



**Department of Computer Science**

**Level 2 Group Project  
Individual Portfolio**

Academic Year 2018-19

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Group 38

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## Table of Contents

1	Application Idea.....	3
2	Personal Tasks.....	4
3	Self-Evaluation .....	14

# 1 Application Idea

Our application idea that we created was to create an app that lets users find restaurants near them and let users convert currency to a selected currency that they can pick from. We called this application Travel Converter. This application is designed for tourists and other people entering the United Kingdom so that they can see how much they are spending on holiday in their own currency. Furthermore, the app consists of more features that lets users use the app with ease. Users using the app can change the language used within the app so they can understand the app and use it with ease with their own language.

Users using the app can choose from the main screen when started to select which currency they wish to convert to and select which language they would like to use within the app. When these things are selected, they are taken to a screen where they can see restaurants near them. This information is provided by Zomato API which gives us information on restaurants and other information about them. When users select a restaurant that they wish to order from they are taken to another screen where users can look at the menu given from the restaurant, this is also given from the Zomato API.

Users can also check reviews and ask questions about the restaurant so that users are informed about the restaurant and see if its good or not. Furthermore, users have an option when selected on the directions icon to be given directions on how to get to the restaurant, this opens up the browser on the phone and takes it to google maps. The directions given to users is from the Zomato API which gives the longitude and latitude of the restaurant's location. Users at the main screen also have the option to select on the information icon, this lets users go on the about screen. Users can go on this screen to find out information about the app so they can understand what the app does.

Our original idea of the app was a student planner application, this app would let users to input their timetable and other things which will then organise them nicely. The app will also inform users of special deals and cheap places to eat which is near their location. However, with help of our tutor Dr Ian Blackman, he helped us shape our final idea of the app which made us change it to be more unique and easier for us to create. During our many meetings with out tutor, he helped us change our idea of creating a student planner app to a restaurant app for students. This was because developing the app had many parts and features to it as organising students work and timetables as well as providing students restaurants near them was too complicated to make. By creating a food app that lets users convert their currency is a more unique app than having a student planner app as there are many apps like these on the app store.

My contribution when developing the final idea of the app was to have an about screen in the app which would describe what the app does and also have a feature which would let users rate the app using a rating bar system. However, we chose not to use a rating bar system to leave a review on the app as there is another feature in the app which does a similar thing for the restaurants, where you can leave and check reviews for the restaurants using a firebase database. This lets users leave a review only when they sign up with a valid email address.

## **2 Personal Tasks**

### **Task 1 - About screen implementation**

In this task I implemented the about screen page using android studio for our application Travel Converter. I did this task from using the designs that I created using Marvelapp.

#### **Learning Outcomes**

LO1: Plan, manage and track a substantial group project activity.

LO3: Independently and systematically design, develop and test a piece of software that is data-driven and has non-trivial functionality

LO4: Compare and evaluate alternative problem solutions according to given criteria including from a technical perspective

LO6: Understand and apply the principles of professional and ethical behaviour in a group context.

#### **Implementation / Achievement**

When creating the about screen page I created a screen which displays information about the app that we made so that users can find information about what the app does. For me to develop this screen I watched tutorial videos from Udacity which was provided from the university. This tutorial helped me understand how to make a screen and add certain features. In this app I added a text box which shows information about the app. Furthermore, I added a picture of the Brunel university logo in the about screen to show users who and where this app was developed from. When developing the about screen I also had to implement an icon which represents the about screen on the main screen of the app. For this icon I found an information picture which I used as the icon so that when users select on the icon it takes users to the about screen.

When implementing this screen I achieved 4 of the learning outcomes. LO1, I achieved this learning outcome by using Trello and WhatsApp. By using these applications I was able to show my team members the tasks that I set when implementing the about screen and communicate with them on WhatsApp to get feedback on the screen. LO3, in this task I developed a piece of software that when the information icon is selected the screen is taken to the about screen page. LO6, this was achieved as I communicated regularly with my group to present and receive feedback from my team members so that my work was matching the colour scheme of the app and to show them if the about screen is doing what it's supposed to when the icon is selected at the main screen. LO4 was achieved as I had problems integrating my screen with everyone else's screens which caused a problem when developing the app, I then found a solution by doing some research as I found GitHub difficult to use.

**You can see the commits that I have committed for this task here:**

<https://github.com/BrunelCS/cs2001-18-19-2018-2019-group-38>

#### **Reflection**

In my opinion, I believe that the about screen page that I created was simple and served its purpose of the app to describe the app for new users as information is needed to inform users on what the app does. When developing this screen I received feedback from my team members in meetings which we had every week and communicated with them on WhatsApp. This was very effective when developing the about screen as they helped me with small things such as size and adjusting the text to fit in the screen appropriately. Furthermore, the use of Trello was

effective when making the about screen as my task was set so that everyone in my group can see the task and what plans I had made for the screen.

