - Enter Competitions
 - Once a band Enters a competition it will appear that the Band has entered the Competition.
 - Book Transport
 - Band should fill in form and it is sent to the bus company via email.
 - Register Member
 - If the band registers a new member, the member will be registered to the Band which is Logged in.
 - The Member will then be added to the list of Members that is displayed in the Edit Member details feature
 - Transfer Member
 - Edit Member Details
 - All the members will be listed.
 - A member can then be selected, and their details edited

Admin specific features

- Allow admin staff to make new admin, Judge and Pipe Major accounts and enter their required details to set up the account.
- Allow admins special access to be able to edit all information added by Judges and Pipe Majors through their buttons:
 - For Band features there will be an additional screen before they can edit specific band or member details. They will have to select the band they want to edit or the band which has a certain registered to it etc
 - For the Judges they must select the Judge and the section that they mark are marking (Piping, Drumming or Ensemble)
- Add competitions, enter bands manually and update the list once the draw takes place, with a time and circle number.
- Collate Competition Results and produce an output where the results for each band are displayed in a table format and there is a table for each grade.
- Admins can then send the results to all the bands via email.

2.6 Methods used in the problem solution

Programming Languages

I have chosen to entirely write my program in Python and SQL. I have chosen these languages due to their simplicity and my previous experience using them. Python will allow me to create a simple graphical user interface efficiently using one of its built in GUI modules. With my previous experience of Python, I should be able to program all basic features quickly and with a little research I should be able to implement more advanced features in my solution.

For my development, I may use PyCharm IDE. I like this environment due to the ability to program on both Mac and Windows without any formatting Issues. I might use Git Hub for version Control. This will allow to me to keep track of all my changes and will allow me to store my code in the cloud. I am easily then able to pull my code on to any device, allowing me to work on my solution from school and home through the push of a button.

Database

For Data storage, I have found an open source piece of software called DB Browser for SQLite. This software will allow me to manually edit and create new tables and will allow me to ensure that data being retrieved from the Solution is being stored correctly during development.

2.7 Set objectives for the proposed system with their specific success criteria.

- 1. Appropriate layout, font and colour-scheme to follow associations colours**
 - For this objective to be successful my proposed system must include the logo of the association, use the blue and green colours of the association and use their official font (Arvo)
- 2. All users of the system on launch will be brought to the home page.**
 - For this objective to be successful my proposed system must launch when the icon is pressed, and the user is brought to the home page.
- 3. All users have the ability to view and search for a band on the bands page.**
 - For this objective to be successful my proposed system must allow the user to be able to search for a band from the band name or their grade. All information stored about the band will be presented in a table structure.
- 4. All users have the ability to view a competition draw on the competitions page.**
 - For this objective to be successful my proposed system must allow the user to select a competition and if the competition has been drawn, the draw will be displayed otherwise a message stating the competition hasn't been drawn will be displayed.
- 5. All users have the ability to view and search for a grades' result in a competition on the results page.**
 - For this objective to be successful my proposed system must allow the user to select a competition and if the competition has taken place and the results have been published, the user will be asked to select the grade. All results will be displayed from the grade and bands will be ordered by their position. If results haven't been published a message to the user will be displayed.
- 6. All users have the ability to login if they have an account.**
 - For this objective to be successful my proposed system must allow the user to enter their username and password in the login page.
- 7. All Account holders have the ability to reset their login credentials.**
 - For this objective to be successful my proposed system must allow for a user to click a forgot password button and then enter the required security questions to be able to identify themselves before being allowed to enter their new password with double entry to ensure new password is valid.
- 8. Different permission levels for band, judge and admin accounts once logged in.**
 - For this objective to be successful my proposed system must display and only display the features that are available to the user type logged in.
- 9. Update and set password, security question and answer when accounts are logged in for the first time.**
 - For this objective to be successful my proposed system must know ask the user to change their password on their first log in. They must be able to select their security question from a list and then type their answer. They must change their password from the initial one given in the email sent. This will require double entry.
- 10. Band accounts will have the ability to update the Bands details & their band members details.**

- For this objective to be successful my proposed system must get all the details from the specific band or member and populate current data in a form and allow user to update and save new/changed data to the database. The email must be sent to the data subject. The email should be sent within five second time frame to ensure my program maintains good performance.

11. Bands will have the ability to enter and withdraw from competitions.

- For this objective to be successful my proposed system must allow bands to select competitions that are available to enter. The Band entered must receive an email in confirmation of this. The email should be sent within five second time frame to ensure my program maintains good performance.

12. Bands have the option of booking transport.

- For this objective to be successful my proposed system must allow users to complete an existing form before pressing submit which will send their request to the bus company along with their stored contact details in an email. The email should be sent within five second time frame to ensure my program maintains good performance.

13. Bands have the ability to register new players and transfer existing members.

- For this objective to be successful my proposed system must allow band and admin users to fill out an existing form to register a member. The member will receive an email with the email address provided to confirm their registration. The email should be sent within five second time frame to ensure my program maintains good performance. Both account holders will also be able to select a member to view their current details and update them if and when required. Again, the member will then receive an email letting them know that their details have been updated.

14. Admins have the ability to carry out these band features above on behalf of the band.

- For this objective to be successful my proposed system must allow admins to successfully edit a bands details, enter and withdraw a band for competitions, book transport and register and edit members details. My program must ask the admin to select the Band they wish to carry these features on behalf of, then the functionality will be the same as the band for each feature. Emails are sent to Pipe Major as in the Band Feature objectives.

15. Admins have the ability to add and remove band accounts, judge accounts and admin accounts. When an account is created an email is sent to include the initial log in details.

- For this objective to be successful my proposed system must allow for admins to complete three existing forms which allow them to register admins, bands and judges. The admin will give the account an initial password which is sent to the user of the new account with the email address linked to the newly registered account. The email should be sent within five second time frame to ensure my program maintains good performance.

16. Admins have the ability to create, update, delete and draw individual competitions.

- For this objective to be successful my proposed system must allow admins to complete an existing form to create a competition. The competition will appear on the competitions page and in the list box to allow bands to enter it. Updating a competition will require the admin to select a competition and the create competition form is populated with the data currently stored about the competition. Deleting a competition will delete a

competition and all the cascading related data from the competition will also be deleted. When drawing a competition, all bands entered each competition will be given a circle number and competition which is entered by the admin. The draw for each grade is sent to all the bands who have entered each grade. All users can view the draw from the competitions page. Once draw has taken place no more bands can enter so competition must be removed from competition list box.

17. Judges have the ability to write comments about each section and the score bands in competitions.

- For this objective to be successful my proposed system must allow the judge to select the competition to be judged. They must be able to select the grade and section of the bands that they are judging. When they select the grade, the judge must select the band that is currently competing to write their comments about their performance. Once they have seen all bands in the grade, they must rank the bands from best to worst. After the judge is brought back to select another grade.

18. Admins then have the ability to collate the judges results and produce the results and send them to all bands which then updates the latest results feed on home page.

- For this objective to be successful my proposed system must allow admins to collate the results to produce the official results document once the admin knows that all bands have entered, and all judges have submitted their results. After they have collated the competitions results. They competition will appear in the send results list box to allow the results to be sent to all bands. An email is produced and sent to all bands and the full results summary is attached so everyone can see the results of all bands in the competition. As an email is being sent to all bands, the admin will have to allow for a delay in using the system while all these emails are sent. Alongside this each band will receive their comments sheet in an individual email sent to them – only the band will see their judges' comment sheets.

3 Design

- 3.1 Input & Output - Specify, design and document screen layouts, reports and other forms of input and output required to create the user interface.
- 3.2 Design and document all data structures that will be required to produce the output for the solution to the problem together with the method of accessing the data in that data structure.
- 3.3 Ensure that all data entered into the system is valid.
- 3.4 Design programming routines to be used to handle and process data within the proposed solution to achieve each objective.
- 3.5 Document these designs using a structured convention such as pseudo-code.

Design Overview

The system I am going to develop will have a suitable and justified User Interface. The system I am going to build will have a graphical user interface. I have chosen to develop this UI because theoretically it should be easier to implement the solution than on a CLI due to the complexity of the program I am designing and its needs. A GUI is also a lot easier to maintain, if new features were to be added after the initial systems development done by myself, it would be much easier for the user to be able to find and use these new features in a GUI as it would not compromise the existing features. A GUI will allow me to develop an intuitive but yet consistent system. I will design my program with the appearance in mind, I will follow the standard layout of my application, with menu bars along the top and down the left-hand side. This layout makes the navigation and usability have a sense of familiarity so that the users feel more confident and are able to repeat their actions. I will make the features used most frequently the most prominent throughout, making the user feel more assured and courageous with the system.

A few libraries I will use after some research include the following:

- Tkinter – Tkinter will be the library I will use to create my GUI along with any standard GUI features including Labels, Entry Boxes or Drop lists.
- Report Lab – I will use this to generate a transport enquiry which will be populated with data the Pipe Major has entered into the Book Transport Form. This will then be sent to the Bus Company where they will do all further communication with the Pipe Major directly.
- Email – I will use this library to send an email from a RSPABNI email account to the Bus Company. I will create a generic body of text with a subject to include the name of the band that would like to book transport. I will also have to be able to attach the generated PDF from report Lab to the email as well.

- SQLite3 – This library will allow me store information in a database file. I am able to retrieve, amend and save data to the database file using SQL commands with this library

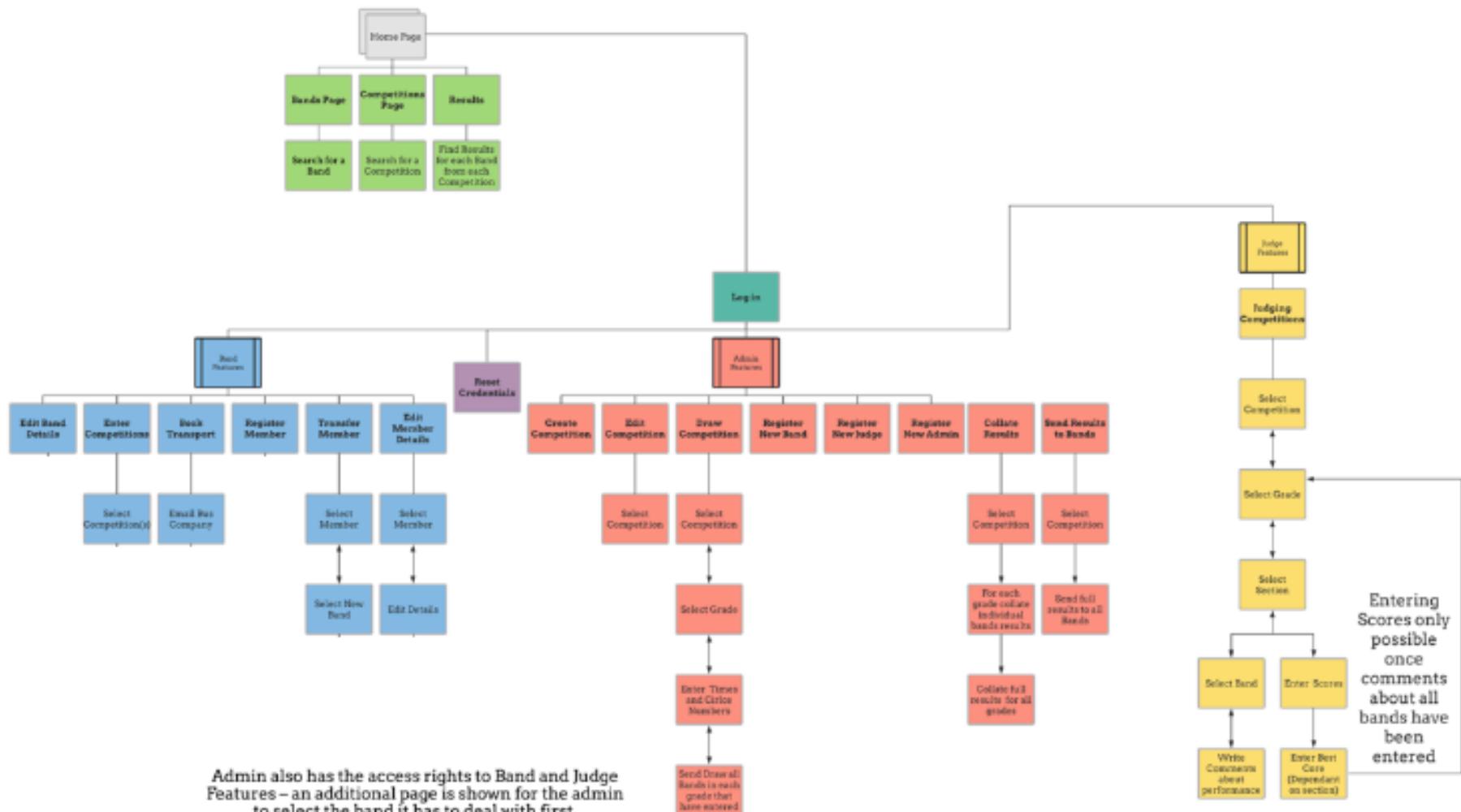
My desk-based research in my investigation has provided me with good solutions to problems I am going to face during development, how I end up developing my code will be reflected in the research I have done. My research has also provided me with the necessary fields which I need to ask the user for to complete certain tasks – I will explain these for each objective when I get to them.

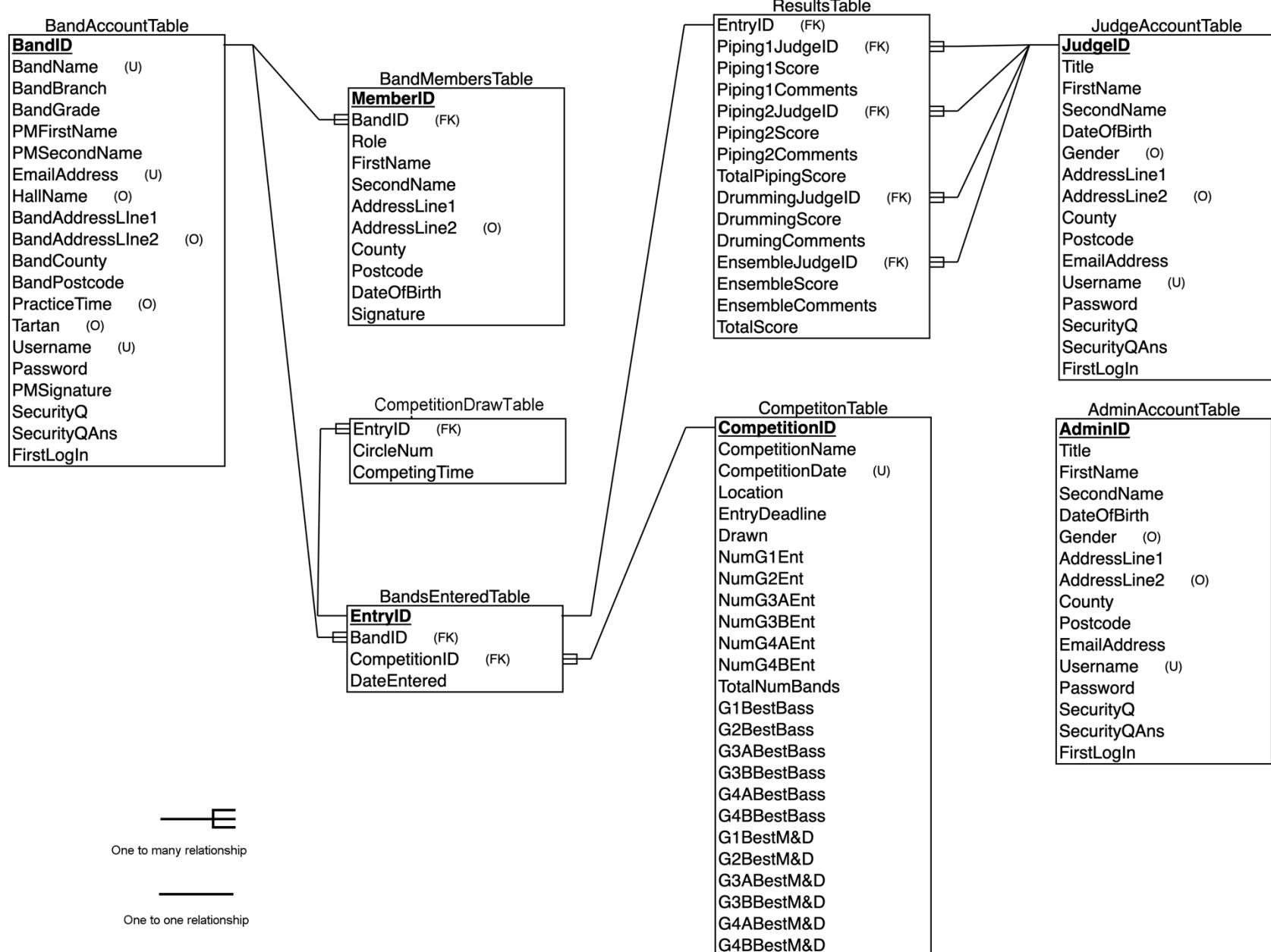
I have included a structured DFD & ERD diagram below to show the scope of my project and breakdown of my system of the data that I will need to store. I will describe how I intend to manipulate my data structure (database) as and when new data is going to be added in the objective where it is dealt with and make reference to my data structures throughout.

I have split my project down into my objectives. For each objective I will give a quick overview of what it involves, also within each objective I will fully:

- Describe data to be inputted and outputted from the system.
- Consider the reasons for the data to be included in my database and outputs.
- Describe all files, data structures and methods of access.
- Describe validation routines to be carried out on raw data.
- Describe the processing routines.

*Please find a higher quality version of DFD as Appendix_i.png





I have created a data dictionary for each of my tables within my database. Along with the standard requirements I will make reference to why I have included them giving their purpose and how I will access the data.

Key –

 Green box means yes

 Red box means no

Figure 3.0.1 – Admin Details.

Table Name: AdminAccountTable		Estimated number of records:		10 - 15		Foreign Keys:		
Table Purpose: Contains basic details about administrators of the system		Type of data structure and how will it be accessed		Database storing data as records. Accessed using SQLite3, Insert Set and Select where Commands		Composite Keys		
Field Name:	Primary Key?	Field Type:	Field Length in bytes:	Required at registration?	Default Value:	Validation methods on entry:	Example Data	Field Purpose
AdminID		Auto Number			N/A	<ul style="list-style-type: none"> • N/A as auto increments the primary key 	12	Used to uniquely identify Admin accounts.
Title		String	5		N/A	<ul style="list-style-type: none"> • Dropdown list 	Mrs	Must be stored as part of the RSPBANI policy as point of contact details.
FirstName		String	20		N/A	<ul style="list-style-type: none"> • Presence check • Alphabetic check 	Adam	Must be stored as part of the RSPBANI policy as point of contact details.

SecondName		String	20		N/A	<ul style="list-style-type: none"> • Presence check • Alphabetic check 	Faucett	Must be stored as part of the RSPBANI policy as point of contact and to identify the person linked to the account.
AddressLineOne		String	60		N/A	<ul style="list-style-type: none"> • Presence check 	Belfast Road	Must be stored as part of the RSPBANI policy as point of contact and to identify the person linked to the account.
AddressLineTwo		String	60		""	<ul style="list-style-type: none"> • Alphabetical check 	Aldergrove	Must be stored as part of the RSPBANI policy as point of contact and to identify the person linked to the account.
County		String	20		N/A	<ul style="list-style-type: none"> • Dropdown list 	Down	Must be stored as part of the RSPBANI policy as point of contact and to identify the person linked to the account.
Postcode		String	7		N/A	<ul style="list-style-type: none"> • Presence • Format check – LLNN NLL or LLNNLL • Length check – 7/8 	BT38 8HJ	Must be stored as part of the RSPBANI policy as point of contact and to identify the person linked to the account.
DOB		String	10		N/A	<ul style="list-style-type: none"> • Date format – DD/MM/YYYY 	12/09/1960	Must be stored as part of the RSPBANI policy as point of contact and to identify the person linked to the account.
Gender		String	6		N/A	<ul style="list-style-type: none"> • Radio Button (Male, Female, other) 	Male	Must be stored as part of the RSPBANI policy as point of contact and to identify the person linked to the account.
Username	Unique	String	20		N/A	<ul style="list-style-type: none"> • Presence check • Uniqueness check 	adamF687	Username is required to identify the user when logging on to the system.

Password		String	20		N/A	<ul style="list-style-type: none"> • Presence check • Length check - >8 • Character check >=1 [A-Z] & >= [a-z] • Special character check 	@dAmF10	To also identify the user but also make the account secure.
EmailAddress		String	60		N/A	<ul style="list-style-type: none"> • Presence check • Format check – string@string.string 	Adam.f687@gmail.com	The email address is required so it is asked to be confirmed when the user wants to change their password.
SecurityQ		String	40		""	<ul style="list-style-type: none"> • Presence Check • Dropdown list 	What is your favourite team?	The Security Question and answer is used as proof of the person so as they can identify themselves before, they change their password as a layer of protection.
SecurityAns		String	40		""	<ul style="list-style-type: none"> • Presence Check 	Liverpool FC	
FirstLogin		Boolean	1		False	<ul style="list-style-type: none"> • True or False 	False	This is used and checked when this user logs in. If they haven't logged in before it will allow the program to ask them to change their password.

Figure 3.0.2 – Band Details.

Table Name: BandAccountTable		Type of data structure and how it will be accessed	Database storing data as records. Accessed using SQLite3, Insert Set and Select where Commands				Foreign Keys:		
Table Purpose: Contains all the required information about the band to allow it to enter competitions and display about it.				Estimated number of records		100 - 200	Composite Keys:		
Field Name:	Primary Key?	Data Type:	Field Length in bytes:	Required?	Default Value:	Validation methods used:	Example Data:	Field purpose:	
BandID		Auto Number		N/A		<ul style="list-style-type: none"> Presence check 	25	Used for all processing stages involved with bands as this uniquely identified every band. Eg. Registering Members, Entering competitions and editing band details	
Grade		String	5	N/A		<ul style="list-style-type: none"> Presence check Dropdown list 	3B	This is the grade of the Band used in many processing stages	
BandName		String	30	N/A		<ul style="list-style-type: none"> Presence check Alphabetical check 	Ballydonagh	This is the BandName which is used for output instead of processing	
BranchSection		String	20	N/A		<ul style="list-style-type: none"> Presence Dropdown list 	Co.Antrim	Information about the band that is displayed on the bands page so the public can find out about the band.	

PMFirstName		String	20		N/A	<ul style="list-style-type: none"> • Presence check • Alphabetic check 	Andy	Information about the band that is displayed on the bands page so the public can find out about the band.
PMSurname		String	20		N/A	<ul style="list-style-type: none"> • Presence check • Alphabetic check 	Baker	Information about the band that is displayed on the bands page so the public can find out about the band.
HallName		String	20		“”	<ul style="list-style-type: none"> • Alphabetical check 	The Mount	Information about the band that is displayed on the bands page so the public can find out about the band.
AddressLineOne		String	60		N/A	<ul style="list-style-type: none"> • Presence check 	Garlandstown Road	Information about the band that is displayed on the bands page so the public can find out about the band.
AddressLineTwo		String	60		“”	<ul style="list-style-type: none"> • Alphabetical check 	Crumlin	Information about the band that is displayed on the bands page so the public can find out about the band.
County		String	30		N/A	<ul style="list-style-type: none"> • Presence check 	Antrim	Information about the band that is displayed on the bands page so the public can find out about the band.
Postcode		String	8		N/A	<ul style="list-style-type: none"> • Presence Check • Format check – LLNN NLL or LLNNLL • Length check – 7/8 	BT29 7HJ	Information about the band that is displayed on the bands page so the public can find out about the band.
PracticeTime		String	30		“Unknown”	<ul style="list-style-type: none"> • None 	7:30pm – 10:00pm	Information about the band that is displayed on the bands

								page so the public can find out about the band.
Tartan		String	30	“Unknown”	• Alphabetical check	Royal Stewart	Information about the band that is displayed on the bands page so the public can find out about the band.	
EmailAddress	Unique	string	60	N/A	• Presence check • Format check – string@string.string	AndyB987@gmail.com	This is the Pipe Majors email. It is used to send confirmations of entering competitions and also as a field to the bus company so that they can arrange the rest independently of RSPBANI & change password	
Username	Unique	String	20	N/A	• Presence check • Uniqueness check	ABaker987	Username is required to identify the user when logging on to the system.	
Password		String	20	N/A	• Presence check • Length check - >8 • Character check >=1 [A-Z] & >= [a-z] • Special character check	Pictur@THIS78	To also identify the user but also make the account secure.	
SecurityQ		String	40	””	• Presence Check • Dropdown list	In what town was your first job?	The Security Question and answer is used as proof of the person so as they can identify	

SecurityAns		String	40		""	• Presence Check	London	themselves before they change their password as a layer of protection.
FirstLogin		Boolean	1		False	• True or False	False	This is used and checked when this user logs in. If they haven't logged in before it will allow the program to ask them to change their password.

Figure 3.0.3 – Band Members’ Details

Table Name: BandMembersTable		Type of data structure and how it will be accessed	Database storing data as records. Accessed using SQLite3, Insert Set and Select where Commands				Foreign Keys:	BandID	
Table Purpose: Contains all the required information about thto allow it to enter competitions and display about it.				Estimated number of records		~ 3000	Composite Keys:		
Field Name:	Primary Key?	Data Type:	Field Length in bytes:	Required?	Default Value:	Validation methods used:	Example Data:	Field purpose:	
MemberID		Auto Number			N/A	<ul style="list-style-type: none"> Presence check 	25	Used for all processing stages involved with bands as this uniquely identified every band. Eg. Registering Members, Entering competitions and editing band details	
BandID		Integer			N/A	<ul style="list-style-type: none"> Presence Check 	2	This is to link the member to a band.	
Role		String	20		N/A	<ul style="list-style-type: none"> Presence check Dropdown list 	Pipe Sergeant	This is the instrument that the band member plays within the band.	

FirstName		String	20		N/A	<ul style="list-style-type: none"> • Presence check • Alphabetic check 	Andy	Information about the band that is displayed on the bands page so the public can find out about the band.
SecondName		String	20		N/A	<ul style="list-style-type: none"> • Presence check • Alphabetic check 	Baker	Information about the band that is displayed on the bands page so the public can find out about the band.
AddressLineOne		String	60		N/A	<ul style="list-style-type: none"> • Presence check 	Garlandstown Road	Information about the band that is displayed on the bands page so the public can find out about the band.
AddressLineTwo		String	60		""	<ul style="list-style-type: none"> • Alphabetical check 	Crumlin	Information about the band that is displayed on the bands page so the public can find out about the band.
County		String	30		N/A	<ul style="list-style-type: none"> • Presence check 	Antrim	Information about the band that is displayed on the bands page so the public can find out about the band.
Postcode		String	8		N/A	<ul style="list-style-type: none"> • Presence Check • Format check– LLNN NLL or LLNNLL • Length check – 7/8 	BT29 7HJ	Information about the band that is displayed on the bands page so the public can find out about the band.

DOB		String	10		N/A	<ul style="list-style-type: none"> • Date format – DD/MM/YYYY 	12/02/1989	Must be stored as part of the RSPBANI policy as point of contact and to identify the person linked to the account.
Gender		String	6		N/A	<ul style="list-style-type: none"> • Radio Button (Male, Female, other) 	Male	Must be stored as part of the RSPBANI policy as point of contact and to identify the person linked to the account.
Email Address	Unique	string	60		N/A	<ul style="list-style-type: none"> • Presence check • Format check – string@string. 	AndyB987@gmail.com	Their email address is required as the method of contact.
Signature		string	40		N/A	<ul style="list-style-type: none"> • Presence check 	Andy Baker	Their signature is required so confirm that they agree for the information given is correct and the RSPBANI have permission to store and use it.

Figure 3.0.4 – Judges’ Details.

Table Name: JudgeAccountTable		Estimated number of records:		10 - 15		Foreign Keys:		
Table Purpose: Contains basic details about the Judges of the association		Type of data structure and how will it be accessed		Database storing data as records. Accessed using SQLite3, Insert Set and Select where Commands		Composite Keys		
Field Name:	Primary Key?	Field Type:	Field Length in bytes:	Required at registration?	Default Value:	Validation methods on entry:	Example Data	Field Purpose
JudgeID		Auto Number		N/A	N/A as auto increments the primary key	12	Used to uniquely identify Judge accounts.	
Title		String	5	N/A	• Dropdown list	Mrs	Must be stored as part of the RSPBANI policy as point of contact details.	
FirstName		String	20	N/A	• Presence check • Alphabetic check	Adam	Must be stored as part of the RSPBANI policy as point of contact details.	
SecondName		String	20	N/A	• Presence check • Alphabetic check	Faucett	Must be stored as part of the RSPBANI policy as point of contact and to identify the person linked to the account.	
AddressLineOne		String	60	N/A	• Presence check	Belfast Road	Must be stored as part of the RSPBANI policy as point of contact and to identify the person linked to the account.	

AddressLineTwo		String	60		””	<ul style="list-style-type: none"> • Alphabetical check 	Aldergrove	Must be stored as part of the RSPBANI policy as point of contact and to identify the person linked to the account.
County		String	30		N/A	<ul style="list-style-type: none"> • Dropdown list 	Down	Must be stored as part of the RSPBANI policy as point of contact and to identify the person linked to the account.
Postcode		String	7		N/A	<ul style="list-style-type: none"> • Presence • Format check – LLNN NLL or LLNNLL • Length check – 7/8 	BT38 8HJ	Must be stored as part of the RSPBANI policy as point of contact and to identify the person linked to the account.
DOB		String	10		N/A	<ul style="list-style-type: none"> • Date format – DD/MM/YYYY 	12/09/1960	Must be stored as part of the RSPBANI policy as point of contact and to identify the person linked to the account.
Gender		String	6		N/A	<ul style="list-style-type: none"> • Radio Button (Male, Female, other) 	Male	Must be stored as part of the RSPBANI policy as point of contact and to identify the person linked to the account.
Username	Unique	String	20		N/A	<ul style="list-style-type: none"> • Presence check • Uniqueness check 	adamF687	Username is required to identify the user when logging on to the system.
Password		String	20		N/A	<ul style="list-style-type: none"> • Presence check • Length check - >8 • Character check >=1 [A-Z] & >= [a-z] • Special character check 	@dAmF10	To also identify the user but also make the account secure.

EmailAddress		String	60		N/A	<ul style="list-style-type: none"> • Presence check • Format check – string@string.string 	Adam.f687@gmail.com	The email address is required when user is asked to be confirmed when the user wants to change their password.
SecurityQ		String	40		""	<ul style="list-style-type: none"> • Presence Check • Dropdown list 	What is your favourite team?	The Security Question and answer is used as proof of the person so as they can identify themselves before, they change their password as a layer of protection.
SecurityAns		String	40		""	<ul style="list-style-type: none"> • Presence Check 	Liverpool FC	
FirstLogin		Boolean	1		False	<ul style="list-style-type: none"> • True or False 	False	This is used and checked when this user logs in. If they haven't logged in before it will allow the program to ask them to change their password.

Figure 3.0.5 – Competitions

Table Name: CompetitionTable		Estimated number of records:		~ 200		Foreign Keys:		
Table Purpose: Contains basic details about the Judges of the association		Type of data structure and how will it be accessed		Database storing data as records. Accessed using SQLite3, Insert Set and Select where Commands		Composite Keys		
Field Name:	Primary Key?	Field Type:	Field Length in bytes:	Required at creation of competition?	Default Value:	Validation methods on entry:	Example Data	Field Purpose
CompetitionID		Auto Number			N/A	N/A as auto increments the primary key	12	Used to uniquely identify each competition held in different years.
CompetitionName		String	50		N/A	• Dropdown list	“Co.Antrim Championships”	Displayed to the user when they are selecting a competition as they would not be able to distinguish competitions from their ID
CompetitionDate		Date	5		N/A	• Presence check • Alphabetic check	15/08/19	This is also displayed to the user so that they know the date of the competition
Location		String	50		N/A	• Presence check • Alphabetic check	“Antrim Castle Gardens”	Displayed to the user so that they know where the competition is being held
EntryDeadline		Date	5		N/A	• Presence check	15/06/19	This is used by the program to only allow the user to enter competitions before this date. After this date the competition

								will appear on the admin side to be able to draw it. It is also displayed to bans on the competition page so they know when they have to enter each competition by.
Drawn		Boolean	1	False	• Alphabetical check	True		This variable is incremented to true after the deadline and once the admin has drawn the competition.
NumG1Ent		Integer		0	• N/A – calculated by program	1		This stores the number of bands in Grade 1 for this competition. This is only calculated once the draw has taken place. It is used when the details about the competitions has been updated to include the draw.
NumG2Ent		Integer		0	N/A – calculated by program	6		This stores the number of bands in Grade 2 for this competition. This is only calculated once the draw has taken place. It is used when the details about the competitions has been updated to include the draw.
NumG3AEnt		Integer		0	N/A – calculated by program	10		This stores the number of bands in Grade 3A for this competition. This is only calculated once the draw has taken place. It is used when the details about the competitions has been updated to include the draw.

NumG3BEnt		Integer			0	<ul style="list-style-type: none"> • N/A – calculated by program 	5	This stores the number of bands in Grade 3B for this competition. This is only calculated once the draw has taken place. It is used when the details about the competitions has been updated to include the draw.
NumG4AEnt	Unique	Integer			0	<ul style="list-style-type: none"> • N/A – calculated by program 	6	This stores the number of bands in Grade 4A for this competition. This is only calculated once the draw has taken place. It is used when the details about the competitions has been updated to include the draw.
NumG4BEnt		Integer			0	N/A – calculated by program	20	This stores the number of bands in Grade 4B for this competition. This is only calculated once the draw has taken place. It is used when the details about the competitions has been updated to include the draw.
TotalNumBands		String	3		0	<ul style="list-style-type: none"> • N/A – calculated by program 	66	This adds up the number of bands entered into each grade to be displayed on the Competitions page.
G1BestBass		String	40		“”	<ul style="list-style-type: none"> • Dropdown list of bands entered in the specific grade. 	Field Marshal Montgomery	The value of this is set to “” when the competition is created. Once the drumming judge has entered the comments for each band in the specific grade. They then must select the band with the best
G2BestBass		String	40		“”	<ul style="list-style-type: none"> • Dropdown list of bands entered in the specific grade. 	PSNI	

G3ABestBass		String	40		""	<ul style="list-style-type: none"> Dropdown list of bands entered in the specific grade. 	Broughshane	bass section, and this is updated to reflect that. It is then used to be displayed on the Results page
G3BBestBass		String	40		""	<ul style="list-style-type: none"> Dropdown list of bands entered in the specific grade. 	McNeilstown	
G4ABestBass		String	40		""	<ul style="list-style-type: none"> Dropdown list of bands entered in the specific grade. 	Gransha	
G4BBestBass		String	40		""	<ul style="list-style-type: none"> Dropdown list of bands entered in the specific grade. 	Broughshane	
G1BestM&D		String	40		""	<ul style="list-style-type: none"> Dropdown list of bands entered in the specific grade. 	Field Marshal Montgomery	
G2BestM&D		String	40		""	<ul style="list-style-type: none"> Dropdown list of bands entered in the specific grade. 	PSNI	
G3ABestM&D		String	40		""	<ul style="list-style-type: none"> Dropdown list of bands entered in the specific grade. 	Broughshane	
G3BBestM&D		String	40		""	<ul style="list-style-type: none"> Dropdown list of bands entered in the specific grade. 	McNeilstown	
G4ABestM&D		String	40		""	<ul style="list-style-type: none"> Dropdown list of bands entered in the specific grade. 	Gransha	
G4BBestM&D		String	40		""	<ul style="list-style-type: none"> Dropdown list of bands entered in the specific grade. 	Broughshane	

Figure 3.0.6 – Bands that have entered competitions

Table Name: BandsEnteredTable		Estimated number of records:		~ 1000		Foreign Keys:		
Table Purpose: Contains a record for competition that each band enters		Type of data structure and how will it be accessed		Database storing data as records. Accessed using SQLite3, Insert Set and Select where Commands		Composite Keys		BandID, CompetitionID
Field Name:	Primary Key?	Field Type:	Field Length in bytes:	Default Value:	Validation methods on entry:		Example Data	Field Purpose:
EntryID		Auto Number		N/A	N/A as auto increments the primary key		100	Used to uniquely identify each entry.
BandID		Integer		N/A	<ul style="list-style-type: none"> N/A as this field is just queried from the Band Account Table of the either the Band Logged in or the band the admin has selected 		15	The primary key, BandID, is included along with the primary key, competitionID. This creates a composite key to ensure that each record is unique and can be easily found when queried
CompetitionID		Integer		N/A	<ul style="list-style-type: none"> N/A as this field is just queried from the CompetitionsTable of the either the Band Logged in or the band the admin has selected 		8	
DateEntered		Date	20	N/A	<ul style="list-style-type: none"> Format check – DD/MM/YYYY 		12/05/18	This field will be used to store the date of entry to be outputted in the confirmation email that will be sent to the PM when he enters a competition.

Figure 3.0.7 – Bands that have entered competitions

Table Name: CompetitionDrawTable		Estimated number of records:		~ 1000	Foreign Keys:			
Table Purpose: Contains a record for competition that each band enters		Type of data structure and how will it be accessed		Database storing data as records. Accessed using SQLite3, Insert Set and Select where Commands		Composite Keys:		EntryID; BandID & CompetitionID
Field Name:	Primary Key?	Field Type:	Field Length in bytes:	Default Value:	Validation methods on entry:		Example Data	Field Purpose:
EntryID		Integer	4	N/A	<ul style="list-style-type: none"> • N/A as this field is just queried from the Bands EnteredTable of the either the Band Logged in or the band the admin has selected 	8	This composite key is this entities primary key which uniquely identifies the band at a competition	
CircleNum		Integer		N/A	<ul style="list-style-type: none"> • Range check: 1-10 	5	This is the Circle number that will be outputted to the user once the drawn has taken place	
CompetingTime		String	5	N/A	<ul style="list-style-type: none"> • Format check – NN:NN 	11:15	This is the Circle number that will be outputted to the user once the drawn has taken place	

Figure 3.0.8 – Results

Table Name: ResultsTable		Estimated number of records:		~ 1000		Foreign Keys:		
Table Purpose: Records each bands results from every judge per competition and is used to calculate and store their final score.		Type of data structure and how will it be accessed		Database storing data as records. Accessed using SQLite3, Insert Set and Select where Commands		Composite Keys:		EntryID; BandID & CompetitionID
Field Name:	Primary Key?	Field Type:	Field Length in bytes:	Default Value:	Validation methods on entry:		Example Data	Field Purpose
EntryID		Auto Number		N/A	N/A as this field is just queried from the Bands Entered Table of the either the Band Logged in or the band the admin has selected		100	To identify a bands result at a specific competition
Piping1JudgeID		Integer		""	• N/A as this field is just queried from the Judge Account Table of the either the Judge Logged in or the judge the admin has selected		5	The ID of the Judge who graded this section of the band at the competition.
Piping1Score		Integer		""	• Range check: 1- Number of bands entered the grade		1	The store the score the judge gives.
Piping1Comments		String	~	""	• Presence Check		“Their comments”	To store the comments the judge gives them for their performance.
Piping2JudgeID		Integer		""	• N/A as this field is just queried from the Judge Account Table of the either the Judge Logged in or the judge the admin has selected		5	The ID of the Judge who graded this section of the band at the competition.

Piping2Score		Integer		""	<ul style="list-style-type: none"> Range check: 1- number of bands entered the grade 	1	The store the score the judge gives.
Piping2Comments		String	~	""	<ul style="list-style-type: none"> Presence Check 	"Their comments"	To store the comments the judge gives them for their performance.
TotalPipingScore		Integer		""	<ul style="list-style-type: none"> Range: 2 – 2x Numbers of bands Entered the Grade 	2	This used to store the total of the piping scores
DrummingJudgeID		Integer		""	<ul style="list-style-type: none"> N/A as this field is just queried from the Judge Account Table of the either the Judge Logged in or the judge the admin has selected 	5	The ID of the Judge who graded this section of the band at the competition.
DrummingScore		Integer		""	<ul style="list-style-type: none"> Range check: 1- number of bands entered the grade 	1	The store the score the judge gives.
DrummingComments		String	~	""	<ul style="list-style-type: none"> Presence Check 	"Their comments"	To store the comments the judge gives them for their performance.
EnsembleJudgeID		Integer		""	<ul style="list-style-type: none"> N/A as this field is just queried from the Judge Account Table of the either the Judge Logged in or the judge the admin has selected 	5	The ID of the Judge who graded this section of the band at the competition.
EnsembleScore		Integer		""	<ul style="list-style-type: none"> Range: 1 – Number Bands Entered the grade 	1	The store the score the judge gives.
EnsembleComments		String	~	""	<ul style="list-style-type: none"> Presence Check 	"Their comments"	To store the comments the judge gives them for their performance.
TotalScore		Integer		""	<ul style="list-style-type: none"> Range: 4 – 4x Number of bands entered the grade. 	5	This used to store the total score of all the judges.

As a whole my system has been designed with the colours and scheme of the association in mind. I have chosen Avro as the font that I am going to be implementing through my solution. I could not show this font in my interface designs due to limitations of the software I used. Most of the text though my system will be black on the white background. This keeps my system aesthetically pleasing and makes it easy to navigate.

Avro is the associations main font which they use in their current outputs and any documentation they produce. The size of the font will be determined by the importance of the text. The font will be size 32 for each page heading. The rest of the font will be of a smaller size and will depend on how much space there is available, however as a rule of thumb I will try to aim for size 10-12.

Throughout my program I have used coloured buttons to highlight different functionality. I have used Green buttons to distinguish these as main navigational buttons which will bring you to another page. Buttons which are blue in colour are involved in a feature in my system. These blue buttons will allow a user to work their way through a feature and save changes to data being stored on the system.

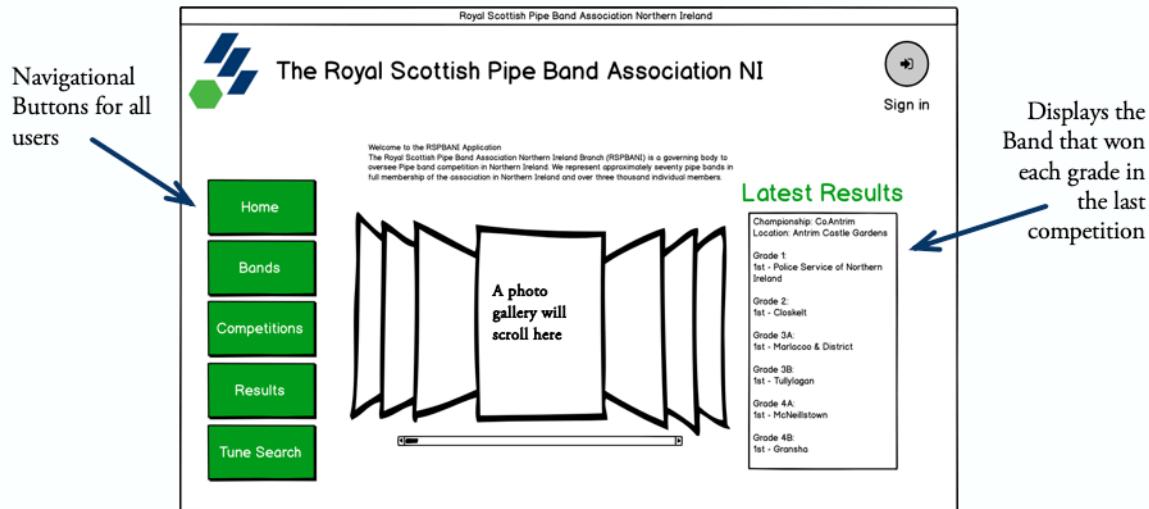
The hex code for the association's colours are as followed:

Green - #009e0f

Blue - #073763

I will design my interface according to the objectives stated in the investigation phase, for each I will give a quick introduction into the screen, annotate the interface design and outline any processing stages that may exist to show you how data in my system will be handled and processed.

"All users of the system on launch will be brought to the home page."



When the user runs the application, this home page will be presented to them. This Screen has been designed for easy and intuitive navigation. I chose big coloured buttons instead of icons because for the majority of the time, one of the biggest users of these pages will be bands members and spectators who will not be using the system very often and will not be trained in any way to be able use the system. The design features the photo gallery taking up most of this page.

The Latest Results section is very simply laid out to ensure there is no confusion about results but also acts as a quick go to feature to view the winners of each grade after a competition. Due to space and aesthetic feel of the Home Page, I did not want too much unnecessary band results which can be viewed under the results section. The information to be displayed in this section is queried from the database. The processing of how I will go about this is highlighted below.

The Green Button dashboard will be available throughout all pages within my system, to allow for easy navigation between them.

Pseudocode for getting the latest competition results	<pre> DECLARE CompetitionID as Int DECLARE CompetitionName as StringVar DECLARE CompetitionLocation as StringVar DECLARE G1Winner as StringVar DECLARE G2Winner as StringVar DECLARE G3AWinner as StringVar DECLARE G3BWinner as StringVar DECLARE G4AWinner as StringVar DECLARE G4BWinner as StringVar LatestCompetition = SELECT CompetitionID, CompetitionName, CompetitionLocation FROM Competitions WHERE Latest = "True" IF LatestCompetition CompetitionID = LatestCompetition[0] </pre>
---	--

```

CompetitionName = LatestCompetition [1]
CompetitionLocation = LatestCompetition[2]
ELSE
    CompetitionID = "No latest Competition"
    CompetitionName = "No latest Competition"
    CompetitionLocation = "No latest Competition"

G1Winner = SELECT BandName FROM Results WHERE CompetitionID = CompetitionID AND Position = "1" AND Grade = "1"
G2Winner = SELECT BandName FROM Results WHERE CompetitionID = CompetitionID AND Position = "1" AND Grade = "2"
G3AWinner = SELECT BandName FROM Results WHERE CompetitionID = CompetitionID AND Position = "1" AND Grade = "3A"
G3BWinner = SELECT BandName FROM Results WHERE CompetitionID = CompetitionID AND Position = "1" AND Grade = "3B"
G4AWinner = SELECT BandName FROM Results WHERE CompetitionID = CompetitionID AND Position = "1" AND Grade = "4A"
G4BWinner = SELECT BandName FROM Results WHERE CompetitionID = CompetitionID AND Position = "1" AND Grade = "4B"

Populate textbox on GUI with
"CompetitionName" + CompetitionName
"CompetitionLocation" + CompetitionLocation
"Grade 1 – 1st place: " + G1Winners
"Grade 2 – 1st place: " + G2Winners
"Grade 3A – 1st place: " + G3AWinners
"Grade 3B – 1st place: " + G3BWinners
"Grade 4A – 1st place: " + G4AWinners
"Grade 4B – 1st place: " + G4BWinners

END

```

"All users have the ability to view and search for a band on the bands page."

Another page that guest users can view without necessary logging in is this Bands page. All users are able to search by multiple filters. The user will be able to view all the Bands in a certain grade by selecting the radio button they wish to search by and then pressing the related search button.

The selections are spaced out symmetrically which make it easier to find the filter you are looking for. There is a button to search by the selection you have entered. It will be in the blue of the association which will stand out so that the user will realise they must press it to filter to their results.

Whether they have been filtered or not, all the bands that are present in the table will be organised in alphabetical order. Each box will have a label at the top to explain the data in the field.

Radio Button
so only one
option can be
chosen

Entry Box
allows the user
to specifically
search for a
band

The Results
from the search
are displayed in
the table below
in alphabetical
order. If no
filter is used all
bands will be
displayed

Pseudocode to display all the bands on the page	<pre> START NameListbox = ListBox() GradeListbox = ListBox() BranchListbox = ListBox() AddressListbox = ListBox() TimeListbox = ListBox() TartanListbox = ListBox() AllBands = SELECT BandName, BandGrade, BandBranch, HallName, AddressLine1, AddressLine2, County, Postcode, PracticeTime, Tartan FROM BandAccount FOR Band IN AllBands BEGIN Insert Band[0] into NameListBox </pre>
--	---

	<p>Insert Band[1] into GradeListBox</p> <p>Insert Band[2] into BranchListBox</p> <p>Insert concatenate(Band[3] + Band[4] + Band[5] + Band[6] + Band[7]) into AddressListBox</p> <p>Insert Band[8] into TimeListBox</p> <p>Insert Band[9] into TartanListBox</p> <p>NEXT</p> <p>END</p>
Pseudocode for searching by grade filter	<p>START</p> <p>NameListbox = ListBox()</p> <p>GradeListBox = ListBox()</p> <p>BranchListBox = ListBox()</p> <p>AddressListBox = ListBox()</p> <p>TimeListBox = ListBox()</p> <p>TartanListBox = ListBox()</p> <p>Grade = Get(GradeSelected from RadioButton)</p> <p>BandsInFilter = SELECT BandName, BandGrade, BandBranch, HallName, AddressLine1, AddressLine2, County, Postcode, PracticeTime, Tartan FROM BandAccount WHERE BandGrade = Grade</p> <p>FOR Band IN BandsInFilter</p> <p> BEGIN</p> <p> Insert Band[0] into NameListBox</p> <p> Insert Band[1] into GradeListBox</p> <p> Insert Band[2] into BranchListBox</p> <p> Insert concatenate(Band[3] + Band[4] + Band[5] + Band[6] + Band[7]) into AddressListBox</p> <p> Insert Band[8] into TimeListBox</p> <p> Insert Band[9] into TartanListBox</p> <p> NEXT</p> <p>END</p>
Pseudocode for searching by band name filter	<p>START</p> <p>NameListbox = ListBox()</p> <p>GradeListbox = ListBox()</p> <p>BranchListbox = ListBox()</p> <p>AddressListbox = ListBox()</p> <p>TimeListbox = ListBox()</p> <p>TartanListbox = ListBox()</p>

	<pre>INPUT BandNameEntered BandsInFilter = SELECT BandName, BandGrade, BandBranch, HallName, AddressLine1, AddressLine2, County, Postcode, PracticeTime, Tartan FROM BandAccount WHERE BandName = BandNameEntered FOR Band IN BandsInFilter BEGIN Insert Band[0] into NameListBox Insert Band[1] into GradeListBox Insert Band[2] into BranchListBox Insert concatenate(Band[3] + Band[4] + Band[5] + Band[6] + Band[7]) into AddressListBox Insert Band[8] into TimeListBox Insert Band[9] into TartanListBox NEXT END</pre>
--	--

“All users have the ability to view and search for a competition on the competitions page.”

This screen is will also be available to all users of my application. This Competitions page will display all the competitions of the season. Competitions displayed in alphabetical order. This page allows the user to select a competition to view the Draw for each grade using the radio button selection on the page. They must select the grade they would like to see the draw for then the circle number and competing time will be displayed if the competition has been drawn.

Radio Button so only one option can be chosen

All relevant information is displayed about the competitions so that users are able to distinguish between them

Button to view Draw of Selected competition

Competition	Location	Date
Co. Antrim Championships	Antrim Castle Gardens	12/June/2019
UK Championships	Stormount	19/June/2019
World Championships	Glasgow Green	18/August/2019
Co. Down Championships	Bangor Castle Gardens	25/August/2019

Back Button to go back to previous page

List box to select the grade

Please select the grade you would like to View Draw

- 1
- 2
- 3A
- 3B
- 4A
- 4B

Select Grade

If grade has been drawn then each bands competition information will be displayed.

Band	Circle Number	Competing Time
Field Marshal Montgomery	1	11:00
Inventory and District	1	11:10
PSNI	1	11:20
Vale of Atholl	1	11:30

No Bands have entered this grade / Draw hasn't taken place yet

Viewing a competition draw – This is achieved by the user selecting the competition and then followed by the grade. The Database will be queried with this retrieved data and display all the bands in the grade along with the circle number and competing time they have been given.	<pre> START CompetitionIDSelected = Get(CompetitonSelected) GradeSelected = Get(GradeSelected) BandDrawQuery = SELECT BandID, BandName FROM BandAccount WHERE Grade = GradeSelected FOR Band IN BandDrawQuery BEGIN DrawQuery = SELECT CircleNum, CompetingTime FROM CompetitionDraw WHERE BandID = Band[0] IF results from DrawQuery THEN Display (BandName, CirlceNumber, CompetitionTime) ELSE Display("No Bands have entered this grade or Draw hasn't taken place") NEXT END </pre>
--	--

"All users have the ability to view and search for a grades' result in a competition on the results page."

As before, this page will be available to all users of my system. I have decided to again use list boxes to implement this objective to meet its criteria. The user is prompted with some text above the list box explaining to them that they must select a competition to view its results.

Co Antrim Championships	11/May/2019
Champion of Championships	18/May/2019
Co Down Championships	25/May/2019
Ulster Championships	5/June/2019
All Ireland Championships	8/June/2019

List box to select the competition to view results along with the competition date which makes it easy for the user to find the competition they are looking for.

Once selected they must go through the same procedure and select the grade they wish to view.

List box to select the grade

Once they have selected the grade, they will be presented with the results in the grade including each sections score, which are all aligned on the screen to make it easy to read. If the competition has not taken place and therefore results not published, instead a message displayed telling the user the reason the results cannot be displayed.

The breakdown of each bands results are published here and their overall position in the grade

The Results have not yet been published for this grade

Band	Piping 1	Piping 2	Total Piping	Drumming	Ensemble	Total Score	Position
PSNI	1	2	3	1	1	5	1
Vale	2	1	3	2	2	7	2
Inverary	3	3	6	3	3	12	3

Displaying Results to user – Before the results can be displayed the user must select the competition and grade they want to view the results for. Once this is done. The Database is queried so that only the results of that grade of the competition are returned to the user. This will be done by getting all the bands entered into the grade of the competition and ordering them by their final position in the grade, eg

```

START
CompetitionSelected = Get(CompetitionSelection)
GradeSelected = Get(GradeSelection)
BandsInGradeSelected = []
GradeResults = []
BandsInCompetition = SELECT BandID FROM BandsEntered WHERE CompetitionID =
CompetitionSelected
FOR Band in BandsInCompetition
    BEGIN
        BandGrade = SELECT Grade FROM BandAccount WHERE BandID = Band
        IF BandGrade == GradeSelected THEN
            BandsInGradeSelected.append(Band)
    NEXT
FOR BandID in BandsInGradeSelected
    ResultsBandsInGrade = SELECT Piping1Score, Piping2Score, TotalPiping,
    DrummingScore, EnsembleScore, TotalScore, Position WHERE BandID = BandID

```

ranked best to worst,
then displayed.

```
AND CompetitionID = CompetitionSelected  
GradeResults.append(ResultsBandsInGrade)  
NEXT  
Sort by Position ASCENDING (GradeResults)  
Display(Results)  
END
```

"All users have the ability to login if they have an account."

When the user presses the log in button on the top right corner of their screen, they will be provided this screen which will allow them to log onto to their account using their credentials. This page consists of only text entry boxes that are supported by reflective labels making the reading and layout of this form simple and intuitive. The forget password button is small and not as noticeable as the blue button to be pressed to log in.

Logging In – Users must enter their username and password into the respective input fields. When they press log in their details are taken and checked to see if they exist and in which table (Band, Judge or admin) this will determine which access levels they will receive.

```

START
Username = Get(Username)
Password = Get>Password)

CheckBandAcc = SELECT FirstName FROM BandAccount WHERE Username = Username
AND Password = Password
IF CheckBandAcc THEN
OUTPUT ("Welcome" + str(CheckBandAcc))
Display(BandFeatures)
ELSE:
    CheckJudgeAcc = SELECT FirstName FROM JudgeAccount WHERE Username =
    Username AND Password = Password
    IF CheckJudgeAcc THEN
        OUTPUT ("Welcome" + str(CheckJudgeAcc))
        Display(JudgeFeatures)
    ELSE:

```

```
CheckAdminAcc = SELECT FirstName FROM AdminAccount WHERE Username =
Username AND Password = Password
IF CheckAdminAcc THEN
    OUTPUT ("Welcome" + str(CheckAdminAcc))
    Display(BandFeatures)
    Display(JudgeFeatures)
    Display(AdminFeatures)
ELSE:
    OUTPUT("No account found please ensure your credentials are correct")
END
```

"All Account holders have the ability to reset their login credentials."

The user of this system will be brought to this page if they have forgotten their password and have pressed the forgot password button on the login in screen as seen in the objective above. They are prompted like before to enter their username and email address this time. This is extra verification of the user to ensure they are who they are saying they are. Again, the same as before if they have forgotten their username there is a smaller button to press which will inform the user that they must contact an administrator to get access to their account again.

The Royal Scottish Pipe Band Association NI

Password Reset

Username:

Email Address:

[Forgot username?](#)

Sign in

Username entry box

Email address entry box to verify the user.

Forgotten username button once pressed will display a message to the user asking them to contact an administrator.

For extra security the user is asked for their account security question from the account initialisation period

Please enter the account security question.

<Security Question>

Enter

Once the user has been verified then they can then change their account password – which requires double entry and specific validation listed in the data dictionary.

Royal Scottish Pipe Band Association Northern Ireland

The Royal Scottish Pipe Band Association NI

Change Password

Please enter your new password

New password:

Re-enter password:

Enter

Password reset -	<pre> START FUNCTION on button press Username = Get(Username) EmailAddress = Get(EmailAddress) AdminCheck = SELECT SecurityQ, SecurityQAns FROM AdminAccount IF AdminCheck SecurityQuestion = SecurityQ SecurityQAnswer = SecurityQAns DISPLAY(AskSecurityQ) ELSE: BandCheck = SELECT SecurityQ, SecurityQAns FROM BandAccount IF BandCheck SecurityQuestion = SecurityQ SecurityQAnswer = SecurityQAns DISPLAY(AskSecurityQ) JudgeCheck = SELECT SecurityQ, SecurityQAns FROM JudgeAccount IF JudgeCheck SecurityQuestion = SecurityQ SecurityQAnswer = SecurityQAns DISPLAY(AskSecurityQ) ELSE: OUTPUT("No account founded matching these credentials") FUNCTION AskSecurityQ Populate interface with SecurityQuestion Populate entry box for their SecurityQuestion Answer FUNCTION on button press InputSecurityQAnswer = Get(SecurityQuestionAnswer) IF InputSecurityQAnswer == SecurityQAnswer THEN DISPLAY(ChangePasswordFrame) ELSE: OUTPUT("Security Question Answer does not match") FUNCTION ChangePassworFrame Populate Frame with password label and entry box Populate Frame with re-enter password label and entry box FUNCTION on button press NewPassword = Get(Password) NewPasswordDouble = Get(Re-enterPassword) </pre>
-------------------------	---

```
IF CheckPasswordValidation(NewPassword) * == True THEN
    IF NewPassword == NewPasswordDouble THEN
        UPDATE Database (Password)
    ELSE:
        OUTPUT("Passwords do not match")
        DISPLAY(ChangePasswordField)

    ELSE:
        OUTPUT("Password Invalid")
        DISPLAY(ChangePasswordField)

END
```

*Note CheckPasswordValidation is a validation routine that has been outlined in the validation section at the end of this section

“Different permission levels for band, judge and admin accounts once logged in.”

Once logged in these are the different access levels that are available and the additional features that come with the particular levels are circled in red. The designs below show the positioning of these buttons for each user.

Band Account logged in

The screenshot shows the homepage of the RSPBAND website. At the top, there is a navigation bar with links: Edit Band Details, Enter Competitions, Book Transport, Register Member, Transfer Member, and Edit Member Details. The 'Edit Member Details' link is circled in red. Below the navigation bar, there is a welcome message and a brief description of the association. To the right, there is a 'Latest Results' section showing competition results for the Championship at Antrim Castle Gardens. A 'Sign Out' button is located in the top right corner. On the left side, there is a vertical sidebar with green buttons labeled Home, Bands, Competitions, Results, and Tune Search.

Admin Account logged in

This screenshot shows the same website as above, but with an Admin account logged in. In addition to the standard navigation links, there is a vertical sidebar on the right containing several red-circled icons with labels: New Bond, New Judge, New Admin, New Competition, Edit Competition, Draw Competition, Collate Results, and Send Results. The 'Judging Competitions' button in the bottom left of the main content area is also circled in red.

Judge Account logged in

This screenshot shows the website with a Judge account logged in. The vertical sidebar on the right contains the same set of red-circled icons as the Admin account screenshot. The 'Judging Competitions' button in the bottom left of the main content area is also circled in red.

See Pseudocode for Log In with access levels in the Login objective above.

“Update and set password, security question and answer when accounts are logged in for the first time.”

When the user enters their password. Both fields will be checked to ensure they match and then checked to ensure they have met the required strength. This is documented in the validation processes found later in this document. On the button press, if password is acceptable then this new password will be updated in the database and the current password is overridden otherwise the user will be prompted to re-enter their new password.

When every account is logged into for the first time the user will be hit with a “welcome to your new account” pop up window. This simply allows the user to change their password from the preset admin default and pick their security question from a drop down box

The user will then be presented with a new page to select their security question and answer. Both fields will be saved to the database in the record belonging to the logged in user. The program will check to ensure the user has selected a question and has provided an answer. On button press, if all data is valid, the data will be saved, and user will be brought to the home screen as pop up window will be destroyed.

Processing stages

Checking for password and double entry is a match	START On “Next” button press Get passwords from entry boxes PasswordCheck = False If CheckPassword (Password1) == True: If password1 == password2 : PasswordCheck = True
--	--

	<pre> If passwordCheck == True: UPDATE BandAccount SET Password = Password1 WHERE BandID = BandLoggedinID Display Security Question screen ELSE: Display Password frame to ask user to enter password again END </pre>
Checking for security question selected and answer given	<pre> START On "finish" button press Get security question and answer from entry boxes ValidQuestion = False ValidAnswer = False IF SecurityQuestion != "Select a Question": ValidQuestion = True If SQAnswer = "" or "": OUTPUT("Please enter your answer to the selected question") ELSE: ValidAnswer = True ELSE: OUTPUT ("Please select a question") IF ValidAnswer == True AND ValidQuestion == True: UPDATE BandAccount SET SecurityQuestion = SecurityQuestion , SecurityQAns = WHERE BandID = BandLoggedinID Destroy pop up window Display Home page ELSE: Return to Security Question Frame END </pre>

“Band accounts will have the ability to update the Bands details & their band members details.”

This object allows for a pipe major of a band who has logged in or an admin to update and edit the details of the band or the details of the members. Once saved all data will be revalidated to ensure all new data entered is valid. If all data is valid then update the bands record to hold all the information that is now found in these entry boxes.

Populated entry boxes with the bands current information queried from the database

Royal Scottish Pipe Band Association Northern Ireland

The Royal Scottish Pipe Band Association NI

Sign Out

Edit Band Details

Home Bands Competitions Results Tune Search

Band Name: Ballydonogh Hall Name: The Mount
Branch: Co Antrim Address Line 1: 76 Gorlinstown Road
Grade: 4B Address Line 2: Crumlin
County: Select your County Postcode: BT38 7OH
Pipe Major First Name: Alistair Practice Time(s): Monday 7-8pm
Pipe Major Second Name: McCleery Tartan: McClan
Username: AmlcCleery7867
Password Reset:
Re-enter Password:

Update Band

A member must be selected before their details can be edited and updated.

Populated entry boxes with the members current information queried from the database

Royal Scottish Pipe Band Association Northern Ireland

The Royal Scottish Pipe Band Association NI

Sign Out

Edit Member Details

Home Bands Competitions Results Tune Search

Dorne, Jonny, Christian, etc.
Select Member

Back

First Name: Dorne
Second Name: Fleming
Address Line 1: 54 Band Street
Address Line 2: Birger
County: Co Down
Postcode: BT28 7OH
Date of Birth: 16 January 1990
Delete Update Member

Processing stages

Edit Band Details	<p>START</p> <p>BandNameCheck = False</p> <p>BandBranchCheck = False</p> <p>BandGradeCheck = False</p> <p>PMFirstNameCheck = False</p> <p>PMSecondNameCheck = False</p> <p>CheckUsername = False</p> <p>AdressLine1Check = False</p> <p>CountyCheck = False</p> <p>PostcodeCheck = False</p> <p> </p> <p>BandDetails = SELECT * FROM BandAccount WHERE BandID = BandIDofBandLoggedIn</p> <p>Populate the frame was seen in the design above</p> <p>Populate entry boxes with respectful fields that have been retrieved from database</p> <p> </p> <p>On button click</p> <p>IF UsernameCheck.Username.get() == True:</p> <p> CheckUsername = True</p> <p>IF CheckAlphaAndDigit(BandName.get()) == True:</p> <p> BandNameCheck = True</p> <p>IF BandBranch != "Select Branch":</p> <p> BandBranchCheck = True</p> <p>IF Grade != "Select Grade":</p> <p> GradeCheck = True</p> <p>IF AllAlpha(PMFirstName.get()) == True:</p> <p> PMFirstNameCheck = True</p> <p>IF AllAlpha(PMSecondName.get()) == True:</p>
--------------------------	--

	<pre> PMSecondNameCheck = True IF CheckAlphaAndDigit (AddressLine1.get()) == True: AddressLin1Check = True IF County != "Select County": CountyCheck = True IF CheckPostcode(Postcode.get()) == True: PostcodeCheck = True IF PostcodeCheck == True AND CountyCheck == True AND BandNameCheck == True AND BandBranchCheck == True AND BandGradeCheck == True AND PMFirstNameCheck == True AND PMSecondNameCheck == True AND CheckUsername == True AND AdressLine1Check == True: UPDATE BandAccount SET * = BandDetails WHERE BandID = BandIDofLoggedIn ELSE: OUTPUT(X Field not valid) END </pre>
Edit Member Details	See pseudocode from edit band details above. The processing stages are the same however the fields and data to be populated will be queried from Members table instead. Validation routine used will be the same and can be found below.
Delete Member	<pre> START MemberSelected = Selected member from listbox On "Delete" Button click DELETE FROM MemberDetails WHERE MemberID = MemberSelected END </pre>

“Bands will have the ability to enter competitions”

In this feature, bands can enter by selecting the competition and pressing enter. The list box displayed on this page will only contain competitions that the band has not already entered, and the competition deadline has not passed (i.e. the competition has not been drawn). The pipe Major will receive an email as confirmation of entering the competition.

List of competitions that a band selects to enter. They can choose multiple allowing them to enter multiple at the same time.

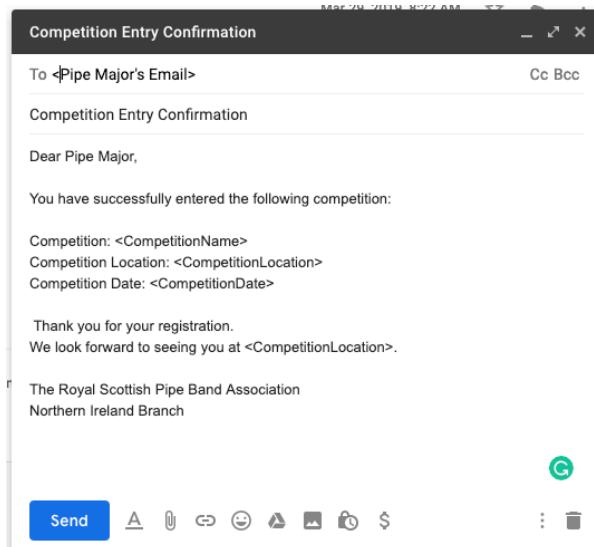
Only competitions the band hasn't entered already will appear in this list box.

I have the entry deadline date highlighted in red so that it stands out to the user to make they aware of the date they need to enter the competition by.

Processing stages

Displaying competitions that are Displayed in list box	<pre> START CompsNotDrawn = SELECT CompetitionID FROM Competitios WHERE Drawn = False CompetitionsEntered = SELECT CompetitionID FROM BandsEntered WHERE BandID = BandIDofLoggedIn CompsToBeDisplayed = Difference (CompsNotDrawn, CompetitionsEntered) Populate Listbox with CompsToBeDisplayed END </pre>
Entering Competitions	<pre> START CompetitionSelected = CompetitionSelected from listbox INSERT INTO BandsEntered (BandID, CompetitionID, DateEntered) Values (BandIDofLoggedIn, CompetitionSelected, CurrentDate) END </pre>

Output:



The email that will be sent to the pipe major, will include all the details about the competition. These details will be queried from the database and retrieved using the Competition ID of the selected competition in the list box. If multiple are selected. There will be an email for each entry.

“Bands have the option of booking transport.”

This objective allows for bands to enquire about transport. From my desk-based research, I have included the following fields to ensure the bus company receive enough information to provide a quote to the band.

This form can be filled out with information required if a band would like book transport.

Once completed, this is sent to the bus company and the Pipe Major of the band logged in is also sent and further correspondence is made independently

Processing stages

Booking Transport	Display Frame as shown above in interface design. PickUpPointCheck = False PickUpDayCheck = False PickUpMonthCheck = False PickUpYearCheck = False PickUpTimeCheck = False DestintationCheck = False ReturnDayCheck = False ReturnMonthCheck = False ReturnYearCheck = False ReturnTimeCheck = False PartySizeCheck = False NumInstrCheck = False Check
--------------------------	--

```

IF PickUpPoint.get() != "":

    PickUpPointCheck = True

IF PickUpDay.get() != "Select Day":

    PickUpDayCheck = True

IF PickUpMonth.get() != "Select Month":

    PickUpMonthCheck = True

IF PickUpYear.get() != "Select Year":

    PickUpYearCheck = True

IF PickUpTime.get() != "":

    PickUpTimeCheck = True

IF Destination.get() != "":

    DestinationCheck = True

IF ReturnTime.get() != "":

    ReturnTimeCheck = True

IF ReturnDay.get() != "Select Day":

    ReturnDayCheck = True

IF ReturnMonth.get() != "Select Month":

    ReturnMonthCheck = True

IF ReturnYear.get() != "Select Year":

    ReturnYearCheck = True

IF Int(PartySize.get()) <= 150:

    PartySizeCheck = True

IF int(NumInstr.get()) < 100:

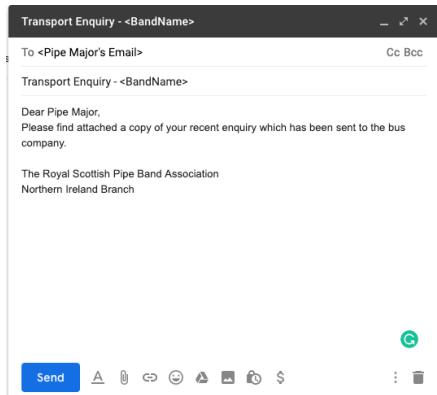
    NumInstrCheck = True


IF PickUpPointCheck == True AND PickUpMonthCheck == True AND
PickUpYearCheck == True AND PickUpTimeCheck == True AND
DestinationCheck == True AND ReturnTimeCheck == True AND
ReturnDayCheck == True AND ReturnMonthCheck == True AND

```

	<p>ReturnYearCheck == True AND PartySizeCheck = True AND NumInstrCheck ==True:</p> <p>Email = SELECT EmailAddress From BandAccount WHERE BandID = BandLoggedIn.</p> <p>Create Document and add all these fields along with Band details and Pipe Majors Email Address - as seen in the designed output below.</p> <p>Email Pipe Major(output shown in output section) this will include this document attached as confirmation of their enquiry.</p> <p>Email Bus company (output shown in output section) this will include this document attached.</p> <p>ELSE:</p> <p>OUTPUT (X Field not valid)</p> <p>END</p>
--	--

Outputs:



This is the mock-up of the email sent to the Pipe Major on enquiring transport using the form. The details will be attached to keep as a record of their request.

RSPBANI
Royal Scottish Pipe Band Association
Northern Ireland Branch

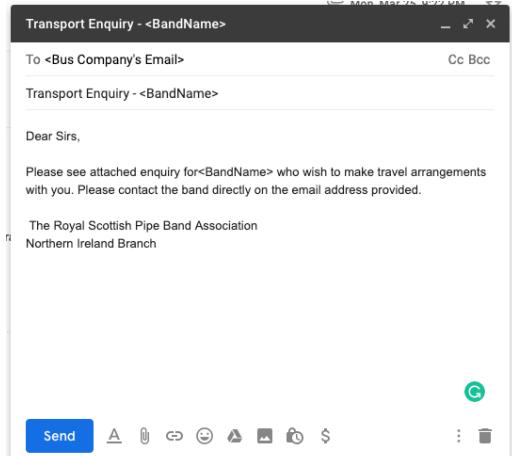
<BandName> Booking Enquiry

<BandName> would like to book transport with you. Please find their booking requirements below:

Trip Type:	<Trip Type>
Pick-up Location:	<Pick-up Location>
Pick-up Date:	<Pick-up Day>/<Month>/<Year>
Pick-up Departure Time:	<Pick-up Departure Time>
Destination:	<Destination>
Return Date:	<Day>/<Month>/<Year>
Return Departure Time:	<Return Departure Time>
Party Size:	<Party Size>
Number of Instruments:	<Num Instr>
Pipe Major's Email Address:	<PM Email>

This designed output will be produced with the information that the Pipe Major has entered into the Booking Enquiry Form.

The respected Fields will be laid out as shown. I have designed this document in such a way that all the information with regards to pick up, return and contact details are split making it easier to read.



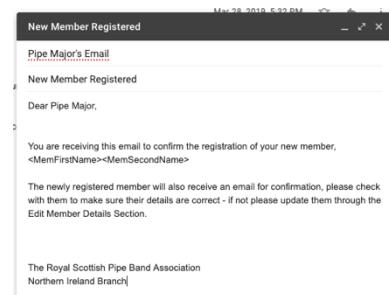
Similar to the Email sent to the Pipe Major, this is the email which the bus company can expect to receive from the Association when they receive an enquiry.

Along with this email they will find attached the document with the Bands requirements.

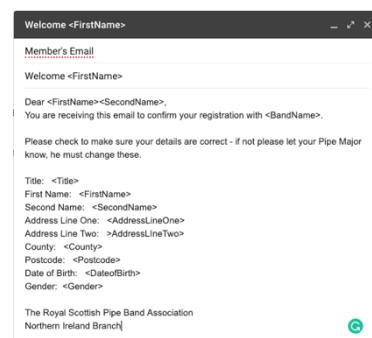
“Bands have the ability to register new players and transfer existing members.”

The Pipe Major has the ability to register new members to their band. They must fill out the following form. Once they press the register button, this information is stored, and a new record is made for this new member in the MembersDetails Table within the database. The Member is linked to the registered band through a foreign key of the BandID from the BandAccount Table in the Members Details Table. This exists for each member in the table. The Pipe Major receives an email of confirmation. The Member will also receive an email, their details will be sent over email as so they can ensure their details have been stored accurately and fairly.

Outputs:



This output shows a mock-up of the email the Pipe Major of the band, that has registered a new member. The name of the Member will be queried from the form and used in the email. I have decided to include this as so the email is specifically being generated for each new member and not a generic email.

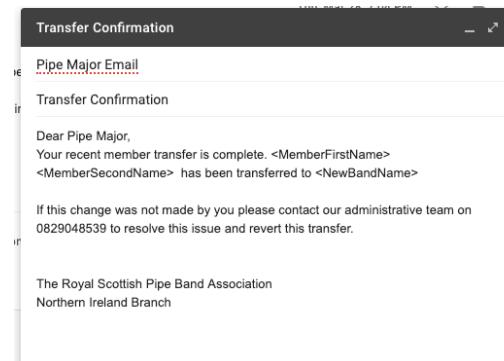


This output shows the mock-up of the email received by the newly registered member. It includes their details, so they can ensure they have been entered correctly by the Pipe Major.

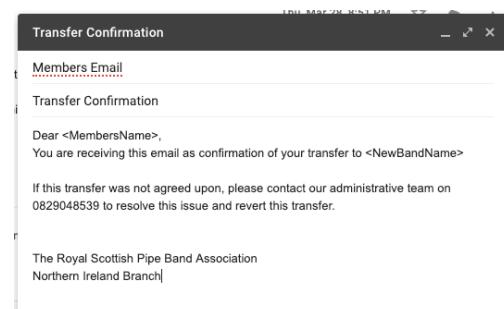
When a Pipe Major wishes to transfer a member to another band on the members request. The Pipe Major must select the member they wish to transfer and then to which band once they have selected the member. I have designed these using list boxes. This ensures they PM can only select one member and one band only.

The first screenshot shows the 'Transfer Member' page. A sidebar on the left has green buttons for Home, Bands, Competitions, Results, and Tune Search. The main area has a heading 'Transfer Member' and a note: 'Please select the member of your band which you want to transfer to another band. The Band you wish to transfer this member can be selected on the next page.' Below this is a list box containing member names: Daniel Cheesell, Jenny Fennell, Clinton Hall, Jamie Wright, Alan Beckett, and Rory Loverty. A 'Select Member' button is at the bottom. The second screenshot shows the next step where a band has been selected. The list box now contains band names: Broughshane, Ballyronan, Major Sinclair Memorial, McDonald Memorial, and Dr Wright. A 'Transfer' button is at the bottom.

Output:



Again, this mock-up shows the email that must be sent to the pipe major on transferring a member. This email will include the Members Name and the band which they have been transferred to.



The transferred member will receive this email on transfer between bands. The purpose of this email is to let the member know that they have been transferred to the named band.

Processing stages

Registering Member	See pseudocode for registering a new band below. This feature instead will save the members details to the MembersDetails table.
Transferring Member	<p>START</p> <p>SelectedMember = Selected Member from list box</p> <p>CurrentBand = BandIDofLoggedIn</p> <p>ListOfBands = SELECT BandID FROM BandAccount</p> <p>ListOfBands.remove(CurrentBand)</p> <p>Display new page and populate another list box with ListOfBands.</p> <p>SelectedBand = Selected Band from list box</p> <p>Ask user are they sure they want to transfer <SelectedMember> to <SelectedBand></p> <p>UPDATE BandMembers SET BandID = SelectedBand WHERE MemberID = SelectedMember</p> <p>Email BandMember, New Band, and old band for confirmation</p> <p>END</p>

“Admins have the ability to carry out these band features above on behalf of the band.”

This feature allows admins to make the necessary changes to any band. This feature will work by instead of using the Band ID of the Band which has been logged in their ID of the Band the Admin has selected will be used throughout this feature.

The same logic is applied to the admin when they wish to judge a competition. The ID of the judge selected will be used instead of the ID of the Judge logged on.

The image displays two screenshots of the Royal Scottish Pipe Band Association Northern Ireland website. Both screenshots show a sidebar menu with the following items: Home, Bands, Competitions, Results, and Tune Search. The 'Competitions' item is highlighted in blue, indicating it is the active section.

Select a Band Screenshot: The title is 'Select a Band'. Below it is a message: 'Please select the band you would like to edit'. A list box contains the following options: Broughshane, Ballydugny, Major Sinclair Memorial, McDonald Memorial, and Dr. Wright. A blue arrow points from the text 'When an admin carries out a band feature on behalf of a band they must select the band' to this list box.

Select a Judge Screenshot: The title is 'Select a Judge'. Below it is a message: 'Please select the judge you would like enter competitor scores'. A list box contains the following options: W Pollock, J Loverty, E Martin, R Fleming, and M Hull. A blue arrow points from the text 'When an admin carries out a judge feature on behalf of a judge they must select the judge' to this list box.

“Admins have the ability to add and remove band accounts, judge accounts and admin accounts. When a band account is created an email is sent to the Pipe Major to include the initial log in details”

I have designed this feature to make it simple for the user to use. I have used a combination of drop-down boxes and entry boxes to make it easier to enter the correct data. The use of drop-down boxes allows the user to only select a valid option. This means that the data selected can be referred to something else without ambiguity.

In each case of registration all the data is pulled from the entry boxes and drop-down lists and checked to ensure it is valid. If all data isn't valid a message box will alert the user – Form is returned in same state to allow user to correct mistakes without losing the rest of their inputted information.

When a band, admin or judge is registered, their information is stored in the BandAccount, AdminAccount or JudgeAccount respectively.

Processing stages

Registering a new Band	START Populate Frame as seen in interface design. On “Register Band” Button click BandNameCheck = False
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```

BandBranchCheck = False
BandGradeCheck = False
PMFirstNameCheck = False
PMSecondNameCheck = False
CheckUsername = False
PasswordCheck = False
AdressLine1Check = False
CountyCheck = False
PostcodeCheck = False

IF UsernameCheck.Username.get() == True:
    CheckUsername = True
IF PasswordCheck.Password.get() == True:
    PasswordCheck = True
IF CheckAlphaAndDigit(BandName.get()) == True:
    BandNameCheck = True
IF BandBranch != "Select Branch":
    BandBranchCheck = True
IF Grade != "Select Gade":
    GradeCheck = True
IF AllAlpha(PMFirstName.get()) == True:
    PMFirstNameCheck = True
IF AllAlpha(PMSecondName.get()) == True:
    PMSecondNameCheck = True
IF CheckAlphaAndDigit(AddressLine1.get()) == True:
    AddressLin1Check = True
IF County != "Select County":
    CountyCheck = True
IF CheckPostcode(Postcode.get()) == True:

```

	<p>PostcodeCheck = True</p> <p>IF PostcodeCheck == True AND CountyCheck == True AND BandNameCheck == True AND BandBranchCheck == True AND BandGradeCheck == True AND PMFirstNameCheck == True AND PMSecondNameCheck == True AND CheckUsername == True AND AdressLine1Check == True AND PasswordCheck = True:</p> <p style="padding-left: 40px;">INSERT INTO BandAccount (BandName, BandBranch, Grade, PMFirstName, PMSecondName, HallName, AddressLine1, AddressLine2, County, Postcode, EmailAddress, Username, Password)</p> <p>Email Pipe Major(output shown in output section) this will include username and initial password.</p> <p>ELSE:</p> <p style="padding-left: 40px;">OUTPUT(X Field not valid)</p> <p>END</p>
Registering a new Admin	See pseudocode for registering a new band above instead of inserting into Band Account information will be committed to the AdminAccount Table
Registering a new Judge	See pseudocode for registering a new band above instead of inserting into Band Account information will be committed to the JudgeAccount Table

Outputs of the system:

I have included a mock-up of the email that the pipe major of the newly registered band will receive which will include their initial log in credentials to allow the user pipe major to log in to the system.

Welcome Topp Star of the North [Inbox x](#)

 rspbani.info@gmail.com
to me ▾

Dear Pipe Major,

You are receiving this email to confirm the registration of this band, Topp Star of the North, under your leadership.

Please find your initial log in details. Once you log in for the first time, you will be asked to set your own password along with a security question which you will need to reset your password through the application.
Also through this application you are able to do the following:

- * View Competitions
- * View Competition Draw
- * View Competition Results
- * View all Bands and their details
- * Edit Band Details
- * Enter Competitions
- * Book Transport
- * Register New Members
- * Edit Member Details

Username: Abellingham584
Password: gy5bd8YF7D

The Royal Scottish Pipe Band Association
Northern Ireland Branch

Similar to the newly registered band, this email must be sent to the newly registered judge so that they are able to log in to the system once the account has been initialised for them. This is because the administrator must set up the account initially. Included is the judge's username and their first-time log in password.

Welcome David [Inbox](#)

 rspbani.info@gmail.com to me [...](#) 12:30 PM (0 minutes ago) [Star](#) [Reply](#) [Forward](#) [Print](#) [Copy](#)

Dear David,

You are receiving this email to confirm the registration of this account.

Please find your initial log in details. Once you log in for the first time, you will be asked to set your own password along with a security question which you will need to reset your password through the application.
Also through this application you are able to do judge competitions through this which replace the current paper based system.

Username: DOfficer295
Password: gh67EC6Hi8

The Royal Scottish Pipe Band Association
Northern Ireland Branch

[Reply](#) [Forward](#)

Again, the newly registered admin will also be sent an email with their username and first-time log in password which after an administrator has set up the account initially.

Welcome James [Inbox](#)

 rspbani.info@gmail.com to me [...](#) 12:30 PM (0 minutes ago) [Star](#) [Reply](#) [Forward](#) [Print](#) [Copy](#)

Dear James,

You are receiving this email to confirm the registration of this administrative account.

Please find your initial log in details below. Once you log in for the first time, you will be asked to set your own password along with a security question which you will need to reset your password through the application.
Also through this application you are able to do the following:

- * View Competitions
- * View Competition Draw
- * View Competition Results
- * View all Bands and their details
- * Edit Band Details on behalf of bands
- * Enter Competitions on behalf of bands
- * Book Transport on behalf of bands
- * Register New Members on behalf of bands
- * Edit Member Details on behalf of bands
- * Register new Bands
- * Register new Judges
- * Register new Admins
- * Create and edit competitions
- * Register new bands
- * Draw Competitions
- * Collate Competition results
- * Send results to Bands
- * Judge Competitions on behalf of a judge

Username: JStirling454
Password: fc4AM7DvH9

The Royal Scottish Pipe Band Association
Northern Ireland Branch

“Admins have the ability to create, update, delete and draw individual competitions.”

I decided to design this frame to allow an admin to create a competition, like shown below with drop-down boxes for both dates to stop with any confusion with regards to date format. If I had used an entry box for the date, different administrators could easily use a different date format. The drop-down box only allows the admin to enter data in one specific way, this makes validating these dates much easier.

List box to select the competition to be edited. This is the same format as the enter competitions page in the bands features with the entry deadline in red to distinguish it from the competition date

Admins have the ability to delete a competition

Competition	Competition Date	Entry Deadline
Cs Antrim Championships	18/04/2019	24/04/2019
Championships	18/04/2019	24/04/2019
Co Down Championships	18/04/2019	24/04/2019
Ulster Championships	17/06/2019	23/06/2019
All Ireland Championships	8/06/2019	23/06/2019

The Royal Scottish Pipe Band Association Northern Ireland

Draw Competition

Please select the competition you would like to draw

Competition	Competition Date	Entry Deadline
Gaelscore Championships	19/May/2019	18/May/2019
Championships	26/May/2019	25/May/2019
Gaelscore Championships	23/Jun/2019	22/Jun/2019
Ulster Championships	19/Jun/2019	18/Jun/2019
All Ireland Championships	26/Jun/2019	25/Jun/2019

Select Competition

Sign Out

New Band

New Judge

New Admin

New Competition

Edit Competition

Draw Competition

Collate Results

Send Results

Home

Bands

Competitions

Results

Tune Search

Judging Competitions

Admin must then select the grade to draw.

The Royal Scottish Pipe Band Association Northern Ireland

Draw Competition

Please select the grade you would like to draw

1	2
3A	3B
4A	4B

Select Grade

Back

Home

Bands

Competitions

Results

Tune Search

Judging Competitions

For each grade, the admin will be presented with this screen. The number of bands in will reflect the number of bands entered the grade.

The Royal Scottish Pipe Band Association Northern Ireland

Draw Grade <Selected Grade>

Please enter the circle number and competing times for each band

Bond ID:	Circle Number:	Competing Time:
3	<input type="text"/>	<input type="text"/>
4	<input type="text"/>	<input type="text"/>
1	<input type="text"/>	<input type="text"/>
7	<input type="text"/>	<input type="text"/>

Next

Sign Out

New Band

New Judge

New Admin

New Competition

Edit Competition

Draw Competition

Collate Results

Send Results

Home

Bands

Competitions

Results

Tune Search

Judging Competitions

List box to select the competition to be drawn. This is the same format as the enter competitions page in the bands features with the entry deadline in red to distinguish it from the competition date.

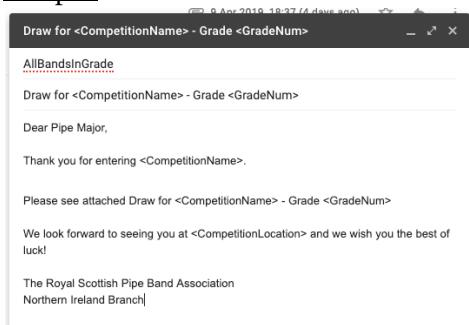
Only competitions that haven't been drawn will be shown in this list box. The admin should only select a competition to drawn once the entry deadline has reached.

Processing stages

Create Competition	See pseudocode for creating a Band. The code is very similar and instead of saving Band fields to Band Account table Competition Fields are instead saved to the Competitions Table. See validation routines which are used for each field.
Editing Competitions	Again, see pseudocode for editing Band details. Competitions page will be populated with the respectful competition fields from the competition table and then once updated the field are checked to ensure they are valid and then old data is overwritten by this new data when saved to Competitions table in database.
Drawing Competitions	<pre> FUNCTION DrawGrade(CompetitionID, GradeNum, ListOfGrades) NumBandsEntered = SELECT BandID FROM BandsEntered WHERE CompetitionID = CompetitionID AND Grade = GradeNum Populate DrawGrade frame. Create an entry box for Circle number and one for competing time for each band in NumBandsEntered. ON "Draw Grade" Button click DECLARE ListEmail, Array FOR I in NumBandsEntered: INSERT INTO CompetitionDraw (CompetitionID, BandID, CircleNum, CompetingTime) VALUES (CompetitionID, I, CircleNum, CompetingTime) EntryID = SELECT EntryID FROM BandsEntered WHERE BandID = I AND CompetitionID = CompetitionID. INSERT INTO Results(EntryID, BandID, CompetitionID) VALUES(EntryID, I, CompetitionID) Email = SELECT Emailaddres FROM BandAccount WHERE BandID = I ListEmail.append(Email) Send Email to all bands in the grade to include the draw for all bands. ListOfGrades.remove(GradeNum) START SelectedCompetition = CompetitionSelected from list box ListOfGrades = "1", "2", "3A", "3B", "4A", "4B" Until ListOfGrades = "" </pre>

	<p>Show listbox populated with contents of ListOfGrades</p> <p>SelectedGrade = Grade selected from next list box presented to user.</p> <p>DrawGrade (SelectedCompetition, SelectedGrade)</p> <p>NEXT</p> <p>END</p>
Delete Competitions	<p>START</p> <p>CompetitionSelected = Selected competition from listbox</p> <p>On “Delete” Button click</p> <p>DELETE FROM Competitions WHERE CompetitionID = CompetitionSelected</p> <p>DELETE FROM CompetitionsDraw WHERE CompetitionID = CompetitionSelected</p> <p>DELETE FROM BandsEntered WHERE CompetitionID = CompetitionSelected</p> <p>DELETE FROM Results WHERE CompetitionID = CompetitionSelected</p> <p>END</p>

Output:



This is a mock-up of the email to be sent to all the pipe majors in the recently drawn grade. This email will include the name of the competition so that the PM knows exactly which competition they have just received the draw for.



<CompetitionName> Draw – Grade <GradeNum>

BandName:	Circle Number:	Competing Time:
<BandName>	<CircleNum>	<CompetingTime>

This is the document produced for each grade that has been drawn. It will be attached to every email that is sent to entered bands. The Data seen here is replicated in the Competitions Page in the application.

“Judges have the ability to score bands in competitions.”

This objective must allow judges to enter their scores and comments about the section of the band that they are grading. It must be possible for the judge to select the competition which they are about to assess. They must easily be able to select the grade and section which they are judging. The program will then take them to a list of bands that have entered that competition from the selected grade. Once the judge clicks save, they will automatically be brought back to the list of bands to be able to select the next band about to compete. Once the grade is finished, they will have the option to go back to the previous pages to be able to select another grade and another section in case they are to assess different sections at the competitions. After all the bands have performed, the grade scores are entered including the best bass section and best march and deportment, they are saved to the database and the total for each band is calculated and the bands are ranked in their positions they have been placed.

Judge table to get the ID of the judge for reference in the results table.

Once the judge has entered their comments for each section of a band, they must be saved to the database.

The Royal Scottish Pipe Band Association Northern Ireland

Judging Competitions

Please select the competition you would like to Judge

Competition Name	Competition Date
Co. Antrim Championships	10 May/2019
Champion of Championships	18 May/2019
Co. Down Championships	25 May/2019
Ulster Championships	3 June/2019
All Ireland Championships	10 June/2019

Select Competition

Home
Bands
Competitions
Results
Tune Search
Judging Competitions

Sign Out

Select the competition to be judged from the list. Only competitions that have been drawn will appear here.

Admin must then select the grade to judge.

The Royal Scottish Pipe Band Association Northern Ireland

Judging Competitions

Please select the grade you would like to judge

1
2
3A
3B
4A
4B

Select Grade

Home
Bands
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The Royal Scottish Pipe Band Association NI

Judging Competitions

Please select the section you would like to judge

- Piping 1
- Piping 2
- Drumming Ensemble

Select Section

Select the section that the judge is grading in the competition.

The Royal Scottish Pipe Band Association NI

Judging Competitions

Please select the band you would like to judge

- Broughshane
- Ballymoney
- Major Simola Memorial
- McDonald Memorial
- Dr. Wright

Select Band

A list of bands then entered the competition will appear in a list box.

The judge must enter their comments about each band in the grade before they can enter their scores for the band.

Royal Scottish Pipe Band Association Northern Ireland

Judging Competitions

Please enter your comments for <Selected Band>

Good strong introduction
Good chanter pitch
Steady drones throughout
Poor lower hand movement integration

Save

Once all the grade has finished and all bands have competed, the judge then must rank the bands.

Royal Scottish Pipe Band Association Northern Ireland

The Royal Scottish Pipe Band Association NI

Judging Competitions

Please enter your Scores for <Selected Grade>

Ballydonoghue	<input type="text"/>
Broughshane	<input type="text"/>
Major Sinclair Memorial	<input type="text"/>
McDonald Memorial	<input type="text"/>
Dr Wright	<input type="text"/>

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Processing stages

Saving Judge Comments	<p>START</p> <p>CompetitonID = Selected Competition from listbox</p> <p>BandID = Selected Band from listbox</p> <p>Grade = Selected Grade from listbox</p> <p>Section = Selected Section from listbox</p> <p>Comments = get comments from textbox</p> <p>UPDATE Results SET <Section>+Comments = Comments WHERE CompetitonID = CompetitionID AND BandID = BandID</p> <p>END</p>
Entering Score for Grade	<p>START</p> <p>CompetitonID = Selected Competition from listbox</p> <p>BandID = Selected Band from listbox</p> <p>Grade = Selected Grade from listbox</p> <p>Section = Selected Section from listbox</p>

NumBands = SELECT Count(BandID) FROM Results WHERE CompetitorID = CompetitorID AND Grade = Grade

AllBandsInGrade = SELECT BandID FROM Results WHERE CompetitionID = CompetitorID AND Grade = Grade

FOR I, J in NumBands, AllBandsInGrade:

 Display J and Entry box

 BandScore[J] = Score

 Display Button

On Button Press

Check all scores to ensure they are all between 1 and NumBands and same score is not given to two bands.

FOR I, J in BandScore:

 UPDATE Results SET <Section>+Score = Score FROM Results WHERE BandID = J AND CompetitionID = CompetitionID

 Display list box for judge to select the next grade to compete.

END

"Admins then have the ability to collate the judges results and produce the results and send them to all bands."

Admins then must collate the results for the whole competition which then works out each bands total score and then their positions in their grade. These are outputted in word documents, that can be proof checked before being sent. Each Bands comments sheets are also produced

Royal Scottish Pipe Band Association Northern Ireland

The Royal Scottish Pipe Band Association NI

[Edit Band Details](#) [Enter Competitions](#) [Book Transport](#) [Register Member](#) [Transfer Member](#) [Edit Member Details](#)

Collate Results

Please select the competition to collate its results

Co Antrim Championships Champion of Championships Co Down Championships Ulster Championships All Ireland Championships	11/May/2019 18/May/2019 25/May/2019 1/June/2019 8/June/2019
--	---

Select Competition

Sign Out

- New Band
- New Judge
- New Admin
- New Competition
- Edit Competition
- Draw Competition
- Collate Results
- Send Results

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Admins can then send their full results sheet to every registered band. Each band that competed also receives their individual comments sheets

Royal Scottish Pipe Band Association Northern Ireland

The Royal Scottish Pipe Band Association NI

[Edit Band Details](#) [Enter Competitions](#) [Book Transport](#) [Register Member](#) [Transfer Member](#) [Edit Member Details](#)

Send Results

Please select the competition to publish its results

Co Antrim Championships Champion of Championships Co Down Championships Ulster Championships All Ireland Championships	11/May/2019 18/May/2019 25/May/2019 1/June/2019 8/June/2019
--	---

Select Competition

Sign Out

- New Band
- New Judge
- New Admin
- New Competition
- Edit Competition
- Draw Competition
- Collate Results
- Send Results

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Collating Results	<p>START</p> <p># Creation of Comment Sheets</p> <p>CompetitonID = Competition Selected from list box</p> <p>ListofBands = SELECT BandID FROM BandAccount WHERE CompetitionID = CompetitonID</p> <p>For I in ListofBands:</p> <p> SELECT CompetitionName, CompetitionLocation, CompetitionDate FROM competitions WHERE CompetitionID = CompetitionID</p> <p> SELECT Piping1Judge, Piping1Comments, Piping2Judge, Piping2Comments, DrummingJudge, DrummingComments, EnsembleJudge, EnsembleComments WHERE BandID = I AND CompetitionID = CompetitionID</p> <p> SectrionList = "Piping1", "Piping2", "Drummming", "Ensemble"</p> <p> FOR section IN SectionList:</p> <p> Produce new page in document for section. Add Competition Details and section Judge and Comments. (See layout in Judge Comments Sheet output)</p> <p> SELECT EntryID FROM Results WHERE BandID = I and CompetitionID = CompetitionID</p> <p> Save document as <EntryID></p> <p> UPDATE Results SET ResultsFileName = EntryID WHERE EntryID = EntryID</p> <p>NEXT</p> <p>#Creation of full results summary</p> <p>For Band in ListofBands:</p> <p> SELECT Piping1Score, Piping2Score, DrummingScore, EnsembleScore FROM Results WHERE CompetitionID = CompetitionID AND BandID = Band</p> <p> TotalPipingScore = Piping1Score + Piping2Score</p> <p> TotalScore = Piping1Score + Piping2Score + DrummingScore + EnsembleScore</p> <p> UPDATE Results SET TotalScore = TotalScore, TotalPipingScore = TotalPipingScore WHERE EntryID = EntryID</p> <p>GradeList = "1", "2", "3A", "3B", "4A", "4B"</p> <p>FOR Grade in GradeList</p>
-------------------	---

NumInGrade = SELECT Count(BandID) FROM Results WHERE CompetitionID = CompetitionID AND Grade = Grade

RankedBands = SELECT BandID FROM Results WHERE CompetitionID = CompetitionID AND Grade = Grade ORDER BY TotalScore

For Num, Band in NumInGrade, RankedBands:

UPDATE Results SET Position = Num WHERE BandID = Band AND CompetitionID = CompetitonID AND Grade = Grade

CompDetails = SELECT CompetitonName, CompetitonLocation,CompetitonDate FROM Competitions WHERE CompetitionID = CompetitionID

Create Full Results Summary Document

ADD CompetitionDetails

For Grade in GradeList

BestPipes = SELECT "G" + Grade + "BestPipes" FROM Competition WHERE CompetitionID = CompetitonID

BestDrumScore = SELECT "G" + Grade + "BestDrum" FROM Competition WHERE CompetitionID = CompetitonID

BestM&D = SELECT "G" + Grade + "BestM&D" FROM Competition WHERE CompetitionID = CompetitonID

BestBass = SELECT "G" + Grade + "BestBass" FROM Competition WHERE CompetitionID = CompetitonID

AllBandResults = SELECT BandName, Piping1Score, Piping2Score, TotalPipingScore, DrummingScore, EnsembleScore, TotalScore, Position WHERE CompetitionID = CompetitionID AND Grade = Grade ORDER BY Position

Create Table on page (see layout in full result summary sheet below)

FOR Band in AllBandResults

Add row to table and populate fields will each field in Band

Create Table, populate will Best Pipes, BestDrum, BestM&D and bestBass

Next page

Save document as <CompetitionID> - <CompetitonName>

	<pre> UPDATE Results SET CompResultsFileName = <CompetitionID> - <CompetitonName> WHERE CompetitionID = CompetitionID END </pre>
Sending Results	<pre> #sending Full results summary and Comments Sheets START CompetitonID = Competition Selected from list box ListEmailAddress = SELECT BandID, EmailAddress FROM BandAccount FOR I, Band in ListEmailAddress: SELECT CompResultsFileName FROM Competitions WHERE CompetitionID = CompetitionID Send Email to Band and attach document named <CompResultsFileName > SELECT ResultsFileName FROM Results WHERE BandID = I AND CompetitionID = CompetitionID IF results: Send Email to Band attach document named <ResultsFileName> ELSE: Continue END </pre>

Outputs produced:

Each band will receive a comments sheet for Piping 1, piping2, drumming and ensemble. Each sheet will be populated with the competitions details which will be queried from the competition Table. The adjudicator, section and Judges comments will be queried from the results table and the information stored about the section of the band, in the competition will be used in this output and formatted like below. This data is included so that the band is clearly able to find out which competition and section these comments are about. If I didn't include these it would be impossible for the band receiving these sheets to work out and understand these comments.

For the official results summary, all the bands in each grade and their results will be shown in the table format below. Again, the competition details are used in this output, so the band knows which competition these results are for. For each grade I will query all the bands and their results, Bands will be ranked in the table by the value of position which will rank the bands from first to last.

RSPBANI



Official Results Summary

Competition: <Competition Name>
Location: <Location>
Date: <Date>

Band: <Band Name>
Adjudicator: <Judge Name>
Section: <Section>

RSPBANI



Official Results Summary

Competition: <Competition Name>
Location: <Location>
Date: <Date>

Grade <Grade Number> Results

Band	Piping 1	Piping 2	Total Piping	Drumming	Ensemble	Total Score	Overall Position
<Band Name>	<Score>	<Score>	<Score>	<Score>	<Score>	<Score>	1st
<Band Name>	<Score>	<Score>	<Score>	<Score>	<Score>	<Score>	2nd
<Band Name>	<Score>	<Score>	<Score>	<Score>	<Score>	<Score>	3rd
<Band Name>	<Score>	<Score>	<Score>	<Score>	<Score>	<Score>	4th
<Band Name>	<Score>	<Score>	<Score>	<Score>	<Score>	<Score>	5th
<Band Name>	<Score>	<Score>	<Score>	<Score>	<Score>	<Score>	6th
<Band Name>	<Score>	<Score>	<Score>	<Score>	<Score>	<Score>	7th
<Band Name>	<Score>	<Score>	<Score>	<Score>	<Score>	<Score>	8th

Judges' Comments

Best Pipes:	<Band Name>
Best Drum Corp:	<Band Name>
Best Bass Section:	<Band Name>
Best M&D:	<Band Name>

Pseudocode for my validation routines

Validation Type	Pseudocode	Fields that require the validation
Postcode check	Input = TextVar() PostcodeCheck = False BEGIN IF Input.upper() == Format([A-Z][A-Z][0-9] [0-9][0-9][A-Z][A-Z]) OR Format([A-Z][A-Z][0-9][0-9][A-Z][A-Z]) THEN PostocdeCheck = True ELSE OUTPUT("Invalid Postcode, please re-enter") END	JudeAccount.Postcode AdminAccount.Postcode BandAccount.BandPostcode BandMembers.Postcode
Presence Check	Input = TextVar() PresenceCheck = False BEGIN IF Input == "" THEN OUTPUT ("Required Field empty") ELSE: PresenceCheck = True END	BandAccount.HallName BandAccount.PracticeTime BandAccount.Tartan BandAccount.SecurityQAns JudgeAccount.SecurityQAns AdminAccount.SecurityQAns MembersDetails.Role
Alphabetic Check	Input = TextVar() AlphabeticCheck= False BEGIN IF Input.isalpha() == True THEN AlphabeticCheck = True ELSE: OUTPUT ("Field requires alphabetic letters only") END	BandAccount.AddressLine2 AdminAccount.AddressLine2 JudgeAccount.AddressLine2 BandAccount.FirstName AdminAccount. FirstName JudgeAccount. FirstName BandAccount.SecondName AdminAccount. SecondName JudgeAccount. SecondName

Password Check	<pre> Input = TextVar() LengthCheck = False LowerCheck = False UpperCheck = False PasswordCheck= False BEGIN IF length(Input) <= 8 THEN LengthCheck = True For letter in Input IF letter.islower == True LowerCheck = True IF letter.isupper == True UpperCheck = True IF LowerCheck == True AND UpperCheck == True AND LengthCheck == True THEN PasswordCheck = True ELSE OUTPUT("Password invalid") END </pre>	BandAccount.Password AdminAccount. Password JudgeAccount. Password
Username Check	<pre> Input = TextVar() PresenceCheck = False ListOfUsernames = [] UsernameMatch = False UserNameCheck = False IF PresenceCheck(Input) == True PresenceCheck = True </pre>	BandAccount.Username AdminAccount. Username JudgeAccount. Username

	<pre> AdminUsername = SELECT Username FROM AdminAccount For Username in AdminUsername ListOfUsernames.append(Username) JudgeUsername = SELECT Username FROM AdminAccount For Username in JudgeUsername ListOfUsernames.append(Username) BandUsername = SELECT Username FROM AdminAccount For Username in BandUsername ListOfUsernames.append(Username) For user in ListOfUsernames IF Input == user UsernameMatch = True IF UsernameMatch = True AND PresenceCheck = True THEN UsernameCheck = True ELSE OUTPUT("Username is already in use") </pre>	
Email Address Check	Input = TextVar() EmailAddressCheck = False AtCheck = False DotCheck = False FOR letter IN Input IF letter == "@" THEN	BandAccount.EmailAddress AdminAccount.EmailAddress JudgeAccount.EmailAddress MembersDetails.EmailAddress

	AtCheck = True IF letter == “.” THEN DotCheck = True IF AtCheck == True AND DotCheck = True THEN EmailAddressCheck = True RETURN True ELSE OUTPUT(“Email address is not valid”)	
--	---	--

4 Prototype

4.1 Justify the areas of the problem to be included in the prototype system.

The new RSPBANI application has many key areas that I have been asked to development, which are as followed:

- Band management
- Admin management
- Judge management
- Booking transport (email)
- Competitions
- Results

The aim of my prototype is to give the association a quick initial feel for the solution I will be developing. My prototype will give me flexibility in my design, as I am able to react to the customers opinions and reflect my solution to the requirements of the customer. This will allow me change how I will continue to develop my solution if needs be.

From my investigation phase, it was clear to me that there would be no point in implementing the Competitions and Results functionality until I had got the basic functionality of the band, admin and judge management sections. If I were to make the competition area first, I would not be able to enter any bands for any of the competitions which therefore also makes the implementation of the results unnecessary. I would not be able to test this feature as I went along as there would be no bands to test it with. For this reason, I decided to begin with the management side of the system. I have created all basic functionality around the creation of all users (bands, judges and admins) and allowed them to log into the system which brings additional functionality that depends on their access rights attached to their account.

I have developed most of the features that are available to bands once they log in. I have decided to not develop the transfer member feature has this requires the same skills as other features implemented and is not integral to the main objectives of the system.

I have decided to show how the admin is able to override the band functionality with one of the features available to each of the bands - if there is ever an issue and a band cannot do it themselves for whatever reason. I have been able to do this by adding another screen that asks the admin to select the band they wish to edit the details for before being shown exactly the same screen the band would have seen if they were logged in.

In my prototype, I have implemented the ability for admins to be able to register more accounts. I have created three simple forms with the required fields that I was given during my document analysis part of the investigation. Alongside this I have started to develop the functionality for entering competitions. An Admin is able to create a competition, after which bands can then enter it, once they log on. The admin then has the ability to make the draw for the competition and the judge can enter their results during the competition. They must go through a selection of list boxes so that they enter their result about the correct band and section of the band. This is however not fully developed but I have started it to show where I am going with it.

I have not implemented any validation into the prototype as it would make the quick development very tedious and is not necessary as it doesn't affect the functionality, this however means my prototype is not robust, but this robustness will come in the software development once I have all the functionality implemented and working correctly.

I wanted to design the UI in my prototype completely as I felt this was key to ensuring the client was happy with the prototype and overall appearance of their solution. I have kept my UI design consistent between screens, as this is required in industry level solutions for a successful solution which the client is happy with.

4.2 Produce a range of screens and outputs for the prototype solution.

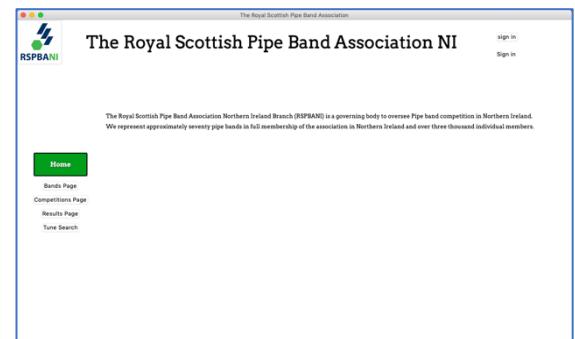
4.3 Create a functioning system that carries out all chosen processes.

4.4 Use realistic data for output and storage.

Guest View

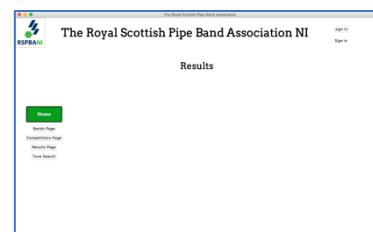
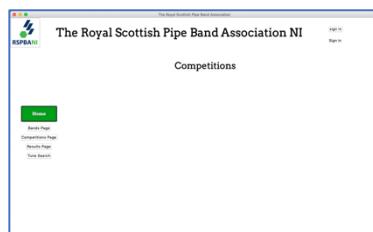
This is the Home Page screen – currently it looks quite bare. I have implemented the design of one of the buttons which I will use for the rest but of which I have not designed yet. I have not been able to include the photo gallery in the prototype because I do not have the necessary skills and is not a main feature which is required by the client and is not vital to the success of the project. As I complete the rest of my coursework, I will be continually researching possible methods to my solution, so I can implement it the way the customer requires. Again, I have not will not implemented the “Latest Results” section because I have not developed the Results functionality in enough depth to successfully process this function with all the required data. I will have to pull the winning Band for each grade from the latest competition to display it on the home Screen.

The Bands page to the left shows all the Bands that are registered to the system. I have not implemented the filtering options as I unsure on how I will implement this yet and it will require a bit of research to find the most efficient way.



Bands					
Band	Grade	Address	Practice Time(s)	Status	
Connicle	2	Londonderry	Unit 6, Northward Business Park, B71 6BB (Fridays & Thurs 8-10pm)	New Arc Suite	
Baile Mòr	2	Down	10 Main Orange Hall, B71 6BD (Monday & Thursday 8-11pm)	Medieval	
Marielaneen	3A	Armagh	10 Main Orange Hall, B71 6BD (Monday & Wednesday 8-11pm)	Medieval	
Finglas and District	3A	Armagh	10 Main Orange Hall, B71 6BD (Monday & Wednesday 8-11pm)	Medieval	
Broughshane and District	4B	Armagh	10 Main Orange Hall, B71 6BD (Monday 7-9pm)	Unknown	
Ballynahinch	4B	Armagh	10 Main Orange Hall, B71 6BD (Monday 7-9pm)	Unknown	
View of Atholl	2	Down	Vale Road, B76 7RH	Tuesday 8-10pm	Atholl
PDSB	2	Armagh	Mangrove Police Station, 10 Belfast Road, Ards & Tully 7-8pm	Royal Stewart	

For my prototype, I haven't started the functionality on the competitions or the results pages as these can only be completed once the processes relating to them are fully developed.



I have not begun to build the Tune Search page as the functionality is very similar to the functionality I have implemented In the Bands page.

There is no point in implementing two very similar features which aren't needed for anything else in the system.

Login

I have created my login function. This is vital for my system as different people need to access different aspects of my program. If a Band was able to access the admin features, the system would be unable and deemed as a straight failure.

The top screenshot shows the main navigation menu with options: Home, Bands Page, Competitions Page, Results Page, and Tune Search. The bottom screenshot shows the login form with fields for Username and Password, and a Login button.

The screenshot shows the main navigation menu with options: Home, Bands Page, Competitions Page, Results Page, and Tune Search. The 'Bands Page' option is highlighted in green.

The screenshot shows a database table titled 'BandAccount' with columns including BandID, Bandname, Landstrand, indirte, Mifystam, Kedondin, Haffane, BandaddressLine1, indAddressin, BandCounty, landPostcode, PracticeTime, Tartan, Username, Password, and Emp. The table contains 10 records of band information.

BandID	Bandname	Landstrand	indirte	Mifystam	Kedondin	Haffane	BandaddressLine1	indAddressin	BandCounty	landPostcode	PracticeTime	Tartan	Username	Password	Emp	
1	PDN	Antrim	1	Cheney	Dahane	Mugrave P...	10 Belfast Road	Belfast	County Antrim	B71 1AA	Mon & Tues...	Royal Stewart	PDN	policeServiceNI1	paro1	
2	Vale of Atholl	Down	2	Jonny	Fleming	Vale Road	Vale Town...	Courthill	County Down	B77 8HG	Tuesday 8...	Atholl	band	Value1	Value2	
3	4	Ballydromy	Antrim	48	Alastair	McDerry	The Mount	13 Grandstand...	County Antrim	B72 6QH	Monday & T...	Unknown	ballydromy	theMcM87	ballydromy	
4	5	Broughshane an...	Antrim	48	Davy	Reid	Broughshan...	23 Main Street	Broughshane	County Antrim	B74 7JG	Monday 7...	Unknown	broughshane	davie180	brough
5	6	Markree Municipal	Donegal	50	John	Farrelly	Lisburn Com...	20 Markree Rd...	County Donegal	E91 2TG	Wednesday, Mi...	Donegal	markree11	markree100	markree	
6	7	Marine and Dr...	3A	Walter	Farrelly	Markree Cr...	10 Markree R...	Pettigo	County Donegal	E91 2TG	Wednesday, Mi...	Donegal	markree100	markree100	markree	
7	8	McKeevitt	Antrim	39	Rosie	Bellingham	51 Buncrana E...	Pettigo	County Donegal	E74 8QH	Thursday 8...	Red McKeever	rosie2000	rosie2000	rosie2000	
8	9	Ravera	Down	2	Alastair	Dunn	Ravera Oran...	Venry Road	Ballymoney	County Down	B72 6HU	Monday & T...	MidUlster	Alastair2	Ravera2	Ravera
9	10	Colmcille	London...	2	Mark	Hasson Jr	Unit 6	Northwest Bus...	Skeggs Ind...	County Londond...	B74 8SE	Tues & Thurs...	New Arc...	colmcille2	colmcille2	markh

Once the user has logged in successfully. They will be brought to one of these screens depending if they have signed in with certain credentials, in this case the left one for band only features.

The screenshot shows the main navigation menu with options: Home, Bands Page, Competitions Page, Results Page, and Tune Search. The 'Bands Page' option is highlighted in green.

The screenshot shows the main navigation menu with options: Home, Bands Page, Competitions Page, Results Page, and Tune Search. The 'Competitions Page' option is highlighted in green.

The screenshot shows the main navigation menu with options: Home, Bands Page, Competitions Page, Results Page, and Tune Search. The 'Edit Member' option is highlighted in green.

Band Logged in

Judge Logged in

Admin Logged in

Band Features

Edit Band Details:

This feature allows the person logged into the band account to edit the information stored about them. The information that is currently stored about them is populated in the entry fields which allows the user to easily make the change. The message shown below will be presented to the user if the updated information is successfully stored in the database.

This is an example of changing the name of the band Vale of Athol to Vale and a screenshot of the database before and after the commit.

Enter competitions:

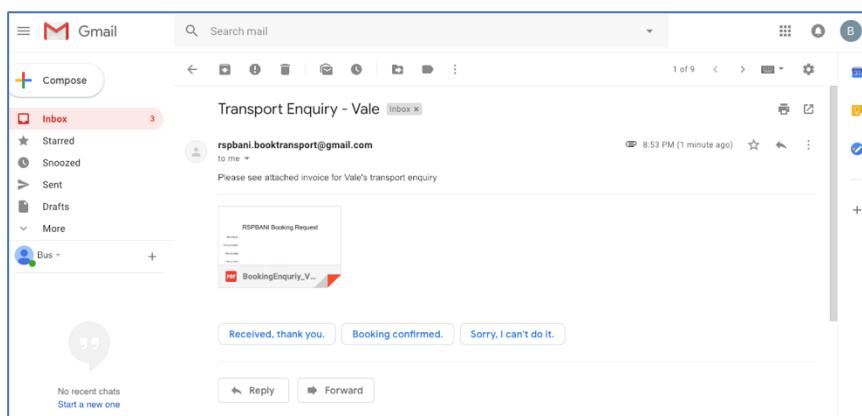
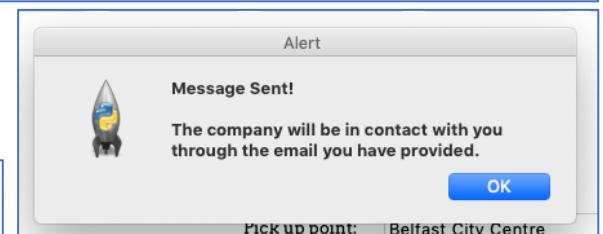
Once an admin creates a competition it will be displayed in this list. Each band is then able to select all the competitions it wishes to enter.

Book transport:

The form on the right is how the band user will be able to enquire about booking transport to and or from a competition.

They must enter all the necessary details about the trip and the party.

When they click submit an email is sent from RSPBANI to the bus company as seen in the email below with a pdf attached with the band's enquiry. It will contain all the fields from the booking form and also the Pipe Majors name and his email address so that the bus company can get directly in touch with the Band to confirm or get more information from them before they can confirm the booking.

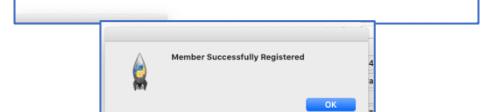


Register member:

This form allows the Pipe Major to register a new member to his band which is logged in.

The Pipe major must fill out the details of the new member and the new user must sign to confirm they wish to be registered and they allow the information to be stored about them.

The database is evidence that the new band member has been registered and their information has been stored. They are given their own identification number and they bands details to which they are registered are also stored in the same table.



Edit member:

This feature then allows the Pipe Major to edit the details of his pipe band. He must select the member he intends to edit before he is brought to a form with their current details, similar to the editing of the band's details, where he can update their personal information. But again, the member must sign to confirm that they know their details have been updated.

As you can see from the previous example where I register “John George”, I have now updated his name to “John David George” which have been saved to the database shown on the right.

First	MemberID	band	bandID	branch	grade	role	firstname	secondname	address1	address2	city	county	postcode
1	1	Vale of Athel	3	Drown	48	Piper	Paul	Martin	10 Main Street		Aldergrove	County Antrim	B74 9DN
2	2	PSNI	2	Antrim	1	Bas Drummer	David	Chesnut	48 Main road		Antrim	County Antrim	B74 1AF
3	3	Ballymoney	4	Antrim	48	Piper	Andy	McCormick	10 Band Street		Banbridge	County Antrim	B75 8PR
4	4	Ballymoney	4	Antrim	48	Piper	Any	Adams	10 Main Street		Drumcree	County Antrim	B75 8PR
5	5	Ballymoney	1	Antrim	48	Piper	Colin	Coleman	10 Main Street		Tullagough	County Antrim	B75 8PR
6	6	Ballymoney	4	Antrim	48	Piper	Patrick	McPherson	33 Crumlin Road		Aldergrove	County Antrim	B77 8TG
7	8	Field Marshal Mac	6	Antrim	1	Piper	Alan	McPherson	158 Bridge Street		Culloden	County Antrim	B72 7NG
8	9	Vale of Athel	3	Drown	2	Lead Drummer	David	Hanson	10 Main Street		Aldergrove	County Antrim	B74 9DN
9	11	Commodore	10	Londonberry	2	Lead Drummer	Brian	Hanson	Jnr	derry street	Londonderry	County Lond.	B71 7QD
10	12	Commodore	10	Londonberry	2	Piper	Colin	Hanson	derry street		Londonderry	County Lond.	B74 6QH
11	13	Vale	3	Drown	2	Piper	Austin	Martin	22 Vale Street		Aldergrove	County Antrim	B72 8H
12	14	Vale	3	Drown	2	Piper	John	George	34 Carrick Road		Carrickfergus	County Antrim	B72 8FU

Admin Features

Registering new user accounts:

Only admins will have the ability to create new user accounts. They must fill in the form for the type of user they wish to create and their username and password. I haven't yet created the ability for when the user logs on for the first time, they will be asked to set their own password – this will come in the development.

The screenshots show three separate registration forms under the 'Admin Features' section:

- New Judge Registration:** Fields include Title, First Name, Last Name, Date of Birth, Select Day, Select Month, Select Year, Gender, Address, Line 1, Line 2, County, Postcode, Username, Password, and a 'Register Judge' button.
- New Band Registration:** Fields include Band Name, Band Number, Select your Grade, Grade, Hall Name, Hall Room, Line 1, Line 2, County, Postcode, Practice Times, and a 'Register Band' button.
- New Admin Registration:** Fields include Title, First Name, Select Title, Second Name, Date of Birth, Select Day, Select Month, Select Year, Gender, Address, Line 1, Line 2, County, Postcode, Username, Password, and a 'Register Admin' button.

Creating a new competition:

Admins must have the ability to create competitions, this at the minute only has very basic functionality, which will be built upon. Once they create the competition, this will allow bands to enter it, as seen in the "Entering Competitions" in the band features section above.

The screenshots illustrate the competition creation process and its database representation:

- Create Competition Page:** Shows fields for Competition Name (All Ireland Championships), Competition Date (12 June 2018), and Competition Location (Stormont Grounds), with a 'Create Competition' button.
- Database View:** Shows the 'Competitions' table in DB Browser for SQLite with the following data:

CompetitionID	CompetitionName	CompetitionLocation	CompetitionDate	Count
1	Ulster Championships	Antrim Castle Gardens	5/July/2018	0
2	Co. Antrim	Glenarm	3/June/2018	0
3	Champion of Champ...	Portrush Tennis Courts	11/August/2018	0
4	All Ireland Champ...	Stormont Grounds	12/June/2018	NULL

Once the Admin creates the competition it is added to the Competitions table, which this example can be seen (highlighted) in the database to the right.

Drawing competition:

Before the competition is scheduled to happen, the admins must draw the competition, this means that the bands will find out when they will be competing on the day and at which circle, they must be at given the provided time.

The Royal Scottish Pipe Band Association NI

Draw Competition

Please select the competition you would like to Draw.

All Related Competitions	12 June 2018
External Competitions	12 June 2018
Ex. Admin	12 June 2018
Other Competitions	12 June 2018

Select Grade

Please select the Grade you would like to Draw.

Draw Grade 2

Please enter the competing time and circle numbers for each of the following Bands.

Band ID	Circle Number	Competing Time
3	3	11:00
10	3	11:00
9	3	11:10

The competitions draw has been updated so that all the bands that have entered the chosen competition and grade in this example (grade 2) have been added with a circle number and a competing time.

Table: CompetitionDraw

CompetitionID	BandID	EntryID	CircleNumber	CompetingTime
Filter	Filter	Filter	Filter	Filter
22	12	5	64	6
23	13	2	65	1
24	13	6	69	1
25	13	13	75	1
26	13	3	66	2
27	13	9	72	2
28	13	10	73	2
29	13	7	70	3
30	13	8	71	4
31	13	11	74	4
32	13	4	67	6
33	13	5	68	6
34	15	2	78	1
35	15	9	75	2
36	15	3	76	2
37	15	7	80	3
38	15	5	79	5
39	15	4	82	6
40	4	3	14	3
41	4	10	15	3
42	4	9	16	3
11:00				
11:05				
11:10				

14 14 22 - 13 of 13 14 14

Judge Features

Judging a competition:

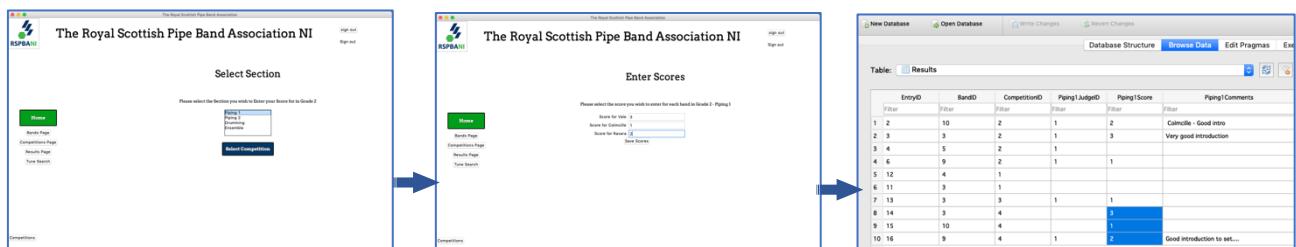
After the competition has been drawn and it's the day of the competition, the bands must be judged and ranked from best to worst. The three screens below show how the judge is able to select the competition, grade and band. On the third screen they have the option to enter their comments about each band's performance in the grade or once all the bands have competed in the grade, they can then rank the bands from best to worst. By pressing the “enter scores for the bands” button.



If the judge selects to write their comments about the bands performance, they will be directed to the next screen where they are asked which section they would like to judge followed then by the comments sheet where they can write and update their comments. When they click save they will be brought back to the “Select Bands” page in in the previous screenshot. The database shown proves that this part of the system is functional.



Once they have commented about each band in the grade, they must select the “Enter scores for the bands” button where they can input their ranks after listening to all the competing bands. Again, the screen shot of the database shows the scores being committed to storage along with the ID of the judge who entered them.



4.5 Evaluate the prototype solution to my objectives and describe shortcomings.

➤ Guest View:

This is the Bands page is the only page I have worked on in the guest view, simply because the guest view is a stand-alone feature available to everyone and most of the pages require information that has to be inputted and processed by the users before it can be displayed.

- Bands Page:

The information that is being displayed in the page is correct, however I do not like the way I have developed the table using list boxes because if the information to be displayed under each heading is too long to fit in the box it is not shown properly. The way I have done this is not fit for its purpose and audience so I will be finding another way to do this.

➤ Login Feature:

I think my log in function is fit for its intended purpose. I chose to implement it the way I have because of its simplicity. Having multiple log in buttons for different users (bands, admins and judges) is not user friendly as it may be confusing for unexperienced users as they could try and log onto their account through the log in which is avoidable.

➤ Admin Features:

I am pleased with the layout of the buttons for the admin features. However, it would be impossible to distinguish between the images for the creating account feature. I will change these images so that the admin will know exactly which button to press to register for example an admin. I am pleased with the way I have been able to allow the admins to complete the functionality given to the band on behalf of the band. The simple list box before the admin is shown the same forms as the band asking to select the band which the admin wishes to edit is very effective and the best solution to solving the issue

- Creating a band, admin or judge account:

I think the form for registering a new bands, admins or judges are sufficient as all the required fields are there and is very straight forward and accessible from everywhere once the admin has logged on. This feature functions as it should.

- Creating competitions:

This feature is good, admins are able to enter competitions however, I think I will need to include another field that is a deadline so that bands know when they must enter by.

- Drawing Competitions:

When it came to drawing competitions within the prototype, my solution wasn't really meeting the objectives. The order at which the bands were given their competing time was not random and therefore in the prototype it would be very easy to "fix" the competing times of the bands. To improve this feature, I will make the bands appear randomly and will not show the band ID on the screen to admins.

➤ **Band Features:**

○ Editing band details

The form for editing the bands details is sufficient as it meets all objectives and is simple to navigate and is laid out in a way that it's easy to see what you are doing. I like the way I was able to populate the entry fields with the information already stored. This makes it easy for the user to see what is already being stored and makes it easier to see what needs updated. I took this idea from my desk-based research and have been able to fully implement the functionality.

○ Registering a member:

Again, similar to the other forms I have created, I am happy with its layout and the fields I have entered, these should be all I need to include, as I have made reference to the paper-based registration form and included the same data.

○ Booking transport:

The booking transport does not fully function the way I would like it yet. I have been able to send an email to the bus company and be able to lay out the email and attach the enquiry pdf, but I have not been able to get the entered data from the fields and include them in the generated pdf. I am going to find another library within Tkinter that will allow me to design the document to a higher more professional standard. Apart from this it is working and functioning according to the objective.

○ Entering competitions:

Currently this feature is not robust enough to be a good feature. Bands have no way at telling which competitions they have entered, this can mean they can accidentally enter them twice. To solve this, I will only populate the selection box with the competitions that the band have not entered already. Bands also cannot see the date of the competitions they are about to enter so I will add this like in the judge's feature. I will need to create a deadline so that bands know when they have to enter the competitions by. Once the deadline is passed then the band will be removed from the list as they will no longer be able to enter it.

➤ **Judge Features:**

○ Judging of the competitions:

This feature is not perfect by any means, but it does what it is required to do. To make it easier for the judges to use, giving them less chance to make a mistake, I will change the order of the list boxes that the judge has to work their way through until they are presented with the correct comment sheet for the section they are grading.

Because each judge will be judging the same section for each band in a certain grade. I will make the judge select the section they will grade before they select the band, instead of after. This will remove the issue of the judge selecting the wrong section for the band.

I also have the issue where judges are able to select competitions for judging before they have been drawn. I will have to add an additional check to ensure

only competitions that have been drawn are shown to the judges. Currently there is no validation on the scores that the judges enter. I would classify this as the most important process of the whole system. As the bands have to be ranked from best to worst, the valid data that should be entered will change depending on how many bands there are. By this I mean, if there were 7 bands entered into a particular grade. The maximum score that can be given out (to the band that was the worst) is 7. But also, the same score cannot be given to two bands. I will need to develop a method so that the entering of scores is fool proof.

Additional shortcomings and improvements

In addition to all mentioned above, there are a few shortcoming and improvements I will still need to make to ensure the solution is a success and is fit for its purpose. To ease all users using the system I will need to produce better refined instructional text to the user to tell them what to do at each stage of every process.

I will need to implement all of the features in the guest view. These include the photo gallery to be displayed on the home page along with the latest results summary. I need to display a list of all the competitions including all the relevant information. I will need to create a list of all the past competitions and display the full results of all competitions on the results page.

When new users log in for the first time, I will need to implement the feature where the user is asked to change their password.

I will need to validate all of my inputs to ensure that all are logical and as expected.

5 Post-prototype refinement of design

5.1 Obtain feedback from competent third parties.

Having presented my prototype to my class, I gained valuable competent third-party feedback from my Computer Science teacher.

These are the comments she made about my prototype and whether or not I will accept or reject her decisions:

“You should add additional options when booking transport. Should bands have the ability to select where they want a return or one way – trip and add a section for additional comments for special requirements etc”

Yes, I am going to take into account this feedback because it is vital that the bands are able to properly enquire about a booking they wish to make. This is for a number of reasons; to ensure the band can get a true reflected quote for their journey and so that the bus company will not need to query any more information, before they can give them a price and availability.

“When a Pipe Major updates members details, the member should be sent an email or equivalent to ensure they are aware that their information has been edited. The same goes for admins. If an admin makes a change on behalf of the band, the pipe major must be made aware of these, an email can be sent again to notify the Pipe Major of these changes.”

This is a really good suggestion. It is very important that whether the Pipe Major or admin enters a competition, books transport, or edits information stored about any member or the band itself, the Pipe major is sent an email to confirm with them that the change has occurred. When details about a member with in the band are updated, the member should also receive and email letting them know that their details have been updated.

“Could you make it easier for the pipe major of a band to see which competitions they have entered, could you have another screen off the entering competitions page to allow for this? Will this feature then allow for pipe majors to withdraw from competitions?”

Yes, I like this idea! This additional feature will improve the usability of my system as currently the only way that pipe majors can view which competitions that the band has entered is through the email send on confirmation of entering each competition. I will be able to display all the competitions that the bands have entered in a list box and beside the name of the competition, I will have the date of the competition. This allows the pipe major to see which date the competitions are which is the most important piece of information that the pipe major needs as this is when the competition is being held.

Bands will only be able to withdraw from a competition if the draw for the competition hasn't already happened, otherwise if they select a competition from the list where the draw has already occurred, they will be told they are unable to withdraw from this competition due to the draw for the competition has already taken place.

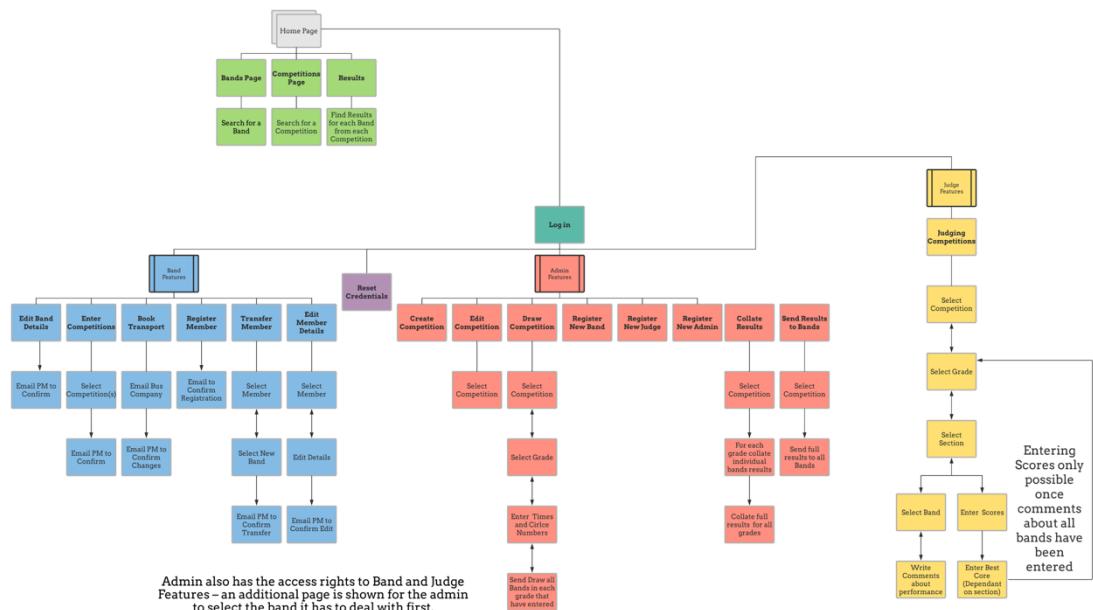
5.2 Refine designs in light of the evaluation of the prototype solution and feedback received from others.

From my feedback and my evaluation, I have refined my prototype to include the changes that have been suggested by my teacher and my self-reflection of my prototype in the previous section.

I have fully refined the book transport frame in light of my teachers' feedback. I have added radio buttons so that the band is able to select which type of trip they would like to book. I have also included an additional comments section. I feel this is very important as bands can explicitly make sure the bus company of any other requirements they might need in the initial contact with the company – this will speed up the process for the bus company.

I have updated my DFD to include the additional outputs to my system, these include:

- Email pipe major when band details are changed.
- Email pipe major to confirm the entering of a competition.
- Email pipe major with a copy of the enquiry sent to the Bus Company.
- Email pipe major when a new member is registered.
 - Email the newly registered member to confirm their registration.
- Email member when their details have been updated.



These additional outputs will not be too hard to implement into my system. After the changes have been saved by the pipe major or admin and committed to the database, I will be able to send a quick email to the corresponding people to ensure they are aware of the changes that have been made.

When the details about a band have been edited by the pipe major of the band or the admin, I must send the email to the new email address that has been saved to the database. This ensures that the email confirmation won't be sent to the old email address of the pipe major. The email will be formatted as follows:

Band Details Updated [Inbox](#)



rspbani.info@gmail.com

to me ▾

Dear Pipe Major,

We have successfully updated your Bands details according to the changes you made on the Edit Band Details section.

If this change was not made by you please contact one of the systems administrators so we can resolve this issue.

The Royal Scottish Pipe Band Association
Northern Ireland Branch

[Reply](#)

[Forward](#)

Again, when the details of a member are updated, the pipe major will be emailed to confirm these changes. The member of those details will also be emailed, and their email must include their new details so they can check themselves and if they are not correct the steps, they must take to resolve the issue will be included also.

Your Details have been updated [Inbox](#)



rspbani.info@gmail.com

to me ▾

Dear Member of Vale of Atholl,

You are receiving this email to confirm the changes that have been made about you.

Title: Miss
First Name: Adele
Second Name: Martin
Address Line One: British Road
Address Line Two: Aldergrove
County: County Antrim
Postcode: BT294DH
Date of Birth: 31/August/1966
Gender: Female

Please check your details below and if they are not correct please contact your Pipe Major and he will update your details.

The Royal Scottish Pipe Band Association
Northern Ireland Branch

When the band enters a competition, the following output from the system will be sent to the pipe major of the band. I have mocked up the expected output from my system to the pipe major.

Competition entry confirmation Inbox x



info RSPBANI <rspbani.info@gmail.com>

to me ▾

Dear Pipe Major,

You have successfully entered the following competition:

Competition: Co. Down Championships

Competition Date: 13/06/18

Location: Bangor Castle Grounds

Thank you for your registration.

We look forward to seeing you at Bangor

The Royal Scottish Pipe Band Association

Northern Ireland Branch

When a band sends an enquiry to the bus company, the details are not stored on the system. Instead an email will be sent to the pipe major with exactly the same information given to the bus company so they a record of what they enquired in case an issue arises between them and the bus company.

Transport Enquiry - Topp Star of the North Inbox x

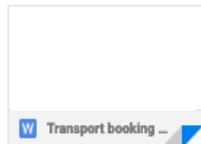


rspbani.booktransport@gmail.com

to me ▾

Dear Pipe Major,

Please find attached a copy of your recent enquiry which has been sent to the bus company



Reply

Forward

I have re-designed my enter competitions band feature page to allow for the addition of the list of entered competitions and the withdrawal feature.

The user must simply press the button which says, “View entered competitions & withdrawal” and they will be directed to another page which will show this list of competitions. To withdraw from a competition, they must select the competition by name and press the withdraw button. If their withdrawal has been successful, a message box will appear confirming the withdrawal of the competition and the competition will be removed from the list of entered competitions and will reappear in the list of competitions that the band hasn’t entered if they wish to re-enter again at a later stage. I must also implement an email confirming the withdrawal of the band from the competition.

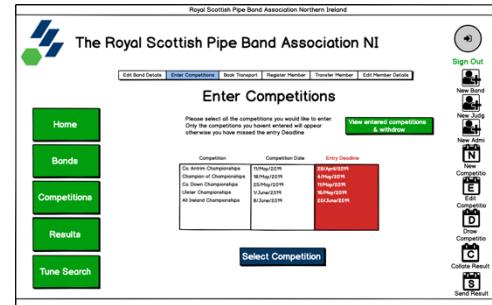
Pseudocode for populating the list box:

```

START
ListboxCompName = Listbox()
ListboxCompDate = Listbox()
ListboxCompEntryDeadliene = Listbox()
AllCompsDetails = []

# creating list boxes of all competitions entered
ListEnteredCompsID = SELECT CompetitionID FROM BandsEntered WHERE BandID = BandIDofBandLoggedIn
FOR compID IN ListEnteredComps
    BEGIN
        CompsDetails = SELECT CompetitionName, CompetitionDate, EntryDeadline FROM Competitions WHERE CompetitionID = compID
        Add CompetitionName to ListboxCompName
        Add CompetitionDate to ListboxCompDate
        Add EntryDeadline to ListboxCompEntryDeadliene
    NEXT
END

```

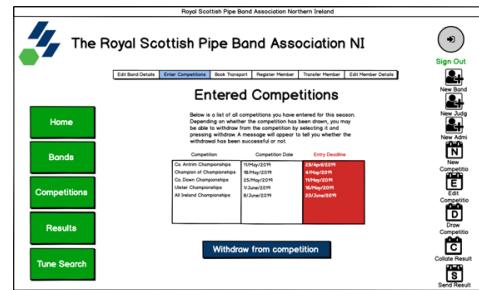


Pseudocode for withdrawing from a competition:

```

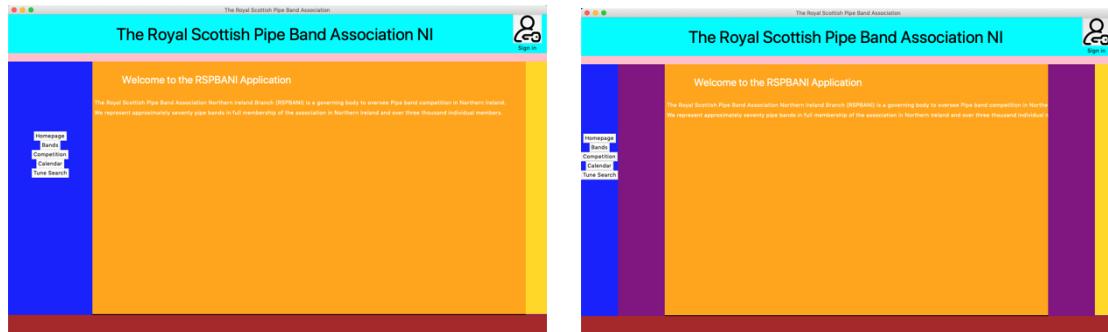
START
# withdrawing from competition
ListofCompetitionsIDNotDrawn = SELECT CompetitionID FROM Competitions WHERE Drawn = "False"
FOR CompetitionID IN ListofCompetitionsNotDrawn
    BEGIN
        IF CompetitionIDSelectedFromListBox = CompetitionID
            DELETE FROM BandsEntered WHERE CompetitionID = CompetitionID AND BandID = BandIDofBandLoggedIn
            OUTPUT("Competition has been successfully been withdrawn")
            Send Email
        ELSE:
            OUTPUT("Withdrawal has been unsuccessful as competition has already been drawn. You are still entered into the competition")
    NEXT
END

```



6 Developmental Testing

6.1 Developmental testing; Produce evidence of testing at each stage of development.



In the early stages of my

development, when I was trying to design the layout of my program. It took me a while as I had a few teething problems, I had never used the grid() method for placing objects into a frame. Once I thought I had mastered it, I had programmed the left button menu bar to be a fixed size but for some reason, it shrank to the size of the largest button which left the root (purple) of my program visible as my frames were not covering the whole screen. I was able to find my solution using stack overflow for some guidance. I had to configure the column that the left menu bar was in to a minimum size – so I set the min size to the size I wanted it to be and that solved my issue.

```
with sqlite3.connect("RSPBANI.db") as db:
    cursorBandPage = db.cursor()
    BandPageInfoGetQuery = "SELECT Firstname FROM BandMembers WHERE bandID = ?"
    cursorBandPage.execute(BandPageInfoGetQuery, [bandID])
    BandPageInfoGet = cursorBandPage.fetchall()
    print("BandPageInfoGet", BandPageInfoGet)

    for bandRecord in BandPageInfoGet:
        for eachField in bandRecord:
            n = []
            EditMemberDetailsListBox.insert(n, str(eachField))

    SelectButton = Button(EditMemberDetails, image=photoSelectMemberButton, command=lambda: SpecMembPage(Years))
    SelectButton.grid(row=4, column=4, columnspan=2, pady="10")

    global AdminBandIDRegMen
```

```
with sqlite3.connect("RSPBANI.db") as db:
    cursorBandPage = db.cursor()
    BandPageInfoGetQuery = "SELECT Firstname FROM BandMembers WHERE bandID = ?"
    cursorBandPage.execute(BandPageInfoGetQuery, [bandID])
    BandPageInfoGet = cursorBandPage.fetchall()
    print("BandPageInfoGet", BandPageInfoGet)

    for bandRecord in BandPageInfoGet:
        for eachField in bandRecord:
            n = []
            EditMemberDetailsListBox.insert(n, str(eachField))

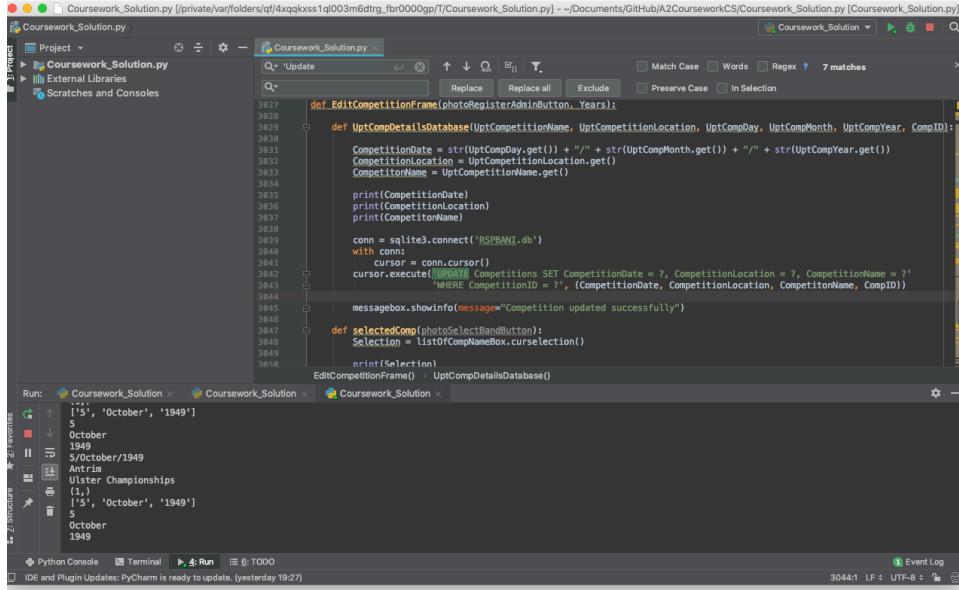
    SelectButton = Button(EditMemberDetails, image=photoSelectMemberButton, command=lambda: SpecMembPage(Years))
    SelectButton.grid(row=4, column=4, columnspan=2, pady="10")

    global AdminBandIDRegMen
```

I ran into a problem where, I was creating a list box and populating it with all the members of a band. The user should then be able to select a member and press the Edit Member Details button which just called a function and passed the list box as an argument of the function. However, when I tried to do this my system crashed and I got the following error message as my program failed to display the list box and give the user the option to select their member as it had continued on with the function called by the button before the button had actually been pressed.

After some research online, I was able to find the reasoning behind this issue. When I was stating the function to be called on click of the button, the command function cannot accept arguments along with the function or procedure that you want to call. To fix this problem, before I called the function name with arguments I had to write “command=lambda:

function(arguments)" instead of "command=function(arguments)" in front and this tells the command argument inside the button that parameters are to be passed through this function.



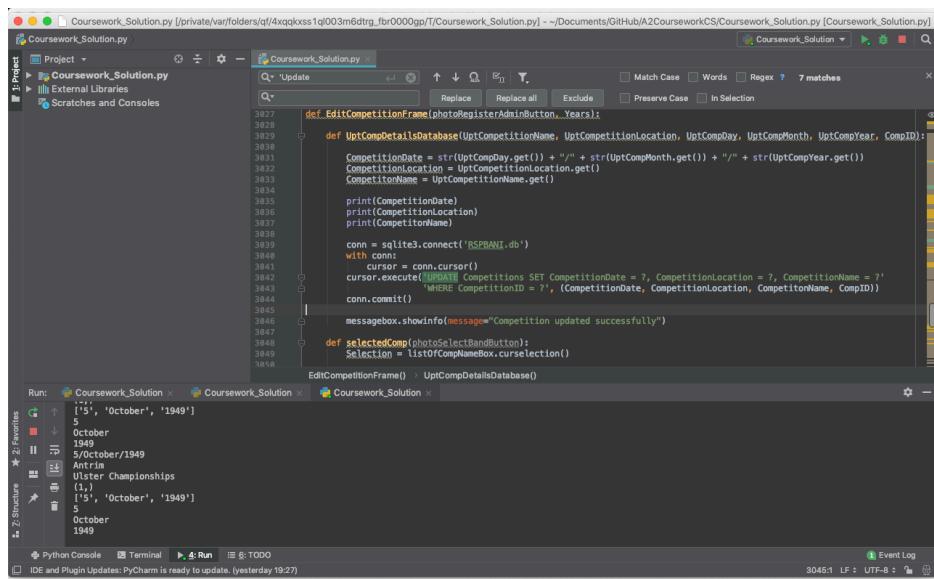
```

Coursework_Solution.py [~/private/var/folders/qf/4xqqkxss1qj003m6dtrg_fbr0000gp/T/Coursework_Solution.py] - ~/Documents/GitHub/A2CourseworkCS/Coursework_Solution.py [Coursework_Solution.py]
Project Coursework_Solution.py
External Libraries Scratches and Consoles
Coursework_Solution.py
Q Update Replace Replace all Exclude Match Case Words Regex 7 matches
Qr
3027     def EditCompetitionFrame(photoRegisterAdminButton_Years):
3028         def UpdComDetailsDatabase(UptCompetitionName, UptCompetitionLocation, UptCompDay, UptCompMonth, UptCompYear, CompID):
3029             CompetitionDate = str(UptCompDay.get()) + "/" + str(UptCompMonth.get()) + "/" + str(UptCompYear.get())
3030             CompetitionLocation = UptCompetitionLocation.get()
3031             CompetitionName = UptCompetitionName.get()
3032
3033             print(CompetitionDate)
3034             print(CompetitionLocation)
3035             print(CompetitionName)
3036
3037             conn = sqlite3.connect('RSRANT.db')
3038             with conn:
3039                 cursor = conn.cursor()
3040                 cursor.execute("UPDATE Competitions SET CompetitionDate = ?, CompetitionLocation = ?, CompetitionName = ? WHERE CompetitionID = ?", (CompetitionDate, CompetitionLocation, CompetitionName, CompID))
3041
3042             messagebox.showinfo(message="Competition updated successfully")
3043
3044         def selectedComp(photoSelectAndButton):
3045             Selection = listOfCompNameBox.curselection()
3046
3047             print(Selection)
3048
3049             print(EditCompetitionFrame) > UpdComDetailsDatabase()

```

When I began to save data to my database that the user had inputted, I ran into another issue. I had been able to get all the data the user had entered into the entry boxes on the form. However, when I was saving the data to the database once I pressed the save button and

checked the database to ensure it then existed in the database it didn't save to the database and I wasn't getting an error message, so I found it very difficult to resolve the issue. I got one of my peers to have a look at my code to see if they would see where I was going wrong as the code was still running so I knew it wasn't a syntax error instead a logical error when saving to the database. This was my code beforehand with no error message and no data saved to the database:



```

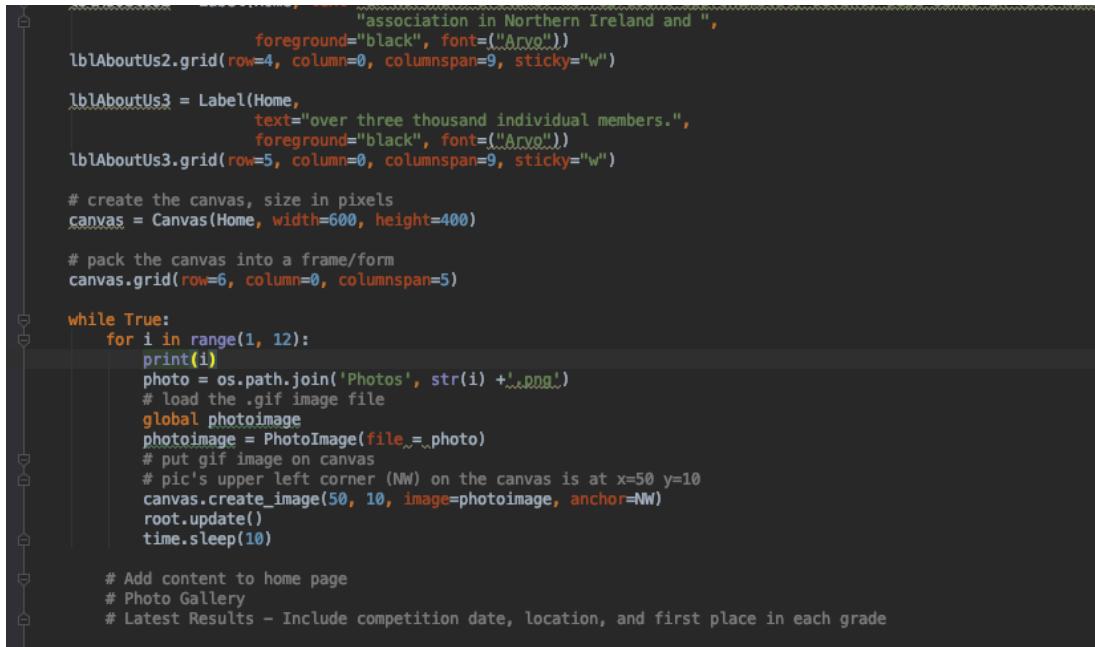
Coursework_Solution.py [~/private/var/folders/qf/4xqqkxss1qj003m6dtrg_fbr0000gp/T/Coursework_Solution.py] - ~/Documents/GitHub/A2CourseworkCS/Coursework_Solution.py [Coursework_Solution.py]
Project Coursework_Solution.py
External Libraries Scratches and Consoles
Coursework_Solution.py
Q Update Replace Replace all Exclude Match Case Words Regex 7 matches
Qr
3027     def EditCompetitionFrame(photoRegisterAdminButton_Years):
3028         def UpdComDetailsDatabase(UptCompetitionName, UptCompetitionLocation, UptCompDay, UptCompMonth, UptCompYear, CompID):
3029             CompetitionDate = str(UptCompDay.get()) + "/" + str(UptCompMonth.get()) + "/" + str(UptCompYear.get())
3030             CompetitionLocation = UptCompetitionLocation.get()
3031             CompetitionName = UptCompetitionName.get()
3032
3033             print(CompetitionDate)
3034             print(CompetitionLocation)
3035             print(CompetitionName)
3036
3037             conn = sqlite3.connect('RSRANT.db')
3038             with conn:
3039                 cursor = conn.cursor()
3040                 cursor.execute("UPDATE Competitions SET CompetitionDate = ?, CompetitionLocation = ?, CompetitionName = ? WHERE CompetitionID = ?", (CompetitionDate, CompetitionLocation, CompetitionName, CompID))
3041
3042                 conn.commit()
3043
3044             messagebox.showinfo(message="Competition updated successfully")
3045
3046         def selectedComp(photoSelectAndButton):
3047             Selection = listOfCompNameBox.curselection()
3048
3049             print(EditCompetitionFrame) > UpdComDetailsDatabase()

```

They were able to fix where I had gone wrong. In fact, they spotted it straight away. I had forgotten to commit my change to the database hence why it wasn't saving. I had to add one line of code "conn.commit()"

I also came across a problem trying to use while loops with the time.sleep function in Tkinter. This issue occurred with me when I was trying to implement my photo gallery. I was trying to get my homepage to change photo every 10 seconds and the only way I could figure out how to implement this was using the sleep function. I ran the program, and everything worked nicely until I tried to navigate to another page, and this is where the

problems began. As I was sleeping my application when I tried to change page there would be a delay in the action due to my program “sleeping”. This was a big performance issue as I could not have my program looking like it wasn’t responding to user driven event clicks. Here is the code for what I tried to achieve unsuccessfully. In the end I had to take out this feature as my system performance was more important than my photo gallery even though it would have been nice to have.



```
        "association in Northern Ireland and ",
        foreground="black", font=("Arvo"))
lblAboutUs2.grid(row=4, column=0, columnspan=9, sticky="w")

lblAboutUs3 = Label(Home,
                    text="over three thousand individual members.",
                    foreground="black", font=("Arvo"))
lblAboutUs3.grid(row=5, column=0, columnspan=9, sticky="w")

# create the canvas, size in pixels
canvas = Canvas(Home, width=600, height=400)

# pack the canvas into a frame/form
canvas.grid(row=6, column=0, columnspan=5)

while True:
    for i in range(1, 12):
        print(i)
        photo = os.path.join('Photos', str(i) +'.png')
        # load the .gif image file
        global photoimage
        photoimage = PhotoImage(file=photo)
        # put gif image on canvas
        # pic's upper left corner (NW) on the canvas is at x=50 y=10
        canvas.create_image(50, 10, image=photoimage, anchor=NW)
        root.update()
        time.sleep(10)

# Add content to home page
# Photo Gallery
# Latest Results - Include competition date, location, and first place in each grade
```

As I was validating my “Judging Competitions” feature I had another problem to solve. To ensure that the judges could only enter valid scores for the bands in each grade. I had hoped to create a list of the possible scores that the judges could select from using the drop list widget of Tkinter. The issue revolved around the fact that I didn’t know exactly how many bands had entered the competition so the number of drop lists I needed to display was also unknown. This made this very hard as I had to populate my frame with a certain number of these widgets. I was able to figure out how to use a for loop in the range of the number of bands, but the issue came when I tried to get the values that the judge had selected for each band. This was because I could not dynamically assign the textvar variables used to store the chosen number for the unknown number of drop lists. In the end I could not use this method and I had to revert back to entry boxes and the traditional validation. Unfortunately, I did not take a screenshot of this however, at one stage trying to debug this issue I did ask my teacher, of which she witnessed my issue, if she could provide me with any ideas but between ourselves, we couldn’t find a possible solution to my problem.

I had an issue where I thought I was only inserting the competitions that a band hadn’t already entered into the list box on the “Enter competitions” page, however I realised that this logic was incorrect. I had to populate the list box with competitions that the band hadn’t entered, and of which hadn’t been drawn. This was the list of competitions that I thought the band hadn’t entered and still could. I was getting a list of all the competitions and a list of all the competitions the band had entered and returning a list of the difference.

Competition Name	Competition Date	Entry Deadline
Lisburn Championships	31/June/2018	14/May/2018
Champion of Championship	12/September/2018	9/August/2018
Moira Championships	10/July/2018	10/May/2018

```

# gets a list of all the competitions that have not yet been drawn and is still possible to enter
with sqlite3.connect("RSPBANI.db") as db:
    # Creates a cursor to search through the data
    cursorListOfComps = db.cursor()
    # SQL Query to select all Competitions from the competitions table
    listOfCompsQuery = 'SELECT CompetitionID FROM Competitions'
    cursorListOfComps.execute(listOfCompsQuery)
    # Execute the query to get a list of all the bands
    cursorListOfComps.execute(listOfCompsQuery)
    # The query will produce a 2 dimensional tuple
    listOfComps = cursorListOfComps.fetchall()
    listOfComps = []

for i in listOfComps:
    for j in i:
        listOfComps.append(str(j))

# get a list of the Competitions the Band has already entered
with sqlite3.connect("RSPBANI.db") as db:
    cursor = db.cursor()
    listOfCompsEnteredQuery = 'SELECT CompetitionID FROM BandsEntered WHERE BandID = ?'
    cursor.execute(listOfCompsEnteredQuery, [BandIDComps])
    listOfCompsEntered = cursor.fetchall()

listOfCompsEntered = []
for i in listOfCompsEntered:
    for j in i:
        listOfCompsEntered.append(str(j))

# compare these two lists and return the competitions that haven't been entered and can still be entered
CompsNotEntered = diff(listOfCompsEntered, listOfComps)

```

Instead to ensure a band could not enter a competition that had been already drawn.

To only get the competitions that hadn't be drawn and not entered by the band I had to query the database again to get a list of all the competitions that hadn't been drawn (Drawn = "False") and store the result in a list. I then had to increment through this list and for each element in the list try and remove it from the list of competitions not entered by the band, if it existed using the try except clause. This then gave me a list of all the competitions the band hadn't entered which haven't been drawn.

```

with sqlite3.connect("RSPBANI.db") as db:
    # Creates a cursor to search through the data
    cursorListOfComps = db.cursor()
    # SQL Query to select all Competitions from the competitions table
    listOfCompsQuery = 'SELECT CompetitionID FROM Competitions WHERE Drawn = ?'
    cursorListOfComps.execute(listOfCompsQuery, ["True"])
    # The query will produce a 2 dimensional tuple
    listOfCompTrue = cursorListOfComps.fetchall()
    listOfCompTrue = []

ListCompsAlreadyDrawn = []

for i in listOfCompTrue:
    for j in i:
        ListCompsAlreadyDrawn.append(str(j))

# get a list of the Competitions the Band has already entered
with sqlite3.connect("RSPBANI.db") as db:
    cursor = db.cursor()
    listOfCompsEnteredQuery = 'SELECT CompetitionID FROM BandsEntered WHERE BandID = ?'
    cursor.execute(listOfCompsEnteredQuery, [BandIDComps])
    listOfCompsEntered = cursor.fetchall()

listOfCompsEntered = []
for i in listOfCompsEntered:
    for j in i:
        listOfCompsEntered.append(str(j))
        print(listOfCompsEntered)

# compare these two lists and return the competitions that haven't been entered. This list
# initialise a dictionary to store the competition name and date from all the competitions
# that still be entered

for element in ListCompsAlreadyDrawn:
    try:
        CompsNotEntered.remove(str(element))
    except:
        None

CompsNameDateNotEntered = {}

for element in CompsNotEntered:
    CompsNameDateNotEntered[element] = {}

for element in CompsNameDateNotEntered:
    print(element)

```

When I tried to import the python docx library, so I could use it to produce my outputs from the system. I got this error saying that no module was found. I googled the solution and I was told

that I need to install the module onto my

```

Traceback (most recent call last):
  File "D:\Testing_A2_Coursework.py", line 8, in <module>
    from docx import Document
ImportError: No module named 'docx'
```

mac. I opened terminal and ran the pip install python-docx command. I however got another error, this time I didn't have pip installed. I then had to download the pip file and run it on my mac before I could import the python docx module.