However, if I was to do things differently when developing this screen, I would have added a rating bar system where users can rate the app. When users rate the app the data will be sent to our database so that we can see all the data that users submit when they submit their ratings. Furthermore, I would have added another screen where users can see the ratings that users have submitted before as this would involve me to receive data from our database and display it on another screen so that users can see what other people think about the app. From developing this screen I have learnt how to use basic android studio functions such as making a screen and adding features to it. I also learnt how to open an activity when selecting a button and understanding constraints layout when making a screen.

## **Task 2 – Language support implementation**

In this task I added some languages to our application which lets users use the app in different languages. I did this task by using android studio and background research on what languages are best to use for our app.

### **Learning Outcomes**

L01: Plan, manage and track a substantial group project activity.

L03: Independently and systematically design, develop and test a piece of software that is data-driven and has non-trivial functionality.

L05: Effectively present, communicate and market ideas and solutions to different audiences.

L06: Understand and apply the principles of professional and ethical behaviour in a group context.

L07: Reflect and learn from the group project experience.

### **Implementation / Achievement**

For this task I added 5 languages to our application for users to use within the app, this included Punjabi, Welsh, Korean, Portuguese and Spanish. These languages were added after research I undertook to see which languages were best suitable for our app after asking different people such as other groups, friends and family what they thought were suitable to have in our app as the app is designed for tourists and other visitors to the country. This task was done on android studio where I had to change the strings to the according languages I picked. The first language was done in English so it was simple for me to just duplicate the English string and change it to the languages I picked. This involved me to translate the strings on different screens in the app to my languages by simply changing the names from English to my languages, I did this by using google translator as this was the quickest method of translating the strings. I repeated this for all the languages that I had chosen.

These meet some of the leaning outcomes that were given to me such as L01, we added our list of languages on trello and our WhatsApp group so that members in the group can see what languages we have chosen. L03 is met as I tested the languages on a virtual device to make sure that the languages chosen are showing up correctly on the app. L06 is met as we had a meeting to discuss which languages to pick and how we would do this which involved us all to be present and contribute to this task individually. L05 is met as I had to ask different people on their opinions on what languages they thought were best suitable for our app.

**You can see the commits that I have committed for this task here:**

<https://github.com/BrunelCS/cs2001-18-19-2018-2019-group-38>

### **Reflection**

After implementing the languages I feel that I completed the task quickly and effectively. I felt that this task was simple and that I could have easily added more languages if I needed to however, we all agreed that 5 languages were our limit each when adding the support. From completing this task I can say that I completed basic android studio functions that I learnt which I can take this further into my next year of university. I felt that when completing this task we all communicated well and attended meetings which allowed us to work together to find which languages were best to use.

### **Task 3 – Restaurant directions implementation**

In this task I added a feature on the application where when the restaurant is selected you can select on an icon which takes you into google maps on your phones browser where you can get directions to the restaurant selected by a URL request.

#### **Learning Outcomes**

L01: Plan, manage and track a substantial group project activity.

L03: Independently and systematically design, develop and test a piece of software that is data-driven and has non-trivial functionality.

L04: Compare and evaluate alternative problem solutions according to given criteria including from a technical perspective

L06: Understand and apply the principles of professional and ethical behaviour in a group context.

L07: Reflect and learn from the group project experience.

#### **Implementation / Achievement**

In this task I used the Zomato API that we used to get the data for all the restaurants, as the data that was given from the API gave us the longitude and Latitude for all the restaurants. Using this data allowed me to retrieve this data for each restaurant when selected by the user so that users can select the maps icons to open up their phones internet browser to be directed the google maps website where the restaurants location is already entered by the longitude and latitude of the restaurant.

By completing this task I achieved some of the learning outcomes that were given. L01 was met as we used Trello to track the tasks that we were doing and also our WhatsApp group. L03 was met as I completed this task by myself and tested this on devices and on android studio to see if this feature was working fully. L04 was met as I had problems on how the directions feature should work such as if the maps function would open within the app. I chose for the feature to open up with the phones internet browser as this was the easiest way for me to implement this function.