```
'pip' is not recognized as an internal or external command,  
operable program or batch file.
```

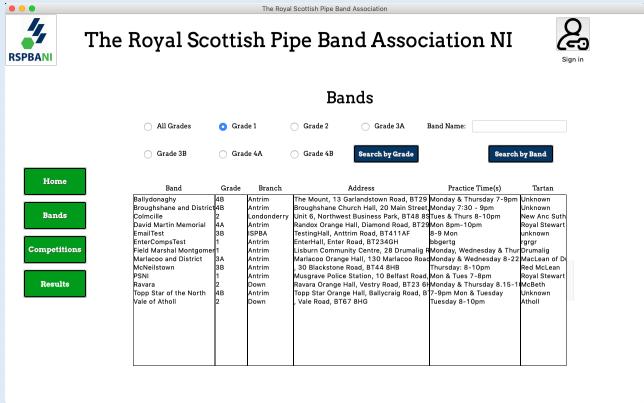
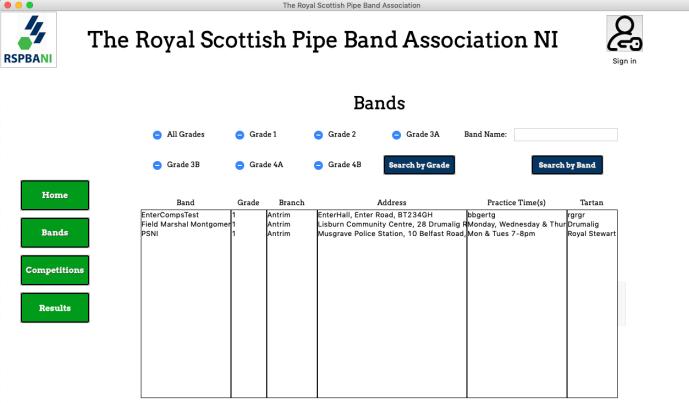
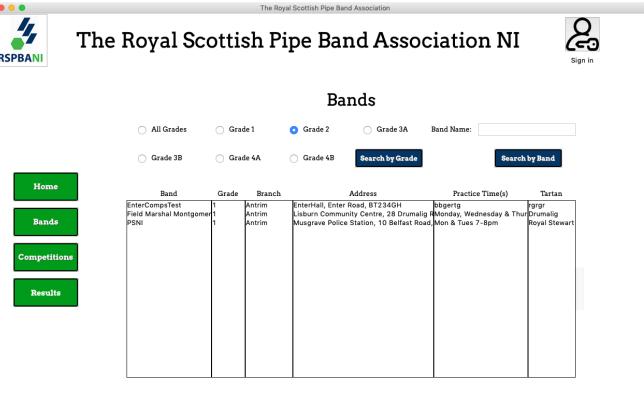
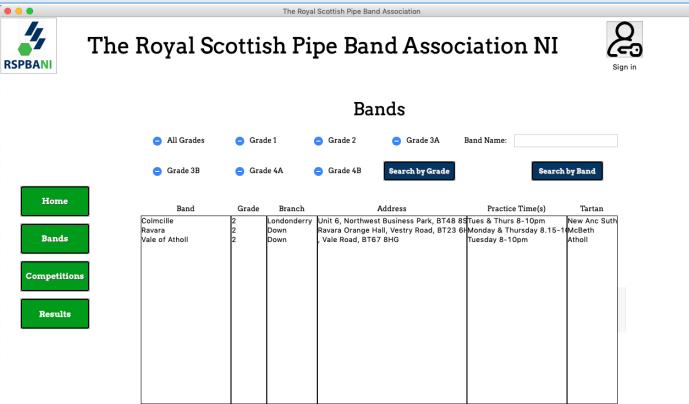
7 Testing

- 1.1 Testing the final system; Produce evidence of all problems encountered and actions taken to overcome these problems.
- 1.2 Design a test plan to test:
 - 1.2.1 Each individual system function
 - 1.2.2 That each individual function works with typical, extreme or invalid data
 - 1.2.3 The whole system to ensure that the system produces the correct results for the data input.
- 1.3 Actual test; Runs Produce annotated test runs that include commentaries on the outcomes of the testing process.

1. All users have the ability to view and search for a band on the bands page.

Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Testing the Grade radio button filter	Typical	Grade 1	On “Search by grade” button bands from Grade 1 only shown	Functional
2	Testing the Grade radio button filter	Typical	Grade 2	On “Search by grade” button bands from Grade 2 only shown	Functional
3	Testing the Grade radio button filter	Typical	Grade 3A	On “Search by grade” button bands from Grade 3A only shown	Functional
4	Testing the Grade radio button filter	Typical	Grade 3B	On “Search by grade” button bands from Grade 3B only shown	Functional

<u>5</u>	Testing the Grade radio button filter with no bands registered in this grade.	Typical	Grade 4A	On “Search by grade” button message box will appear telling user no bands have been entered and they will be presented the list of all bands.	Functional
<u>6</u>	Testing the Grade radio button filter	Typical	Grade 4B	On “Search by grade” button bands from Grade 4B only shown	Functional
<u>7</u>	Testing the Grade radio button filter	Invalid	No radio selection chosen	On “Search by grade” button no bands will be shown as no filter had been selected	Functional
<u>8</u>	Testing the searching my name filter	Typical	“Ballydonaghy”	On “Search by name” button only one band should appear in the selection.	Functional
<u>9</u>	Testing the searching my name filter	Typical	“ballydonaghy”	On “Search by name” button only one band should appear in the selection.	Functional
<u>10</u>	Testing the searching my name filter	Typical	“Bally”	On “Search by name” button only one band should appear in the selection.	Functional
<u>11</u>	Testing the searching my name filter	Invalid	“Ba11ydonaghy”	On “Search by name” button only one band should appear in the selection.	Functional

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments																																																																																																
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3

The Royal Scottish Pipe Band Association NI

Bands

Band Name:

All Grades Grade 1 Grade 2 Grade 3A Grade 3B Grade 4A Grade 4B

Search by Grade **Search by Band**

Home **Bands** **Competitions** **Results**

Band	Grade	Branch	Address	Practice Time(s)	Tartan
Emmelle Reivers	2	Consett	Unit 6 Northwest Business Park, BT14 8BB	Fridays & Thursdays 10pm	New Anc Suth
Vale of Atholl	2	Dovey	Reavas Orange Hall, Valey Road, BT67 8HG	Mondays & Thursday 8.15-10pm	MacBeth Atholl

Bands from Grade 3A only shown in the list box.

The Royal Scottish Pipe Band Association NI

Bands

Band Name:

All Grades Grade 1 Grade 2 Grade 3A Grade 3B Grade 4A Grade 4B

Search by Grade **Search by Band**

Home **Bands** **Competitions** **Results**

Band	Grade	Branch	Address	Practice Time(s)	Tartan
Mariacoo and District	3A	Antrim	Mariacoo Orange Hall, 130 Mariacoo Road	Monday & Wednesday 8-22	MacLean of D

This test has passed

4

The Royal Scottish Pipe Band Association NI

Bands

Band Name:

All Grades Grade 1 Grade 2 Grade 3A Grade 3B Grade 4A Grade 4B

Search by Grade **Search by Band**

Home **Bands** **Competitions** **Results**

Band	Grade	Branch	Address	Practice Time(s)	Tartan
Mariacoo and District	3A	Antrim	Mariacoo Orange Hall, 130 Mariacoo Road	Mondays & Wednesday 8-22	MacLean of D

Bands from Grade 3B only shown in the list box.

The Royal Scottish Pipe Band Association NI

Bands

Band Name:

All Grades Grade 1 Grade 2 Grade 3A Grade 3B Grade 4A Grade 4B

Search by Grade **Search by Band**

Home **Bands** **Competitions** **Results**

Band	Grade	Branch	Address	Practice Time(s)	Tartan
EmailTee McNeilstown	BB	GBRA Antrim	TaxingHall, Antrim Road, BT41 1AF	S-9 Mon-Thursday 8-10pm	McKinnon Red McLean
	BB		30 Blackstone Road, BT44 8H8		

This test has passed

5

The Royal Scottish Pipe Band Association NI

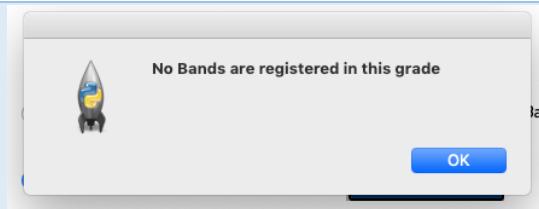
Bands

Band: Smalltest McNeilson, Grade: 3B, Branch: RSPBA Antrim, Address: Testmagh, Antrim Road, BT41 1AF, Practice Time(s): 8-9 Mon, Tartan: Unknown Red McLean.

Navigation menu: Home, Bands, Competitions, Results.

Filter buttons: All Grades, Grade 1, Grade 2, Grade 3A, Grade 3B, Grade 4A, Grade 4B, Search by Grade, Search by Band.

Bands from Grade 4A only shown in the list box.



This test has passed

6

The Royal Scottish Pipe Band Association NI

Bands

Band: David Martin Memorial, Grade: 4A, Branch: Rondo Orange Hall, Diamond Road, BT12, Address: Diamond Road, BT12, Practice Time(s): Mon 8pm-10pm, Tartan: Royal Stewart.

Navigation menu: Home, Bands, Competitions, Results.

Filter buttons: All Grades, Grade 1, Grade 2, Grade 3A, Grade 3B, Grade 4A, Grade 4B, Search by Grade, Search by Band.

Bands from Grade 4B only shown in the list box.

The Royal Scottish Pipe Band Association NI

Bands

Band: Ballydrayagh, Grade: 4B, Branch: Antrim, Address: The Mount, 13 Garlisdene Road, BT12, Practice Time(s): Monday & Thursday 7-9pm, Tartan: Unknown.

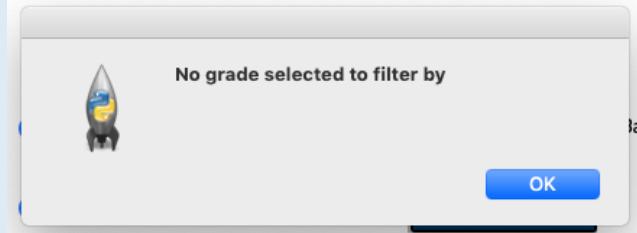
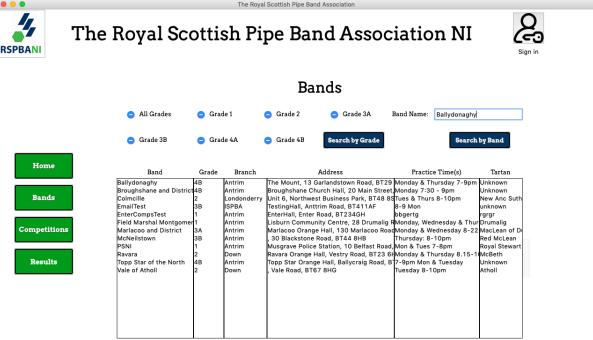
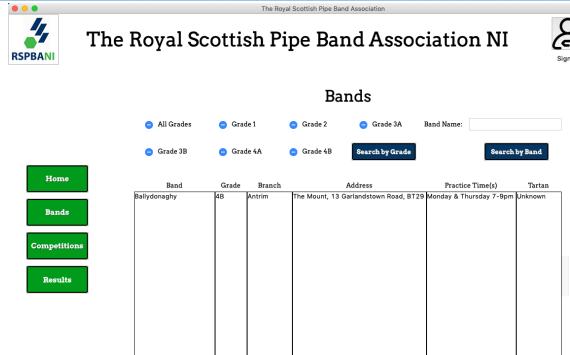
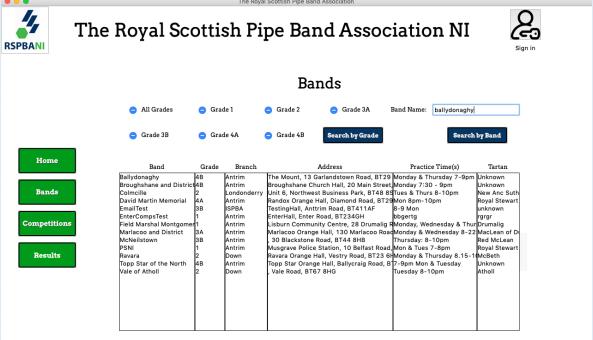
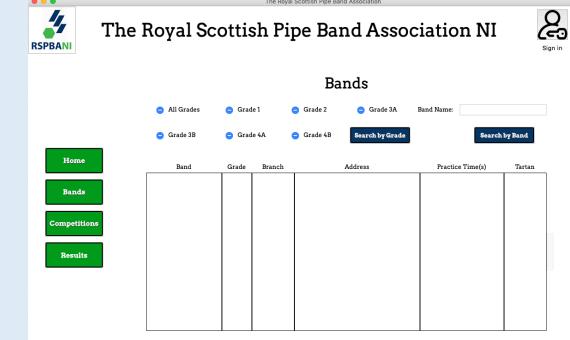
Band: Broughshane and District, Grade: 4B, Branch: Antrim, Address: Broughshane Church Hall, 20 Main Street, BT12, Practice Time(s): Monday 7:30 - 8pm, Tartan: Unknown.

Band: Topp Star of the North, Grade: 4B, Branch: Antrim, Address: Topp Star Orange Hall, Ballycraigy Road, BT12, Practice Time(s): Monday & Tuesday 8-10pm, Tartan: Unknown.

Navigation menu: Home, Bands, Competitions, Results.

Filter buttons: All Grades, Grade 1, Grade 2, Grade 3A, Grade 3B, Grade 4A, Grade 4B, Search by Grade, Search by Band.

This test has passed

7	N / A	Message box to tell user that they haven't selected a grade to filter results		This test has passed
8		User displayed any matching results from their search – in this case all details from Ballydonaghyl will appear.		This test has passed
9		No bands shown – this was not supposed to happen, this has not met the required criterion		Failed – My program does not allow the user to enter the band name when it is not identical to what is stored in the database. I will need to implement some validation to ensure the input is in title case.

10

The Royal Scottish Pipe Band Association NI

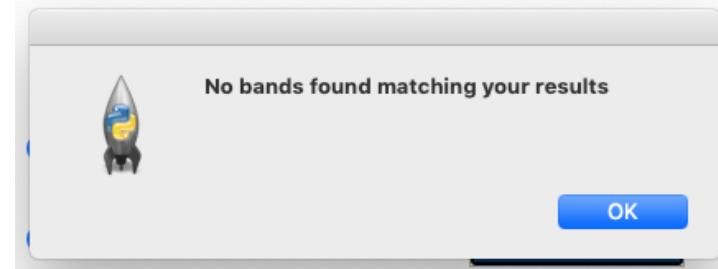
Bands

Band Name: Bally

Band	Grade	Branch	Address	Practice Times(s)	Tutor(s)
Ballydroyagh	BB	Antrim	The Mount, 13 Garvaghtown Road, BT29	Monday & Thursday 7-8pm	Unknown
Broughshane And District	BB	Antrim	Broughshane Church Hall, 20 Main Street	Monday 7-9pm	Unknown
Carrickfergus	BB	Antrim	13 Newgate Street, BT71 1AF	Wednesday 8-9pm	John & Ruth
EmailTest	BB	GPBA	TestingHall, Antrim Road, BT411AF	8-9 Mon	Unknown
Immaculate Heart Of Mary	BB	Antrim	Ulster Community Centre, 28 Drumaliy	Monday, Wednesday & Thursday 8-9pm	Drumaliy
Field Marshal Montgomery	1	Antrim	Ulster Community Centre, 28 Drumaliy	Monday, Wednesday & Thursday 8-9pm	Drumaliy
Macmillan And District	BB	Antrim	30 Blackstone Road, BT44 8RH	Wednesday 8-9pm	Red McLean
McNeilstown	BB	Antrim	Margave Police Station, 10 Belfast Road	Mon & Tues 8-10pm	Red McLean
Pipers	2	Antrim	Margave Police Station, 10 Belfast Road	Mon & Tues 8-10pm	Royal Stewart
Portavogie	BB	Antrim	13 Newgate Street, BT71 1AF	Wednesday 8-9pm	Unknown
Topp Star Of The North	BB	Antrim	Topp Star Orange Hall, Ballycraig Road, BT7	8-9pm Mon & Tuesday	Unknown
Vale Of Antrim	2	Antrim	Vale Road, BT71 3HQ	Tuesday 8-10pm	Unknown

Search by Grade:

No bands will be shown as this is not the name of any band. User will be displayed bands.



This test has passed

11

The Royal Scottish Pipe Band Association NI

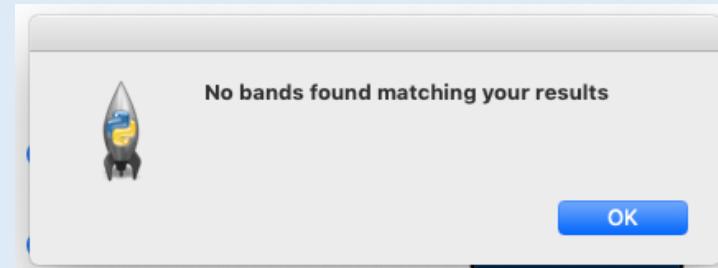
Bands

Band Name: Ba1lydyogh

Band	Grade	Branch	Address	Practice Times(s)	Tutor(s)
Ballydroyagh	BB	Antrim	The Mount, 13 Garvaghtown Road, BT29	Monday & Thursday 7-8pm	Unknown
Broughshane And District	BB	Antrim	Broughshane Church Hall, 20 Main Street	Monday 7-9pm	Unknown
Carrickfergus	BB	Antrim	13 Newgate Street, BT71 1AF	Wednesday 8-9pm	John & Ruth
EmailTest	BB	GPBA	TestingHall, Antrim Road, BT411AF	8-9 Mon	Unknown
Immaculate Heart Of Mary	BB	Antrim	Ulster Community Centre, 28 Drumaliy	Monday, Wednesday & Thursday 8-9pm	Drumaliy
Field Marshal Montgomery	1	Antrim	Ulster Community Centre, 28 Drumaliy	Monday, Wednesday & Thursday 8-9pm	Drumaliy
Macmillan And District	BB	Antrim	30 Blackstone Road, BT44 8RH	Wednesday 8-9pm	Red McLean
McNeilstown	BB	Antrim	Margave Police Station, 10 Belfast Road	Mon & Tues 8-10pm	Red McLean
Pipers	2	Antrim	Margave Police Station, 10 Belfast Road	Mon & Tues 8-10pm	Royal Stewart
Topp Star Of The North	BB	Antrim	Topp Star Orange Hall, Ballycraig Road, BT7	8-9pm Mon & Tuesday	Unknown
Vale Of Antrim	2	Antrim	Vale Road, BT71 3HQ	Tuesday 8-10pm	Unknown

Search by Grade:

Message box presented to user as no bands found with this search. However, this data is not invalid as bands can have "1st" prefix



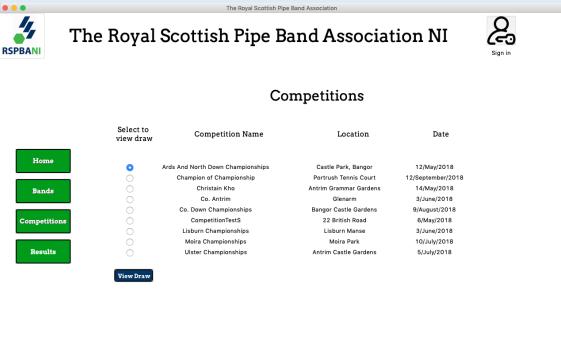
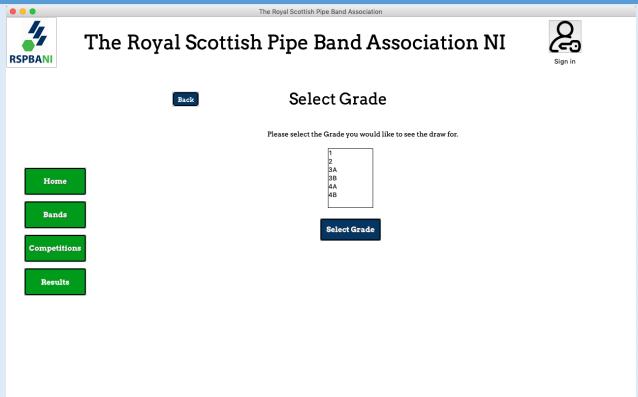
This test has passed

Test number	Issue	Resolution	Commentary
9	Band wasn't found due to the inputted data not being in title case.	<pre> def BandsFrame(photoSearchByGrade, photoSearchByBand): def DisplayName(BandNameSearch): NameOfBand = BandNameSearch.get() print(NameOfBand) print(NameOfBand[0]) if str(NameOfBand[0]).islower()==True: print("True") NameOfBandFirstChar = str(NameOfBand[0]).upper() print(NameOfBandFirstChar) BandNameMinusFirst = NameOfBand[1:] NameOfBand = str(NameOfBandFirstChar) + str(BandNameMinusFirst) print(NameOfBand) </pre>	I tried to use the SQL SELECT LIKE clause however I couldn't get this working. Instead, I was able to resolve this issue by checking if the first character was lower case. If it was, I converted it and then concatenated it to the band name minus the first letter.

2. All users have the ability to view and search for a competition on the competitions page.

Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
<u>1</u>	Select a competition and be presented with list box to select the grade to view	Typical	Ards And North Down Championship radio button selected	Brought to the select grade page	Functional
<u>2</u>	Select a competition and be presented with list box to select the grade to view	Invalid	No radio button selected	Message box telling the user that they must select a competition by clicking on the radio button beside the competition they want to view. User to remain on the competitions page.	Functional
<u>3</u>	Testing the back button on the select grade page	Typical	Pressing back button	The Competitions page should be displayed so the user can select another competition to view the results for.	Functional
<u>4</u>	Select a grade to view results for that grade	Typical	“1”	Page to view the results. The grade number is displayed, the competition name and all the bands in the grade with their circle number and competing time must also be displayed. For this test the user should expect to see the competition name as “Ards And North Down”, the grade as “Grade 1”, the number of bands entered should be “2”. Field Marshal should have a circle number of 1 and a competing time of 9:00. PSNI should have circle number of 1 and competing time of 9:10	Functional

5	Select a grade to view results for that grade	Invalid	No grade selected	Message box stating that no grade has been selected	Functional
6	Selected a grade where no bands entered the grade.	Typical	Competition selected – Champion of Championships Grade selected – 4B	Message displayed on screen – “No bands have entered this grade”	Functional
7	Selecting a competition which hasn't been drawn yet.	Typical	Competition selected – Moria Championships	Informative message – “This competition hasn't been drawn yet”	Functional

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments
1		Select Grade screen was displayed		This test has passed

2

Select to view draw	Competition Name	Location	Date
<input type="radio"/>	Ards And North Down Championships	Castle Park, Bangor	12/May/2018
<input type="radio"/>	Champion of Championship	Portrush Tennis Court	12/September/2018
<input type="radio"/>	Christen Kho	Antrim Grammar Gardens	14/May/2018
<input type="radio"/>	Co. Antrim	Glenarm	3/June/2018
<input type="radio"/>	Co. Down Championships	Bangor Castle Gardens	9/August/2018
<input type="radio"/>	CompetitionTests	22 British Road	6/May/2018
<input type="radio"/>	Lisburn Championships	Lisburn	30/June/2018
<input type="radio"/>	Moira Championships	Moira Park	10/July/2018
<input type="radio"/>	Ulster Championships	Antrim Castle Gardens	5/July/2018

Message has been displayed, the exception has been captured and the user remains on the page to select a competition

Select to view draw	Competition Name	Location	Date
<input type="radio"/>	Ards And North Down Championships	Castle Park, Bangor	12/May/2018
<input type="radio"/>	Champion of Championship	Portrush Tennis Court	12/September/2018
<input type="radio"/>	Christen Kho	Antrim Grammar Gardens	14/May/2018
<input type="radio"/>	Co. Antrim	Glenarm	3/June/2018
<input type="radio"/>	Co. Down Championships	Bangor Castle Gardens	9/August/2018
<input type="radio"/>	CompetitionTests	22 British Road	6/May/2018
<input type="radio"/>	Lisburn Championships	Lisburn	30/June/2018
<input type="radio"/>	Moira Championships	Moira Park	10/July/2018
<input type="radio"/>	Ulster Championships	Antrim Castle Gardens	5/July/2018

This test has passed

3

Please select the Grade you would like to see the draw for.

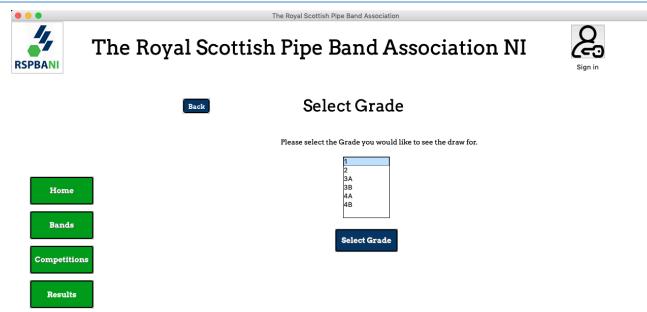
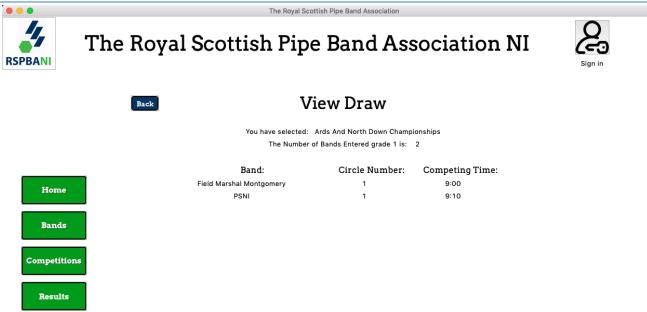
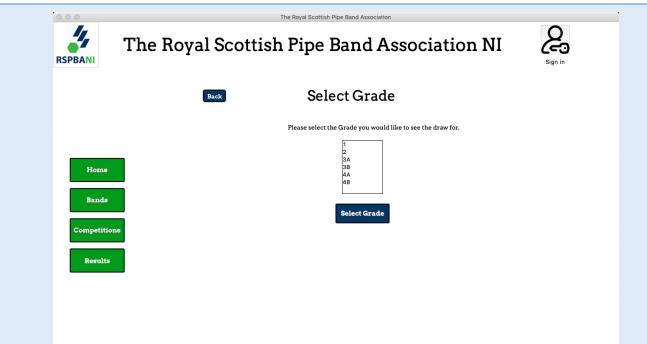
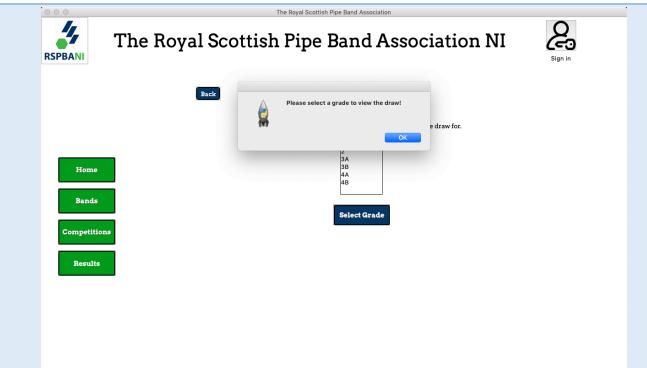
P
RA
RB
RC
AA
AB

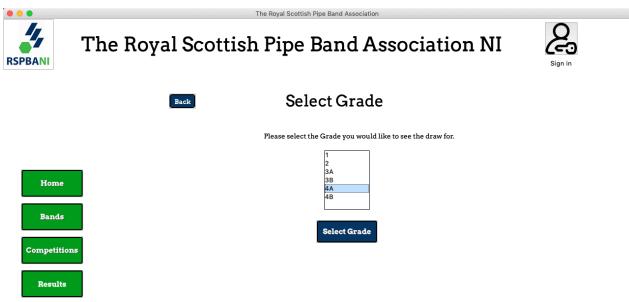
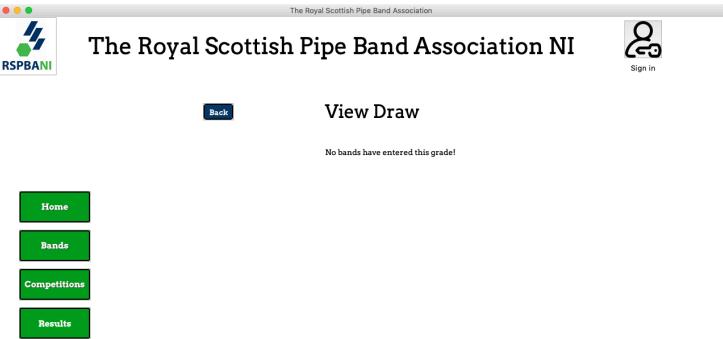
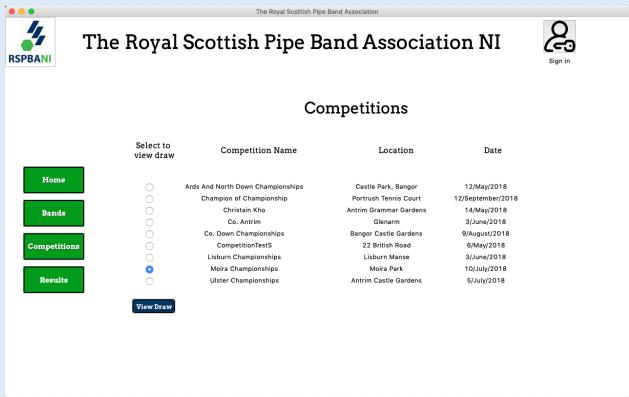
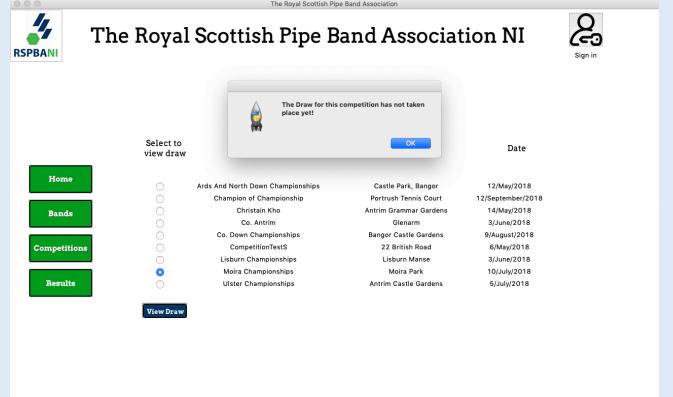
Select Grade

Competitions page displayed

Select to view draw	Competition Name	Location	Date
<input type="radio"/>	Ards And North Down Championships	Castle Park, Bangor	12/May/2018
<input type="radio"/>	Champion of Championship	Portrush Tennis Court	12/September/2018
<input type="radio"/>	Christen Kho	Antrim Grammar Gardens	14/May/2018
<input type="radio"/>	Co. Antrim	Glenarm	3/June/2018
<input type="radio"/>	Co. Down Championships	Bangor Castle Gardens	9/August/2018
<input type="radio"/>	CompetitionTests	22 British Road	6/May/2018
<input type="radio"/>	Lisburn Championships	Lisburn	30/June/2018
<input type="radio"/>	Moira Championships	Moira Park	10/July/2018
<input type="radio"/>	Ulster Championships	Antrim Castle Gardens	5/July/2018

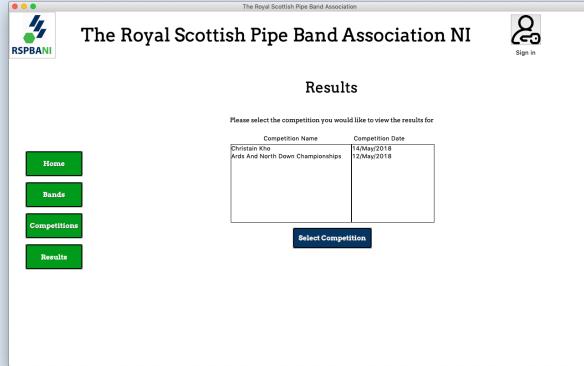
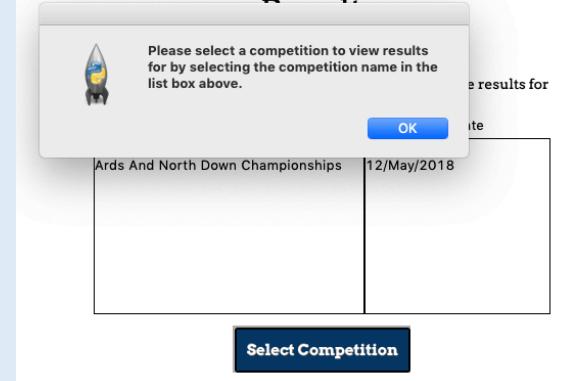
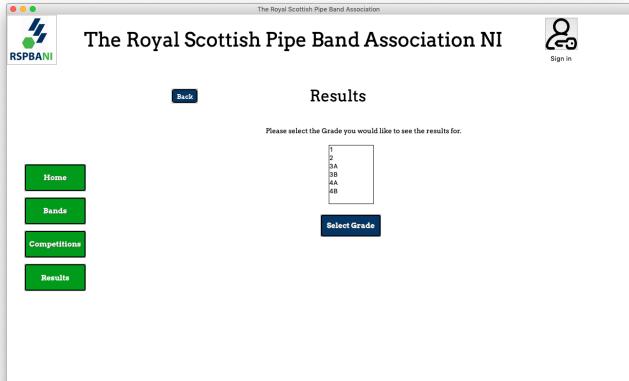
This test has passed

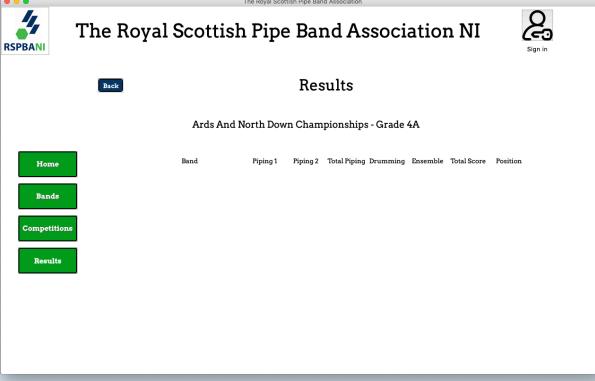
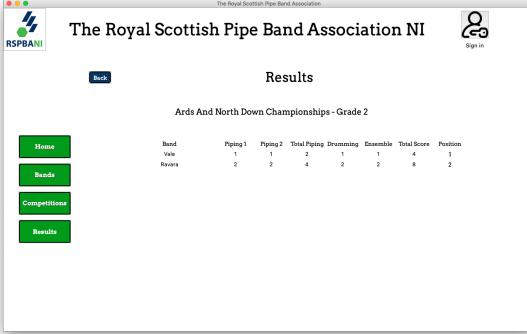
4	 <p>The Royal Scottish Pipe Band Association NI</p> <p>Select Grade</p> <p>Please select the Grade you would like to see the draw for.</p> <p>Home Bands Competitions Results</p>	<p>Draw page displayed will all correct data as expected.</p>	 <p>The Royal Scottish Pipe Band Association NI</p> <p>View Draw</p> <p>You have selected: Ards And North Down Championships</p> <p>The Number of Bands Entered grade 1 is: 2</p> <table border="1"> <thead> <tr> <th>Band:</th> <th>Circle Number:</th> <th>Competing Time:</th> </tr> </thead> <tbody> <tr> <td>Field Marshal Montgomery</td> <td>1</td> <td>9:00</td> </tr> <tr> <td>PSNI</td> <td>1</td> <td>9:10</td> </tr> </tbody> </table> <p>Home Bands Competitions Results</p>	Band:	Circle Number:	Competing Time:	Field Marshal Montgomery	1	9:00	PSNI	1	9:10	<p>This test has passed</p>
Band:	Circle Number:	Competing Time:											
Field Marshal Montgomery	1	9:00											
PSNI	1	9:10											
5	 <p>The Royal Scottish Pipe Band Association NI</p> <p>Select Grade</p> <p>Please select the Grade you would like to see the draw for.</p> <p>Home Bands Competitions Results</p>	<p>Message has been displayed to the user and the exception has been captured.</p>	 <p>The Royal Scottish Pipe Band Association NI</p> <p>Please select a grade to view the draw!</p> <p>OK</p> <p>draw for:</p> <p>1 2 3A 3B 4A 4B</p> <p>Select Grade</p> <p>Home Bands Competitions Results</p>	<p>This test has passed</p>									

6	 <p>The Royal Scottish Pipe Band Association NI</p> <p>Select Grade</p> <p>Please select the Grade you would like to see the draw for.</p> <p>Home Bands Competitions Results</p>	<p>View Draw screen displayed informing that no bands have entered this grade.</p>	 <p>The Royal Scottish Pipe Band Association NI</p> <p>View Draw</p> <p>No bands have entered this grade!</p> <p>Home Bands Competitions Results</p>	<p>This test has passed.</p> <p>The back button will allow them to return to previous screen to select another grade or go back again to select another competition. This has also been tested and is working on both the view draw page and select grade page</p>																																								
7	 <p>The Royal Scottish Pipe Band Association NI</p> <p>Competitions</p> <table border="1"> <thead> <tr> <th>Select to view draw</th> <th>Competition Name</th> <th>Location</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td><input type="radio"/></td> <td>Ards And North Down Championships</td> <td>Castle Park, Bangor</td> <td>12/May/2018</td> </tr> <tr> <td><input type="radio"/></td> <td>Champion of Championship</td> <td>Portrush Tennis Court</td> <td>14/May/2018</td> </tr> <tr> <td><input type="radio"/></td> <td>Christian Kho</td> <td>Antrim Grammar Gardens</td> <td>3/Jun/2018</td> </tr> <tr> <td><input type="radio"/></td> <td>Co. Down Championships</td> <td>Glenarm</td> <td>8/Jun/2018</td> </tr> <tr> <td><input type="radio"/></td> <td>Co. Down Championships</td> <td>Bangor Castle Gardens</td> <td>22/British Road</td> </tr> <tr> <td><input checked="" type="radio"/></td> <td>CompetitionTests</td> <td>Lisburn</td> <td>6/May/2018</td> </tr> <tr> <td><input type="radio"/></td> <td>Lisburn Championships</td> <td>Lisburn Mews</td> <td>3/Jun/2018</td> </tr> <tr> <td><input type="radio"/></td> <td>Moira Championships</td> <td>Moira Park</td> <td>10/July/2018</td> </tr> <tr> <td><input type="radio"/></td> <td>Ulster Championships</td> <td>Antrim Castle Gardens</td> <td>5/July/2018</td> </tr> </tbody> </table> <p>Home Bands Competitions Results</p> <p>View Draw</p>	Select to view draw	Competition Name	Location	Date	<input type="radio"/>	Ards And North Down Championships	Castle Park, Bangor	12/May/2018	<input type="radio"/>	Champion of Championship	Portrush Tennis Court	14/May/2018	<input type="radio"/>	Christian Kho	Antrim Grammar Gardens	3/Jun/2018	<input type="radio"/>	Co. Down Championships	Glenarm	8/Jun/2018	<input type="radio"/>	Co. Down Championships	Bangor Castle Gardens	22/British Road	<input checked="" type="radio"/>	CompetitionTests	Lisburn	6/May/2018	<input type="radio"/>	Lisburn Championships	Lisburn Mews	3/Jun/2018	<input type="radio"/>	Moira Championships	Moira Park	10/July/2018	<input type="radio"/>	Ulster Championships	Antrim Castle Gardens	5/July/2018	<p>Message has been displayed to the user as the drawn hasn't taken place yet - exception has been captured. User remains on the competitions screen.</p>	 <p>The Royal Scottish Pipe Band Association NI</p> <p>Select to view draw</p> <p>Ards And North Down Championships</p> <p>Champion of Championship</p> <p>Christian Kho</p> <p>Co. Antrim</p> <p>Co. Down Championships</p> <p>CompetitionTests</p> <p>Lisburn Championships</p> <p>Moira Championships</p> <p>Ulster Championships</p> <p>Castle Park, Bangor</p> <p>Portrush Tennis Court</p> <p>Antrim Grammar Gardens</p> <p>Glenarm</p> <p>Bangor Castle Gardens</p> <p>22 British Road</p> <p>Lisburn Mews</p> <p>Moira Park</p> <p>Antrim Castle Gardens</p> <p>12/May/2018</p> <p>14/May/2018</p> <p>3/Jun/2018</p> <p>8/Jun/2018</p> <p>6/May/2018</p> <p>3/Jun/2018</p> <p>10/July/2018</p> <p>5/July/2018</p> <p>Home Bands Competitions Results</p> <p>View Draw</p> <p>The Draw for this competition has not taken place yet!</p> <p>OK</p> <p>Date</p>	<p>This test has passed</p>
Select to view draw	Competition Name	Location	Date																																									
<input type="radio"/>	Ards And North Down Championships	Castle Park, Bangor	12/May/2018																																									
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<input type="radio"/>	Ulster Championships	Antrim Castle Gardens	5/July/2018																																									

3. All users have the ability to view and search for a grades' result in a competition on the results page.

Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Pressing the select competition button without selecting a competition	Invalid	None	A message box presented to user asking them to select a competition	Functional
2	Selecting a competition to view Results	Typical	Ards and North Down Championships	User will be brought to a new screen to select a grade to view the results from	Functional
3	Selecting a grade with no bands entered it.	Typical	4A	The Results screen will be shown with a message saying that no bands have entered this grade.	Logical
4	Selecting a grade with bands entered	Typical	2	The bands with their full results will be displayed. This should match the output which has been sent to all bands to ensure both are valid.	Logical

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments						
1	 <p>The Royal Scottish Pipe Band Association NI</p> <p>Results</p> <p>Please select the competition you would like to view the results for</p> <table border="1"> <tr> <td>Competition Name</td> <td>Competition Date</td> </tr> <tr> <td>Christian Kno Ards And North Down Championships</td> <td>14May/2018</td> </tr> </table> <p>Select Competition</p>	Competition Name	Competition Date	Christian Kno Ards And North Down Championships	14May/2018	As expected	 <p>Please select a competition to view results for by selecting the competition name in the list box above.</p> <p>OK</p> <table border="1"> <tr> <td>Ards And North Down Championships</td> <td>12/May/2018</td> </tr> </table> <p>Select Competition</p>	Ards And North Down Championships	12/May/2018	This test has passed.
Competition Name	Competition Date									
Christian Kno Ards And North Down Championships	14May/2018									
Ards And North Down Championships	12/May/2018									
2	N/A	As expected	 <p>The Royal Scottish Pipe Band Association NI</p> <p>Results</p> <p>Please select the Grade you would like to see the results for.</p> <table border="1"> <tr> <td>1</td> </tr> <tr> <td>2</td> </tr> <tr> <td>3A</td> </tr> <tr> <td>3B</td> </tr> <tr> <td>4A</td> </tr> <tr> <td>4B</td> </tr> </table> <p>Select Grade</p>	1	2	3A	3B	4A	4B	This test has passed
1										
2										
3A										
3B										
4A										
4B										

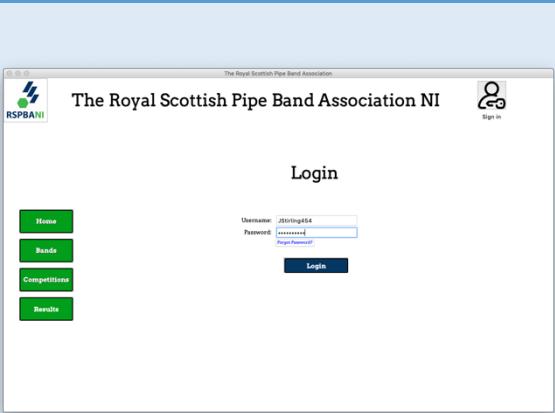
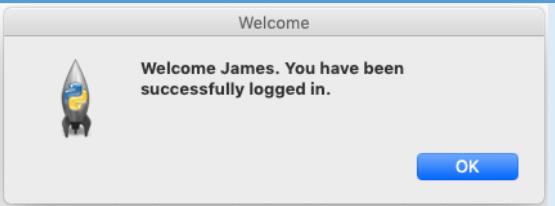
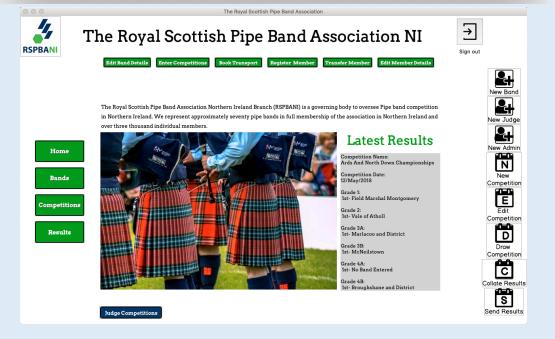
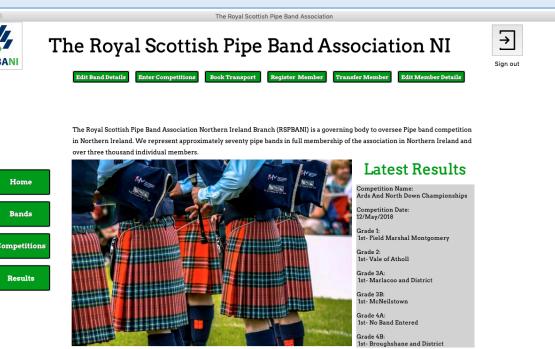
3		This was not as expected.		This test has not passed as there is no information displayed to let the user know why no results have been displayed here.																																
4		As expected.	<p>The screenshot below shows the results on the results page</p>  <table border="1"> <thead> <tr> <th>Band</th> <th>Piping 1</th> <th>Piping 2</th> <th>Total Piping</th> <th>Drumming</th> <th>Ensemble</th> <th>Total Score</th> <th>Position</th> </tr> </thead> <tbody> <tr> <td>Band Name</td> <td>1</td> <td>1</td> <td>2</td> <td>1</td> <td>1</td> <td>4</td> <td>1</td> </tr> <tr> <td>Vote</td> <td>2</td> <td>2</td> <td>4</td> <td>2</td> <td>2</td> <td>8</td> <td>2</td> </tr> <tr> <td>Revers</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>The output below confirms that the same logic has been used to reproduce the same results successfully.</p>	Band	Piping 1	Piping 2	Total Piping	Drumming	Ensemble	Total Score	Position	Band Name	1	1	2	1	1	4	1	Vote	2	2	4	2	2	8	2	Revers								This test has passed.
Band	Piping 1	Piping 2	Total Piping	Drumming	Ensemble	Total Score	Position																													
Band Name	1	1	2	1	1	4	1																													
Vote	2	2	4	2	2	8	2																													
Revers																																				

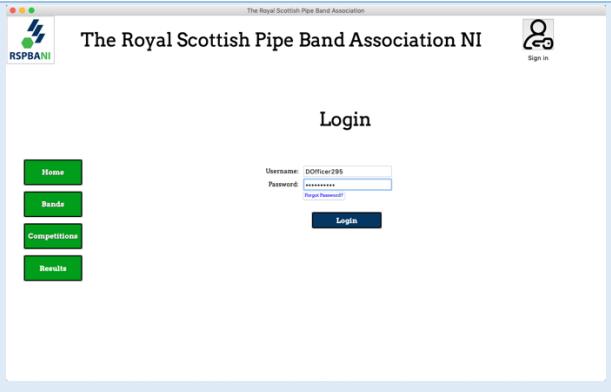
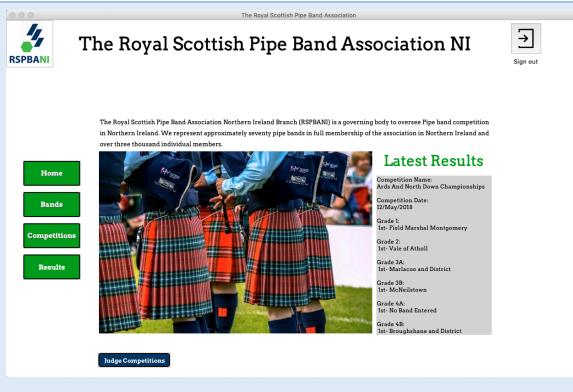
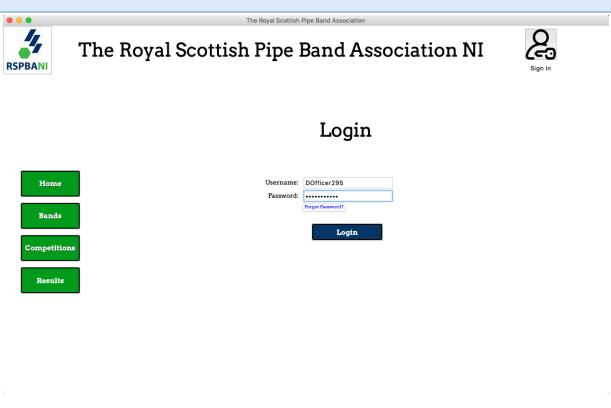
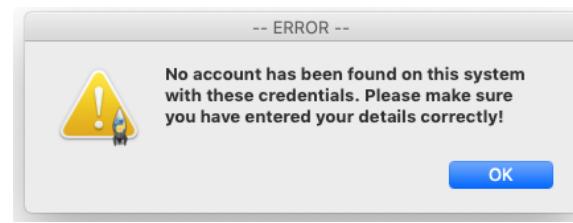
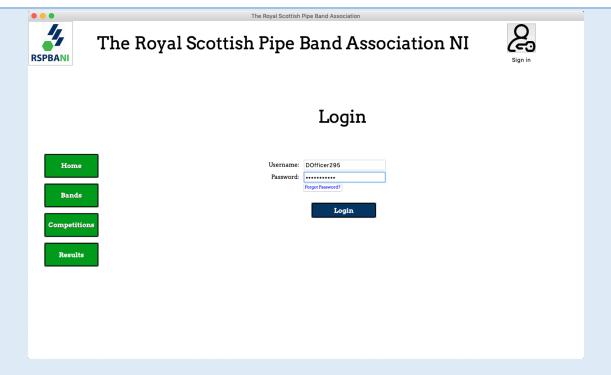
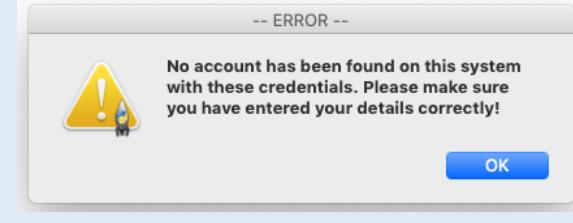
Grade 2 Results								
Band	Piping 1	Piping 2	Total Piping	Drumming	Ensemble	Total	Overall Position	
Vale of Atholl	1	1	2	1	1	4	1	
Ravara	2	2	4	2	2	8	2	

Test number	Issue	Resolution	Commentary
3	User was not informed that no bands had entered the competition when they received a results screen which has not been populated	<pre> def ResultsFrame(): def ViewResults(CompetitionSelected, CompetitionID, listOfGradeDrawBox, listOfCompsNameBox): def getResultsFromGrade(GradeSelected, BandsInComp, CompetitionID): GradeResults = [] if BandsInComp == []: lblSpacer = Label(FullResults, height=5) lblSpacer.grid(row=4) lblNoBandsEntered = Label(FullResults, text="No Bands have entered this grade.. Use the back button to select another grade in...") lblNoBandsEntered.grid(row=5, column=3, columnspan=2) PEP 8: line too long (176 > 120 characters) else: for bandID in BandsInComp: # for each Band get its Results from the results table conn = sqlite3.connect('RSPBANI.db') with conn: cursor = conn.cursor() getBandID = "SELECT Piping1Score, Piping2Score, TotalPipingScore, DrummingScore, EnsembleScore, TotalScore, Position FROM Results WHERE BandID = ?" cursor.execute(getBandID, (bandID, CompetitionID)) BandResults = cursor.fetchall() print("BandResults") print(BandResults) if BandResults: for R in BandResults: Piping1 = R[0] Piping2 = R[1] TotalPiping = R[2] Drumming = R[3] Ensemble = R[4] TotalScore = R[5] Position = R[6] GradeResults.append([bandID, Piping1, Piping2, TotalPiping, Drumming, Ensemble, TotalScore, Position]) else: GradeResults.append([bandID, None, None, None, None, None, None, None]) return GradeResults </pre>	To resolve this issue, I checked to see if any bands existed in the list for the grade. If the list was empty, then instead of trying to get the results for each band, my system will output a message to the screen telling the user what to do as they have selected a grade with no bands entered.

4. All users have the ability to login if they have an account.

Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Log in with admin credentials	Typical	Username - JStirling454 Password - fc4AM7DvH9	Welcome message box and user directed to home screen. Band buttons, admin buttons and judge buttons should appear for the user	Functional
2	Log in with band credentials	Typical	Username - Wayne_Byrne Password - Byrne_Wayne000	Welcome message box with their name and user directed to home screen. Only Band buttons should appear to user once logged on.	Functional
3	Log in with judge credentials	Typical	Username - DOfficer295 Password - gh67EC6Hi8	Welcome message box with their name and user directed to home screen. Only judge buttons should appear to user once logged on.	Functional
4	Log in with incorrect username	Invalid	Username - DOfficer295 Password – Password123	Displays an error message as an account with these credentials cannot be found.	Functional
5	Log in with incorrect password	Invalid	Username - DOfficer295 Password - DOfficer295	Displays an error message as an account with these credentials cannot be found.	Functional

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments
1	 <p>The Royal Scottish Pipe Band Association NI</p> <p>Login</p> <p>Username: JString644 Password: ****@****</p> <p>Sign in</p> <p>Home Bands Competitions Results</p>	<p>Outcome was as expected – user has been logged on with correct access level; test has met this criterion.</p>	 <p>Welcome</p> <p>Welcome James. You have been successfully logged in.</p> <p>OK</p>  <p>The Royal Scottish Pipe Band Association NI</p> <p>Latest Results</p> <p>Competition Name: Ard And North Down Championships Competition Date: 12 May 2018 Grade 1 1st: Field Marshal Montgomery Grade 2 1st: Vale of Atholl 2nd: Marlboro and District Grade 3B 1st: McNeilstown 2nd: McNaughton 3rd: No Band Entered Grade 4B 1st: Broughshane and District</p> <p>Home Bands Competitions Results</p> <p>New Band New Judge New Admin New Competition Edit Competition Delete Competition Judge Competitions Edit Member Details Register Member Transfer Member Send Results</p>	<p>Success – inputted credentials can never be extreme as they have been validated before they have been saved to database and there is no length limit on these fields.</p>
2	 <p>The Royal Scottish Pipe Band Association NI</p> <p>Login</p> <p>Username: Wayne_Byrne Password: ****@****</p> <p>Sign in</p> <p>Home Bands Competitions Results</p>	<p>Outcome was as expected – user has been logged on with correct access level; test has met this criterion.</p>	 <p>The Royal Scottish Pipe Band Association NI</p> <p>Latest Results</p> <p>Competition Name: Ard And North Down Championships Competition Date: 12 May 2018 Grade 1 1st: Field Marshal Montgomery Grade 2 1st: Vale of Atholl 2nd: Marlboro and District Grade 3B 1st: McNeilstown 2nd: McNaughton 3rd: No Band Entered Grade 4B 1st: Broughshane and District</p> <p>Home Bands Competitions Results</p> <p>New Band New Judge New Admin New Competition Edit Competition Delete Competition Judge Competitions Edit Member Details Register Member Transfer Member Send Results</p>	<p>This test has passed</p>

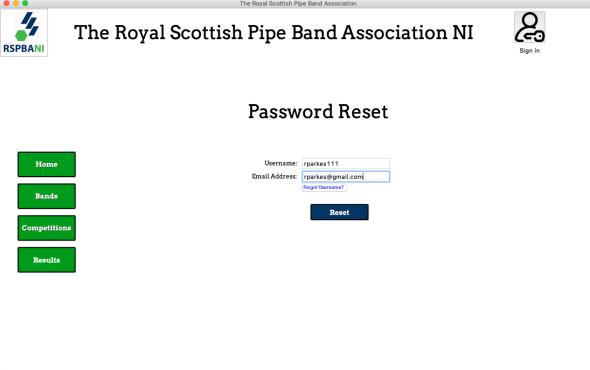
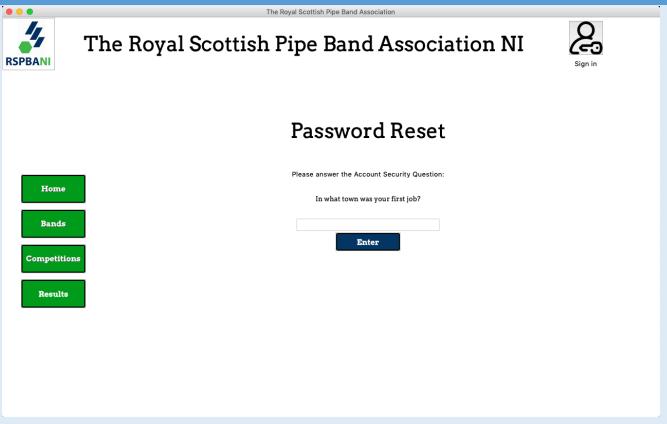
3	 <p>The Royal Scottish Pipe Band Association NI</p> <p>Login</p> <p>Username: DOOfficer295 Password: [REDACTED]</p> <p>Login</p> <p>Home Bands Competitions Results</p>	<p>Outcome was as expected – user has been logged on with correct access level; test has met this criterion.</p>	 <p>The Royal Scottish Pipe Band Association NI</p> <p>The Royal Scottish Pipe Band Association Northern Ireland Branch (RSPBANI) is a governing body to oversee Pipe band competition in Northern Ireland. We represent approximately seventy pipe bands in full membership of the association in Northern Ireland and over three thousand individual members.</p> <p>Home Bands Competitions Results</p> <p>Latest Results</p> <p>Competition Name: Ard And North Dews Championships Competition Date: 22/07/2017 Grade 1: 1st: St Marshal Montgomery 2nd: Vale of Atholl Grade 2A: 1st: Monrovia and District Grade 2B: 1st: McNeiliowns Grade 4A: 1st: No Band Entered Grade 5: 1st: Breaghbhan and District</p> <p>Judge Competitions</p>	<p>This test has passed</p>
4	 <p>The Royal Scottish Pipe Band Association NI</p> <p>Login</p> <p>Username: DOOfficer295 Password: [REDACTED]</p> <p>Login</p> <p>Home Bands Competitions Results</p>	<p>Outcome was as expected – User has been denied entry and user remains on log in screen; test has met this criterion.</p>	 <p>-- ERROR --</p> <p>No account has been found on this system with these credentials. Please make sure you have entered your details correctly!</p> <p>OK</p>	<p>This test has passed</p>
5	 <p>The Royal Scottish Pipe Band Association NI</p> <p>Login</p> <p>Username: DOOfficer295 Password: [REDACTED]</p> <p>Login</p> <p>Home Bands Competitions Results</p>	<p>Outcome was as expected – User has been denied entry and user remains on log in screen; test has met this criterion.</p>	 <p>-- ERROR --</p> <p>No account has been found on this system with these credentials. Please make sure you have entered your details correctly!</p> <p>OK</p>	<p>This test has passed</p>

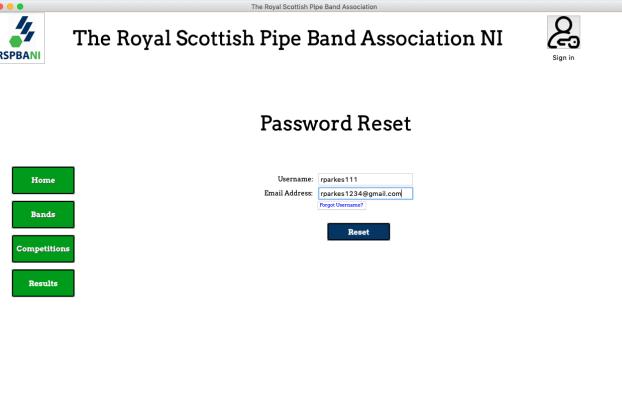
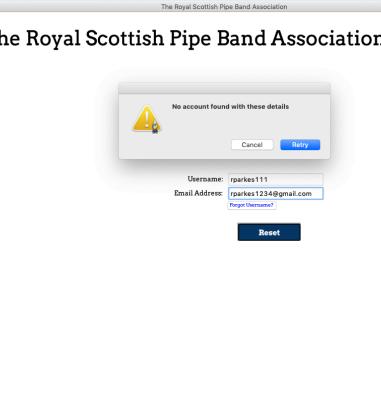
5. All Account holders have the ability to reset their login credentials.

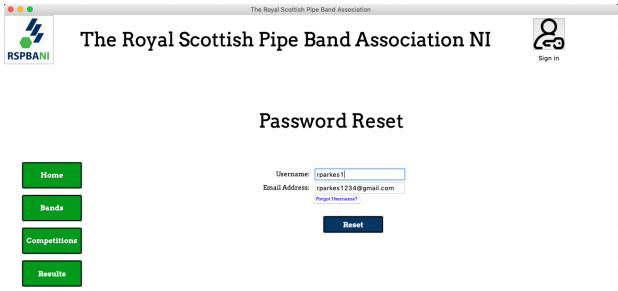
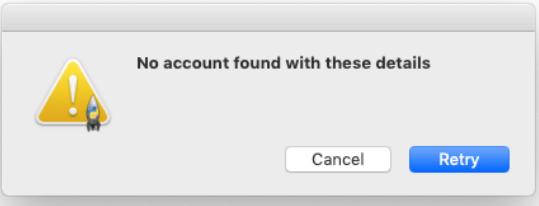
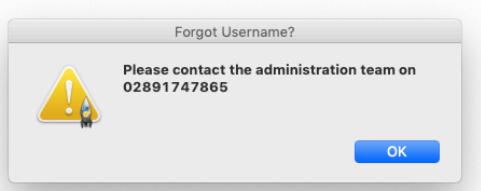
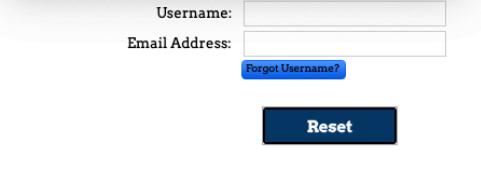
Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Attempting to reset password for Field Marshall Montgomery with correct username and email address	Typical	“rparkes111”, “rparkes@gmail.com”	The user will be then asked for their security question answer on a new page	Functional
2	Attempting to reset password for Field Marshall Montgomery with incorrect username	invalid	“rparkes1”, “rparkes@gmail.com”	An error message will appear indicating to the user that their username or email address does not match. Username and password fields will clear	Functional
3	Attempting to reset password for Field Marshall Montgomery with incorrect email address	invalid	“rparkes111”, “rparkes1234@gmail.com”	An error message will appear indicating to the user that their username or email address does not match. Username and password fields will clear	Functional
4	Attempting to reset password for Field Marshall Montgomery with incorrect email address and username	invalid	“rparkes1”, “rparkes1234@gmail.com”	An error message will appear indicating to the user that their username or email address does not match. Username and password fields will clear	Functional
5	Forgot username and password. User has clicked “forgot password” and then pressed “forgot username” button on next screen provided.	Typical	N/A – button press	A message presented to user explaining that they must contact an administrator on the number given.	Functional

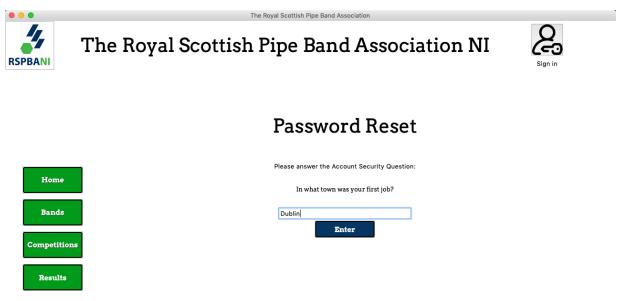
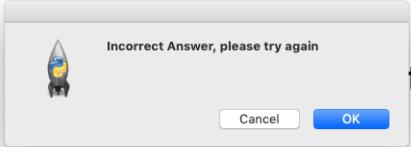
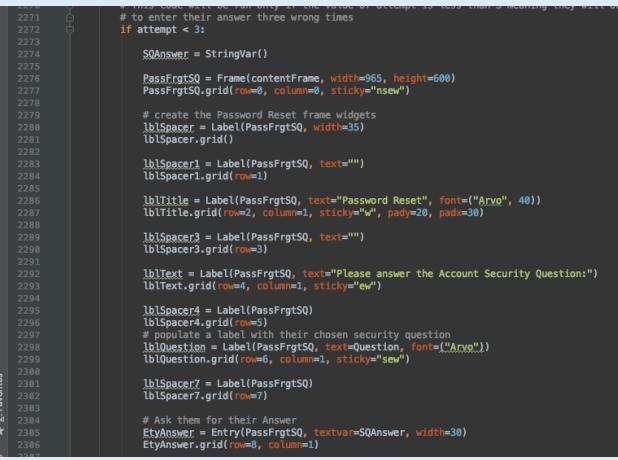
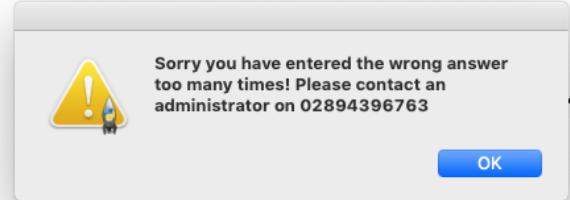
6	Attempting to reset password, entering security question after entering matching username and password	Invalid	“Dublin”	An error message will appear indicating to the user that their security question is incorrect. Answer field will clear	Functional
7	Attempting to reset password, entering security question after entering matching username and password. The user has entered their security question wrong three times.	Invalid	“Dublin” “dublin” “Belfast”	An error message will appear on the first two occasions indicating to the user that their security question is incorrect. Answer field will clear. On the third wrong occasion, the user will be prompted with another error message telling them they have tried incorrectly too many times and to contact an administrator.	Logical
8	Attempting to reset password - entering security question after entering matching username and password	Typical	“London”	The user will be then asked to enter their new password once they have been able to identify themselves.	Functional
9	Attempting to reset password – entering new password once successfully matching security question. Both passwords not meeting validation as there is no uppercase letter.	Invalid	“password123”, “password123”,	An error message will appear indicating to the user that their password must contain at least one uppercase character. User will remain on change password page.	Logical
10	Attempting to reset password – entering new password once successfully matching security question. Both passwords not meeting validation as they are shorter than 8 characters.	Invalid	“Pass123”, “Pass123”	An error message will appear indicating to the user that their password must be at least 8 characters in length. User will remain on change password page.	Logical
11	Attempting to reset password – entering new password once successfully matching security	Invalid	“P@ssWord”, “P@ssWord”	An error message will appear indicating to the user that their password must contain	Logical

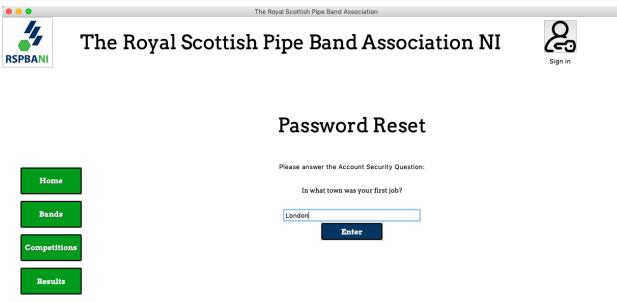
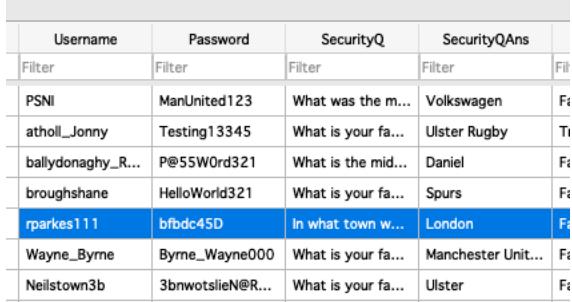
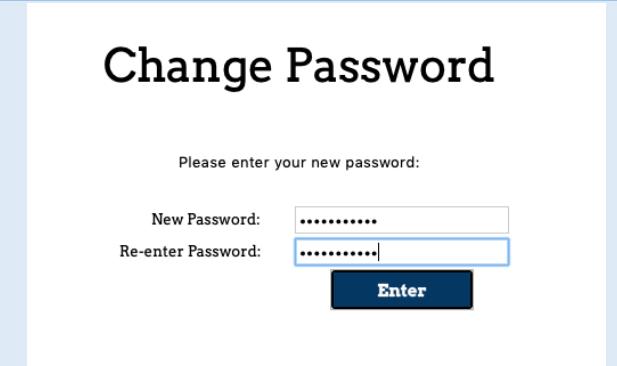
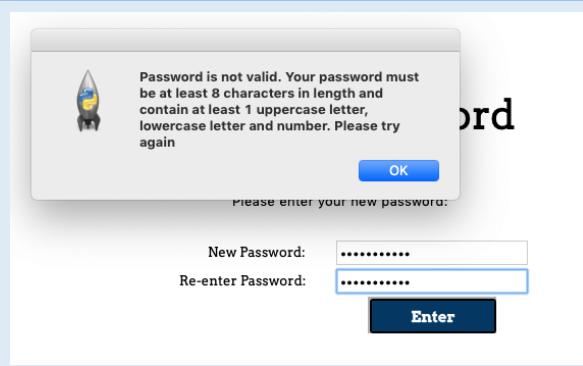
	question. Both passwords not meeting validation as they don't contain a number			more than one number. User will remain on change password page.	
12	Attempting to reset password – entering new password once successfully matching security question. Password changed and is eight characters in length	Extreme	"bfbdc45D", "bfbdc45D"	A message to user indicating that the user's password has been changed. User brought to the Login page.	Logical
13	Attempting to reset password – entering new password once successfully matching security question. Password fields do not match.	Invalid	"Password123", "Password321"	An error message to the user indicating to the user that the passwords they have entered do not match. User will remain on change password page.	Functional

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments
1		As expected.		This test has passed.

2	 <p>The Royal Scottish Pipe Band Association NI</p> <p>Sign in</p> <p>Password Reset</p> <p>Username: rparkes111 Email Address: rparkes1234@gmail.com Forgot Username?</p> <p>Reset</p> <p>Home Bands Competitions Results</p>	As expected.	 <p>No account found with these details</p> <p>Cancel Retry</p> <p>Username: rparkes111 Email Address: rparkes1234@gmail.com Forgot Username?</p> <p>Reset</p>	This test has passed.
3		As expected.		

4	 <p>As expected.</p>	 	This test has passed.
5	N/A	 	This test has passed

6	 <p>The Royal Scottish Pipe Band Association NI</p> <h3>Password Reset</h3> <p>Please answer the Account Security Question:</p> <p>In what town was your first job?</p> <input type="text" value="Dublin"/> Enter	As expected.	 <p>Incorrect Answer, please try again</p> <p>Please answer the Account Security Question:</p> <p>In what town was your first job?</p> <input type="text" value="Dublin"/> Enter	This test has passed.
7	 <pre> 2271 # This code will be run only if the value of attempt is less than 3 2272 # to enter their answer three wrong times 2273 2274 if attempt < 3: 2275 2276 \$QAnswer = StringVar() 2277 2278 PassFrgtSQ = Frame(contentFrame, width=965, height=600) 2279 PassFrgtSQ.grid(row=0, column=0, sticky="nsew") 2280 2281 lblSpacer = Label(PassFrgtSQ, width=35) 2282 lblSpacer.grid() 2283 2284 lblSpacer1 = Label(PassFrgtSQ, text="") 2285 lblSpacer1.grid(row=1) 2286 2287 lblTitle = Label(PassFrgtSQ, text="Password Reset", font=("Arvo", 40)) 2288 lblTitle.grid(row=2, column=1, sticky="w", pady=20, padx=30) 2289 2290 lblSpacer2 = Label(PassFrgtSQ, text="") 2291 lblSpacer2.grid(row=3) 2292 2293 lblText = Label(PassFrgtSQ, text="Please answer the Account Security Question:") 2294 lblText.grid(row=4, column=1, sticky="ew") 2295 2296 lblSpacer4 = Label(PassFrgtSQ) 2297 lblSpacer4.grid(row=5) 2298 2299 # populate a label with their chosen security question 2300 lblQuestion = Label(PassFrgtSQ, text="Question", font=("Arvo")) 2301 lblQuestion.grid(row=6, column=1, sticky="sew") 2302 2303 lblSpacer7 = Label(PassFrgtSQ) 2304 lblSpacer7.grid(row=7) 2305 2306 # Ask them for their Answer 2307 EtyAnswer = Entry(PassFrgtSQ, textvariable=\$QAnswer, width=30) 2308 EtyAnswer.grid(row=8, column=1) </pre>	As expected	 <p>Sorry you have entered the wrong answer too many times! Please contact an administrator on 02894396763</p> <p>Please answer the Account Security Question:</p> <p>In what town was your first job?</p> <input type="text" value="Belfast"/> Enter	This test has passed.

		As expected.		This test has passed
8			 <p>This screenshot shows a database table with columns: Username, Password, SecurityQ, and SecurityQAns. The table contains several rows of user data. The last row, which corresponds to the user who reset their password, has 'London' selected in the SecurityQAns dropdown, matching the answer provided in the screenshot above.</p>	
9	 <p>The screenshot shows a 'Change Password' page with fields for 'New Password' and 'Re-enter Password'. A modal dialog box is displayed, stating: 'Password is not valid. Your password must be at least 8 characters in length and contain at least 1 uppercase letter, lowercase letter and number. Please try again'. Below the dialog is the original form.</p>	As expected	 <p>The screenshot shows a 'Change Password' page with fields for 'New Password' and 'Re-enter Password'. A modal dialog box is displayed, stating: 'Password is not valid. Your password must be at least 8 characters in length and contain at least 1 uppercase letter, lowercase letter and number. Please try again'. Below the dialog is the original form.</p>	This test has passed

	<h2>Change Password</h2> <p>Please enter your new password:</p> <p>New Password: <input type="password"/>.....</p> <p>Re-enter Password: <input type="password"/>.....</p> <p>Enter</p>	As expected.	<p>OK</p> <p>Please enter your new password:</p> <p>New Password: <input type="password"/>.....</p> <p>Re-enter Password: <input type="password"/>.....</p> <p>Enter</p>	This test has passed
11	<p>OK</p> <p>Please enter your new password:</p> <p>New Password: <input type="password"/>.....</p> <p>Re-enter Password: <input type="password"/>.....</p> <p>Enter</p>	As expected.	<p>OK</p> <p>Please enter your new password:</p> <p>New Password: <input type="password"/>.....</p> <p>Re-enter Password: <input type="password"/>.....</p> <p>Enter</p>	This test has passed

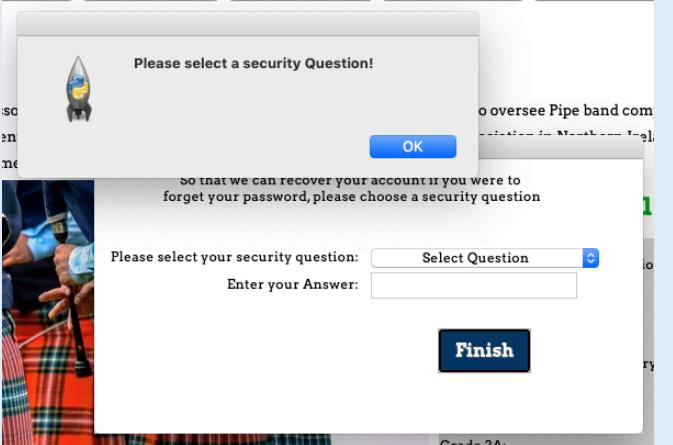
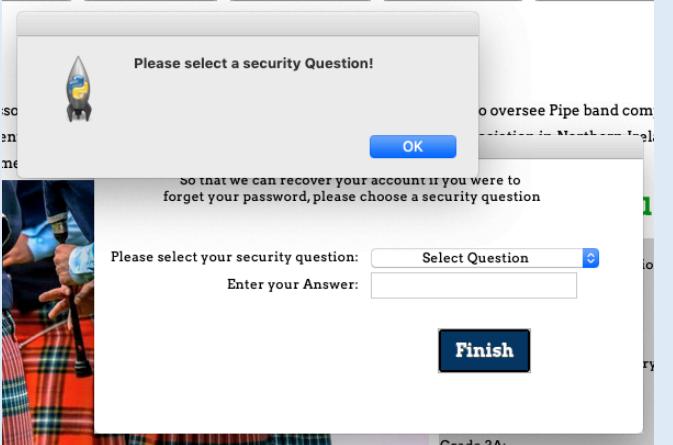
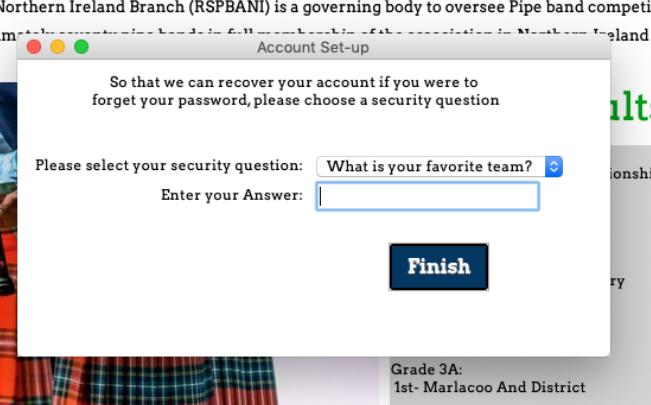
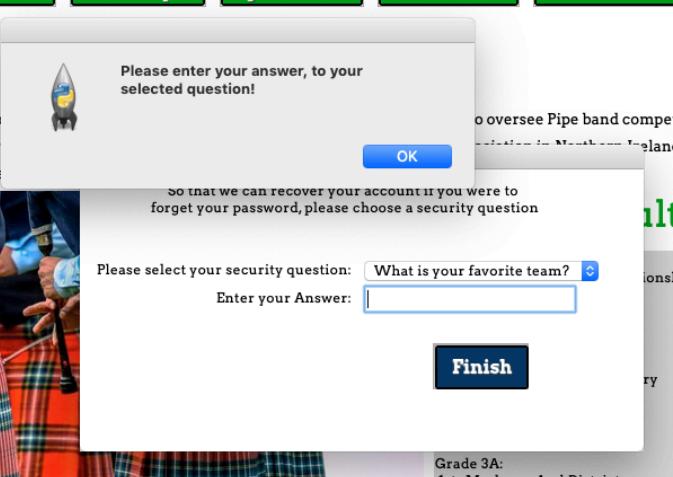
12	<h2>Change Password</h2> <p>Please enter your new password:</p> <p>New Password: Re-enter Password:</p> <p>Enter</p>	As expected.	 <p>Password Successfully Changed</p> <p>OK</p>	This test has passed
13	<h2>Change Password</h2> <p>Please enter your new password:</p> <p>New Password: Re-enter Password:</p> <p>Enter</p>	As expected.	 <p>Passwords do not match, please try again</p> <p>OK</p>	This test has passed

6. Update and set password, security question and answer when accounts are logged in for the first time.

Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Logging into an account which has just been initialised by an admin. (FirstLogIn = True)	Typical	N/A	Pop up screen will appear asking user to update and set their password.	Functional
2	Validation of password	Invalid	N/A	Password will not be accepted unless both match and password contain at least 8 characters long and contains lowercase, uppercase and numbers.	Functional
3	After setting a valid password in the first-time log in. The user must select a security question and provide an answer. None given	Invalid	No security question selected, no answer given	An error message indicating that the user must select a question.	Functional
4	After setting a valid password in the first-time log in. The user must select a security question and provide an answer. Question selected but no answer given.	Invalid	What is your favourite team?, “”	An error message indicating that the user must provide an answer to their chosen question.	Functional
5	After setting a valid password in the first-time log in. The user must select a security question and provide an answer.	Typical	What is your favourite team?, “Northern Ireland”	Updated password saved to database (see objective 5, test 10)	Functional

				Security question and their answer saved to database. FirstLogIn set to True in database	
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Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments																														
1	<table border="1"> <thead> <tr> <th>Username</th><th>Password</th><th>SecurityQ</th><th>SecurityQAns</th><th>FirstLogin</th></tr> </thead> <tbody> <tr> <td>Filter</td><td>Filter</td><td>Filter</td><td>Filter</td><td>Filter</td></tr> <tr> <td>PSNI</td><td>ManUnited123</td><td>What was the m...</td><td>Volkswagen</td><td>False</td></tr> <tr> <td>atholl_Jonny</td><td>Testing13345</td><td>What is your fa...</td><td>Ulster Rugby</td><td>True</td></tr> <tr> <td>ballydonaghy_R...</td><td>P@55WOrd321</td><td>What is the mid...</td><td>Daniel</td><td>True</td></tr> <tr> <td>broughshane</td><td>HelloWorld321</td><td>What is your fa...</td><td>Sours</td><td>False</td></tr> </tbody> </table> <p>FirstLogin is set to True as the band has not been logged in before</p>	Username	Password	SecurityQ	SecurityQAns	FirstLogin	Filter	Filter	Filter	Filter	Filter	PSNI	ManUnited123	What was the m...	Volkswagen	False	atholl_Jonny	Testing13345	What is your fa...	Ulster Rugby	True	ballydonaghy_R...	P@55WOrd321	What is the mid...	Daniel	True	broughshane	HelloWorld321	What is your fa...	Sours	False	As expected.		This has partly passed. I must disable this pop up window so that the user cannot exit out of it without finishing their account set up.
Username	Password	SecurityQ	SecurityQAns	FirstLogin																														
Filter	Filter	Filter	Filter	Filter																														
PSNI	ManUnited123	What was the m...	Volkswagen	False																														
atholl_Jonny	Testing13345	What is your fa...	Ulster Rugby	True																														
ballydonaghy_R...	P@55WOrd321	What is the mid...	Daniel	True																														
broughshane	HelloWorld321	What is your fa...	Sours	False																														
2	This is evidenced in the “Forgot Password” objective (5) and uses the same programming constructs.	As expected.	N/A	I have not shown my test for this as I would have been testing the same code as in the re setting password from objective number 5. Please see Tests 9-13.																														

		As expected.		This test has passed
3	N/A			
4		As expected.		This test has passed.

5

Association Northern Ireland Branch (RSPBANI) is a governing body to oversee Pipe band competition
resent approxim...
al members.

So that we can recover your account if you were to
forget your password, please choose a security question

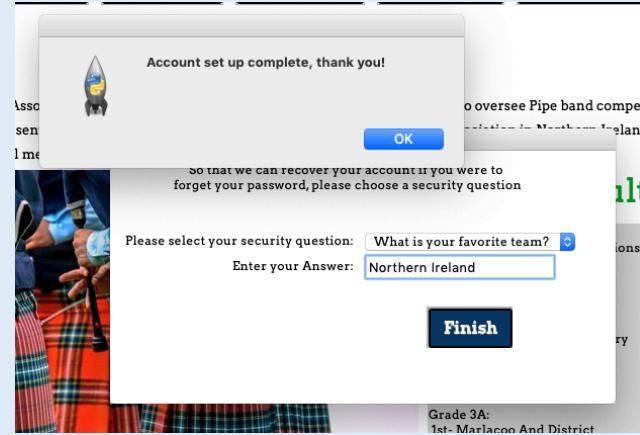
Please select your security question: What is your favorite team? Enter your Answer: Northern Ireland

Finish

Grade 3A:
1st- Marlacoo And District

Grade 3B:
1st- Mc Neilstown

As expected.



This shows the updated security questions being committed to the database and stored against the account logged in

Username	Password	SecurityQ	SecurityQAns	FirstLogin
PSNI	ManUnited123	What was the m...	Volkswagen	False
atholl_Jonny	13345Testing	What is your fa...	Northern Ireland	False

This test has passed

7. Band accounts will have the ability to update the Bands details & their band members details.

Validation routines that exist are the same as the registering band & registering member forms. I therefore will not test the validation – it can be seen in **objective 10**.

Update Band Details:

Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Updating bands details. – Vale of Atholl.	Typical	Band Name = “Vale” Pipe Major’s First Name = “Matthew” Pipe Major’s Second Name = “Hull” EmailAddress = “matthewHull23456@gmail.com”	The user will be presented with a message box to confirm the changes to the band account. BandAccount table will reflect these changes. The respective fields will be updated to contain the test data in replace of the original data. Email sent to the new pipe major’s email address to confirm changes User brought back to home screen.	Functional

Test number

Evidenced test data

Database Structure														
Browse Details														
Edit Programs														
Execute SQL														
Table: BandAccount														
1	PDN	Armagh	Armagh	Armagh	McDerry	McDerry	Johny	Dalhousie	dalhousie12@gmail.com	Magnus F.	10 Bellfield Road	Bellfield	County Armagh	BT7
2	Vale Of Ayr	Down	2	Armagh	Alastair	McCloskey	Jimmy	Flaming	joseph.martin1201@gmail.com	40 Vale Road	Vale Road		County Down	BT1
3	Sullivan	Armagh	4B	Armagh	McCloskey	AAK-McCloskey	Alastair	McCloskey	AAK-McCloskey12@gmail.com	The Mount	13 Garvaghdown...	Oranmore	County Armagh	BT1
4	Brighouse And District	Armagh	4A	Armagh	David	McGinn	David	McGinn	mcginn.martin12@gmail.com	Broughshane	12 Broughshane...	Broughshane	County Armagh	BT1
5	East Tyrone	Armagh	1	Armagh	Patricia	McGinn	Patricia	McGinn	mcginn.martin12@gmail.com	Lisnaskeagh Co.	20 Lisnaskeagh...	Lisnaskeagh	County Armagh	BT1
6	Hanover And District	Armagh	3A	Wayne	Byrne	Willymro5413@gmail.com	Mark	Byrne	Willymro5413@gmail.com	Marklow Or...	100 Marklow R...	Portadown	County Armagh	BT1
7	Mc Neilltown	Armagh	3B	Robbie	Bellingham	Rhodri.martin122@gmail.com	Mark	Bellingham	Rhodri.martin122@gmail.com	30 Blackstone ...	Portadown	Portadown	County Armagh	BT1
8	Reaves	Down	2	Armagh	Dunne	ross.martin	ross.martin1201@gmail.com	Reaves Or...	ross.martin1201@gmail.com	2 Ventry Road	Ballymoney	Ballymoney	County Down	BT1
9	Colcullie	Londonderry	2	Mark	Hasson Jr	Hasson Jr	Mark	Colcullie	Hasson.Jr12@gmail.com	Unit 6	10 Northwest B...	Skene Industrial Est...	County Londonderry	BT7
10	Top Star Of The North	Armagh	4B	Armagh	Bellingham	Aldo.graham9543@gmail.com	Top Star	Bellingham	Aldo.graham9543@gmail.com	Top Star	Ballymoney	Ballymoney	County Armagh	BT1
11	Go to: 1												1 - 10 of 10	

Database before.

1

The Royal Scottish Pipe Band Association NI

Edit Band Details

Band Name: Vale Of Ayr

Branch: Down

Grade: 2

Address: 40 Vale Road

Postcode: BT6 8RH

Practice Times: 00:00 Tuesday 8-10pm

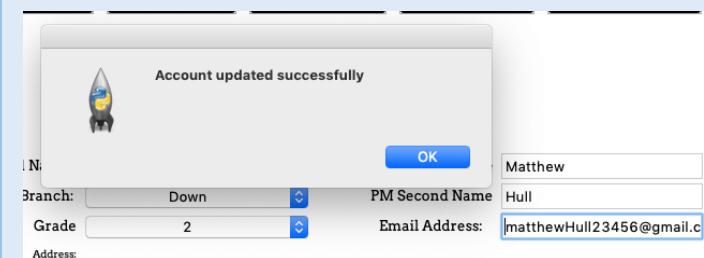
Date: Armat

These details populated in the edit band details page.

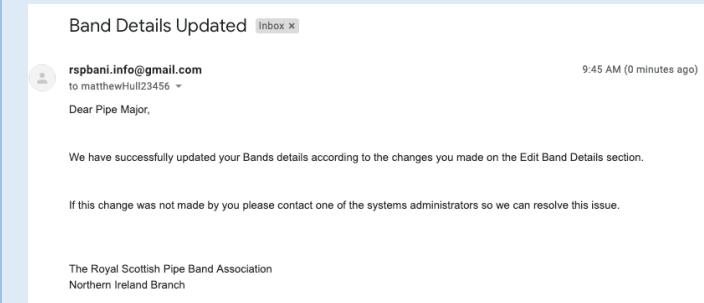
Actual outcome

As expected.

Outcome screenshot



These screenshots show the message box presented to the user and the email received by the pipe major.



Comments

This test has passed.

The Royal Scottish Pipe Band Association NI

Edit Band Details

Band Name: Vale
Branch: Down
Grade: 2
Address:
Hall Name:
Line 1: 40 Vale Road
Line 2:
County: County Down
Postcode: BT76 8UG
Practice Times: Tuesday 8-10pm
Tartan: Arroll

PM First Name: Matthew
PM Second Name: Hull
Email Address: matthew.hull2345@gmail.com
Username: alhull_jony
Password: 12345Testing

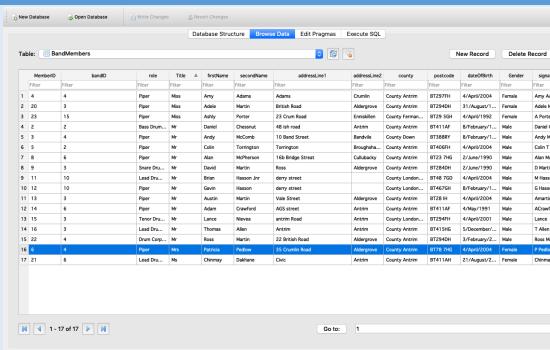
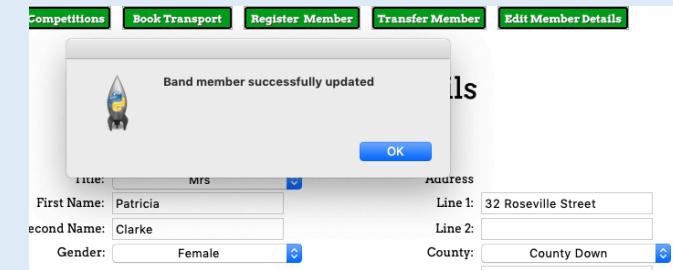
Update Band

Evidence of edited details.

Update Band Member Details:

Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Updating members details. –	Typical	Second Name = "Clarke" AddressLine 1 = "32 Roseville Street" AddressLine2 = "" County = Co.Down	The user will be presented with a message box to confirm the changes to the Member. BandMembers table will reflect these changes. The respective fields will be updated to contain the test data in replace of the original data.	Functional

		<p>Postcode = "BT18 5GH"</p> <p>EmailAddress = "Patricia.Clarke543@gmail.com"</p>	<p>Email sent to pipe major to confirm changes about their member.</p> <p>Member should also receive confirmation of updating.</p> <p>Members name will appear updated in the list box to select a member to edit.</p>	
--	--	---	--	--

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments
1	 <p>Database before</p>	As expected	 <p>This screenshot confirms the updated details have been committed the database.</p>	

The details of the database populated on form.

This screenshot shows the name of the member updated in the edit member details list box.

Evidence form with test data before committing update.

Edit Member Details

Please select the member to edit

Ross Martin
 Patricia Clarke
 Amy Adams
 Andy McComb

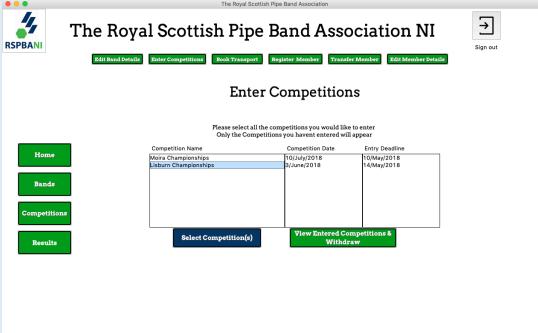
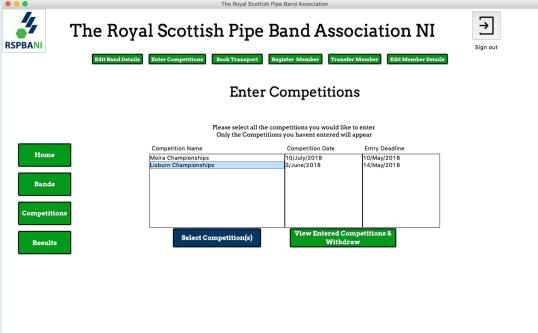
Select Member

8. Bands will have the ability to enter and withdraw from competitions

Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Displaying a list of all competitions the band hasn't entered and still can enter in a list box.	Typical	Logged in as Ravara (BandID is 9) Comps entered are: 2,7,11,12,13 Competitions not entered are: 1,3,14,15 Competitions not drawn are: 14,15	A list of competitions not entered and not drawn. The list should include two competitions for Ravara, these being Moira championships (15) and Lisburn Championships (14)	Logical
2	Attempt to enter a competition with no competitions selected	Invalid	None	An error message telling the user to select one or more competitions to be able to enter	Functional
3	Selecting one competition to enter	Typical	Lisburn Championships	An on-screen message telling user that they have successfully entered the competition(s) and they will receive a confirmation via email. Email received to pipe majors email address confirming entry.	Functional
4	Selecting multiple competitions to enter	Typical	Lisburn Championships & Moira Championships	An on-screen message telling user that they have successfully entered the competition(s) and they will receive a confirmation via email. Email received to pipe majors email address confirming entry for each competition.	Functional

5	Selecting a competition to withdraw from which has already been drawn	Typical	Ards and North Down Championships	A confirmation message asking if they want to withdraw. On yes button, an error message presented to user stating that the competition cannot be withdrawn from as the draw has already taken place. On no press user returned to withdraw page.	Functional
6	Selecting a competition to withdraw from which hasn't been drawn	Typical	Moira Championships	A confirmation message asking if they want to withdraw. On yes button, a message to confirm withdraw from competition. Email sent to confirm. Moira is removed from list box.	Functional

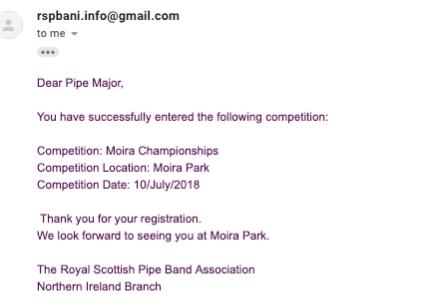
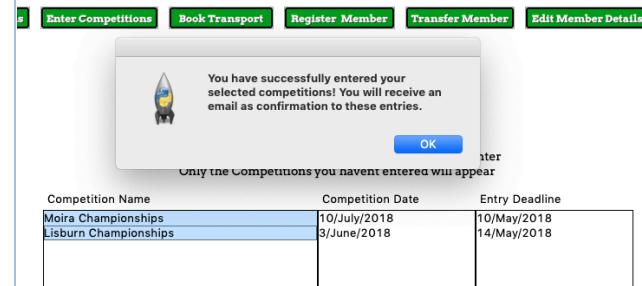
Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments
1	<p>Table: Competitions</p> <p>New Record Delete Record</p> <p>Table: BandsEntered</p> <p>Filter Filter Filter Filter Filter Filter</p>	As expected.		This test has passed

2	N/A	As expected.		<p>Competitions Book Transport Register Member Transfer Member Edit Member</p> <p>Please select one or more competitions which you would like to enter</p> <p>OK</p> <p>Only the Competitions you havent entered will appear</p> <table border="1"> <thead> <tr> <th>Competition Name</th> <th>Competition Date</th> <th>Entry Deadline</th> </tr> </thead> <tbody> <tr> <td>More Championships</td> <td>10/July/2018</td> <td>10/May/2018</td> </tr> <tr> <td>Lisburn Championships</td> <td>3/June/2018</td> <td>14/May/2018</td> </tr> </tbody> </table>	Competition Name	Competition Date	Entry Deadline	More Championships	10/July/2018	10/May/2018	Lisburn Championships	3/June/2018	14/May/2018	This test has passed
Competition Name	Competition Date	Entry Deadline												
More Championships	10/July/2018	10/May/2018												
Lisburn Championships	3/June/2018	14/May/2018												
3		As expected		<p>Competitions Book Transport Register Member Transfer Member Edit Member</p> <p>rspbani.info@gmail.com to me</p> <p>Dear Pipe Major,</p> <p>You have successfully entered the following competition:</p> <p>Competition: Lisburn Championships Competition Location: Lisburn Manse Competition Date: 3/June/2018</p> <p>Thank you for your registration. We look forward to seeing you at Lisburn Manse.</p> <p>The Royal Scottish Pipe Band Association Northern Ireland Branch</p> <p>You have successfully entered your selected competitions! You will receive an email as confirmation to these entries.</p> <p>OK</p> <p>Only the Competitions you havent entered will appear</p> <table border="1"> <thead> <tr> <th>Competition Name</th> <th>Competition Date</th> <th>Entry Deadline</th> </tr> </thead> <tbody> <tr> <td>More Championships</td> <td>10/July/2018</td> <td>10/May/2018</td> </tr> <tr> <td>Lisburn Championships</td> <td>3/June/2018</td> <td>14/May/2018</td> </tr> </tbody> </table>	Competition Name	Competition Date	Entry Deadline	More Championships	10/July/2018	10/May/2018	Lisburn Championships	3/June/2018	14/May/2018	This test has passed
Competition Name	Competition Date	Entry Deadline												
More Championships	10/July/2018	10/May/2018												
Lisburn Championships	3/June/2018	14/May/2018												

4

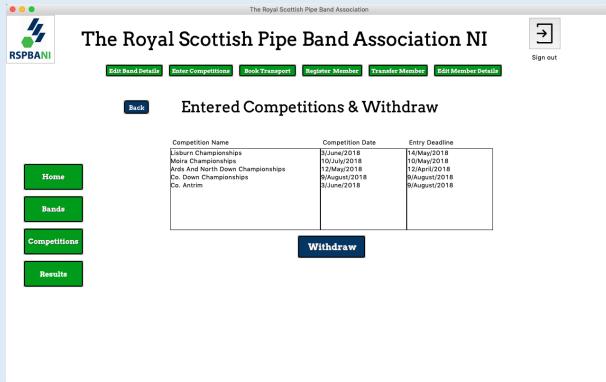
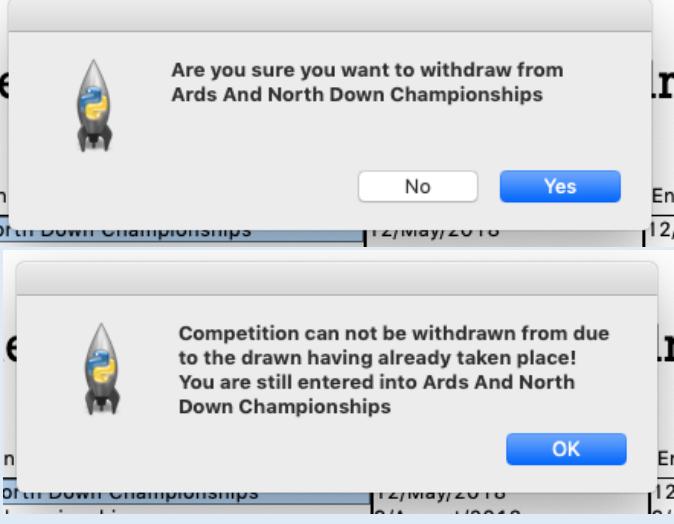
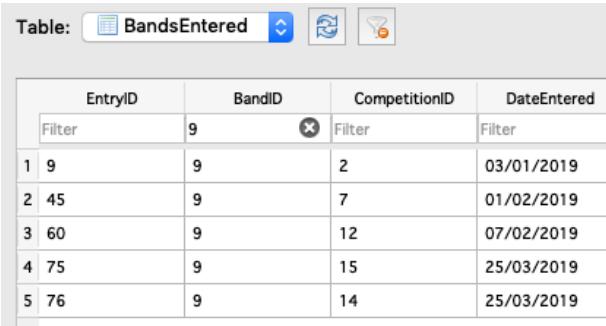
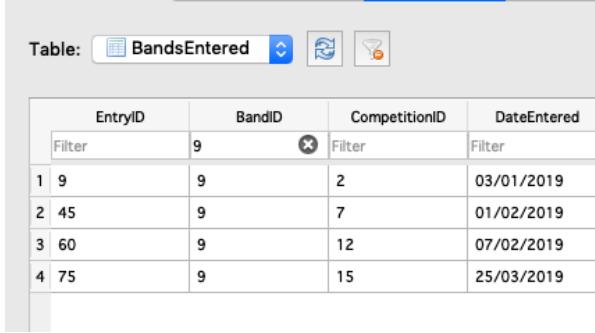
The screenshot shows the 'Enter Competitions' page of the RSPBANI website. At the top, there's a navigation bar with links for Home, Bands, Competitions, and Results. Below the navigation is a main content area titled 'Enter Competitions'. It contains a table with three columns: 'Competition Name', 'Competition Date', and 'Entry Deadline'. Two rows are visible: 'Moira Championships' (Date: 10/July/2018, Deadline: 10/May/2018) and 'Lisburn Championships' (Date: 3/June/2018, Deadline: 14/May/2018). Below the table are two buttons: 'Select Competition(s)' and 'View Entered Competitions & Withdraw'.

As expected.

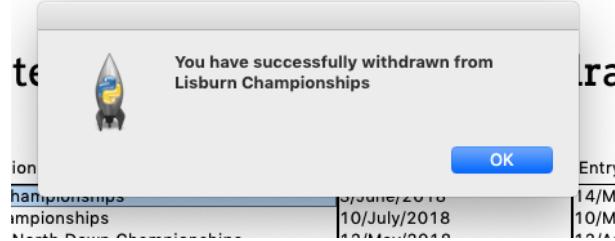


This test has passed

The screenshots here show the emails received by the pipe major on entering competitions

5	 <p>Entered Competitions & Withdraw</p> <p>Competition Name Competition Date Entry Deadline</p> <ul style="list-style-type: none"> Ulster Championships 10/Jan/2019 14/Nov/2018 Mayo Championships 10/Jan/2019 11/Mar/2018 Ards And North Down Championships 12/Mar/2019 12/Apr/2018 Co. Down Championships 10/Apr/2019 16/May/2018 Co. Antrim 31/May/2019 01/August/2018 <p>Withdraw</p>	As expected	 <p>Are you sure you want to withdraw from Ards And North Down Championships</p> <p>No Yes</p> <p>Competition can not be withdrawn from due to the drawn having already taken place! You are still entered into Ards And North Down Championships</p> <p>OK</p>	This test has passed																																												
6	 <p>Table: BandsEntered</p> <table border="1"> <thead> <tr> <th>EntryID</th> <th>BandID</th> <th>CompetitionID</th> <th>DateEntered</th> </tr> </thead> <tbody> <tr> <td>1 9</td> <td>9</td> <td>2</td> <td>03/01/2019</td> </tr> <tr> <td>2 45</td> <td>9</td> <td>7</td> <td>01/02/2019</td> </tr> <tr> <td>3 60</td> <td>9</td> <td>12</td> <td>07/02/2019</td> </tr> <tr> <td>4 75</td> <td>9</td> <td>15</td> <td>25/03/2019</td> </tr> <tr> <td>5 76</td> <td>9</td> <td>14</td> <td>25/03/2019</td> </tr> </tbody> </table>	EntryID	BandID	CompetitionID	DateEntered	1 9	9	2	03/01/2019	2 45	9	7	01/02/2019	3 60	9	12	07/02/2019	4 75	9	15	25/03/2019	5 76	9	14	25/03/2019	As expected.	 <p>Table: BandsEntered</p> <table border="1"> <thead> <tr> <th>EntryID</th> <th>BandID</th> <th>CompetitionID</th> <th>DateEntered</th> </tr> </thead> <tbody> <tr> <td>1 9</td> <td>9</td> <td>2</td> <td>03/01/2019</td> </tr> <tr> <td>2 45</td> <td>9</td> <td>7</td> <td>01/02/2019</td> </tr> <tr> <td>3 60</td> <td>9</td> <td>12</td> <td>07/02/2019</td> </tr> <tr> <td>4 75</td> <td>9</td> <td>15</td> <td>25/03/2019</td> </tr> </tbody> </table> <p>This screenshot above show that the band that has entered does not appear in this table anymore so can not be drawn.</p>	EntryID	BandID	CompetitionID	DateEntered	1 9	9	2	03/01/2019	2 45	9	7	01/02/2019	3 60	9	12	07/02/2019	4 75	9	15	25/03/2019	This test has passed
EntryID	BandID	CompetitionID	DateEntered																																													
1 9	9	2	03/01/2019																																													
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4 75	9	15	25/03/2019																																													

[Competitions](#) [Book Transport](#) [Register Member](#) [Transfer Member](#)



Withdrawal confirmation [Inbox](#) [x](#)



[rspbani.info@gmail.com](#)

[to me](#) [▼](#)

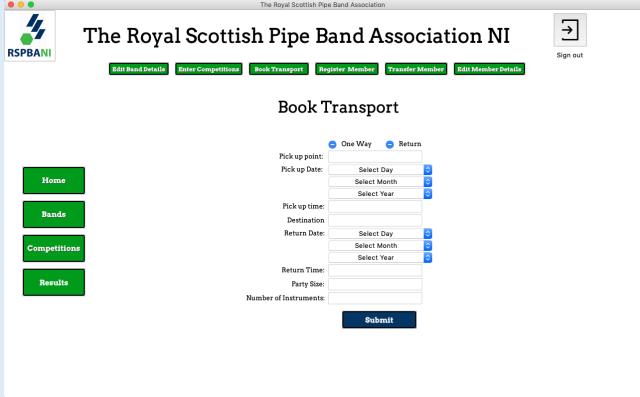
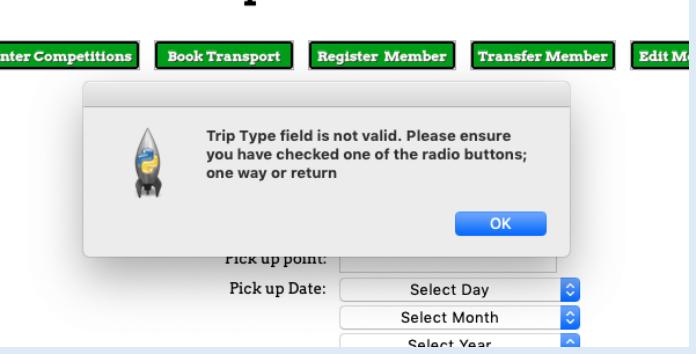
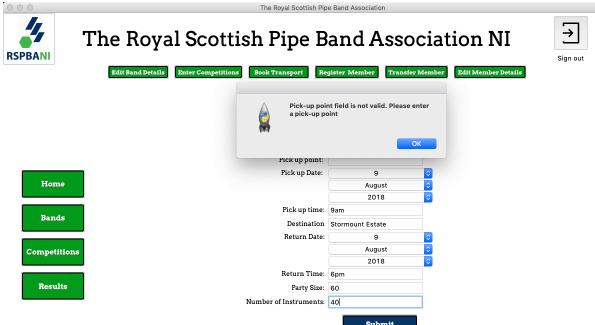
Dear Pipe Major,

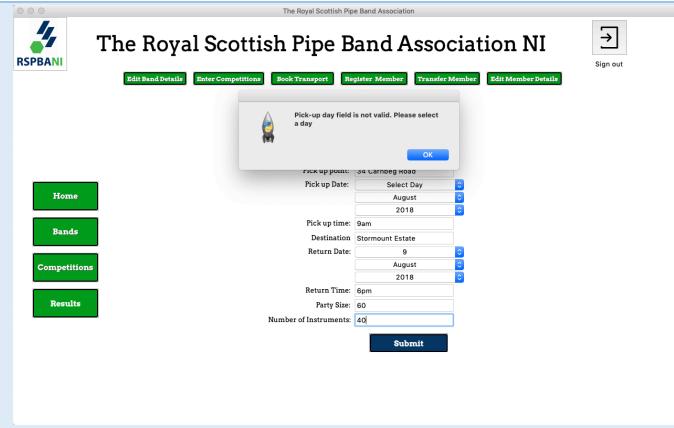
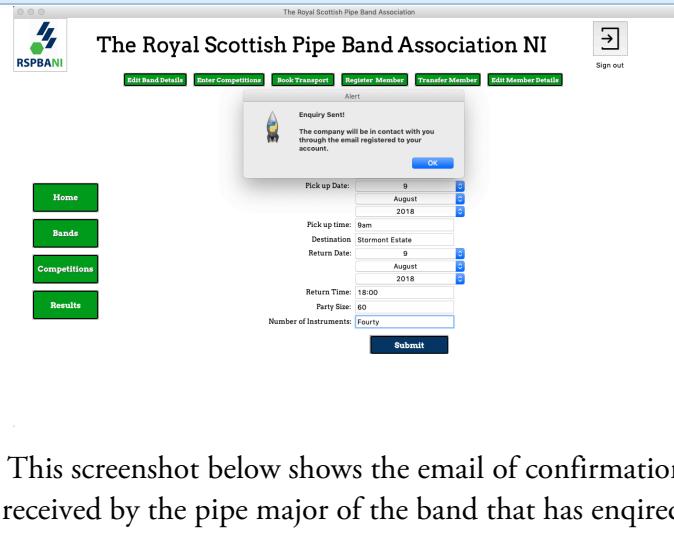
This email is of confirmation of your withdrawal from Lisburn Championships on 3/June/2018.
If you wish to re-enter this competition, the entry deadline is 14/May/2018.

The Royal Scottish Pipe Band Association
Northern Ireland Branch

9. Bands have the option of booking transport.

Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Attempt to book transport without completing the given form. / Validation check for the trip type radio buttons.	Invalid	None	An error message will appear. It will be thrown on the trip type validation if form is empty. Message will say trip type is invalid. User to remain on Book Transport page	Functional
2	Presence check validation for: Pick-up point, pick-up time, Destination, return time, party size and number of instruments.	Invalid	Blank pick-up point field	An error message indicating to the user that the pick-up field is invalid and requesting to enter a pick-up point. User returned to same form.	Functional
3	Date validation check for: Pick-up Day, Pick-up Month, Pick-up Year, Return Day, Return Month, Return Year.	Invalid	Blank pick-up day	An error message indicating to the user that the pick-up day is invalid and requesting to enter a pick-up day. User returned to same form.	Functional
4	Submitting the completed enquiry	Typical	One Way, “34 Carnbeg Road” 9 August 2018, “9am” “Stormont Estate” 9 August 2018, “18:00” “60” “Fourty”	User will receive a message indicating that their enquiry has been sent. A word document is generated with details provided and is attached to an email and sent to the bus company Pipe Major will also receive a copy for his/her reference	

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments
1	 <p>The Royal Scottish Pipe Band Association NI</p> <p>Book Transport</p> <p>One Way Return</p> <p>Pick up point:</p> <p>Pick up Date: Select Day Select Month Select Year</p> <p>Pick-up time:</p> <p>Destination:</p> <p>Return Date: Select Day Select Month Select Year</p> <p>Return Time:</p> <p>Party Size:</p> <p>Number of Instruments:</p> <p>Submit</p>	As expected	 <p>Trip Type field is not valid. Please ensure you have checked one of the radio buttons; one way or return</p> <p>OK</p>	
2	N/A	As expected	 <p>Pick-up point field is not valid. Please enter a pick-up point</p> <p>OK</p> <p>Pick up point:</p> <p>Pick up Date: 9 August 2018</p> <p>Pick up time: 8am</p> <p>Destination: Stormont Estate</p> <p>Return Date: 9 August 2018</p> <p>Return Time: 6pm</p> <p>Party Size: 60</p> <p>Number of Instruments: 40</p> <p>Submit</p>	<p>The function for this presence check is used throughout the stated fields in the test description and works for all fields.</p>

3	N/A			<p>The function for this date check is used throughout the stated fields in the test description and works for all fields.</p>
4	N/A		 <p>This screenshot below shows the email of confirmation received by the pipe major of the band that has enquired.</p>	

 rspbani.booktransport@gmail.com
[to me](#)

9:35 PM (3 minutes ago)   

Dear Pipe Major,
Please find attached a copy of your recent enquiry which has been sent to the bus company. They will be directly in contact with you in the near future to confirm this itinerary.
The Royal Scottish Pipe Band Association
Northern Ireland Branch



This screenshot below shows the email received by the bus company along with enquiry attached.

Transport Enquiry - Ravara [Inbox x](#)



rspbani.booktransport@gmail.com

to me ▾

🕒 9:36 PM (0 minutes ago)

Dear Sirs,

Please see attached enquiry for Ravara who wish to make travel arrangements with you. Please contact the band directly on the email address provided.

The Royal Scottish Pipe Band Association
Northern Ireland Branch



◀ Reply ⏷ Forward



RSPBANI Booking Enquiry

Ravara would like to book transport with you. Please find their booking requirements below:

Trip Type: One Way

Pick-up Location: 32 Carnbeg Road

Pick-up Date: 9 / August / 2018

Pick-up Departure Time: 9am

Destination: Stormont Estate

Return Date: 9 / August / 2018

Return Departure Time: 18:00

Party Size: 60

Number Instruments: Fourty

Pipe Major's Email Address: ross.martin1201@gmail.com

10. Bands have the ability to register new players and transfer existing members.

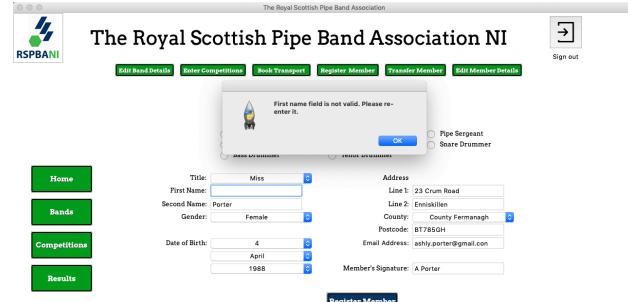
I will only show testing extreme data when registering new users or updating users below as the validation used is the same throughout all these features for each specific field.

Register new band members: - For all below I will be registering new members to Broughshane.

Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Attempt to register a new member without completing registration form. This is also my validation test	Invalid	None	An error message will appear. It will be thrown on the role validation if form is empty. Message will say Role is invalid. User to remain on Register Member page.	Functional
2	Alphabetic check validation for: first name, second name and Member's signature fields.	Invalid	Blank first name field	An error message indicating to the user that the first name field is invalid and requesting to User returned to same form.	Functional
3	Droplist check validation for: Title, Gender, Day of birth, Month of birth, Year of birth, County	Invalid	No selected title.	An error message indicating to the user that they haven't selected a title. User returned to same form.	Functional
4	Address Line One field validation; - empty	Invalid	Blank Address line one	An error message presented to user telling them that their address line one is invalid. It must include house number and road. User returned to same form.	Functional

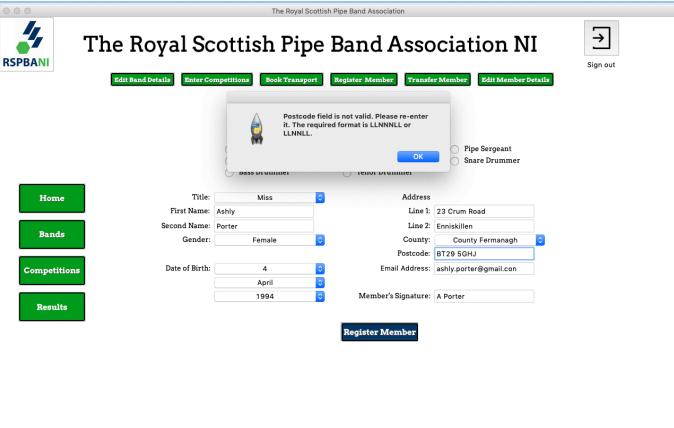
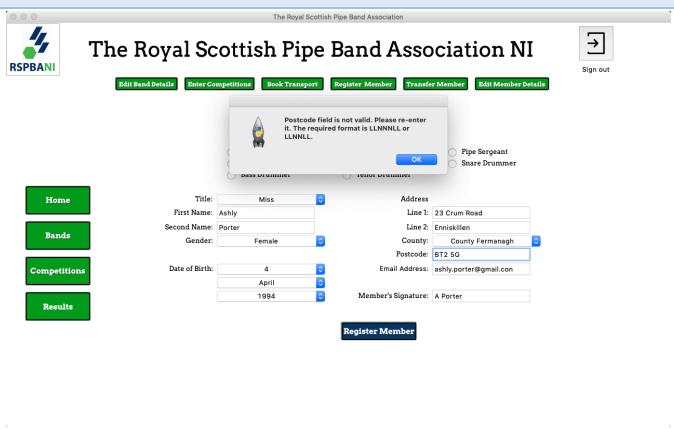
5	Address line one validation testing where only the road is given and not the house number.	Invalid	“Crum Road”	An error message presented to user telling them that their address line one is invalid. It must include house number and road. User returned to same form.	Functional
6	Address line one validation testing where they have only provided a number and not the name of the road.	Invalid	“23”	An error message presented to user telling them that their address line one is invalid. It must include house number and road. User returned to same form.	Functional
7	Postcode validation – Postcode longer than 7 characters in length.	Invalid	“BT29 5GHJ”	An error message presented to the user telling them that the postcode they have entered is not valid. The required format is LLNN NLL. User returned to same form.	Functional
8	Postcode validation – Postcode less than 6 characters	Invalid	“BT2 5G”	An error message presented to the user telling them that the postcode they have entered is not valid. The required format is LLNN NLL. User returned to same form.	Functional
9	Postcode validation – Postcode containing only three letters.	Invalid	“T29 5GH”	An error message presented to the user telling them that the postcode they have entered is not valid. The required format is LLNN NLL. User returned to same form.	Functional
10	Postcode validation – not in correct format as numbers come before letters in the first part of the postcode.	Invalid	“29BT 5GH”	An error message presented to the user telling them that the postcode they have entered is not valid. The required format is LLNN NLL.	Functional

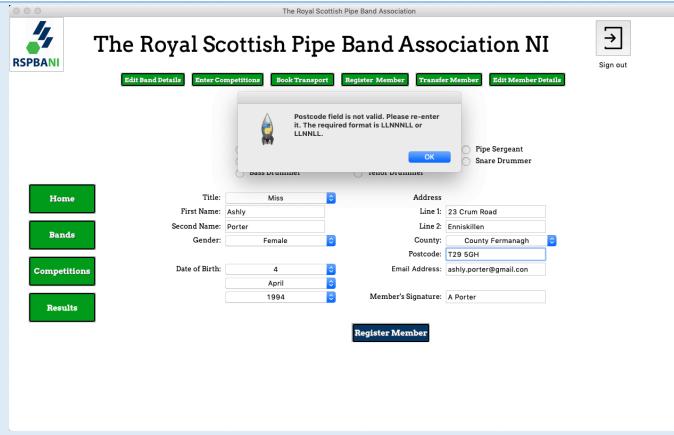
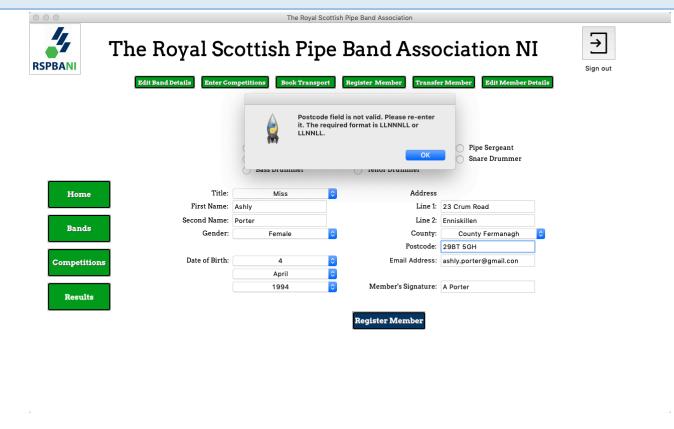
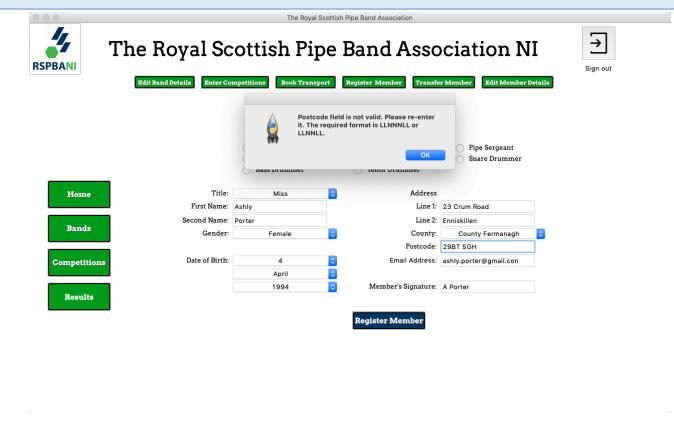
				User returned to same form.	
11	Postcode Validation – Postcode including a space between the two parts. Email Address is invalid so that program throws an error message after it checks that the email is valid.	Typical	“BT29 5GH”	Program will check the rest of the fields in the form. If the rest of the fields are valid then member will be registered. If not, the program will produce an error message at the invalid field. User returned to same form.	Functional
12	Postcode Validation – Postcode not including the space between the two parts. Email Address is invalid so that program throws an error message after it checks that the email is valid.	Typical	“BT295GH”	Program will check the rest of the fields in the form. If the rest of the fields are valid then member will be registered. If not, the program will produce an error message at the invalid field.	Functional
13	Email Validation – no “@” symbol in email address field	Invalid	“ashly.portergmail.com”	An error message indicating that the email address the user has entered is not valid.	Functional
14	Email Validation – no “.” symbol after the “@” in the email address field	Invalid	“ashly.porter@gmailcom”	An error message indicating that the email address the user has entered is not valid. User returned to same form.	Functional
15	Email Validation – entering a valid email address. Members signature is not valid	Typical	“ashly.porter@gmail.com”	Program will check the last remaining field on the form, Member’s signature, if this is valid then the program will proceed to save details to the database. Program will alert user that members signature is in valid	Functional
16	Registering a user with fully valid fields	Typical	Piper, Miss, “Ashly”, “Porter”, Female, 4, April,	Program will check all validation, which this test will pass. All information will be saved to	Functional

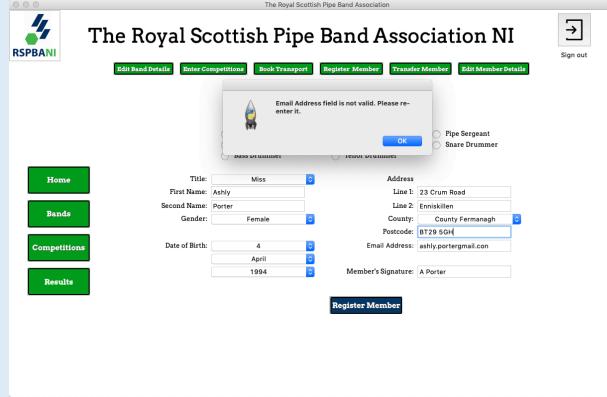
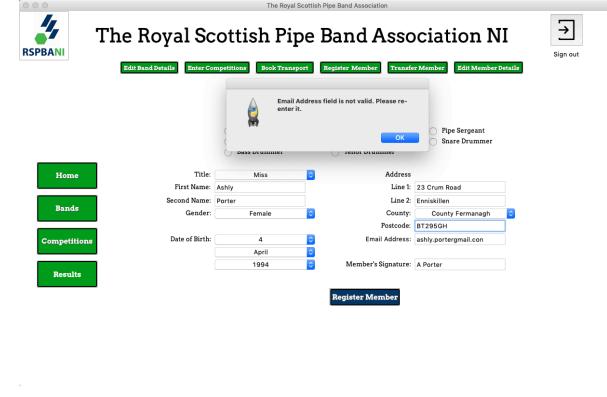
Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments
1		As expected.		This test has passed.
2	N/A	As expected.	 <p>The screenshot shows a registration form for a member. The first name field contains 'Miss' and the last name field contains 'Porter'. A validation error message 'First name field is not valid. Please re-enter it.' is displayed above the last name field. Below the form, there are tabs for Home, Bands, Competitions, and Results. On the right side of the page, there are links for Edit Band Details, Enter Competitions, Book Transport, Register Member, Transfer Member, and Edit Member Details. A sign-out link is also present.</p>	This test has passed.

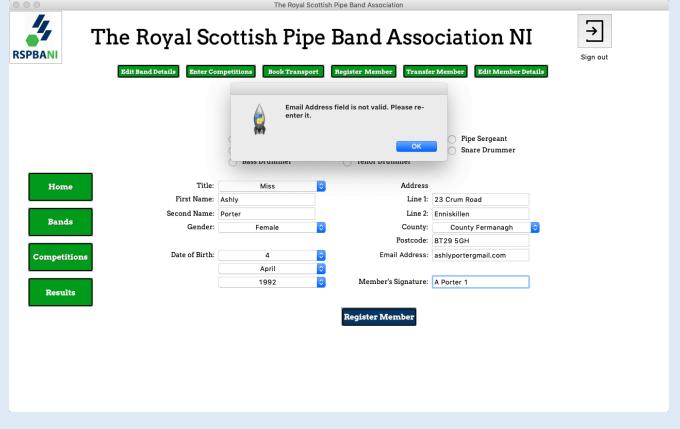
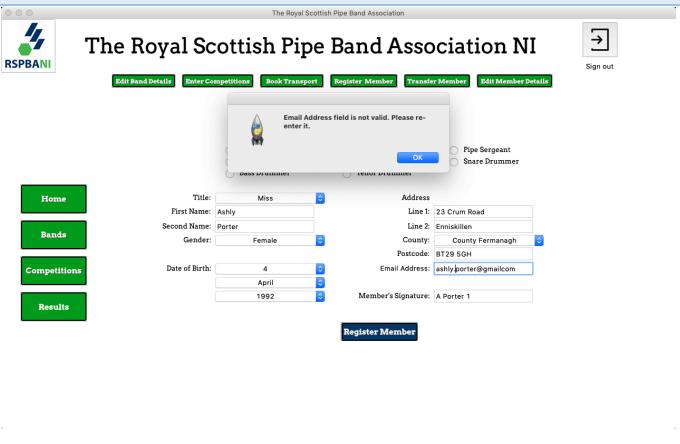
3	N/A	As expected.		This test has passed.
4	N/A	As expected.		This test has passed.

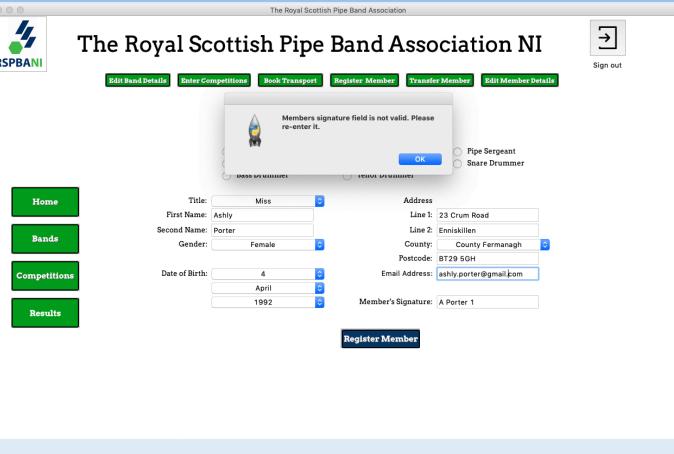
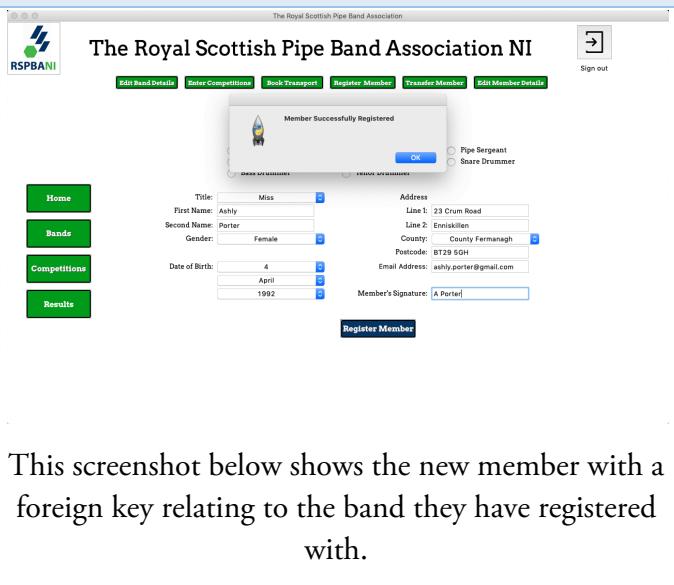
5	N/A	As expected.	<p>The Royal Scottish Pipe Band Association NI</p> <p>Address line 1 field is not valid. Please include your house number and road.</p> <p>OK</p> <p>Pipe Sergeant Share Drummer</p> <p>Home Bands Competitions Results</p> <p>First Name: Ashly Second Name: Porter Gender: Female Title: Miss Date of Birth: 4 April 1988 Address: Line 1: 28 Line 2: Enniskillen County: County Fermanagh Postcode: BT785G0 Email Address: ashly.porter@gmail.com Member's Signature: A Porter</p> <p>Register Member</p>	This test has passed.
6	N/A	As expected.	<p>The Royal Scottish Pipe Band Association NI</p> <p>Address line 1 field is not valid. Please include your house number and road.</p> <p>OK</p> <p>Pipe Sergeant Share Drummer</p> <p>Home Bands Competitions Results</p> <p>First Name: Ashly Second Name: Porter Gender: Female Title: Miss Date of Birth: 4 April 1988 Address: Line 1: 28 Line 2: Enniskillen County: County Fermanagh Postcode: BT785G0 Email Address: ashly.porter@gmail.com Member's Signature: A Porter</p> <p>Register Member</p>	This test has passed.

7	N/A	As expected.		This test has passed.
8	N/A	As expected.		This test has passed.

9	N/A	As expected.	 <p>The screenshot shows the RSPBANI website's member registration page. A success message at the top says "Member registered successfully". Below it, there's a summary of the member's details: First Name: Ashly, Second Name: Porter, Gender: Female, Date of Birth: April 1994. To the right, there's a section for address and contact information, and a checkbox for "I am a member of a band". At the bottom is a "Register Member" button.</p>	<p>The screenshot shows the RSPBANI website's member registration page with an error message in a modal dialog: "Postcode field is not valid. Please re-enter it. The required format is LLNNNN or LLNNLL." The rest of the form fields are visible, including the address and birth date sections, and the "I am a member of a band" checkbox.</p>	This test has passed.
10	N/A	As expected.	 <p>The screenshot shows the RSPBANI website's member registration page. A success message at the top says "Member registered successfully". Below it, there's a summary of the member's details: First Name: Ashly, Second Name: Porter, Gender: Female, Date of Birth: April 1994. To the right, there's a section for address and contact information, and a checkbox for "I am a member of a band". At the bottom is a "Register Member" button.</p>	 <p>The screenshot shows the RSPBANI website's member registration page with an error message in a modal dialog: "Postcode field is not valid. Please re-enter it. The required format is LLNNNN or LLNNLL." The rest of the form fields are visible, including the address and birth date sections, and the "I am a member of a band" checkbox.</p>	This test has passed.

11	N/A	As expected.		This test has passed.
12	N/A	As expected.		This test has passed.

13	N/A	As expected.		This test has passed.
14	N/A	As expected.		This test has passed.

15	N/A	As expected.		This test has passed.
16	N/A	As expected.	 <p>This screenshot below shows the new member with a foreign key relating to the band they have registered with.</p>	This test has passed – user has been saved to database and the Band ID of the band they are registered to.

BandMembers																	
MemberID	Title	Filter	bandID	Filter	branch	Filter	grade	Filter	role	Filter	Title	firstName	secondName	addressLine1	addressLine2	Filter	country
1 2	PONI	Z	2	Armagh	1	Bass Drummer	Mr	Daniel	Cheenut	48 Sh road	Armes	County Armon					
2 12	Colmille	10	Londerry	Z	Piper	Mr	Gavin	Hasson	derry street		County London...						
3 20	Vale Of Atholl	3	Down	Z	Piper	Miss	Addie	Martin	British Road	Aldergrove	County Antrim						
4 21	Ballymena	6	Armagh	48	Lead Drummer	Ms	Ormeay	Dakane	Civic		County Antrim						
5 22	Ballymena	4	Armagh	48	Drum Corporal	Mr	Ross	Martin	22 British Road	Aldergrove	County Antrim						
6 23	Broughshane An...	5	Armagh	48	Piper	Miss	Ashly	Porter	23 Crum Road	Enniskillen	County Fermana...						

This screenshot below shows the email received by the pipe major on registering a new member.

New Member Registered [Inbox](#)  

 [rspbani.info@gmail.com](#)
to me 

Dear Pipe Major,

You are receiving this email to confirm the registration of your new member Ashly Porter.

The newly registered member will also receive an email for confirmation, please check with them to make sure their details are correct - if not please update them through the Edit Member Details Section.

The Royal Scottish Pipe Band Association
Northern Ireland Branch

 [Reply](#)  [Forward](#)

Welcome Ashly [Inbox](#) 

 [rspbani.info@gmail.com](#)
to me 

Dear Ashly Porter,

You are receiving this email to confirm your registration with Broughshane And District.

Please check to make sure your details are correct - if not please let your Pipe Major know.

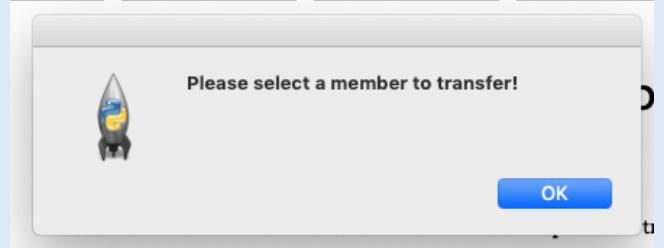
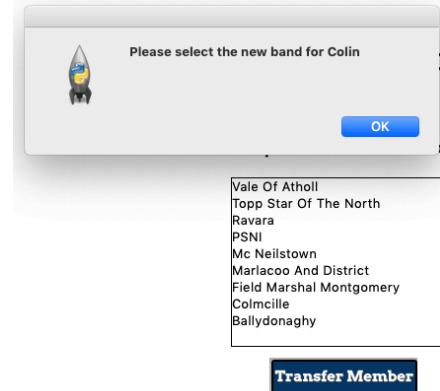
Title: Miss
 First Name: Ashly
 Second Name: Porter
 Address Line One: 23 Crum Road
 Address Line Two: Enniskillen
 County: County Fermanagh
 Postcode: BT29 5GH
 Date of Birth: 4/April/1992
 Gender: Female

The Royal Scottish Pipe Band Association
Northern Ireland Branch

			This screenshot above shows the email received by the new member registered with a band.	
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Transfer existing members:

Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Attempt to transfer a member without selecting a member from the list box.	Invalid	None	An error message telling the user to select a member to transfer.	Functional
2	Selecting Colin Torrington to Transfer from Broughshane and not selecting a new band from the list box provided	Invalid	None	An error message warning user that they haven't selected a band to transfer the member to.	Functional
3	Selecting Colin Torrington to Transfer from Broughshane and then Field Marshal Montgomery.	Valid	Colin Torrington, Field Marshal Montgomery	The list box of bands will have all the bands that are registered minus the band that the user is currently registered to. A confirmation message ensuring the user wants to transfer Colin. They must select yes to carry on with the transfer. An email shall be received by the transferred member to confirm transfer.	Functional

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments
1	N/A	As expected.		This test has passed
2	N/A	As expected.		This test has passed

3

Table: BandMembers  

New Record Delete Record

MemberID	bandID	role	Title	firstName	secondName	ac
Filter	Filter	Filter	Filter	Filter	Filter	Filter
1 4	4	Piper	Miss	Amy	Adams	Adar
2 20	3	Piper	Miss	Adele	Martin	Britis
3 23	15	Piper	Miss	Ashly	Porter	23 C
4 2	2	Bass Drummer	Mr	Daniel	Chessnut	48 is
5 3	4	Piper	Mr	Andy	McComb	10 B
6 5	5	Piper	Mr	Colin	Torrington	Torr
7 8	6	Piper	Mr	Alan	McPherson	16b
8 9	3	Snare Drummer	Mr	David	Martin	Ross
9 11	10	Lead Drummer	Mr	Brian	Hasson Jnr	dern

As expected.

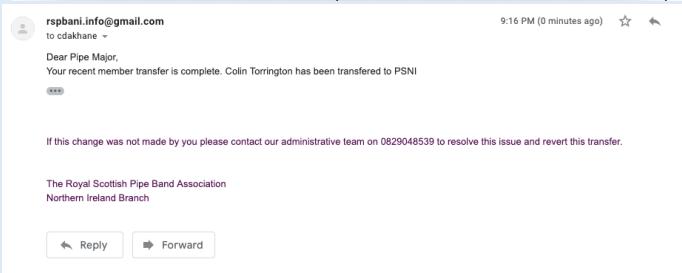
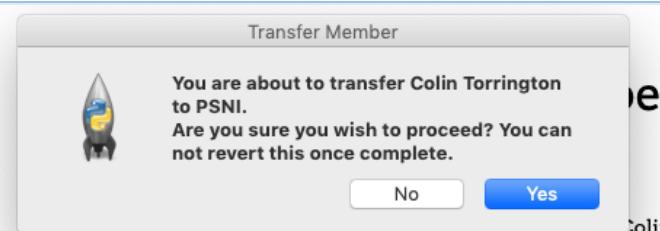


Table: BandMembers  

New Record Delete Record

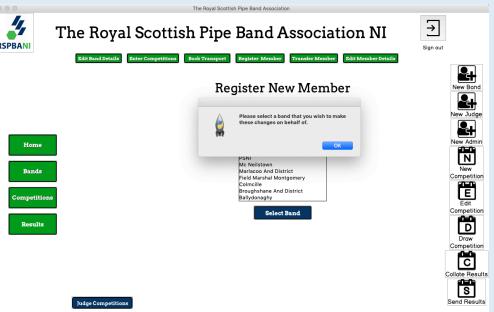
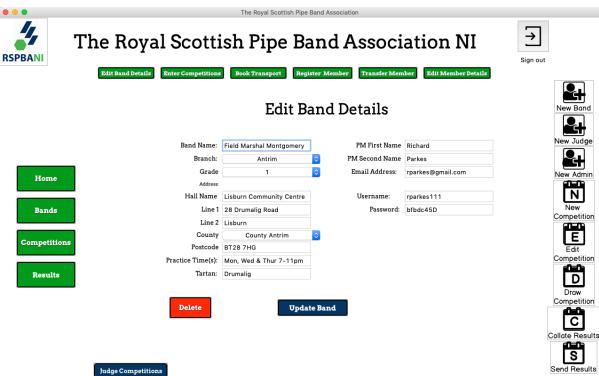
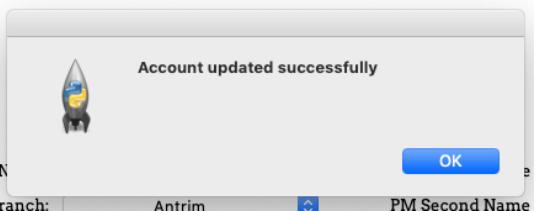
MemberID	bandID	role	Title	firstName	secondName	ac
Filter	Filter	Filter	Filter	Filter	Filter	Filter
1 4	4	Piper	Miss	Amy	Adams	Adar
2 20	3	Piper	Miss	Adele	Martin	Britis
3 23	15	Piper	Miss	Ashly	Porter	23 C
4 2	2	Bass Drummer	Mr	Daniel	Chessnut	48 is
5 3	4	Piper	Mr	Andy	McComb	10 B
6 5	2	Piper	Mr	Colin	Torrington	Torr
7 8	6	Piper	Mr	Alan	McPherson	16b
8 9	3	Snare Drummer	Mr	David	Martin	Ross
9 11	10	Lead Drummer	Mr	Brian	Hasson Jnr	dern

The BandID of Colin has been updated to reflect the Band ID of this new band.

11. Admins have the ability to carry out these band features above on behalf of the band.

For this objective, I am only showing the testing of one feature in my test plan as it is the same code implemented to develop this objective for all band features.

Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Admin attempt to carry out the Enter Competitions Page without selecting the band to carry out this feature on behalf of.	Invalid	None	An error message telling the user to select the band they wish to carry out this feature.	Functional
2	Admin editing a bands details. They admin will change the practice time of Field Marshal Montgomery	Typical	Field Marshall Montgomery, "Mon; 7:30 – 10:30pm"	Once the admin user has selected and pressed the "select Band" button, the user will be brought to the Bands Details form. It will be populated with the Bands current details using the Band ID of the band the admin selected to query the database of information about the band. Email sent to PM to confirm changes.	Functional

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments
1	N/A	As expected		Due to the list box design there isn't much else testing wise than ensuring that if the user presses the button without selecting a band, the error is caught and dealt with by the system.
2		As expected		This test passed.

Band Details Updated



rspbani.info@gmail.com

to rparkes ~

Dear Pipe Major,

9:37 PM (1 minute ago)

We have successfully updated your Bands details according to the changes you made on the Edit Band Details section.

If this change was not made by you please contact one of the systems administrators so we can resolve this issue.

The Royal Scottish Pipe Band Association
Northern Ireland Branch

This screenshot above shows the email the pipe major will receive when the band details have been updated.

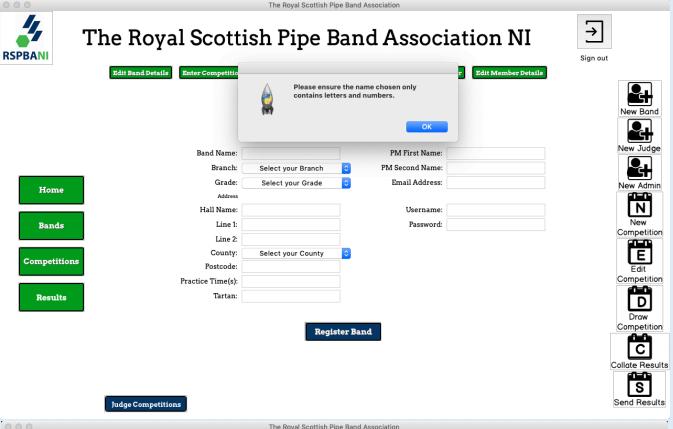
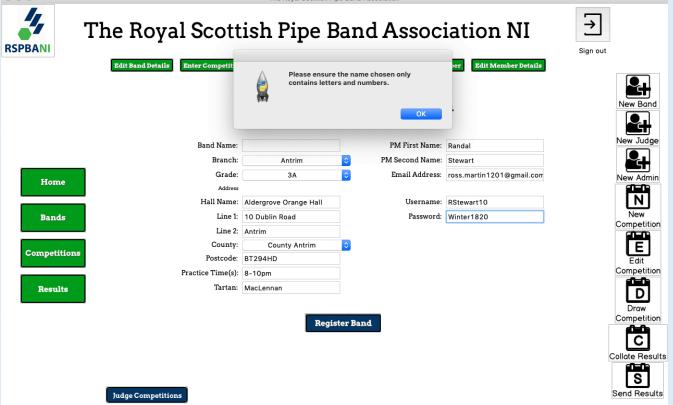
12. Admins have the ability to add and remove band accounts, judge accounts and admin accounts. When a band account is created an email is sent to the Pipe Major to include the initial log in details.

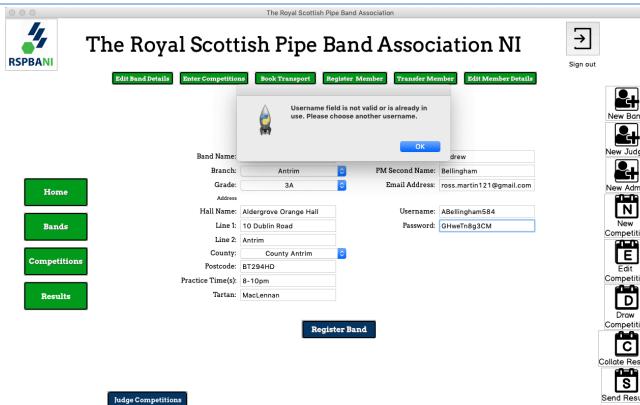
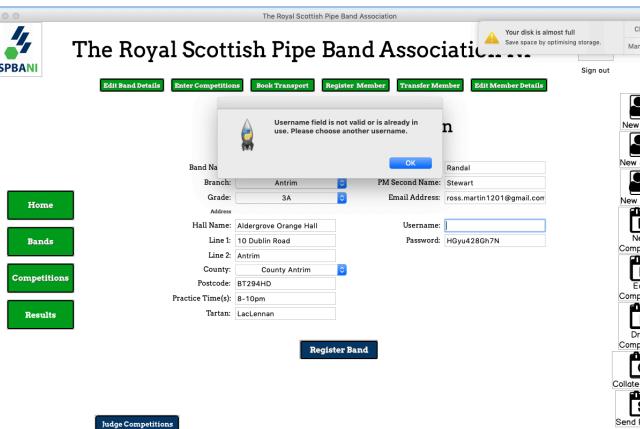
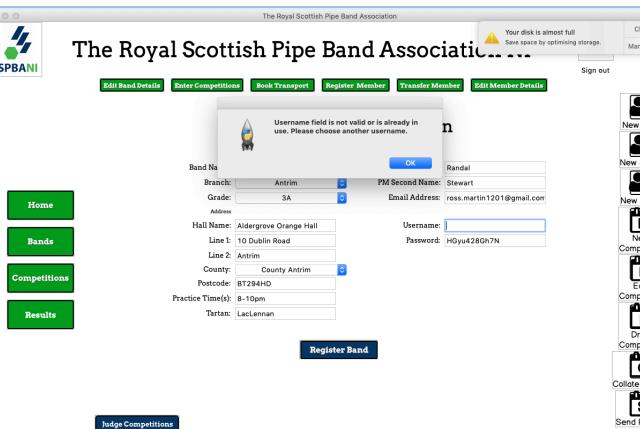
I have not shown the testing of my validation for these registration pages with regards to the fields I have already shown in the registration of band members in objective 10. I will test the additional validation on the band registration page and just test the functionality of the other registration pages to ensure they so what they have been designed and implemented to do.

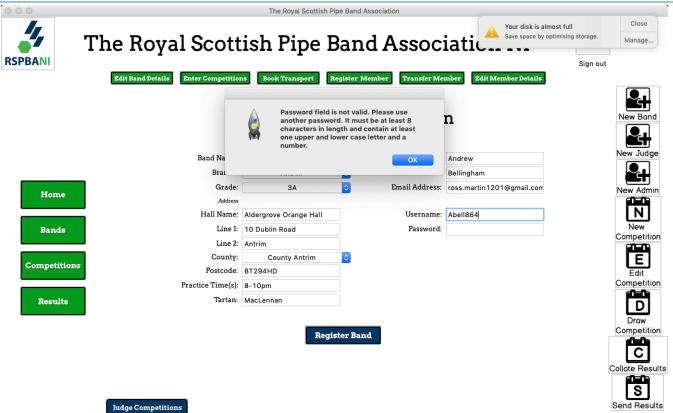
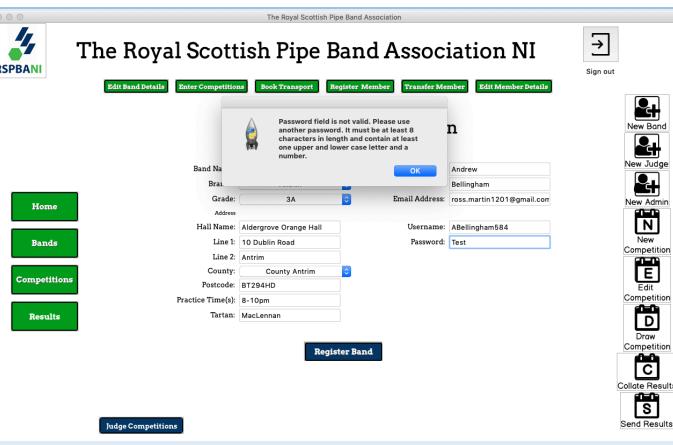
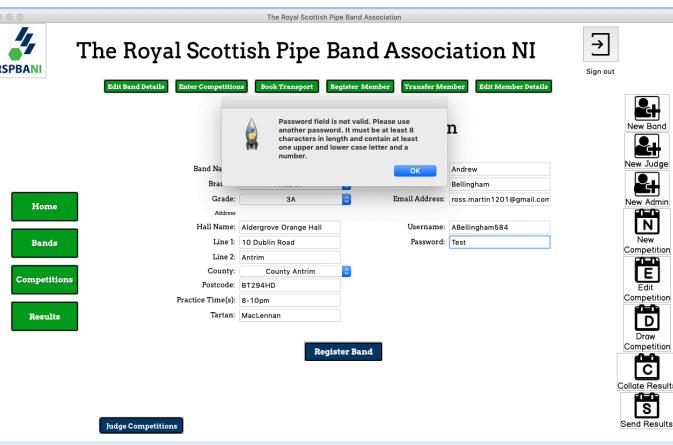
Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Pressing the register band button before filling out the form. (Validation check for Band name)	Invalid	None	An error message will appear to the user. My program is not able to detect whether the user was meant to press the button or not so when it tries to register the band, it will check validation for the band name field. It will throw this field as invalid as the error for an empty registration form.	Functional
2	Username validation check – username entered has already been taken	Invalid	“ABellingham584”	An error message stating that the username select is not valid or is already in use.	Functional
3	Username validation check – no username entered	Invalid	None	An error message stating that the username select is not valid or is already in use.	Functional
4	Username validation check – length is exactly 8 characters (password invalid will throw an error catching the invalid password after the username has been deemed valid)	Typical	“Abell864”	System will accept username. However, because I will leave the password out to show that the username was accepted, and the next field was validated.	Functional

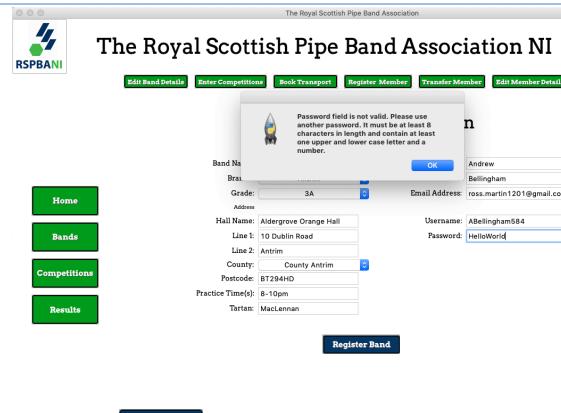
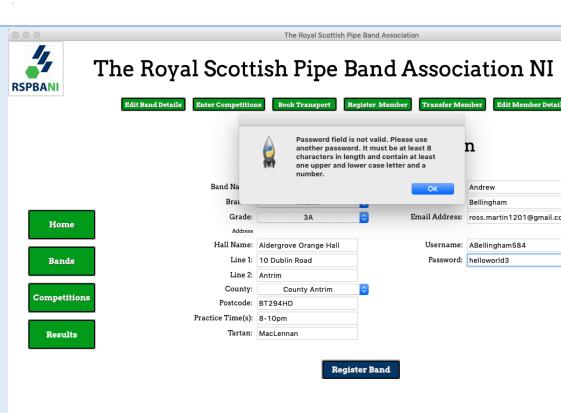
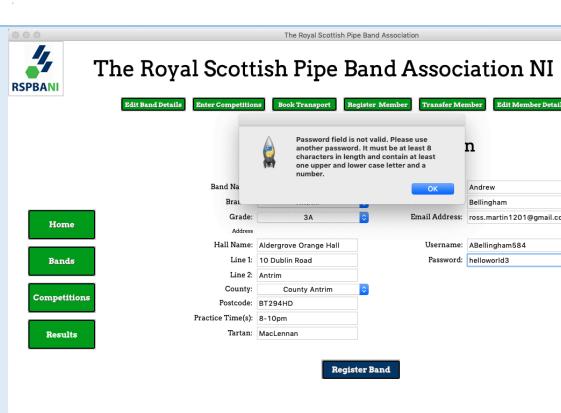
5	Password Validation Check – Password too short	Invalid	“Test”	An error message telling user that the password they have entered is invalid. The message will list the requirements of a suitable password; at least 8 characters and contain at least one upper- and lower-case letter and a number.	Functional
6	Password Validation Check – Password not containing a number	Invalid	“HelloWorld”	An error message telling user that the password they have entered is invalid. The message will list the requirements of a suitable password; at least 8 characters and contain at least one upper- and lower-case letter and a number.	Functional
7	Password Validation Check – Password not containing an uppercase letter	Invalid	“helloworld3”	An error message telling user that the password they have entered is invalid. The message will list the requirements of a suitable password; at least 8 characters and contain at least one upper- and lower-case letter and a number.	Functional
8	Password Validation Check – Password not containing a lower-case letter	Invalid	“HELLOWORLD234”	An error message telling user that the password they have entered is invalid. The message will list the requirements of a suitable password; at least 8 characters and contain at least one upper- and lower-case letter and a number.	Functional

9	Successfully registering a band account.	Typical	Antrim, 3A , “Aldergrove Orange Hall”, “10 Dublin Road”, “Antrim”, Co Antrim, “BT294HD”, “8-10pm”, “MacLennan”, “Randal”, “Stewart”, ross.martin1201@gmail.com, “RStewart10”, “Winter1820”	A pop-up message will appear to the admin user confirming to them that the account has been made. Band is saved to the database. Band is also populated into the bands page. Email is sent to the pipe major with their initial log on details. Fields in form are emptied.	
10	Integration test – logging into the newly registered band account.	Typical	“RStewart10”, “Winter1820”	User will be presented with a welcome message and the first-time log in window will display for the user of the account to begin to finalise their account details.	Functional
11	Deletion of a band account	Typical	None	The user will be asked to confirm if they still wish to delete the account. If yes then account deleted else, account will remain.	Functional

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments
1	N/A	As expected.	 <p>The screenshot shows the 'Edit Member Details' page of the RSPBANI website. A modal dialog box is displayed, stating 'Please ensure the name chosen only contains letters and numbers.' with an 'OK' button. The main form fields include Band Name (Antrim), Branch (Select your Branch), Grade (Select your Grade), Address (Alder Grove Orange Hall, 10 Dublin Road, Antrim, County Antrim, BT294HD), Practice Time(s) (8-10pm), and Tartan (MacLennan). The right sidebar contains navigation links for New Band, New Judge, New Admin, New Competition, Edit Competition, Draw Competition, Collate Results, and Send Results.</p>  <p>The screenshot shows the same 'Edit Member Details' page after the validation error has been resolved. The member details now correctly reflect the input: PM First Name (Randal), PM Second Name (Stewart), Email Address (ross.martin120@gmail.com), Username (RStewart10), and Password (Winter1820). The rest of the form and sidebar are identical to the first screenshot.</p>	This test has passed

		As expected.		This test has passed
2	N/A			This test has passed
3	N/A	As expected.		This test has passed

		As expected.		This test has passed
4	N/A			This test has passed
5	N/A	As expected.		This test has passed

		As expected.		This test has passed
6	N/A			
7	N/A	As expected.		This test has passed

8

N/A

As expected.

The Royal Scottish Pipe Band Association NI

Band Name: Andrew Bellingham

Address: Email Address: ross.martin1201@gmail.com

Hall Name: Aldergrove Orange Hall

Line 1: 10 Dublin Road

Line 2: Antrim

County: County Antrim

Postcode: BT294HD

Practice Time(s): 8-10pm

Tartan: MacLennan

OK

Register Band

Judge Competitions

Navigation menu:

- Home
- Bands
- Competitions
- Results
- Edit Band Details
- Enter Competitions
- Book Transport
- Register Member
- Transfer Member
- Edit Member Details
- Sign out
- New Band
- New Judge
- New Admin
- New Competition
- Edit Competition
- Draw Competition
- Collect Results
- Send Results

This test has passed

9

N/A

As expected.

Competitions Book Transport Register Member Transfer Member Edit Member Details

Band account created!

Band Name: Randal

Branch: Antrim

Grade: 3A

Address:

Hall Name: Aldergrove Orange Hall

Line 1: 10 Dublin Road

Line 2: Antrim

County: County Antrim

PM Second Name: Stewart

Email Address: ross.martin1201@gmail.com

Username: RStewart10

Password: Winter1820

OK

This test has passed

Table: BandAccount

BandID	BandName	BandBranch	BandGrade	PMFirstName	PMSecondName	EmailAddress	HallName	BandAddressLine1	BandAddressLine2	BandCounty	BandPostcode
1	PSB	Antrim	3B	Ormeay	Daleine	cobain@grace...	Muggrave Police...	10 Belfast Road	Blackfoot Road	County Antrim	BT1 1AA
2	Vale Of Antrim	Down	2	Zoey	Tellung	ross.martin120...	Vale Road	Vale View	County Down	BT7 8HQ	
3	Rebeldoghry	Antrim	4B	Ainsar	McGarry	AAMCleary54...	The Mount	11 Gherdaw...	County Antrim	BT23 4GD	
4	Broughshane An...	Antrim	4B	Devy	Red	ross.martin120...	Broughshane Ch...	20 Main Street	Broughshane	County Antrim	BT40 7TG
5	Field Marshal Mo...	Antrim	1	Richard	Parkes	parkes@pmg.c...	Luborne Commu...	28 Dunmally Road	Luborne	County Antrim	BT28 7HG
6	Marcaco And Du...	Antrim	3A	Wayne	Byrne	WByrne5439@...	Marlcoo Dr...	130 Marlcoo R...	Portakawn	County Antrim	BT62 3TB
7	Mc Neistown	Antrim	3B	Robbie	Bellingham	R.Bellingham432...	30 Blackstone R...	Portglenone	County Antrim	BT44 8HB	
8	Ravera	Down	2	Alastair	Dunne	ross.martin120...	Ravera Orange ...	Vestry Road	Ballygown	County Down	BT23 6IU
9	Cobnollie	Londonberry	2	Mark	Hasson Jr	Mhasson5154@...	Unit 6	Norwest Busi...	Sleape Industri...	County Londond...	BT48 8SE
10	Topp Star Of Th...	Antrim	4B	Alastair	Bellingham	ABellingham45...	Topp Star Dr...	Ballyrag Road	Ballymoney	County Antrim	BT58 4RH
11	Tufftagen	Antrim	3A	Randal	Stewart	ross.martin120...	Aldergrove Oran...	10 Dublin Road	Antrim	County Antrim	BT294HD

The Royal Scottish Pipe Band Association NI

Bands

Band	Grade	Branch	Address	Practice Time(s)	Tutor
Ballymena	4B	Antrim	The Mount, 15 Springfield Road, BT7 2Q	Mondays & Thursdays 7-9pm	Unknown
Broughshane And District	4B	Antrim	Broughshane Church Hall, 20 Main Street	Mondays 7-10pm	New Arc South
Colmcille	2	Londondry	Unit 6, Northwest Business Park, BT48 8SD	Tues & Thurs 8-10pm	Unknown
Fife And Perth Monitors	4B	Antrim	Monitors Community Centre, 28 Drumcraig Road	Mondays 7-9pm	Red McLean
Marlaco And District	3A	Antrim	Marlaco Orange Hall, 130 Marlaco Road	Wednesday 8-10pm	Red McLean
Mc Neillstown	3B	Antrim	30 Blackstone Road, BT44 8HB	Thursday 8-10pm	Red McLean
Pipe	2	Down	20 Blackstone Road, BT44 8HB	Monday 8-10pm	Red McLean
Ravara	2	Down	Ravara Orange Hall, Vestry Road, BT23 8JH	Monday & Thursday 8-10pm	Red McLean
Topp Star Of The North	4B	Antrim	Topp Star Orange Hall, Ballyraig Road, BT7 1pm	Mon & Tuesday 8-10pm	Red McLean
Tullylagon	3A	Antrim	Aldergrove Orange Hall, 10 Dublin Road, BT16 7SH	Wednesday 8-10pm	Red McLean
Vale Of Antrim	2	Down	1 Vale Road, BT16 7SH	Tuesday 8-10pm	Red McLean

Judge Competitions

This screenshot above shows the new band in the bands page.

This screenshot shows the initial email sent to pipe majors of newly registered bands

Tullylagon [Inbox X]

rspbani.info@gmail.com to me -

Dear Pipe Major,

You are receiving this email to confirm the registration of this band, Tullylagon, under your leadership.

Please find your initial log in details. Once you log in for the first time, you will be asked to set your own password along with a security question which you will need to reset your password through the application.

Also through this application you are able to do the following:

- * View Competitions
- * View Competition Draw
- * View Competition Results
- * View All Bands and their details
- * Edit Band Details
- * Enter Competitions
- * Book Transport
- * Register New Members
- * Edit Member Details

Username: RSStewart10
Password: Winter1820

The Royal Scottish Pipe Band Association
Northern Ireland Branch

10

The Royal Scottish Pipe Band Association NI

Welcome
Hello Tullyagon, You have been successfully logged in.

Username: RStewart10
Password: Winter1820
Forgot Password?

Login

Home
Bands
Competitions
Results

As expected.

The Royal Scottish Pipe Band Association NI

Welcome to your account

Please enter your new password:
Please enter your password again:

Next

Grade 1A:
1st Mc Neasoco and District

Grade 1B:
1st Mc Neilstown

Grade 4A:
1st No Band Entered

Grade 4B:
1st Broughshane and District

Home
Bands
Competitions
Results

This test has passed

11

The Royal Scottish Pipe Band Association NI

Edit Band Details

Band Name: Tullyagon
Branch: Antrim
Grade: 3A
Address:
Hall Name: Aldergrove Orange Hall
Line 1: 10 Dublin Road
Line 2: Antrim
County: County Antrim
Postcode: BT294HD
Practice Time(s): 8-10pm
Tartan: MacLennan

PM First Name: Randal
PM Second Name: Stewart
Email Address: ross.martin1201@gmail.com

Username: RStewart10
Password: Winter1820

Delete Update Band

New Band
New Judge
New Team
New Competition
Edit Competition
Draw Competition
Collate Results
Send Results

Home
Bands
Competitions
Results

As expected.



This screenshot shows that Tullyagon has been deleted from the BandAccount table

Table: BandAccount

	BandID	BandName	BandBranch	BandGrade	PMinName	PMinSurname	EmailAddress	HallName	BandAddressLine1	BandAddressLine2	BandCountry	BandPostcode
Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
1	2	PSNI	Antrim	1	Cheney	Dakrone	cdakrone@gmail...	Musgrave Police...	10 Belfast Road	Belfast	County Antrim	BT1 1AA
2	3	Vale Of Athol	Down	2	Janey	Fleming	ross.martin120...	Vale Road	Vale Town	County Down	Belfast	BT7 2BG
3	4	Ballydugnagh A.	Antrim	4B	Devin	McArdle	ross.martin120...	The Mount	20 Main Street	Ballynahinch	County Antrim	BT4 7TG
4	5	Broughshane A.	Antrim	4B	Devin	McArdle	ross.martin120...	Broughshane	28 Druryall Road	Lisburn	County Antrim	BT28 7HG
5	6	Field Marshal M.	Antrim	1	Richard	Parkes	rparkes@qsl...	Musgrave Dr...	130 Marlboro...	Portadown	County Armagh	BT62 7TB
7	8	Mc Neilstown	Antrim	3B	Robbie	Selpham	rparkes@qsl...	30 Blackstone R...	Portadown	County Armagh	BT64 8TB	
9	9	Revara	Down	2	Mark	Hasson Jr	ross.martin120...	Revere Orange...	100 Marlboro...	Portadown	County Armagh	BT64 8SE
10	10	Colcille	Londonderry	2	Mark	Hasson Jr	ross.martin120...	Revere Orange...	100 Marlboro...	Skeggs Indust...	County Lond...	BT4 8SE
10	11	Topp Star Of Th...	Antrim	4B	Alastair	Baldinghans1...	ross.martin120...	Top Star Oran...	Ballymoney	County Antrim	BT58 4TH	
11	12	Tullyagon	Antrim	3A	Randal	Stewart	ross.martin120...	Aldergrove Or...	10 Dublin Road	Antrim	County Antrim	BT29 4HD

Table: BandMembers

	MemberID	BandID	Title	Forename	Surname	addressLine1	addressLine2	county	postcode	deceased	Gender
Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
1	24	16	Piper	Dr	Tulip	Officer	23 York Street	Baldinghans	County Antrim	BT28 7HF	Male
2	4	4	Piper	Miss	Amy	Adams	Ormeau	County Antrim	BT7 1NH	4/Apr/2018	Female
3	20	2	Piper	Miss	Adrie	Porter	Ballynahinch	County Antrim	BT29 4HD	1/Apr/2018	Female
4	22	5	Piper	Miss	Adley	Porter	23 Gun Road	Cooly Females	BT28 5GH	4/Apr/1992	Female

Table: BandAccount

	BandID	BandName	BandBranch	BandGrade	PMinName	PMinSurname	EmailAddress	HallName	BandAddressLine1	BandAddressLine2	BandCountry	BandPostcode
Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
1	2	PSNI	Antrim	1	Chimay	Dakrone	cdakrone@gmail...	Musgrave Police...	10 Belfast Road	Belfast	County Antrim	BT1 1AA
2	3	Vale Of Athol	Down	2	Jonny	Flame	ross.martin120...	Vale Road	Vale Town	County Down	Belfast	BT7 2BG
3	4	Ballydugnagh A.	Antrim	4B	Alastair	McClery	AAMAClear54...	The Mount	13 Garliestown...	Crumlin	County Antrim	BT28 6OH
4	5	Broughshane A.	Antrim	4B	Devy	Red	ross.martin120...	Broughshane	20 Main Street	Broughshane	County Antrim	BT62 7TG
5	6	Field Marshal M.	Antrim	1	Richard	Parkes	rparkes@qsl...	Lisburn Commu...	28 Drumard Road	Lisburn	County Antrim	BT28 7HG
7	8	Mc Neilstown	Antrim	3B	Robbie	Selpham	rparkes@qsl...	30 Blackstone R...	Portadown	County Armagh	BT64 8TB	
8	9	Revara	Down	2	Alastair	Dunne	ross.martin120...	Riverside Orange...	Vestry Road	Ballymoney	County Down	BT28 6HU
9	10	Colcille	Londonderry	2	Mark	Hasson Jr	ross.martin120...	Northwest Bus...	Skeggs Indust...	County Lond...	BT4 8SE	
10	15	Topp Star Of Th...	Antrim	4B	Alastair	Baldinghans1...	ross.martin120...	Top Star Oran...	Ballymoney	County Antrim	BT58 4TH	

This test has passed.

Like said in the messagebox, when this band is deleted, all the members of this band are also deleted.

Because the band has been deleted you can be assured it will not appear in any list boxes through my program allowing you to select it etc.

However, any remaining competitions that they have entered will still remain if they

MemberID	bandID	Title	Role	Title	Title	A.	FirstName	SecondName	addressLine1	addressLine2	county	postCode	drawnOrNot	Gender
1	4	Piper	Ms	Miss	Amy	Adams	Cornils	Country Antrim	BT297NH		Country Antrim	BT297NH	4/April/2004	Female
2	20	Piper	Ms	Adrie	Martin	British Road	Aldergrove	Country Antrim	BT294DH		Country Antrim	BT294DH	31/August/1968	Female
3	23	Piper	Ms	Ashy	Porter	23 Crum Road	Ervinslkin	Country Fermana	BT295GH		Country Fermana	BT295GH	4/April/1992	Female
4	2	Bass Drummer	Mr	Daniel	Cheesnut	48 Lin road	Antrim	Country Antrim	BT411AF		Country Antrim	BT411AF	8/February/1932	Male
5	3	Piper	Mr	Andy	McGinn	10 Band Street	Bandhole	County Down	BT388RY		County Down	BT388RY	8/February/1932	Male
6	5	Piper	Mr	Colin	Torrington	Torrington	Broughshane	County Antrim	BT405HJ		County Antrim	BT405HJ	4/April/2004	Male
7	8	Piper	Mr	Alan	McPherson	16b Bridge Street	Cullagacky	County Antrim	BT237HG		County Antrim	BT237HG	2/June/1995	Male
8	9	Snare Drummer	Mr	David	Martin	Ross	Aldergrove	County Antrim	BT284DH		County Antrim	BT284DH	2/June/1990	Male
9	11	Lead Drummer	Mr	Brian	Hasson Jnr	denry street	County London...	BT48 7GD		County London...	BT48 7GD	4/April/2004	Male	
10	12	Piper	Mr	Gavin	Hasson	Vale street	County London...	BT47QH		County London...	BT47QH	8/February/1932	Male	
11	13	Piper	Mr	Adrian	Hasson	145 street	Aldergrove	County Antrim	BT411AF		County Antrim	BT411AF	4/November/2001	Male
12	14	Piper	Mr	Adam	Crawford	405 street	Antrim	Country Antrim	BT411AF		Country Antrim	BT411AF	4-Nov/1991	Male
13	15	Tenor Drummer	Mr	Lance	Nevea	ancone Road	Antrim	County London...	BT294HJ		County London...	BT294HJ	4/April/2001	Male
14	16	Lead Drummer	Mr	Thomas	Allen	Antrim	Antrim	Country Antrim	BT415HQ		Country Antrim	BT415HQ	5/November/2001	Male
15	17	Tenor Drummer	Mr	C	G	Old	Carick	Country Antrim	BT388BZ		Country Antrim	BT388BZ	3/April/1940	Female
16	22	Drum Corporal	Mr	Ross	Martin	22 British Road	Aldergrove	Country Antrim	BT294DH		Country Antrim	BT294DH	3/February/2018	Male
17	6	Piper	Mrs	Patricia	Pedlow	35 Crumlin Road	Aldergrove	Country Antrim	BT78 7HG		Country Antrim	BT78 7HG	4/April/2004	Female
18	21	Lead Drummer	Ms	Chesney	Dalhane	Ovic	Antrim	Country Antrim	BT411AH		Country Antrim	BT411AH	21/August/2000	Female

This screenshot shows no band members with a bandID of 16 are stored in the BandMembers table.

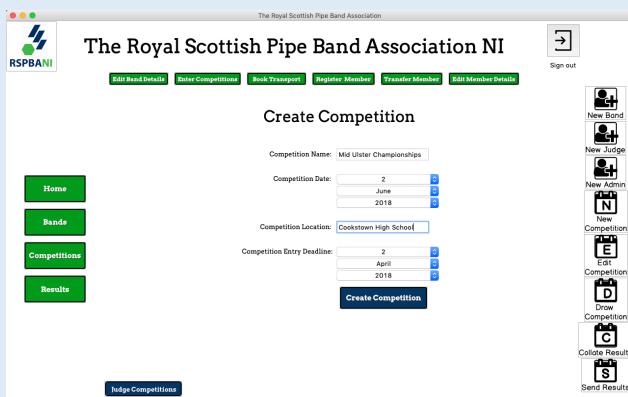
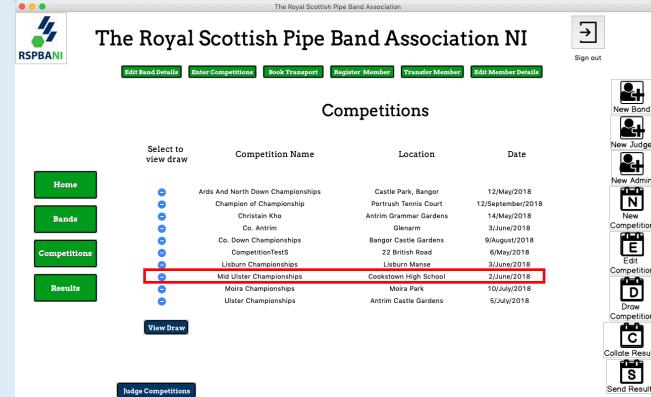
have been drawn. Else the entry to the competition will be deleted. This is because the drawn will have already been sent out to all the bands and therefore can not be removed from the drawn competition.

13. Admins have the ability to create, update, delete and draw individual competitions.

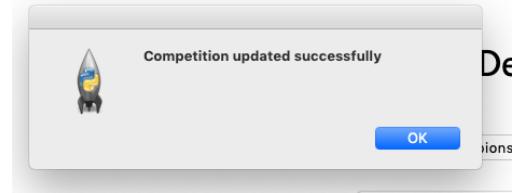
Creation, updating and deletion of competition:

All validation used in this form has already been testing in above objectives. In this objective I will just be testing the functionality of the feature.

Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Creation of a competition	Typical	“Mid Ulster Championships”, 2, June, 2018, “Cookstown High School”, 2, April, 2018	Competition saved to database. Competition listed in Competitions page, and when click it will say hasn't been drawn yet. Also, will appear in the enter competitions list box.	Functional
2	Updating the competition	Typical	“Cookstown Grammar School”	The location of the competition will be updated to the test data of this test. Competitions page will reflect this update.	Functional
3	Deletion of a competition	Typical	Deletion of Co. Down Championships	The competition will be deleted from competitions table in database. All Bands entered into the competition will be deleted, any entered bands draw if it had taken place along with the corresponding records in the results table for each drawn band in the competition. Competition removed from list boxes and competitions page.	Functional

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments																																																																		
1		As expected	<p>Table: Competitions</p> <table border="1"> <thead> <tr> <th>CompetitionID</th> <th>CompetitionName</th> <th>CompetitionLocation</th> <th>CompetitionDate</th> <th>EntryDeadline</th> <th>Drawn</th> </tr> </thead> <tbody> <tr><td>1</td><td>Ulster Champion...</td><td>Antrim Castle G...</td><td>5/July/2018</td><td>9/August/2018</td><td>True</td></tr> <tr><td>2</td><td>Co. Antrim</td><td>Glenarm</td><td>3/June/2018</td><td>9/August/2018</td><td>True</td></tr> <tr><td>3</td><td>Champion of Ch...</td><td>Portrush Tennis ...</td><td>12/September/...</td><td>9/August/2018</td><td>True</td></tr> <tr><td>4</td><td>Co. Down Cham...</td><td>Bangor Castle G...</td><td>9/August/2018</td><td>9/August/2018</td><td>True</td></tr> <tr><td>5</td><td>CompetitionTest5</td><td>22 British Road</td><td>6/May/2018</td><td>9/August/2018</td><td>True</td></tr> <tr><td>6</td><td>Ards And North ...</td><td>Castle Park, Ban...</td><td>12/May/2018</td><td>12/April/2018</td><td>True</td></tr> <tr><td>7</td><td>Christain Kho</td><td>Antrim Gramma...</td><td>14/May/2018</td><td>14/April/2018</td><td>True</td></tr> <tr><td>8</td><td>Lisburn Champi...</td><td>Lisburn Manse</td><td>3/June/2018</td><td>14/May/2018</td><td>False</td></tr> <tr><td>9</td><td>Moira Champion...</td><td>Moira Park</td><td>10/July/2018</td><td>10/May/2018</td><td>False</td></tr> <tr><td>10</td><td>Mid Ulster Cham...</td><td>Cookstown High...</td><td>2/June/2018</td><td>2/April/2018</td><td>False</td></tr> </tbody> </table> <p>This screenshot shows the updated competition details on the competition page.</p> 	CompetitionID	CompetitionName	CompetitionLocation	CompetitionDate	EntryDeadline	Drawn	1	Ulster Champion...	Antrim Castle G...	5/July/2018	9/August/2018	True	2	Co. Antrim	Glenarm	3/June/2018	9/August/2018	True	3	Champion of Ch...	Portrush Tennis ...	12/September/...	9/August/2018	True	4	Co. Down Cham...	Bangor Castle G...	9/August/2018	9/August/2018	True	5	CompetitionTest5	22 British Road	6/May/2018	9/August/2018	True	6	Ards And North ...	Castle Park, Ban...	12/May/2018	12/April/2018	True	7	Christain Kho	Antrim Gramma...	14/May/2018	14/April/2018	True	8	Lisburn Champi...	Lisburn Manse	3/June/2018	14/May/2018	False	9	Moira Champion...	Moira Park	10/July/2018	10/May/2018	False	10	Mid Ulster Cham...	Cookstown High...	2/June/2018	2/April/2018	False	This test has passed.
CompetitionID	CompetitionName	CompetitionLocation	CompetitionDate	EntryDeadline	Drawn																																																																	
1	Ulster Champion...	Antrim Castle G...	5/July/2018	9/August/2018	True																																																																	
2	Co. Antrim	Glenarm	3/June/2018	9/August/2018	True																																																																	
3	Champion of Ch...	Portrush Tennis ...	12/September/...	9/August/2018	True																																																																	
4	Co. Down Cham...	Bangor Castle G...	9/August/2018	9/August/2018	True																																																																	
5	CompetitionTest5	22 British Road	6/May/2018	9/August/2018	True																																																																	
6	Ards And North ...	Castle Park, Ban...	12/May/2018	12/April/2018	True																																																																	
7	Christain Kho	Antrim Gramma...	14/May/2018	14/April/2018	True																																																																	
8	Lisburn Champi...	Lisburn Manse	3/June/2018	14/May/2018	False																																																																	
9	Moira Champion...	Moira Park	10/July/2018	10/May/2018	False																																																																	
10	Mid Ulster Cham...	Cookstown High...	2/June/2018	2/April/2018	False																																																																	

2	N/A	<p>As expected</p>



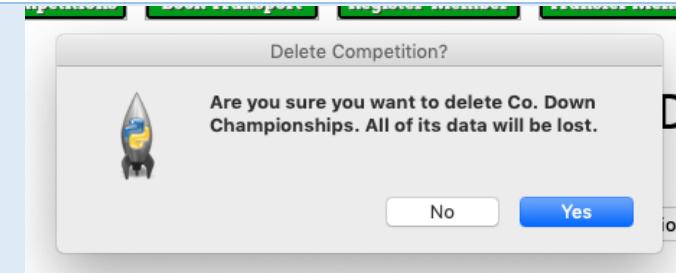
This screenshot shows the new competition created in the list of competitions on the competitions page.

Select to view draw	Competition Name	Location	Date
...	Ards And North Down Championships	Castle Park, Bangor	12/May/2018
...	Champion of Championship	Portrush Tennis Court	12/September/2018
...	Christain Kho	Antrim Grammar Gardens	14/May/2018
...	Co. Antrim	Glenarm	3/June/2018
...	Co. Down Championships	Bangor Castle Gardens	9/August/2018
...	CompetitionTestS	22 British Road	6/May/2018
...	Lisburn Championships	Lisburn Manse	3/June/2018
...	Mid Ulster Championships	Cookstown Grammar School	2/June/2018
...	Moira Championships	Moira Park	10/July/2018
...	Ulster Championships	Antrim Castle Gardens	5/July/2018

[View Draw](#)

Table: Competitions							
		New Record	Delete Record				
CompetitionID	CompetitionName	CompetitionLocation	CompetitionDate	EntryDeadline	Drawn		
1 1	Ulster Champion...	Antrim Castle G...	5/July/2018	9/August/2018	True	1	
2 2	Co. Antrim	Glenarm	3/June/2018	9/August/2018	True	1	
3 3	Champion of Ch...	Portrush Tennis ...	12/September/...	9/August/2018	True	1	
4 7	Co. Down Cham...	Bangor Castle G...	9/August/2018	9/August/2018	True	2	
5 11	CompetitionTestS	22 British Road	6/May/2018	9/August/2018	True	1	
6 12	Ards And North ...	Castle Park, Ban...	12/May/2018	12/April/2018	True	2	
7 13	Christain Kho	Antrim Gramma...	14/May/2018	14/April/2018	True	3	

As expected



This screenshot shows that all details stored about the competitions have been deleted from the competitions table

3

This test passed

Table: BandsEntered

This screenshot shows the BandsEntered table with all records deleted. The table has columns: EntryID, BandID, CompetitionID, DateEntered, and Grade. A filter is applied to the CompetitionID column, which is set to 7. The table is currently empty.

Table: Competitions

This screenshot shows the Competitions table with all records deleted. The table has columns: CompetitionID, CompetitionName, CompetitionLocation, CompetitionDate, EntryDeadline, Drawn, and NumEntries. A filter is applied to the CompetitionID column, which is set to 7. The table is currently empty.

This screenshot shows that all the bands entered the competitions have been deleted

Table: CompetitionDraws

This screenshot shows the CompetitionDraws table with all records deleted. The table has columns: CompetitionID, BandID, EntryID, CircleNumber, and CompetitingTime. A filter is applied to the CompetitionID column, which is set to 7. The table is currently empty.

Table: CompetitionDraws

This screenshot shows the CompetitionDraws table with all records deleted. The table has columns: CompetitionID, BandID, EntryID, CircleNumber, and CompetitingTime. A filter is applied to the CompetitionID column, which is set to 7. The table is currently empty.

This screenshot shows the deletion of the competition as it has been removed from the database.

Table: CompetitionDraws

This screenshot shows the CompetitionDraws table with all records deleted. The table has columns: CompetitionID, BandID, EntryID, CircleNumber, and CompetitingTime. A filter is applied to the CompetitionID column, which is set to 7. The table is currently empty.

Table: Results

This screenshot shows the Results table with all records deleted. The table has columns: EntryID, BandID, CompetitionID, Piping1JudgeID, Piping1Score, Piping1Comments, and Piping2. A filter is applied to the CompetitionID column, which is set to 7. The table is currently empty.

This screenshot shows the competition now does not appear on the competitions page either

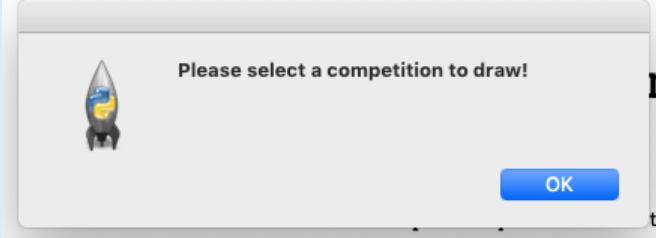
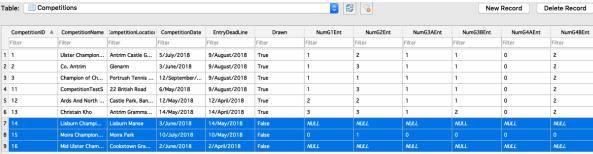
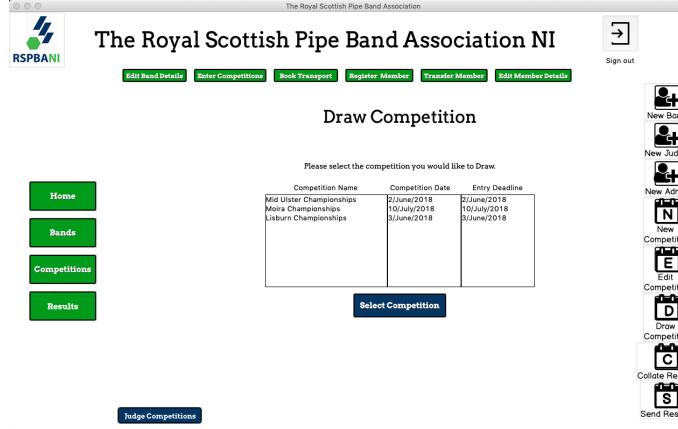
Competitions				
Select to view draw	Competition Name	Location	Date	
	Ards And North Down Championships	Castle Park, Bangor	12/May/2018	
	Champion of Championship	Portrush Tennis Court	12/September/2018	
	Christain Kho	Antrim Grammar Gardens	14/May/2018	
	Co. Antrim	Glenarm	3/June/2018	
	CompetitionTestS	22 British Road	6/May/2018	
	Lisburn Championships	Lisburn Manse	3/June/2018	
	Mid Ulster Championships	Cookstown Grammar School	2/June/2018	
	Moira Championships	Moira Park	10/July/2018	
	Ulster Championships	Antrim Castle Gardens	5/July/2018	
View Draw				

Drawing competitions:

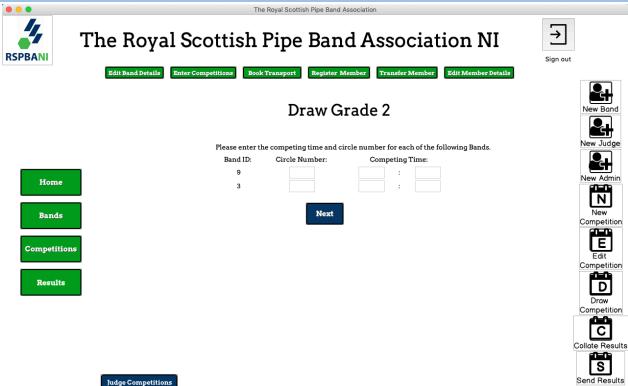
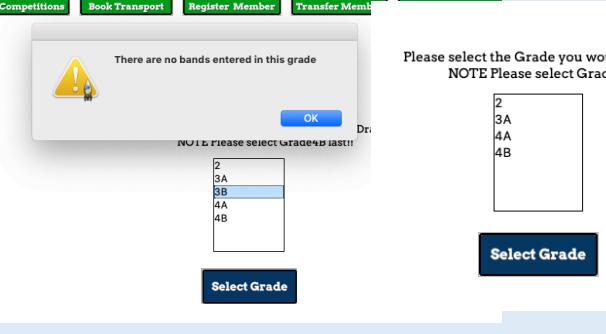
Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Attempting to draw a competition without selecting a competition.	Invalid	None	Message to user – they must select a competition to draw	Functional
2	Ensuring only competitions that haven't been drawn appear in the list box to be drawn	Typical	None	Only the competitions that have the drawn flag set to "False" will populate the list box	Functional
3	Selecting a competition.	Typical	Moira Championships	A list of grades will be shown.	Functional
4	Not selecting a grade	Invalid	None	A message telling user to select a grade.	Functional
5	Selecting a grade with only one band entered.	Extreme	Moira Championships, 1	Draw screen populated with the Band ID and an entry box for the circle number and another for the competing time.	Functional

6	Selecting a grade with two bands entered.	Typical	Moira Championships, 2	Draw screen populated with the Band ID and an entry box for the circle number and another for the competing time for both bands.	Functional
7	Selecting a grade with no bands entered	Typical	Moira Championships, Grade = 3B	Message box letting user know there are no bands entered this grade. Grade will be removed from the grade list.	Functional
8	Entering a circle number that is not between the range of possible circles.	Invalid	Circle Number = "0" AND Circle Number = "7"	The user will receive a message stating that the circle number must be between 1 and 6.	Functional
9	Entering a circle number that will test the limits of my validation	Extreme	Circle Number = "1" AND Circle Number = "6"	System will send email to band as these circle numbers are valid.	Functional
10	Entering the earliest competing time and latest competing time	Extreme	Competing Time = "9","00" Competing Time = "17","59"	System will send email to band as these competing times are valid.	Functional
11	Entering an invalid hour and minute for competing time.	Invalid	Competing Time = "5", "00" Competing Time = "9", "69"	System will produce a messagebox. It will state that the time chosen is not between the hours of 9am and 6pm	Functional

12	Completing draw by entering a valid circle number and competing time.	Typical	Grade 1 – Circle Num = "1" Competing time = "10", "00" Grade 2 – Circle Num = "2" Competing time = "10", "00", Circle Num = "2" Competing time = "10", "10" Grade 3A – Circle Num = "3" Competing time = "10", "30" Grade 3B – Circle Num = "4" Competing time = "10", "50" Grade 4B – Circle Num = "5" Competing time = "11", "00"	Grade to be drawn must be selected. The order of grade selected does not matter. Once the grade has been drawn, a message box will appear to user to tell them the draw has been sent and saved. The email sent is to all of the bands entered. The user will then be presented back to the grade list box. Only the grades that haven't been drawn will be shown in the list box. Once all grades have been drawn, another message will let the user know that all grades have been entered, User will be returned to the list of competitions to be drawn. Drawn flag set to true – Band does not appear in drawn competition list box. Competition Draw now available on competitions page for all bands to view. Competition draw saved to database and number of bands in each grade. Results record made for each entry where judges scores are saved to on competition day.	Functional
----	---	---------	---	--	------------

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments
1	N/A	As expected.		This test has passed.
2		As expected.		This test has passed.

3	N/A	As expected.		This test has passed.
4	N/A	As expected.		This test has passed.
5	N/A	As expected.		This test has passed.

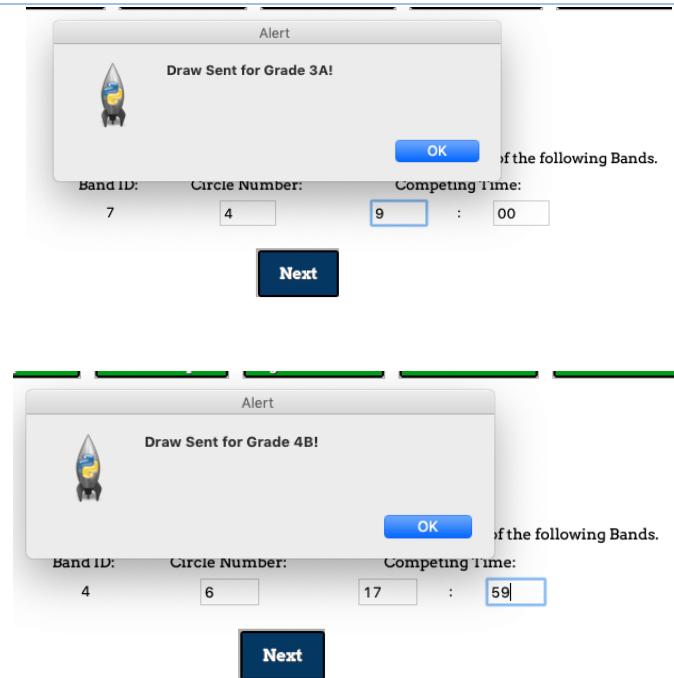
6	N/A	As expected.		This test has passed.
7	N/A	As expected		This test has passed

8	N/A	This outcome was not as expected. My validation had not caught the “0” as an invalid entry.	 	This test failed. However since then I have been able to fix this issue and the user will now receive a message as input is invalid. To fix this bug I had to correct the condition from the value being “>= 0” to “> 0”.
9	N/A	As expected		This test has passed

10

N/A

As expected.

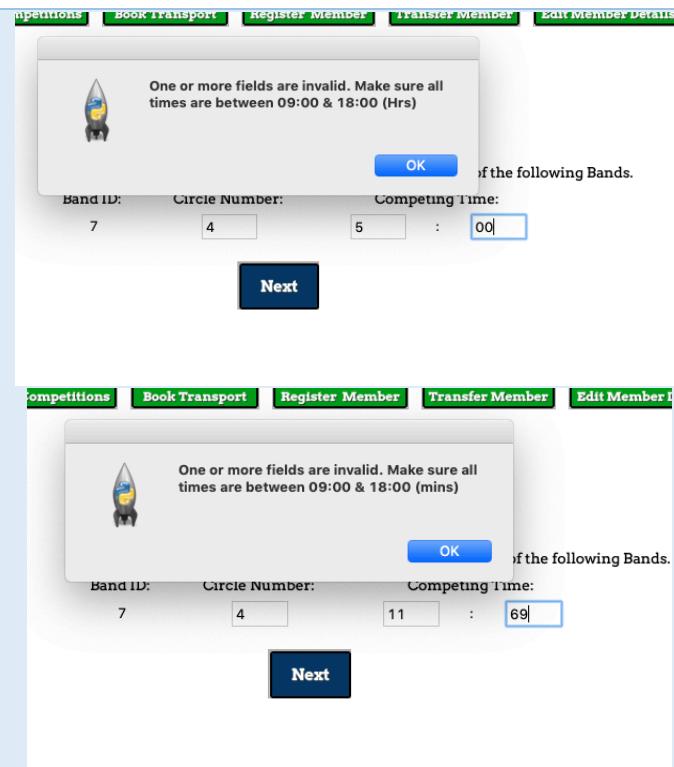


This test has passed.

11

N/A

As expected.



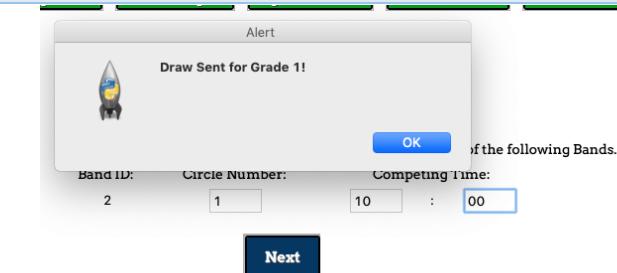
This test has passed

12

Table: CompetitionDraw				
CompetitionID	BandID	EntryID	CircleNumber	CompetingTime
15	Filter	Filter	Filter	Filter

Table: Results									
EntryID	BandID	CompetitionID	PipingJudgeID	PipingScore	PipingComments	PipingJudgeID	PipingScore	PipingComments	TotalPipingScore
Filter	15	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter

As expected



This test has passed

Draw for Moira Championships - Grade 1 [Inbox](#)

rspbani.draw@gmail.com
to cdakhane765 ~

19:15 (1 minute ago)

Please see attached Draw for Moira Championships - Grade 1



This screenshot shows the email sent to every band once the draw has taken place.

This screenshot below shows the output that has been produced and sent to each band in each grade



Official Draw for Grade 1

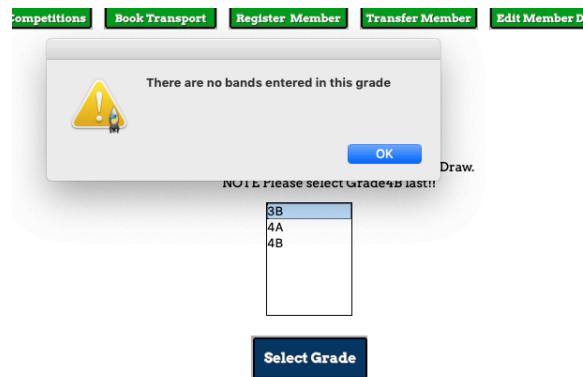
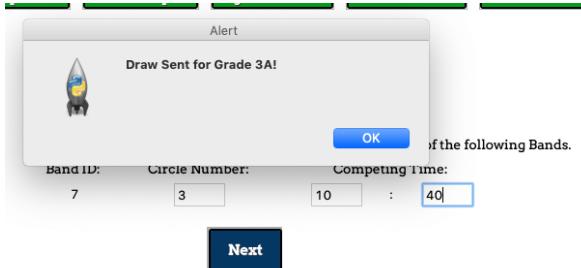
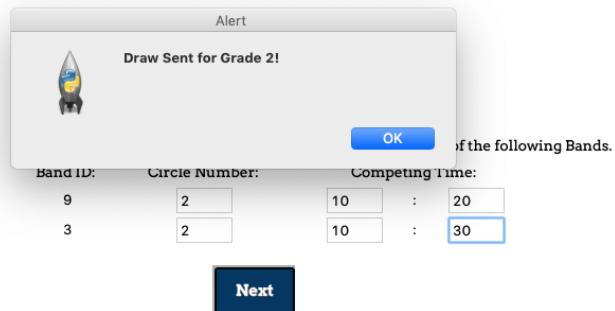
Competition: Moira Championships

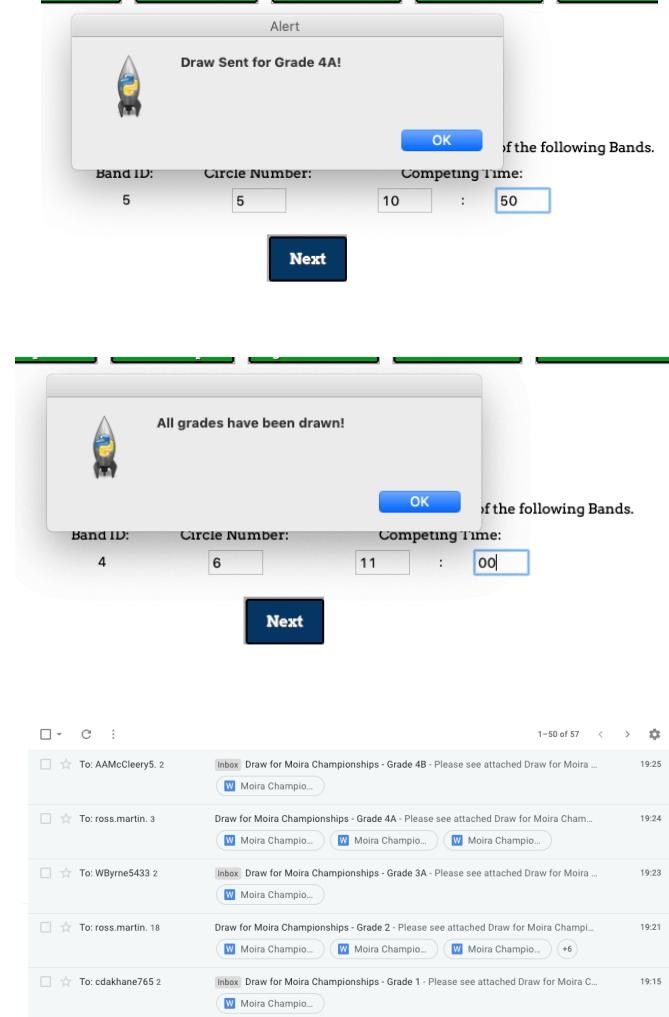
Location: Moira Park

Date: 10/July/2018

Grade 1

Band	Circle Number	Competing Time
PSNI	1	10:00





This screenshot above shows that all bands have been sent the draw for their grade.

View Draw

You have selected: Moira Championships
The Number of Bands Entered grade 2 is: 2

Band:	Circle Number:	Competing Time:
Ravara	2	10:20
Vale Of Atholl	2	10:30

Example of the draw as seen on the competitions page.

Table: Results											
EntryID	BandID	CompetitionID	Piping1JudgeID	Piping1Score	Piping1Comments	Piping2JudgeID	Piping2Score	Piping2Comments	TotalPipingScore	DrummingJudgeID	DrummingScore
1	78	2	15								
2	75	9	15								
3	76	3	15								
4	80	7	15								
5	79	5	15								
6	82	4	15								

This screenshot above shows the creation of the results record for each band once the draw has taken place

This screenshot below shows all the bands Drawn information which can be found on the competitions page.

Table: CompetitionDraw				
CompetitionID	BandID	EntryID	CircleNumber	CompetingTime
15	Filter	Filter	Filter	Filter
1	15	2	78	1
2	15	9	75	2
3	15	3	76	2
4	15	7	80	3
5	15	5	79	5
6	15	4	82	6

This screenshot shows the number of band that have entered each grade which has been calculated after the competition has been drawn.

Competition										New Record	Delete Record
CompetitionID	CompetitionName	CompetitionLocation	CompetitionDate	EntryDeadline	Drawn	NumG1Ent	NumG2Ent	NumG3Ent	NumG3Ent	NumG4Ent	NumG4Ent
Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year
1 1	Ulster Champion... - Ards Castle G...	Ards Castle G...	5/Aug/2018	8/August/2018	True	1	2	1	1	0	2
2 2	Cu. Astur - G...	G...	3/Jun/2018	9/August/2018	True	1	3	1	1	0	2
3 3	Champion of Ch... - Portrush Tennis ...	Portrush Tennis ...	12/September/2018	9/August/2018	True	1	1	1	1	0	2
4 11	CompetitionTests5	22 British Road	6/Nov/2018	9/August/2018	True	1	3	1	1	0	2
5 12	Ards And North ... - Castle Park, Ban...	Castle Park, Ban...	12/May/2018	12/April/2018	True	2	2	1	1	0	2
6 13	Christain Kho - Antrim Gramma...	Antrim Gramma...	14/May/2018	14/April/2018	True	3	3	1	2	0	2
7 14	Lisburn Champ... - Lisburn Malone	Lisburn Malone	3/June/2018	14/May/2018	False	0	0	0	0	0	0
8 15	Morris Champion... - Moors Park	Moors Park	15/Aug/2018	10/May/2018	True	1	2	1	0	1	1
9 16	Mid Ulster Champ... - Cookstown Gra...	Cookstown Gra...	2/June/2018	2/April/2018	False	NULL	NULL	NULL	NULL	NULL	NULL

14. Judges have the ability to write comments about each section and the score bands in competitions.

Before a judge has the ability to write their comments about the performing band, they must navigate their way through a selection of list boxes.

These list boxes ensure that the judge has selected a competition, then the grade they wish to judge and then the section they are judging until they get to list of bands. They can then write their comments and update them if they wish by selecting the band again. Once all the bands have competed. They must score (rank) all the bands in that particular grade. The first test will show the progression of screens until the judge gets to the comments sheet.

Writing Comment sheets:

Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Navigation testing to the comments sheet for the piping 1 section of Vale of Athol in grade 2 in the Moira championships.	Typical	Moira Championships, 2, Vale of Athol, Piping 1.	<p>The user after each selection will be presented with another selection to make. The screen will have the relevant information on what the user must select.</p> <p>For example, When the user selects the grade of the competition. They will be brought to the Select grade page where should tell the user to select the grade they would like to judge.</p> <p>They is repeated with the bands in the grade and the section they judge is scoring.</p> <p>Finally, the user will be presented with a text area to record their comments about the performance and press save once they are finished.</p>	Functional

2	Navigation testing – not selecting a competition.	Invalid	None	User presented a message box telling them they must select a competition.	Functional
3	Navigation testing – not selecting a grade.	Invalid	None	User presented a message box telling them they must select a grade.	Functional
4	Navigation testing – not selecting a band.	Invalid	None	User presented a message box telling them they must select a band.	Functional
5	Navigation testing – not selecting a section.	Invalid	None	User presented a message box telling them they must select a section.	Functional
6	Entering all sections comments for all bands in grade 2 in the Moira Championships. For each comment sheet instead of writing comments about a bands performance I will populate the comments with the details of the competition, band name and section, I am writing about to show how the data is being saved to the database.	Typical	<CompetitionName>, <BandName>, <Section>	Once the judge has pressed the save button to save their comments about a band, will they be shown back to the list of bands in the grade. Where they can select the next band that is competing.	Logical & Functional
7	Logging in as another judge to test if the ID of the judge is being recorded properly	Typical	Logging on as Winston Pollock.	The Judge ID saved to the database will be of Winston pollocks (2)	Functional

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments														
		As expected.	<p>Select Competition</p> <p>Please select the competition you would like to Judge.</p> <table border="1"> <tr><td>Moira Championships</td><td>10/July/2018</td></tr> <tr><td>Christain Kho</td><td>14/May/2018</td></tr> <tr><td>Ards And North Down Championships</td><td>12/May/2018</td></tr> <tr><td>CompetitionTestS</td><td>6/May/2018</td></tr> <tr><td>Champion of Championship</td><td>12/September/2018</td></tr> <tr><td>Co. Antrim</td><td>3/June/2018</td></tr> <tr><td>Ulster Championships</td><td>5/July/2018</td></tr> </table> <p>Select Competition</p>	Moira Championships	10/July/2018	Christain Kho	14/May/2018	Ards And North Down Championships	12/May/2018	CompetitionTestS	6/May/2018	Champion of Championship	12/September/2018	Co. Antrim	3/June/2018	Ulster Championships	5/July/2018	This test has passed
Moira Championships	10/July/2018																	
Christain Kho	14/May/2018																	
Ards And North Down Championships	12/May/2018																	
CompetitionTestS	6/May/2018																	
Champion of Championship	12/September/2018																	
Co. Antrim	3/June/2018																	
Ulster Championships	5/July/2018																	
1	N/A		<p>Select Grade</p> <p>Please select the Grade you would like to Judge.</p> <table border="1"> <tr><td>1</td></tr> <tr><td>2</td></tr> <tr><td>3A</td></tr> <tr><td>3B</td></tr> <tr><td>4A</td></tr> <tr><td>4B</td></tr> </table> <p>Select Grade</p>	1	2	3A	3B	4A	4B									
1																		
2																		
3A																		
3B																		
4A																		
4B																		

Select Band

Please select the Band you wish to Judge.

Vale Of Atholl
Ravara

Select Band

Enter Scoring for Grade 2

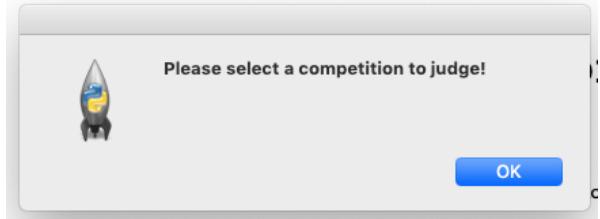
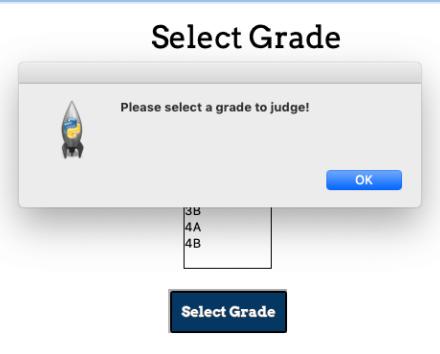
Select Section

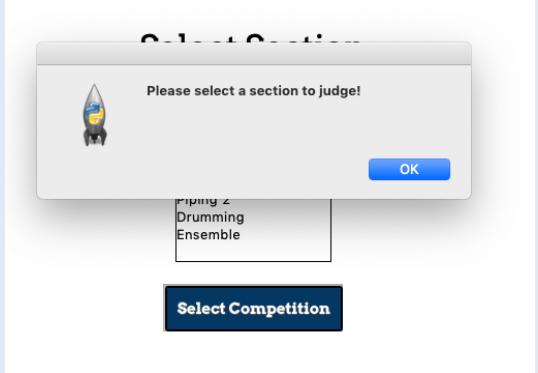
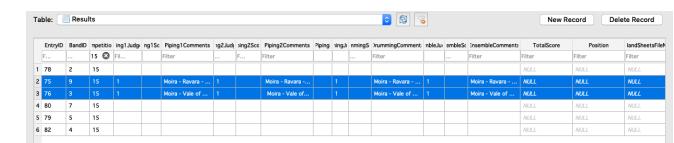
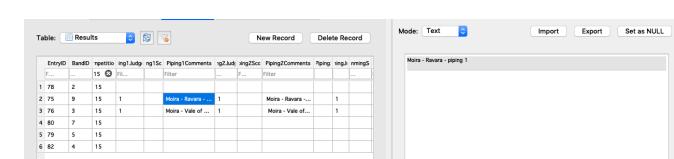
Please select the Section you wish to Judge.

Piping 1
Piping 2
Drumming
Ensemble

Select Competition

The screenshot shows a web application interface for judging pipe bands. At the top, there's a header with the logo 'RSPBANI' and the text 'The Royal Scottish Pipe Band Association NI'. To the right of the header are 'Sign out' and a user icon. Below the header, there's a navigation menu with links: Home, Bands, Competitions, and Results. The main content area is titled 'Comments Sheet' and contains a text input field with the placeholder 'Please write your comment about the bands performance today'. At the bottom of the page, there's a 'Save' button and a link 'Judge Competitions'.

2	N/A	As expected.		This test has passed
3	N/A	As expected.		This test has passed
4	N/A	As expected.		This test has passed

5	N/A	As expected.		This test has passed
6	<p>Example as it is not necessary to show myself entering all comments as it would be too tedious:</p> 	As expected.	<p>Outcome after all bands in the grade have competed and judges have submitted their comments.</p>  <p>This screenshot shows that the results are being saved to the correct field in the database (Ravara's Band ID is 9)</p> 	This test has passed

7		As expected.	<p>Table: Results</p> <table border="1"> <thead> <tr> <th>EntryID</th><th>BandID</th><th>CompetitionID</th><th>Piping1JudgeID</th><th>Piping2JudgeID</th></tr> <tr> <th>Filter</th><th>Fi...</th><th>15</th><th>Filter</th><th>Filter</th></tr> </thead> <tbody> <tr> <td>1</td><td>75</td><td>9</td><td>15</td><td>1</td></tr> <tr> <td>2</td><td>76</td><td>3</td><td>15</td><td>1</td></tr> <tr> <td>3</td><td>78</td><td>2</td><td>15</td><td>1</td></tr> <tr> <td>4</td><td>79</td><td>5</td><td>15</td><td>1</td></tr> <tr> <td>5</td><td>80</td><td>7</td><td>15</td><td>1</td></tr> <tr> <td>6</td><td>82</td><td>4</td><td>15</td><td>2</td></tr> </tbody> </table>	EntryID	BandID	CompetitionID	Piping1JudgeID	Piping2JudgeID	Filter	Fi...	15	Filter	Filter	1	75	9	15	1	2	76	3	15	1	3	78	2	15	1	4	79	5	15	1	5	80	7	15	1	6	82	4	15	2	
EntryID	BandID	CompetitionID	Piping1JudgeID	Piping2JudgeID																																								
Filter	Fi...	15	Filter	Filter																																								
1	75	9	15	1																																								
2	76	3	15	1																																								
3	78	2	15	1																																								
4	79	5	15	1																																								
5	80	7	15	1																																								
6	82	4	15	2																																								
			<p>This screenshot shows that Winston Pollock has been the Piping 2 judge for this competition.</p>																																									

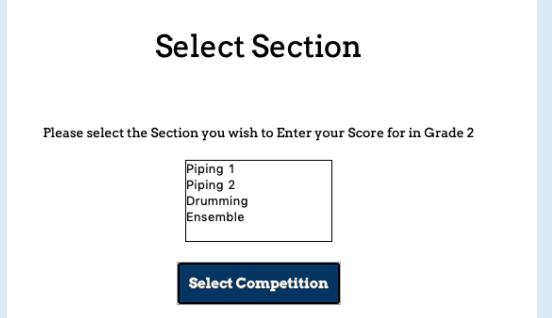
Scoring bands:

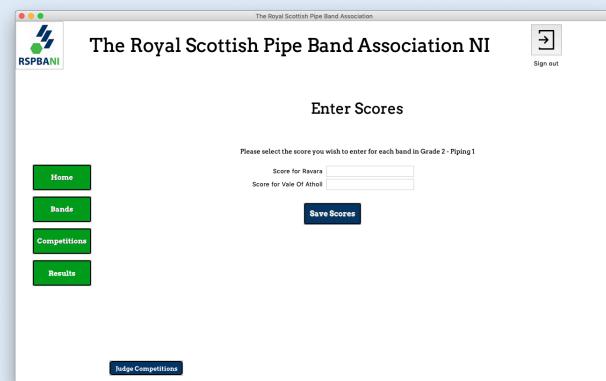
Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Once the judge has entered their comments about all bands. They must select the enter score button. This will then move them to another page where they must select the section to enter the scores of then another page to rank the	Typical	None	After selecting the section to enter scores, the user will be brought to the enter scores page. For every band entered the competition, they will find an entry box to enter their score for the band.	Functional

	bands of the grade they have just judged.				
2	Entering the same score for both bands.	Invalid	"1", "1"	A message box appears to user that entered scores are not valid. The scores entered must be between 1 and the number of bands entered the grade and scores must not be used twice.	Functional
3	Entering a score above the number of bands entered.	Invalid	"1", "3"	A message box appears to user that entered scores are not valid. The scores entered must be between 1 and the number of bands entered the grade and scores must not be used twice.	Functional
4	Entering a negative score for the band	Invalid	"-1", "2"	A message box appears to user that entered scores are not valid. The scores entered must be between 1 and the number of bands entered the grade and scores must not be used twice.	Functional
5	Entering a letter instead of a number	Invalid	"L", "2"	A message box appears to user that entered scores are not valid. The scores entered must be between 1 and the number of bands entered the grade and scores must not be used twice.	Functional
6	Entering valid scores for both bands in the grade for piping 1.	Typical	"2", "1"	Band Scores saved to the database. Program checks to see if both piping 1 and piping 2 have been entered, if so program will calculate the total piping score for each band. Message box to tell judge scores have been saved.	Functional

7	Entering valid scores for both bands in the grade for piping 2.	Typical	“2”, “1”	Band Scores saved to the database. Program checks to see if both piping 1 and piping 2 have been entered, if so program will calculate the total piping score for each band. Ravara should have a total piping score of 4 and Vale of Athol should have a total score of 2	Functional
8	Entering Score for Piping 2 first, then Piping 1. This is testing to ensure that the total score is still calculated if scores are entered the opposite way around.	Typical	“1”, “2” “1”, “2”	Ravara will have piping 1 & 2 score of 1 Vale will have piping 1 & 2 score of 2 Ravara should have a total piping score of 2 and Vale of Athol should have a total score of 4.	Functional
9	Entering Drumming Score	Typical	None	User must select the best Bass section as well as entering the section score	Logical
10	Entering Ensemble Score	Typical	None	User must select the band with best Marching and deportment as well as entering the section score	Logical
11	Not selecting a band for best Bass section	Invalid	None	A message box displayed to user telling them to select a band for best Bass section	Functional
12	Selecting Ravara as best Bass section in grade 2 of Moira Championships	Valid	Ravara	Scored saved message box. Ravara is saved as best Bass section for grade 2 in the record for the Moira Championships.	Logical
13	Not selecting a band for best Bass section	Invalid	None	A message box displayed to user telling them to select a band for best Bass section	Functional

14	Entering Vale of Athol as the band with best M&D in the ensemble scoring page.	Typical	Vale of Athol	A message box displayed to user telling them to select a band for best M&D	Functional
----	--	---------	---------------	--	------------

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments
1	N/A	As expected.	<p>Select Section</p> <p>Please select the Section you wish to Enter your Score for in Grade 2</p> 	This test has passed



Enter Scores

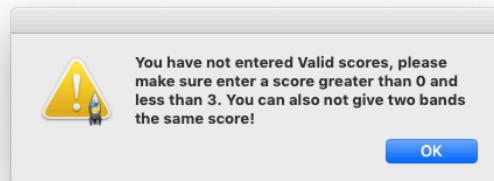
Please select the score you wish to enter for each band in Grade 2 - Piping 1

Score for Ravara

Score for Vale Of Atholl

Save Scores

As expected.



Please select the score you wish to enter for each band in Grade 2 - Piping 1

Score for Ravara

Score for Vale Of Atholl

Save Scores

This test has passed

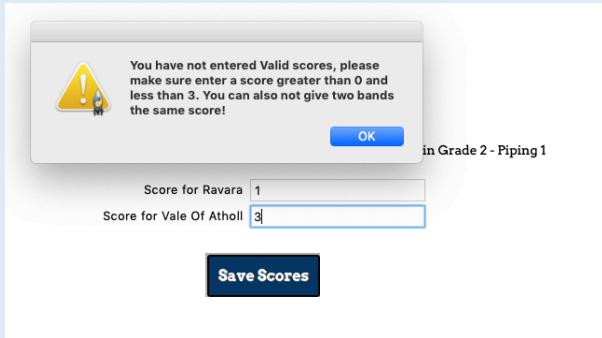
2

Enter Scores

Please select the score you wish to enter for each band in Grade 2 - Piping 1

Score for Ravara
Score for Vale Of Atholl

Save Scores



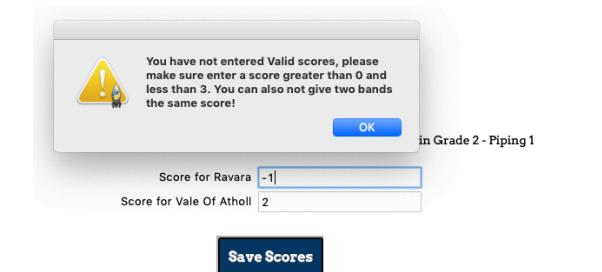
3

Enter Scores

Please select the score you wish to enter for each band in Grade 2 - Piping 1

Score for Ravara
Score for Vale Of Atholl

Save Scores



4

Enter Scores

Please select the score you wish to enter for each band in Grade 2 - Piping 1

Score for Ravara
Score for Vale Of Atholl

Save Scores

System
Crashed.

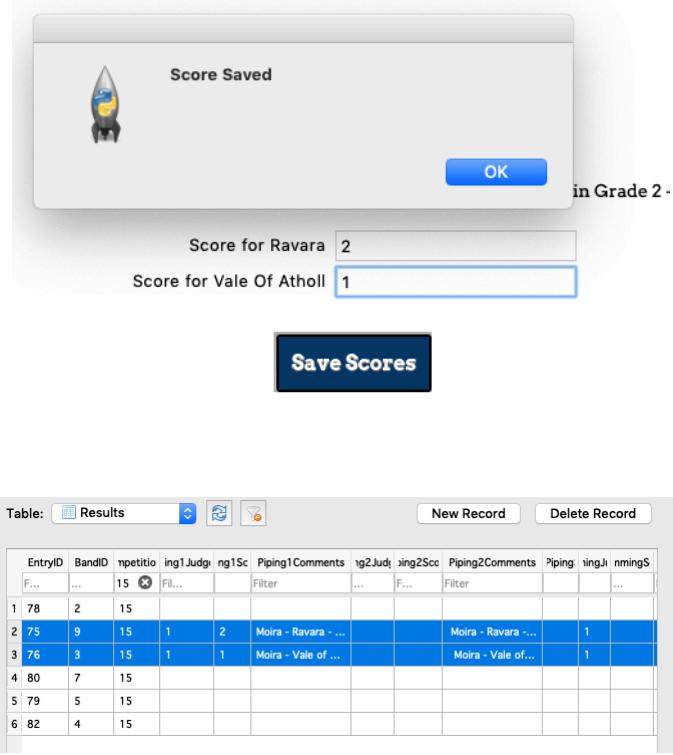
```
Exception in Tkinter callback
Traceback (most recent call last):
  File "/Library/Frameworks/Python.framework/Versions/3.7/lib/python3.7/tkinter/_init_.py", line 1702, in __call__
    return self.func(*args)
  File "r:/Users/RossMartin/Documents/GitHub/A2CourseworkCS/Testing_A2_Coursework.py", line 10006, in <lambda>
    listofJudgeScoreBox)
  File "/Users/RossMartin/Documents/GitHub/A2CourseworkCS/Testing_A2_Coursework.py", line 9902, in ScoreSheetCheck
    if int(BandScore) in possibleScores:
ValueError: invalid literal for int() with base 10: 'L'
```

5

This test failed when it tried to convert a letter to an integer.

6

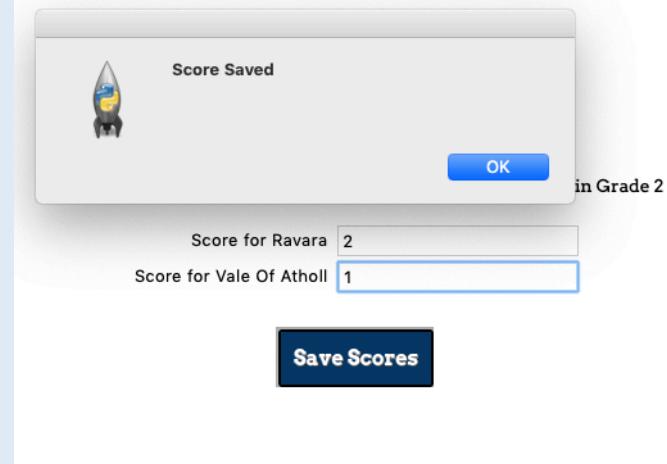
N/A



7

N/A

As expected



This test has passed.

Shows the database after the data has been committed

Table: Results

EntryID	BandID	nrepetitio	ing1Judg	Piping1Score	g1Comr	ng2Judg	Piping2Score	2Comr	TotalPipingScore	ingJ
1 78	2	15								
2 75	9	15	1		Moira...	1		Mo...		1
3 76	3	15	1		Moira...	1		M...		1
4 80	7	15								
5 79	5	15								
6 82	4	15								

8

Table: Results

EntryID	BandID	nrepetitio	ing1Judg	Piping1Score	g1Comr	ng2Judg	Piping2Score	2Comr	TotalPipingScore	ingJ
1 78	2	15								
2 75	9	15	1		Moira...	1		Mo...		1
3 76	3	15	1		Moira...	1		M...		1
4 80	7	15								
5 79	5	15								
6 82	4	15								

As expected

Table: Results

EntryID	BandID	nrepetitio	ing1Judg	Piping1Score	g1Comr	ng2Judg	Piping2Score	2Comr	TotalPipingScore	ingJ
1 78	2	15								
2 75	9	15	1		Moira...	1	1	Mo...		1
3 76	3	15	1		Moira...	1	2	M...		1
4 80	7	15								
5 79	5	15								
6 82	4	15								

This test has passed.

Enter Scores

Please select the score you wish to enter for each band in Grade 2 - Piping 2

Score for Ravara
Score for Vale Of Atholl

Save Scores

Database after only piping 2 entered

Table: Results										
EntryID	BandID	nrepetitio	ing1Judg	Piping1Score	g1Comm	ng2Judg	Piping2Score	2Comm	TotalPipingScore	ingJ
1	78	2	15							
2	75	9	15	1	1	Moira...	1	1	Mo...	2
3	76	3	15	1	2	Moira...	1	2	M...	4
4	80	7	15							
5	79	5	15							
6	82	4	15							

Database once piping 1 is entered.

9

As expected

The Royal Scottish Pipe Band Association NI

Enter Scores

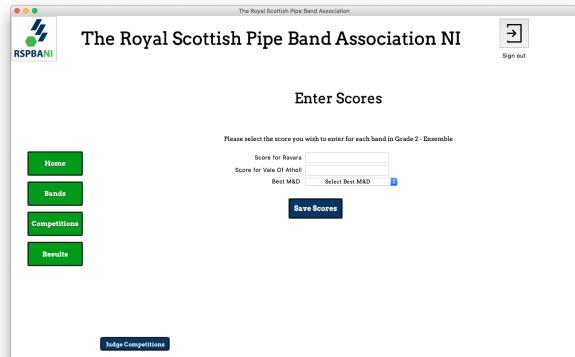
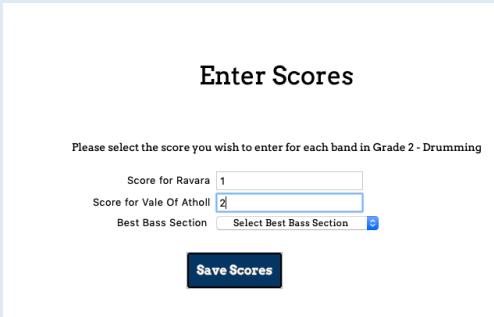
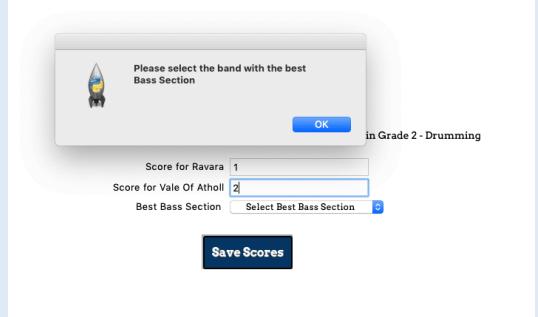
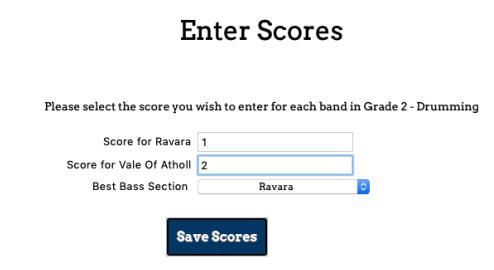
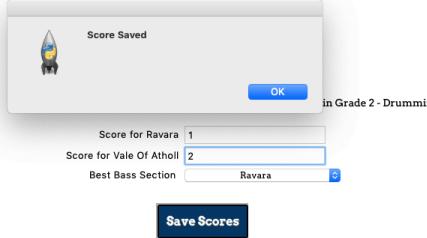
Please select the score you wish to enter for each band in Grade 2 - Drumming

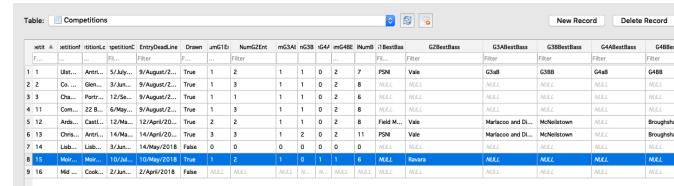
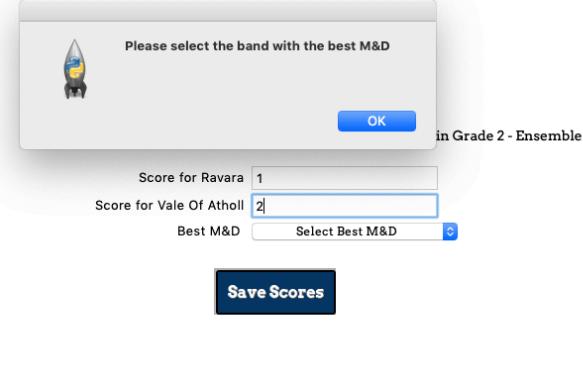
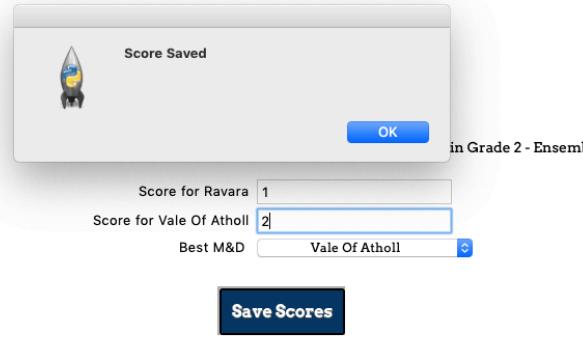
Score for Ravara
Score for Vale Of Atholl
Best Bass Section Select Best Bass Section

Save Scores

Judge Competitions

This test has passed.

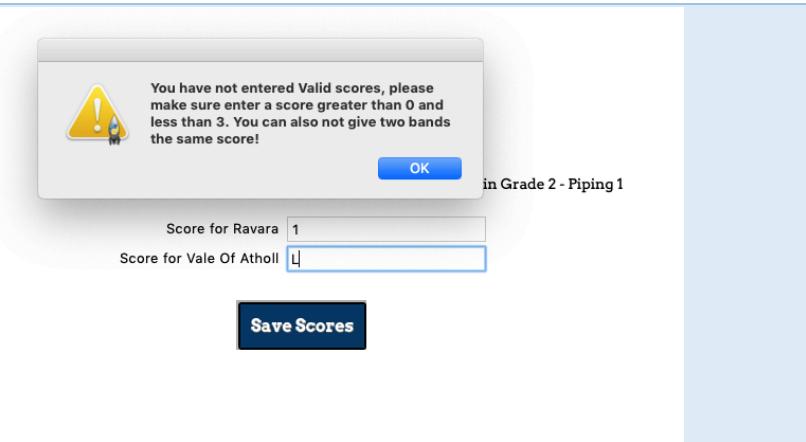
10		As expected		This test has passed.
11		As expected		This test has passed.
12		As expected.		This test has passed.

		This screenshot shows that Ravara have been saved as G2 best Bass section for Moira Championships.	
			
13	<p>Enter Scores</p> <p>Please select the score you wish to enter for each band in Grade 2 - Drumming</p> <p>Score for Ravara: 1 Score for Vale Of Atholl: 2 Best Bass Section: Select Best Bass Section</p> <p>Save Scores</p>	As expected.	
14	<p>Enter Scores</p> <p>Please select the score you wish to enter for each band in Grade 2 - Drumming</p> <p>Score for Ravara: 1 Score for Vale Of Atholl: 2 Best Bass Section: Vale Of Atholl</p> <p>Save Scores</p>	As expected.	

Competitions																						
id	A	CompetitionName	idBand	splitband	EntryDeadline	Drawn	mG1fb	NumG2fb	mG3fb	mG3fb	mG4fb	mG4fb	Numfb	1Bestfb	2Bestfb	3Bestfb	4Bestfb	G2fb	G3fb	G3fbBestfb		
1	1	User Championships	Artd...	5/Apr...	15/August/20...	True	1	2	1	1	0	2	7	FZN	Vale	GStall	G...	G...	Vale	GZAM	C	
2	2	Co Antrim	G...	3/Jan...	15/August/20...	True	1	1	1	1	0	2	8	MELL	MELL	MELL	MELL	MELL	MELL	MELL	MELL	
3	3	Champion of Champion	Potr...	13/Jan...	15/August/20...	True	1	1	1	1	0	2	6	MELL	MELL	MELL	MELL	MELL	MELL	MELL	MELL	
4	11	CompetitionTest	22 B...	6/May...	9/August/20...	True	1	3	1	1	0	2	8	MELL	MELL	MELL	MELL	MELL	MELL	MELL	MELL	
5	12	Ards And North Down	Cert...	12/Mar...	12/April/20...	True	2	2	1	1	0	2	8	Field M...	Vale	Ma...	M...	M...	Fl...	Vale	Merlecoo and D...	N
6	13	Christan Kho	Artd...	14/Mar...	14/April/20...	True	3	3	1	2	0	2	11	FZN	Vale	Ma...	M...	M...	Fl...	Ravers	Merlecoo and D...	N
7	14	Lisburn Championships	Lisb...	3/Jan...	14/May/2018	False	0	0	0	0	0	0	0	MELL	MELL	MELL	MELL	MELL	MELL	MELL	MELL	
8	15	Moira Championships	Mo...	10/Jun...	10/May/2018	True	1	2	1	0	1	1	6	MELL	Ravers	MELL	MELL	MELL	MELL	Vale Of Atholl	ZJL	
9	16	Mid Ulster Championships	Cook...	2/Jan...	2/Apr/2018	False	MELL	MELL	MELL	M...	M...	M...	MELL	MELL	MELL	MELL	MELL	MELL	MELL	MELL	MELL	

This screenshot shows the inputted data being saved to the database under the correct competition.

Test number	Issue	Resolution	Commentary
5	Program can't convert a letter to an integer.	<pre> if BandScore == "": # a number that will never be a possible score # because if the field is left blank then it cant convert "" to a integer BandScore = "0" elif BandScore.isdigit() == False: # if input is not a number then it is invalid so i am setting the BandScore to 0 as it is valid # however can never be a possible score so will be caught further on in the validation routine BandScore = "0" if int(BandScore) in possibleScore: SectionScore[ListBands[n]] = BandScore possibleScore.remove(int(BandScore)) print("PossibleScore" + str(possibleScore)) print("List" + str(ValidPossScoreList)) n += 1 else: # ScoreSheet(grade, ListBands, listOfJudgeScoreBox) ValidCount -= 1 </pre>	I included an additional comparison check to ensure that all invalid data which could be entered would be caught. I created a statement where I checked if the digit was not a number. If the data wasn't a number then I set it to "0" so that during the remainder of the validation routine it got caught instead and the message box was hit.



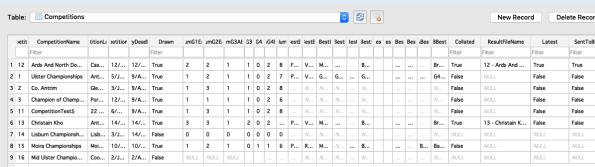
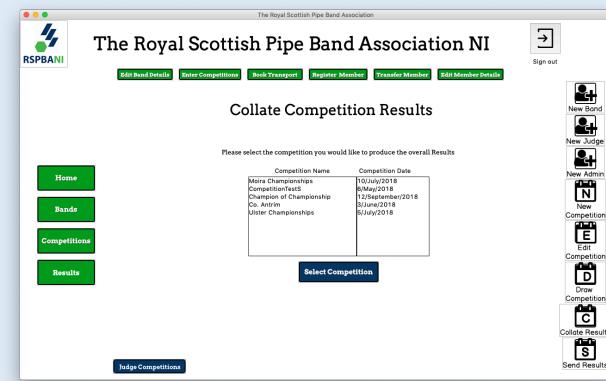
15. Admins then have the ability to collate the judges results and produce the results and send them to all bands and update the latest results feed on home page.

Collating and production of results from judges scores:

Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Displaying only competitions that have been drawn and not already collated will appear in the list box	N/A	None	Only competitions that have the Drawn flag set to True and the Collated flag set to False will appear in the list box.	Logical
2	Pressing the select competition button without selecting a competition from the list box of competitions	Invalid	None	A message box telling user to select a competition to collate its results	Functional
3	Pressing button to collating results of Moira Championships	Typical	None	Total score for every band in competition calculated.	Logical

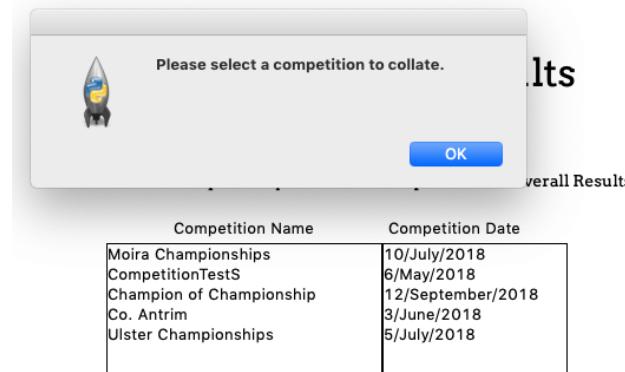
				<p>For each grade, the bands scores are compared and then are placed from 1st to last. In the event of two or more bands getting the same score, the ensemble score of the bands are compared and the band with the lowest ensemble score are placed ahead of the other. These positions are saved to the database.</p> <p>For each band, their comments sheets are produced using the docx library, with the judge who marked them the competitions details and their written comments. The file is named using the Entry ID as this is unique and saved to database. Message box displayed once all sheets have been created.</p> <p>The full results are also produced, the scores for each section for each band in every grade are published in this document along with their total score and position. The grade is then ranked by Position for the first band is at the top and last is at the bottom. The individual best bass and best M&D will also be found after the full results summary for each grade.</p>	
4	Creating results whereby two bands will have the same overall score to ensure my program is able to order them by ensemble score in this case.	Typical	Vale of Athol - Total score = 6, Ensemble Score = 2	Ravara will be first as they have the lowest ensemble score	Logical

			Ravara – Total Score = 6, Ensemble Score = 1		
5	Creating full results when no bands have entered the grade.	Typical	Grade 3A in Moira Championships	The results sheet for this grade will just show no bands. For the individual prizes, they will just be blank.	Functional

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments
1	<p>Table: Competitions</p>  <p>As expected.</p>		 <p>This screenshot shows the populated list box with all the competitions that are eligible for collation.</p>	<p>This test has passed</p>

2

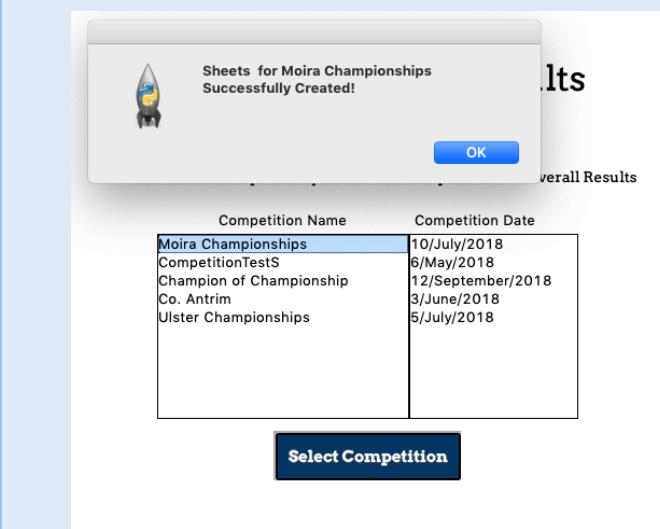
N/A



3

Entry ID 75 is Ravara
Entry ID 76 is Vale of Athol

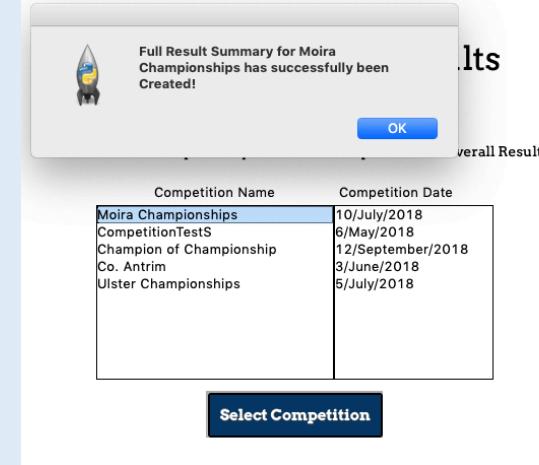
Results											
EntryID	BandID	ctr	A	Ingl	Judge	g1S	PipingComments	g2S	g3Cover	TotalPipingScore	InglDrummingScore
1	78	2	15	1	1	Moira - Piping 1	1	1	Moira - 2	1	1
2	75	9	15	1	1	Moira - Ravara piping 1	1	1	Moira - 2	1	1
3	76	10	15	2	1	Moira - Vale of Athol piping 1	1	2	Moira - 4	1	1
4	80	7	15	1	1	Moira - Harps 1	1	1	Moira - 2	1	1
5	79	5	15	1	1	Moira - Broughshane - Piping 1	1	1	Moira - 2	1	1
6	82	4	15	1	1	Moira - Ballydoherty - Piping 1	1	1	Moira - 2	1	1



This test has passed. I have been able to check using Broughshane as an example for the comment sheets that they have been created with the correct information due to the comments relating to the section and band.

I have manually checked to ensure all the results found in the full results summary are correct and all information has been pulled and populated in the output correctly.

The grade 2 results show that the bands are



displayed and ordered by overall position.

This screenshot shows the breakdown of all the section results. The highlighted are Ravara and Vale of Athol.

The results seen here are correctly reflected in both Outputs.

Table: Results															New Record	Delete Record	
EntryID	BandID	CompetitionID	EngLAdv	PipingScore	Corm	PipingScore	Cor	TotalPipingScore	EngL	DrummingScore	EngC	Blitz	EnsemblesScore	IC	TotalScore	Position	and shear left from A
1	75	15	1	1	M.	1	1	1	1	1	1	1	1	1	75	1	75 decs
2	76	15	1	1	M.	1	2	1	1	1	1	1	1	1	76	2	76 decs
3	78	15	1	1	M.	1	1	1	1	1	1	1	1	1	78	1	78 decs
4	79	15	1	1	M.	1	1	1	1	1	1	1	1	1	79	1	79 decs
5	80	7	1	1	M.	1	1	1	1	1	1	1	1	1	80	1	80 decs
6	82	4	15	1	M.	1	1	1	1	1	1	1	1	1	82	1	82 decs

This example results sheet shows that the band has been matched along with the piping 1 comments.



Official Results Summary

Competition: Moira Championships

Location: Moira Park

Date: 10/July/2018

Band: Broughshane And District

Adjudicator: Winston Pinkerton

Section: Piping 1

Moira - Broughshane - Piping 1

The following screenshots show the full results summary
which has been produced from the results of the
competition in the database



Official Results Summary

competition: Moira Championships

Location: Moira Park

Date: 10/July/2018

Grade 1 Results

Band	Piping 1	Piping 2	Total Piping	Drumming	Ensemble	Total	Overall Position
PSNI	1	1	2	1	1	4	1

Best Pipes: PSNI

Best Drum Corp: PSNI

Best Bass Section: PSNI

Best M&D: PSNI

Grade 2 Results

Band	Piping 1	Piping 2	Total Piping	Drumming	Ensemble	Total	Overall Position
Ravara	1	1	2	1	1	4	1
Vale Of Atholl	2	2	4	2	2	8	2

Best Pipes: Ravara

Best Drum Corp: Ravara

Best Bass Section: Ravara

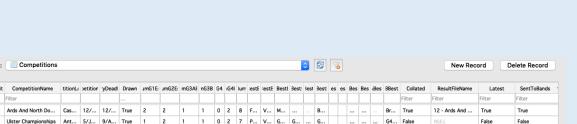
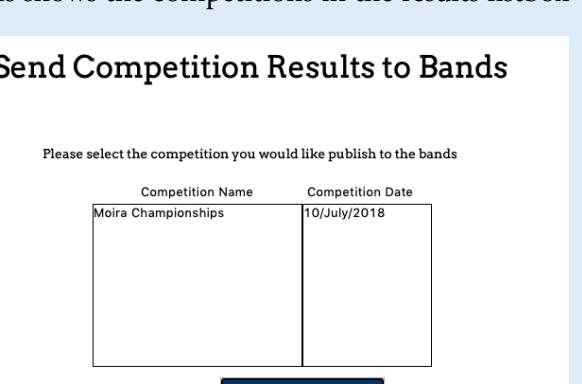
Best M&D: Vale Of Atholl

		As expected.	<p>Grade 3B Results</p> <table border="1"> <thead> <tr> <th>Band</th><th>Piping 1</th><th>Piping 2</th><th>Total Piping</th><th>Drumming</th><th>Ensemble</th><th>Total</th><th>Overall Position</th></tr> </thead> <tbody> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <p>Best Pipes: Best Drum Corp: Best Bass Section: Best M&D:</p>	Band	Piping 1	Piping 2	Total Piping	Drumming	Ensemble	Total	Overall Position									This test has passed
Band	Piping 1	Piping 2	Total Piping	Drumming	Ensemble	Total	Overall Position													
5	N/A																			

Sending results and updating results feed:

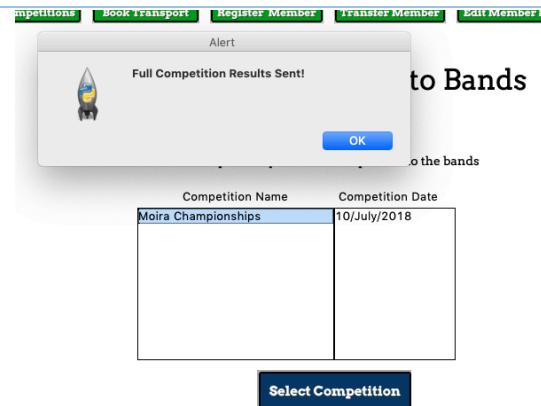
Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1	Viewing competitions in the Results list box	N/A	None	Only competitions that have the Collated Flag set to True and The SentToBands Flag sent to False should appear in this list box.	Functional
2	Sending Results to Bands	Typical	Moira Championships	All Bands registered to the association will receive a copy of the results file attached to an email sent from the association.	Functional

				Each band entered will then receive their comments sheets individually.	
3	Updating the Results news feed on sending of Results	Typical	Moira Championships	Home page Latest results will be updated to the most recently sent out results, as the Latest Flag is set to False for all Bands and the competitions just sent is set to True.	Functional

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments
1	<p>As expected</p> 	<p>This shows the competitions in the results listbox</p> 	<p>This test has passed</p>	

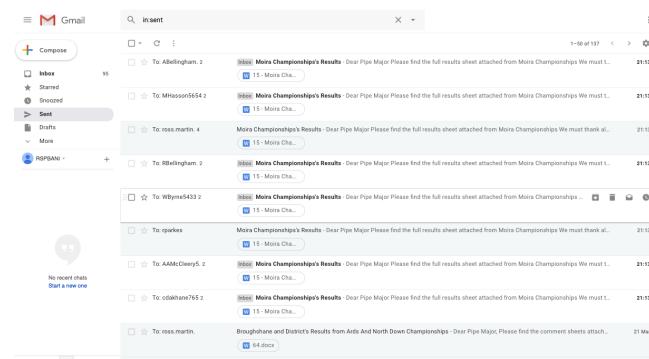
2

As expected



to Bands

This screenshot shows the full results sheet being sent to all bands.



This test has passed

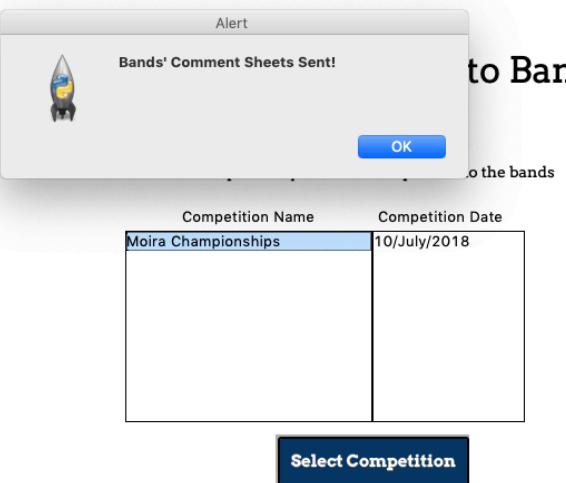
Moira Championships's Results [Inbox](#)

rspbani.results@gmail.com
to ABellingham436543

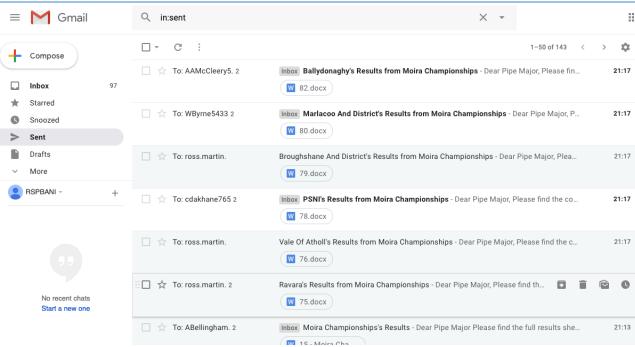
Dear Pipe Major
Please find the full results sheet attached from Moira Championships

We must thank all the competing Bands and the supporters they bring for their continued support throughout the season

The Royal Scottish Pipe Band Association



This screenshot shows all 6 emails being sent to the entered bands with their comments attached.



This is an example email sent to an entered band with their results attached.

Broughshane And District's Results from Moira Championships [Inbox](#)

 rspbani.results@gmail.com to me 9:17 PM (2 minutes ago)

Dear Pipe Major,
Please find the comment sheets attached from the Moira Championships

Congratulations on your recent result. We hope to see you at the next competition.

The Royal Scottish Pipe Band Association



3

As expected.

The screenshot shows a web application interface for the Royal Scottish Pipe Band Association Northern Ireland Branch (RSPBANI). The main header reads "The Royal Scottish Pipe Band Association NI". Below the header is a navigation bar with links: "Edit Band Details", "Enter Competitions", "Book Transport", "Register Member", "Transfer Member", and "Edit Member Details". On the left, there is a vertical sidebar menu with four items: "Home" (selected), "Bands", "Competitions" (selected), and "Results". The central content area displays a photograph of several pipe band members in kilts. To the right of the photo is a section titled "Latest Results" which lists the results for the "Minn Championships" held on "Sunday 20th August 2006". The results are categorized by grade:

Grade	1st	2nd	3rd	4th
Grade 1A	PBNI			
Grade 2	Br. Pipe Band			
Grade 3A	Marliscoo And District			
Grade 3B	Br. Pipe Band			
Grade 4A	Br. Pipe Band			
Grade 4B	Ballynahinch			

At the bottom of the results section is a "Judge Competitions" button. To the right of the main content area is a sidebar with various icons and labels for administrative functions: "New Band", "New Judge", "New Admin", "New Competition", "Edit Competition", "Draw Competition", "Collate Results", and "Send Results".

This test has passed

Extreme testing field data

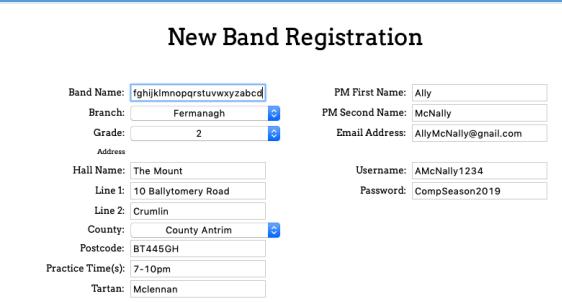
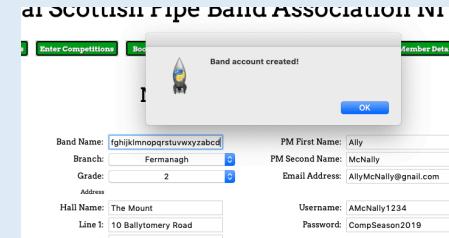
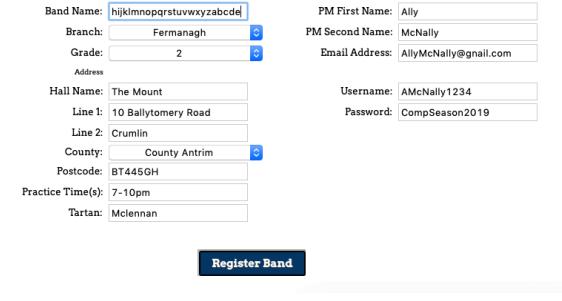
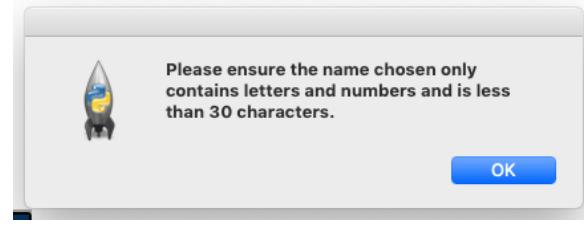
I have extensively tested all data that could be inputted into my system from filling out the many forms on my system. Below I have shown examples of the extreme tests that I have performed on my system to ensure it meets the required criteria of field length in my data structure design in my design section.

The following tests are to ensure extreme data can be entered into my system and still be accepted:

Test number	Description of test	Test data type (Typical/ Extreme/ Invalid)	Tests data to be used	Expected outcome	Test type (Functional / logical)
1a	Testing to ensure extreme data can be entered into my system and still be accepted: BandName can take a length of 30 characters.	Extreme	“abcdefghijklmнопqrstuvwxyzabcd”	Band Name will be accepted	Logical
1b	BandName can take a length of 31 characters.	Invalid	“abcdefghijklmнопqrstuvwxyzabcdе”	Band Name will not be accepted	Logical
2a	Address Line 1 can be a length of 60	Extreme	“1abcdefghijklmнопqrstuvwxyzабцдғілік”	Address Line 1 will be accepted	Logical
2b	Address Line 1 cannot be a length of 61	Invalid	“1abcdefghijklmнопqrstuvwxyzабцдғілік”	Address Line 1 will not be accepted	Logical

			“abcdefg”		
3a	Address Line 2 can be a length of 60 but not 61	Extreme	“1abcdefghijklmnpqrst uvwxyzabcdeghij klmnopqrstuvwxyz abcdefg”	Address Line 2 will be accepted	Logical
3b	Address Line 2 cannot be a length of 61	Invalid	“1abcdefghijklmnpqrst uvwxyzabcdeghij klmnopqrstuvwxyz abcdefg”	Address Line 2 will not be accepted	Logical
4a	Email address can be a length of 60	Extreme	“abcdefghijklmnpqrst uvwxyzabcdeghij klmnopqrstu@wxyz. abcdefg”	Email Address will be accepted	Logical
4b	Email address cannot be a length of 61	Invalid	“abcdefghijklmnpqrst uvwxyzabcdeghij klmnopqrstu@wxyz. abcdefg”	Email Address will not be accepted	Logical
5a	First name can be a length of 20	Extreme	“Abcdefghijklmnpqrst”	First name will be accepted	Logical
5b	First name cannot be a length of 21	Invalid	“Abcdefghijklmnpqrstu”	First name will not be accepted	Logical
6a	Second name can be a length of 20	Extreme	“Abcdefghijklmnpqrst”	Second name will be accepted	Logical
6b	Second name cannot be a length of 21	Invalid	“Abcdefghijklmnpqrstu”	Second name will not be accepted	Logical

7a	Username can be of length 20	Extreme	"Abcdefghijklmnopqrs1"	Username will be accepted	Logical
7b	Username cannot be of length 21	Invalid	"Abcdefghijklmnopqrst1"	Username will not be accepted	Logical
8a	Password can be of length 20	Extreme	"Abcdefghijklmnopqrs1"	Password will be accepted	Logical
8b	Password cannot be of length 21	Invalid	"Abcdefghijklmnopqrst1"	Password will not be accepted	Logical

Test number	Evidenced test data	Actual outcome	Outcome screenshot	Comments
1a	<p>New Band Registration</p>  <p>The form shows a band name "fghijklmnopqrstuvwxyzabcd" entered into the "Band Name" field. Other fields include Branch: Fermanagh, Grade: 2, Address: The Mount, Line 1: 10 Ballymoney Road, Line 2: Crumlin, County: County Antrim, Postcode: BT445GH, Practice Time(s): 7-10pm, and Tartan: McLennan. The PM details (First Name: Ally, Second Name: McNally, Email: AllyMcNally@gmail.com) and login details (Username: AMcNally1234, Password: CompSeason2019) are also present.</p>	As expected	 <p>A modal dialog box displays the message "Band account created!" with an OK button. The background shows the registration form with the same data as the screenshot above.</p>	This test has passed
1b	<p>New Band Registration</p>  <p>The form shows a band name "hijklmnopqrstuvwxyzabcd" entered into the "Band Name" field. Other fields are identical to the first test case.</p>	As expected	 <p>A modal dialog box displays the message "Please ensure the name chosen only contains letters and numbers and is less than 30 characters." with an OK button.</p>	This test has passed

New Band Registration

Band Name: Atholl
 Branch: Down
 Grade: 2
 Address:
 Hall Name: Atholl Hall
 Line 1: ijklmnopqrstuvwxyzabdefg
 Line 2: Atholl
 County: County Fermanagh
 Postcode: BT295GH
 Practice Time(s): 7-10
 Tartan: Atholl

PM First Name: Terry
 PM Second Name: Tully
 Email Address: TTully@gmai.com

Username: TTully123
 Password: GiuEvUdE5N7

Register Band

As expected

New Band Registration

Band account created!

Band Name: Atholl
 Branch: D
 Grade:
 Address:
 Hall Name: Atholl Hall
 Line 1: ijklmnopqrstuvwxyzabdefg
 Line 2: Atholl
 County: County Fermanagh
 Postcode: BT295GH
 Practice Time(s): 7-10
 Tartan: Atholl

Username: TTully123
 Password: GiuEvUdE5N7

OK

This test has passed

2a

New Band Registration

Band Name: Atholl
 Branch: Down
 Grade: 2
 Address:
 Hall Name: Atholl Hall
 Line 1: Imnopqrstuvwxyzabdefgh
 Line 2: Atholl
 County: County Fermanagh
 Postcode: BT295GH
 Practice Time(s): 7-10
 Tartan: Atholl

PM First Name: Terry
 PM Second Name: Tully
 Email Address: TTully@gmai.com

Username: TTully123
 Password: GiuEvUdE5N7

Register Band

As expected

Enter Competitions Book Transport Register Member Transfer Member Edit Member

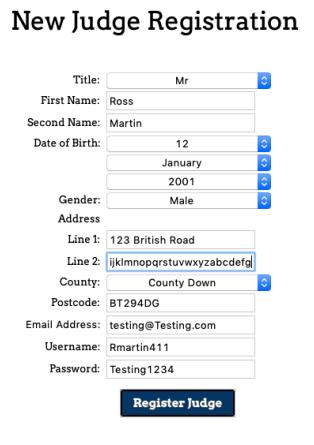
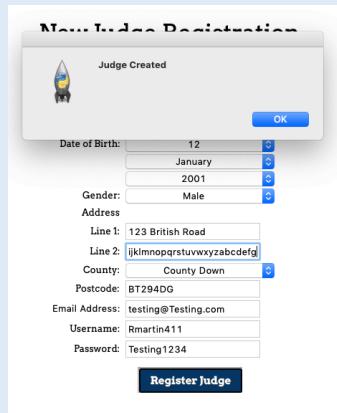
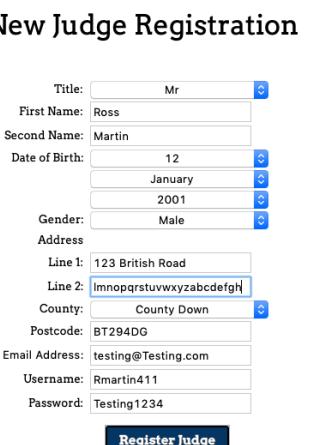
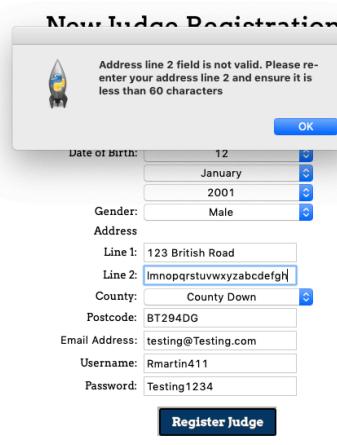
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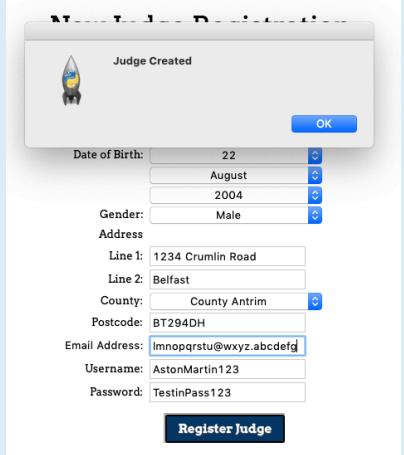
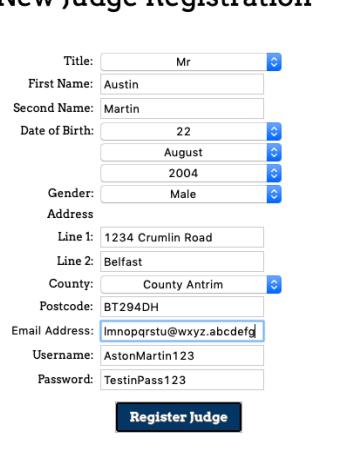
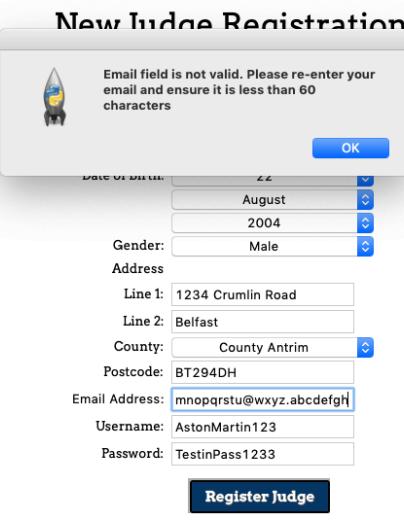
OK

Band Name: Terry
 Branch: Down PM Second Name: Tully
 Grade: 2 Email Address: TTully@gmai.com

This test has passed

2b

		As expected		This test has passed
3a		As expected		This test has passed

	New Judge Registration	As expected		This test has passed
4a				
4b	New Judge Registration	As expected		This test has passed

New Admin Registration

Title: Mr

First Name: Abcdefghijklmnopqrst

Second Name: David

Date of Birth: 15 April 1998

Gender: Male

Address

Line 1: 123 Tossing Road

Line 2: Bangor

County: County Down

Postcode: BT388RJ

Email Address: Testing@testing.com

Username: Testing123

Password: TesstngPass123

Register Admin

As expected

New Admin Registration

Title: Mr

First Name: Abcdefghijklmnopqrst

Second Name: David

Admin Created



OK

Line 2: Bangor

New Admin Registration

Title: Mr

First Name: Abcdefghijklmnoprstu

Second Name: David

Date of Birth: 15 April 1998

Gender: Male

Address

Line 1: 123 Tossing Road

Line 2: Bangor

County: County Down

Postcode: BT388RJ

Email Address: Testing@testing.com

Username: Testing123

Password: TesstngPass123

Register Admin

As expected

New Admin Registration

Title: Mr

First Name: Abcdefghijklmnopqrstu

Second Name: David

First name field is not valid. Please re-enter your first name and ensure it is less than 20 characters

OK

Line 1: 123 Tossing Road

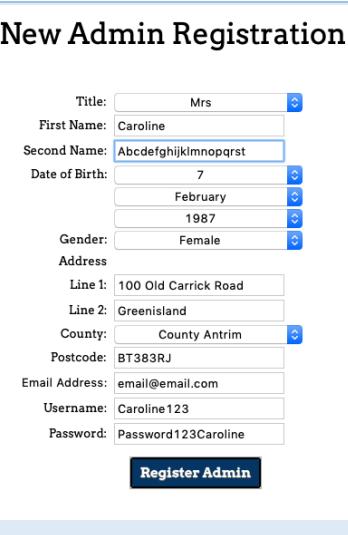
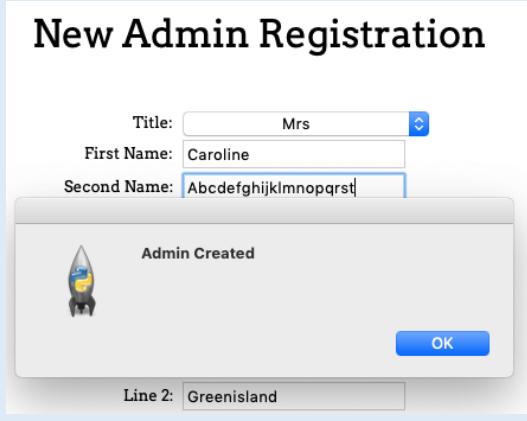
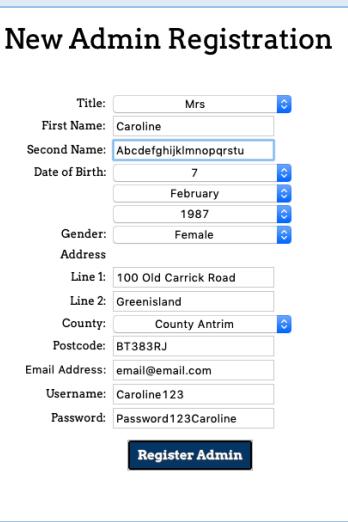
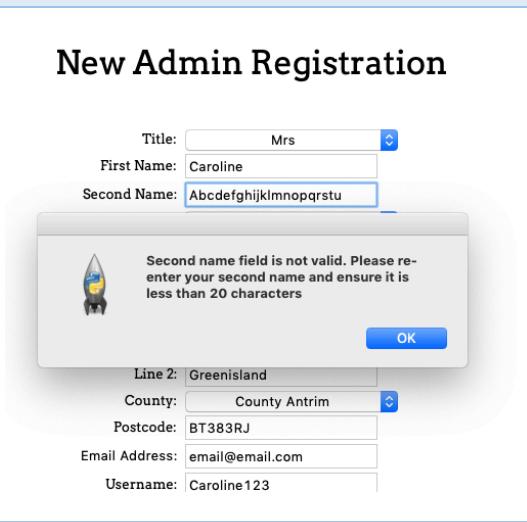
Line 2: Bangor

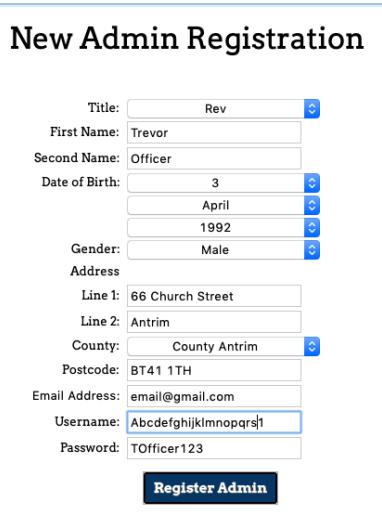
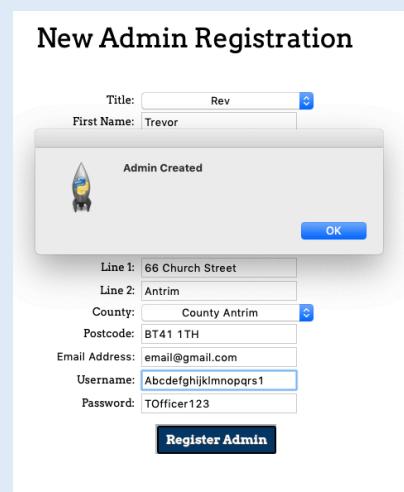
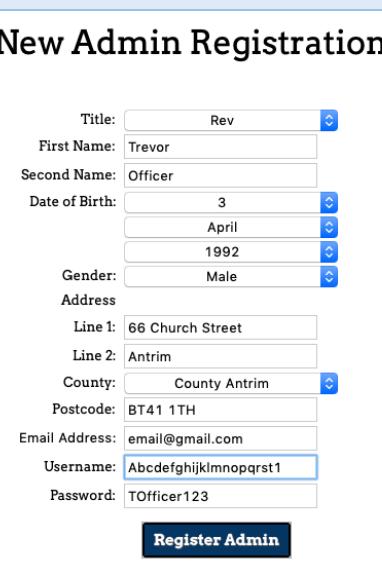
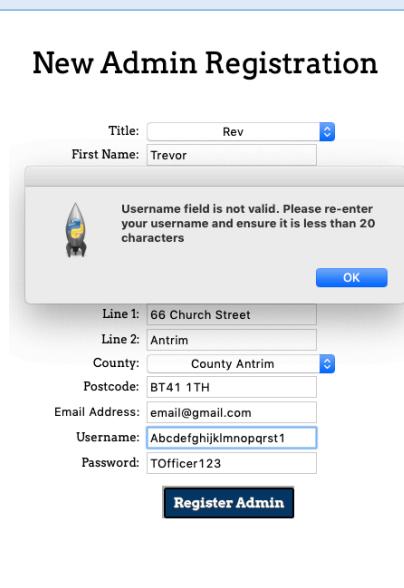
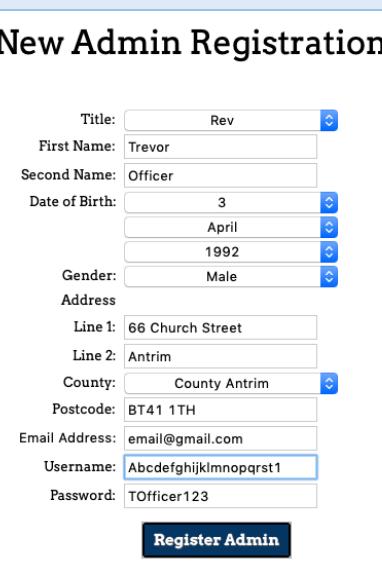
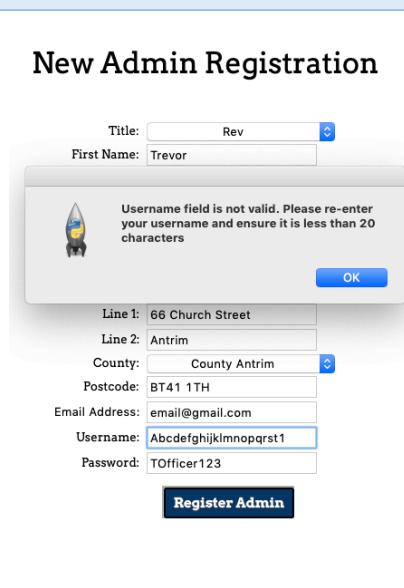
County: County Down

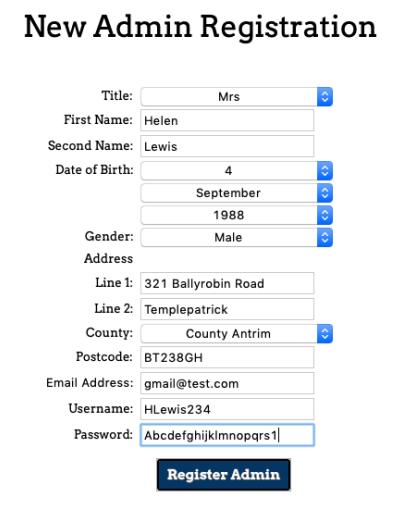
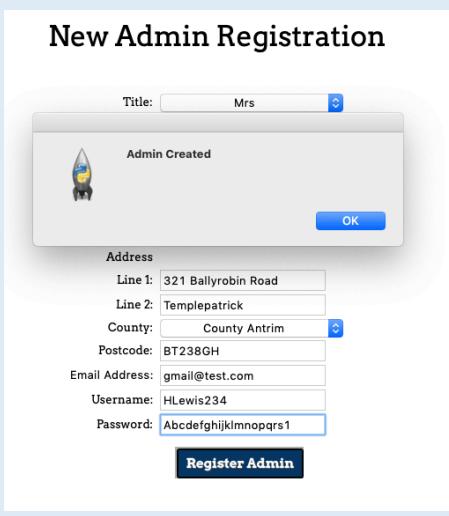
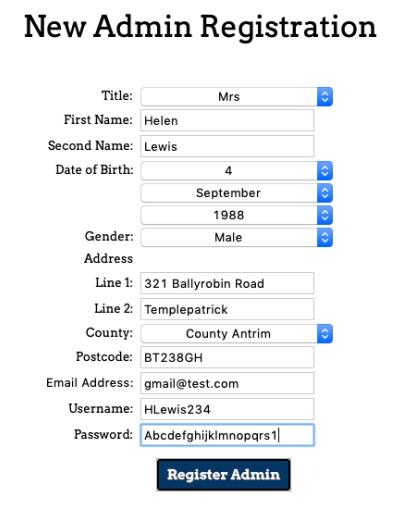
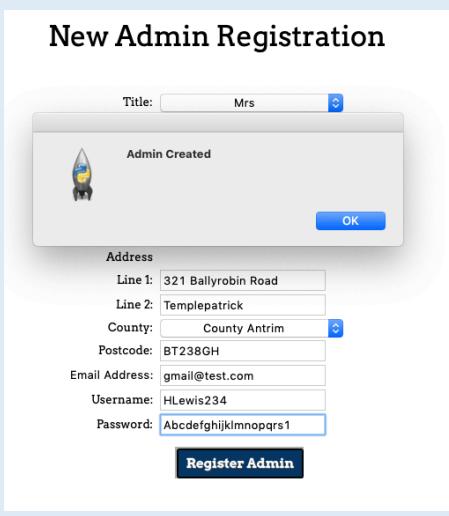
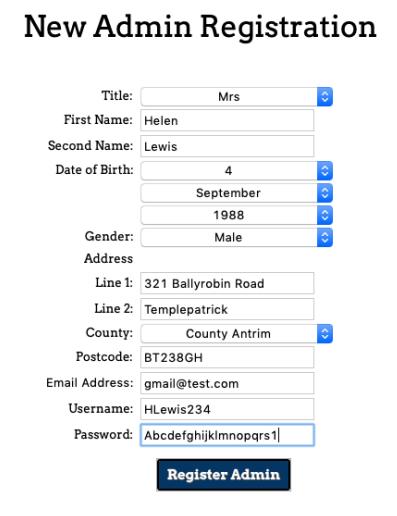
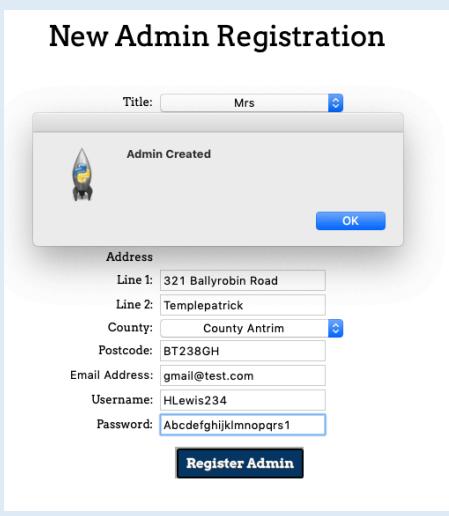
5a

This test has passed

5b

6a	<h3>New Admin Registration</h3>  <p>The screenshot shows a registration form with the following data:</p> <ul style="list-style-type: none"> Title: Mrs First Name: Caroline Second Name: Abcdefghijklmnopqrst Date of Birth: 7 February 1987 Gender: Female Address: <ul style="list-style-type: none"> Line 1: 100 Old Carrick Road Line 2: Greenisland County: County Antrim Postcode: BT383RJ Email Address: email@email.com Username: Caroline123 Password: Password123Caroline <p>Register Admin</p>	As expected	 <p>The screenshot shows a confirmation dialog box with the message "Admin Created" and a small rocket icon. Below the dialog, the "Line 2" field contains "Greenisland".</p>	This test has passed
6b	<h3>New Admin Registration</h3>  <p>The screenshot shows a registration form with the following data:</p> <ul style="list-style-type: none"> Title: Mrs First Name: Caroline Second Name: Abcdefghijklmnopqrstuvwxyz Date of Birth: 7 February 1987 Gender: Female Address: <ul style="list-style-type: none"> Line 1: 100 Old Carrick Road Line 2: Greenisland County: County Antrim Postcode: BT383RJ Email Address: email@email.com Username: Caroline123 Password: Password123Caroline <p>Register Admin</p>	As expected	 <p>The screenshot shows an error dialog box with the message "Second name field is not valid. Please re-enter your second name and ensure it is less than 20 characters" and a small rocket icon. Below the dialog, the "Line 2" field contains "Greenisland".</p>	This test has passed

	<h3>New Admin Registration</h3> 	As expected	<h3>New Admin Registration</h3> 	This test has passed
7a	<h3>New Admin Registration</h3> 	As expected	<h3>New Admin Registration</h3> 	This test has passed
7b	<h3>New Admin Registration</h3> 	As expected	<h3>New Admin Registration</h3> 	This test has passed

	<p>New Admin Registration</p> 	As expected	<p>New Admin Registration</p> 	This test has passed
8a	<p>New Admin Registration</p> 	As expected.	<p>New Admin Registration</p> 	This test has passed
8b	<p>New Admin Registration</p> 	As expected.	<p>New Admin Registration</p> 	This test has passed

8 Evaluation

8.1 Evaluate the system; Produce an evaluation of the programming language used to create the solution.

To develop my solution, the languages I used were Python and SQL. I choose Python for a number of reasons including my previous experience from practical lessons in class and through my GCSE coursework. I also chose python because of its simplicity when compared to other languages that I could have used to develop my system. Python was developed to be simple to read and write, it is therefore very like the English language, with keywords being easily understood and interpreted by even programmers with minimal previous experience with other languages.

I began to teach myself C# by subscribing to Team Treehouse, an online platform to learn many different languages. I could've potentially used this language along with WinForms to design the interface for my application. This combination of C# and WinForms would have allowed me to “drag-and-drop” widgets which would have made the implementation of my interface a lot quicker. However, as I did not have as much experience of the syntax for C# to implement an extended task like this, I did not want my inexperience to affect the development of my program. Most of my peers choose to use Python as well, so if we had any issues, we could help each other out.

I decided to use Tkinter, Python’s GUI toolkit. I choose this package because Tkinter is Python’s most popular GUI library, so there were plenty of resources for when I needed to figure out how to implement a new feature and I wasn’t quite so sure on the syntax or simply trying to debug an error in my program. I knew developing the GUI using Tkinter would take longer than with C# using WinForms however I feel like I would have lost this gained time using WinForms when trying to write the logic of my program.

When I started to develop my program, I really struggled to implement my interface using Tkinter, this was my first time ever creating a GUI, all my previous programming experience was using the Command Line Interface. As documented in my developmental testing, I struggled with the layout of frames, and the ability to switch them to display different screens on action driven events ie. Button presses. Within Tkinter there were three different methods that could have been used to insert widgets onto frames, these are; .pack(), .place() and .grid(). The choice in the method used depends on how complicated you wanted interface to be. The .pack() method is the simplest however, this does not allow you to place every object exactly where you want it on your frame. You have the option to “pack” a widget left or right and it just pushes the widget to the left of your frame or right. I wanted to create a very intuitive interface, so this method wasn’t going to be the one for me. So then I decided to use the .place() method. This method takes the coordinates of where you want to place the widget. I thought this would be the best option because this would have allowed me to exactly place the widgets where I wanted them to reflect my design. This method became an issue when I tried to line up buttons and labels on my frame as I wasn’t sure exactly where coordinate was being taken from. By this I mean when I tried to line up two labels which held

different data, I wasn't able to exactly align them up below each other as the length of the text had changed which changed the x-coordinate in needed to use. I ended up using .grid() which allowed me to place all my widgets into rows and columns, This made development a lot easier as I was able to place a widget into a particular cell and then align the widget inside the cell ie. East or West.

I was able to effectively use many programming constructs within Python. These are included lists, two dimensional lists, dictionaries and tuples which were produced from the SQL query - of which I had no experience using before. Dictionaries allowed me to store allow the scores for each band in a grade and using the Band ID as the key and the score of the band as the Value, this construct ensured the correct score was being committed to the database for each band after the judge has entered their results and they had been checked for validity.

I also tried to limit the number of global variables I used, however I could not get away without using none. Global variables differ from local variables as these are variables which are made available to every sub-routine through a program. They should be avoided because they are very hard to debug if an error is thrown. They also limit the amount of code that is reusable and therefore very hard to maintain after development. I used global variables in instances where I could not pass them as parameters into a subroutine as they weren't necessarily accepted into every instance of the subroutine. I also used them to my advantage as I was able to make global the type of user logged in. This allowed my program display different widgets depending on the user. For example, in the judging competitions button, if the global variable admin was true then get the admin to select a judge to override, if admin was False then don't ask the judge to select a judge instead, get the global ID of the judge to be used in the subroutine.

In terms of file handing, I used the sqlite3 library for Python to save and retrieve data from my database, along with the DB browser application to view the state of my database. I found that it worked very well with Python. I never had a major issue where I couldn't save or retrieve any data from my database. I found the syntax also very easy to learn as again it is very much like English with keywords in block capitals, it also helped massively having to learn SQL commands for theory and it was good to put some theory into practice.

Within my program I made use of a few libraries. My system required me to produce an output of results from each competition. I began to use a library called ReportLab which generated PDF documents. I found this very difficult to use as again placing text on the page was through coordinates. I had the same issue where I couldn't line up the text. I then searched for a better solution and came across Python docx. This library produces word documents instead of PDFs. I found this library so much easier to use. The documentation that was given along side this library was so easy to follow and understand. They also gave an example which made it so much easier to adapt and change to suit my required needs.

In the early stages of my development and previous to my coursework, I had just been using IDLE as my integrated development environment (IDE). It was perfect for solving small tasks however, I soon realised that this was not the IDE to be developing a bigger system with as it lacked many developments and debugging tools.

A friend of mine had recommended using PyCharm, an IDE designed for Python. From when I began using it, my programming experience improved drastically. PyCharm had many nice features which made development so much more efficient and less stressful as it took less time to debug. A couple of features I loved for development include auto-completion of variable name, automatic syntax check where unrecognised syntax is underlined before compiling and my favourite, bracket matching. Bracket matching closes any set of brackets that you open without you having to. This is a very nice feature as I would occasionally forget to close a set of brackets and spend ages looking for the missing bracket. PyCharm also allowed me to set breakpoints and then step through to debug the logic of my system as this allowed me to view the state of every variable throughout execution.

I made use of GitHub for version control. This cloud-based service allowed me to work on my project from many different computers without having to physically hold all my files needed on a flash drive. GitHub was also very useful for following the changes I had made each time I developed as I kept a log of commits and updates. It also meant that if I tried to develop something and it didn't work, I could very easily revert back to the previous stable version of my system.

8.2 Compare the solution with similar commercially available systems.

I believe that my solution has been developed to a high standard and if pushed out to the association, they would be able to use it effectively. Any commercially available system is built as so multiple users can be using the application at any given time. Before I could make my system commercialised, I feel like it would need adapt my solution in a way that means the database is hosted on the internet and each device using the system must be connected to the internet to access the application. This would allow each judge to log in and be judging the bands "simultaneously".

As my system is very specific to the needs of the RSPBANI, there are no similarly available systems on the market. As I don't have any commercially available systems, in my desk-based research I found a few examples of what data I would need to collect for certain features in my program and how to lay them out. I also have shown a few examples which I do not like and explained why I did not implement these in my solution. I found the desk-based research very hard, however I think it was solely down to the project I choose in the first instance as my chosen problem is so abstract.

Like all commercially available systems my system is able to send generic emails to users of my system when they carry out specific features. I really like how my system emails for instance a bands member when the Pipe Major of the band has edited their details or emailing the Pipe Major to confirm he has just entered a specific competition. I said in my desk-based research that I would like to email the bus company when the Pipe Major with their quote. I believe my system has been able to achieve more than in my desk-based research.

8.3 Identify the successful features of the system and make specific suggestions for improving less successful areas of the system.

To evaluate the good features of my system I will colour code my objectives based on how successful I think they are and below I will talk about a few of the successfully features.

Green means that I think the feature has been successful

Red will mean I don't think it has been as successfully as I had initially intended

Objectives:

1. Appropriate layout, font and colour-scheme to follow associations colours
2. All users of the system on launch will be brought to the home page.
3. All users have the ability to view and search for a band on the bands page.
4. All users have the ability to view and search for a competition on the competitions page.
5. All users have the ability to view and search for a grades' result in a competition on the results page.
6. All users have the ability to login if they have an account.
7. All Account holders have the ability to reset their login credentials.
8. Different permission levels for band, judge and admin accounts once logged in.
9. Update and set password, security question and answer when accounts are logged in for the first time.
10. Band accounts will have the ability to update the Bands details & their band members details.
11. Bands will have the ability to enter and withdraw from competitions.
12. Bands have the option of booking transport.
13. Bands have the ability to register new players and transfer existing members.
14. Admins have the ability to carry out these band features above on behalf of the band.
15. Admins have the ability to add and remove band accounts, judge accounts and admin accounts.
When a band account is created an email is sent to the Pipe Major to include the initial log in details.
16. Admins have the ability to create, update, delete and draw individual competitions.
17. Judges have the ability to write comments about each section and the score bands in competitions.
18. Admins then have the ability to collate the judges results and produce the results and send them to all bands which then updates the latest results feed on home page.

Good features:

As seen from above my solution contains many features which I am pleased with. I am satisfied with most of my features as I have been able to develop them both functionally and aesthetically. I love the way I have been able to develop my system so that only specific buttons are given to the user depending on their access rights. (Access rights depend on the table their credentials are found in). This means that all groups of users cannot see all the available functionality. This provided extra security as it does not tempt a user who doesn't have access to certain functionality to try and gain access to it.

I think basing my main form of navigation through all features using list boxes was a really nice. This idea worked very well for my system as is pretty much all cases, for the user to carry out any functionality they had to select a competition or a band. This use of list box I think will really improve the users experience – they make all functionality so simple to use.

When the user wished to edit band or members details, I love the ability for my program to display the same registration form however just populated with the current band or members details. This allows the user to easily see which fields they would like to change.

I also really like how my system is able to produce emails every time an important change is carried out. I think this is a great idea as this allows the band to keep track of when changes were made. This feature is very useful because admins also have the ability to edit and update band details on their behalf. So, when an admin updates information about a band, the Pipe Major of the band will receive confirmation of this change.

I am most impressed with the Collating results function. At first there doesn't seem like much is going on as there is only one click of a button, however the logic powering this feature had me rough drawing diagrams allowing me to see where I needed to get each piece of information from and then saving it back to the database and then producing the outputs.

Short comings and improvements:

I had wished to be able to allow the judge to select the section of the bands they are judging after selecting a competition. However, during development I was unable to implement this in this way due to time restraints of the project. Unfortunately, the judge has to select the the section each time they enter any results about a band. Of course, this is an issue as this can lead to human error causing issues if the judge selects the wrong section to judge and overwrites another judges score. This issue can be looked at after the initial release of the software and come as an improvement as it does not affect the stability of the system, it is just possible to reduce the chance of human error.

For the system to be used to its full potential, the system must be hosted on an online platform to allow multiple users to be logged in at the same time and constantly updating details and entering

scores. This would mean that the system may need to be tweaked a bit to allow for this and tested to ensure that the program can still function as required as mentioned above in the comparison of commercial systems.

If I had more time and knowledge, I would have implemented some way for bands or members for confirm that they agree with the changes that have been made about them before their new details are committed and updated, this will require another table of pending changes which if accepted are updated into the main file or discarded if decided by the data subject. This could be done through a link in the current email the members are already receiving. This would be a significant improvement as this will ensure no incorrect personal data is being stored.

Going along similar lines, when transferring members to a different band, I would have liked to implement a feature where by the receiving band must have the option to accept the transfer request. This ensures that members can not be transferred by mistake or incorrectly.

Another major shortcoming of my program is down to how data in list boxes is manipulated. I used list boxes as they are a very simple and intuitive way to allow the user to only select valid data from a list of possible data. This feature of my program makes it very easy to navigate and it also reduces the chances of the user entering invalid data and causing the program to crash. However, one major downside to this feature is that I must display the name of the band in the list box for the user but to use the competition in the logic of my system I must use the competition ID which is unique to the band and creates relationships in different tables within my program. This means that I can only retrieve the name of competition or band and I must query the database for the primary key. This means that I can not have any bands or competitions with the same name otherwise I will get an error as two bands or competitions will be query where theoretically there should only be one. To solve this program, it would have been nice if the language would have allowed the name of the competition or band to be displayed in the list box but on selection pass the ID to be used in my program. This would prevent me having to query the ID and means that multiple competitions could have the same name. This will become an issue when an admin creates the same competition for the next competitive season, where the name of the competition may be the same as the previous year. If I was able to get the list box ID functional then another improvement could be adding another screen to view previous competition results while still being able to enter and draw competitions for the currently competition season.

Currently my program is of a fixed size in terms of the aspect ratio that is of my computer (1280x800) As an improvement I would like to be able to expand/minimise my interface to suit the aspect ratio of the users monitor. This would mean that my program could be used on many different devices and there would be no compatibility issues where the users screen might be too small to fix the application. This would be very hard to implement as all my widgets and text would have to be scaled to ensure my program would still be displayed correctly and there were no formatting issues.

On the Bands page I did not display the bands details is a professional manor. I simply did not have enough screen space to be able to display all the information of each band. I am not pleased with this

feature and I would have liked to fix it however I felt this shortcoming does not affect the running of my solution so therefore it wasn't at the top of list of issues to fix. In the future I could potentially limit the number of characters that is allowed for each field at registration/updating. This would then allow me to keep the layout I have which would be the easiest solution. Although I think the most suited option would rely on a complete redesign of this page and possibly only show important information of the band when searched for and allow the user to select a band to view all the information about the band on an additional page.

8.4 Describe the strengths and weaknesses of own performance in the design and development of the solution.

Design and prototype:

I am overall very pleased with the design of my system. I was able to design my whole system before development and know where I wanted to place everything on my interface. I knew which buttons I needed to include and to which user they must be made available. As a class we had to present our design section to each other. This was a great opportunity to gather their thoughts and opinions and they were able to point out a few issues which had not stood out to me as the developer. This allowed me to resolve these problems before I began to prototype my program.

One aspect of the design section I found challenging was the processing stages of each objective. I struggled to effectively create my pseudocode to solve the problems and at this stage I had very little experience using Tkinter, so I wasn't exactly sure how to implement widgets at this point.

My prototype in my opinion was over developed in many features and underdeveloped in others. I feel this may have been down to the fact that I was unsure with Tkinter at the beginning so as I got small things to work, I decided to continue on, and I ended up with some features fully developed and others not at all. I would have to admit I think I spent too much time on developing my prototype however looking back it might have worked for the better. It definitely allowed for a quicker development as I had gained a lot of experience using a GUI and using widgets.

Time management:

Throughout the whole project, time constraints had always been in the back of my mind. At the later stages of the coursework I felt very pushed for time struggling to meet deadlines. At the beginning, during the discussion, investigation and design phase my time management was very poor, I spent too long on these sections. I found myself beginning to complete these long sections with not enough time until the final deadline.

Overcoming errors:

During development, I had many problems which I had to diagnose and debug. The complexity of these bugs and then the time taken to find a fix for them depended on whether they were logical or syntactic errors. I have found that logical errors require a lot more thought and are much harder to fix than syntax errors. Many logical errors that I had dry run the logic on a piece of paper and draw diagrams if necessary. Syntax errors may have been easier to fix however if I did not know how to fix them, I had to use websites such as W3Schools or Stack Overflow. These websites were very good for finding and solving syntactic bugs as other programmers will have come across them as well so once I found what I was looking for I was very quickly able to resolve my own problem. As I gain more programming experience, I hope to rely less on web resources like this.

8.5 Describe changes of approach that would be adopted to solve a similar problem.

If I were to solve a similar problem again. I would re-consider using Tkinter to develop the GUI. Instead of using Tkinter and Python, I would use a more popular language like C or Java#. There are many advantages of using C# over Python. C# is an object orientated programming language. Developing a similar project using OOP instead of procedural programming has many advantages in itself. Using OOP allows for the creation of objects which inherit attributes from a class. This structure would have allowed me to re-use more code more efficiently which would decrease the developmental time. This re-useable code means that less debugging will need to be done and the code will be easier to maintain in the future.

In terms of development, in the future I will create the main functionality without the log in feature first. I realised during my prototype that because I had implemented my log in functionality, every time I wanted to test or dry run my system - I had to log in. This increased my development time as it took much longer to get to the page I wanted to test and got very frustrating at times when you kept getting the credentials wrong. I found it very hard to force myself to write annotation on my code as I went along because I got so into programming I couldn't stop until I had implemented the feature, this meant sometimes when I went back to write my annotations, I found it difficult to understand which I am actually doing in certain parts of my code.

My balsamiq designs really helped me with the layout and feel of my application. However I feel like it would have been a lot easier to develop my solution using individual flow chart diagrams for each feature as I would have been able to see and layout my system on paper. I found pseudocode very hard to write in the design section as I wasn't sure exactly how I was going to end up developing my solution. In the future I must create and design less complex and more understandable pseudocode in my design section as did not end up following fully in my development.

If I were to start the write up again, from the beginning I would ensure I have thoroughly planned what I was going to write in each section and limit myself to how many hours I should put into each. This would allow me to spend more time on the latter sections. The testing section of this, was

the most time consuming. If I had planned this section by creating my test plan as I developed functionality, I could have saved some time when each feature was fresh in my head. Doing this would have allowed me to go straight into testing instead of having to create my test plan for each objective from scratch before testing it. I also think creating the test plan after development makes it a lot easier to forget and miss a few tests in the test plan.

In conclusion, I really enjoyed developing my solution as part of this coursework piece. I have successfully completed the task I set out to solve and have been able to meet all my objectives, most of which to a commercial standard. I think this coursework has been invaluable to learning in depth how to program an extended task and the skills that are required in many fields within the software development sector, from systems analysis, software developing and testing, all which are vital to ensure the success of a project.