**You can see the commits I have committed for this task here:**

<https://github.com/BrunelCS/cs2001-18-19-2018-2019-group-38>

#### **Reflection**

When completing this task I felt that this was the most challenging one for me as I am not a programmer as I do Business Computing. This involved me to watch tutorial videos and use the Udacity Course which is provided for this module. I did receive help from my team members which helped me when linking the database to my code. Furthermore, I can say that from completing this task my programming skills have improved and that I can successfully complete basic android studio java functions. If I were to do things differently in this task, I would take my programming skills to the next level and implement the maps feature to open within the app rather than take the easy method of it opening up in the phone's browser.

## Task 4 – Travel Converter application designs

This task involved me to create designs for our app using lo fi prototypes and making the final designs using Marvelapp.

### Learning Outcomes

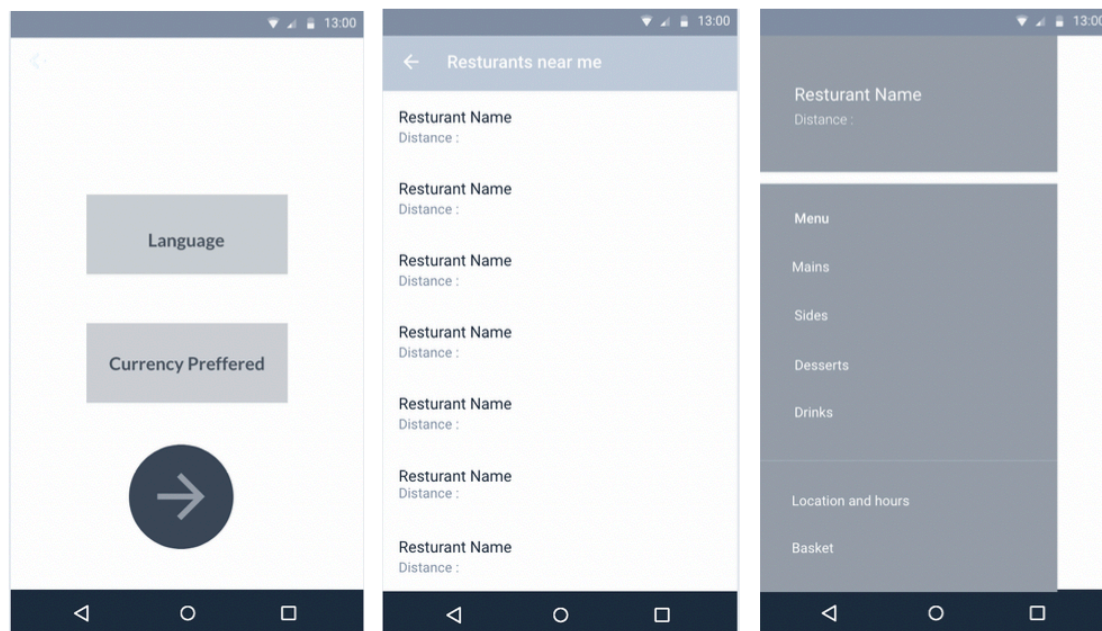
L02: Take an open-ended problem, collect and analyse relevant information and define and refine the requirements.

L06: Understand and apply the principles of professional and ethical behaviour in a group context.

### Implementation / Achievement

In this task I had to develop designs for our app which included the designs for each screen. I first sketched it out on paper which I then presented to my group where they gave their opinions on my sketches. After hearing their points on the sketches I then used Marvelapp to make a more detailed hi-fi prototype. Using Marvelapp gave a better view of how the app would look like.

L02 was met as I demonstrated this outcome by researching and looking at other apps and their designs which allowed me to collect relevant information about our app and how it would look like as wanted it to be similar to other apps so that users are comfortable using the app. L06 was met as designing the app I needed input from my group members on what features the app will have and what it will look like on each screen. This involved in having group meetings at the start of the project so that we all had a similar plan for what the app would look like when finished.



The diagram above shows the designs that I made using Marvelapp



## **Reflection**

When designing the application I used the usability engineering module as guidance of how to design the app. This module helped me a lot designing the app as it gave me good points on how to design it and how I should lay out the text and images in the design as it is very important for users using the app, because at the end of the day the app is for users and it needs to be designed in a way that shows the app is easy to use. When completing this task I learnt how to use Marvelapp which helped me throughout the year for this project and other modules such as usability engineering. Furthermore, designing apps has led me to reading more about Human Computer Interaction which has led me to choose this module next year for my final project.

## **Task 5 – Weekly scrum meetings**

This task involved me to attend and contribute in our weekly meetings.

### **Learning Outcomes**

L01: Plan, manage and track a substantial group project activity.

L05: Effectively present, communicate and market ideas and solutions to different audiences.

L06: Understand and apply the principles of professional and ethical behaviour in a group context.

L07: Reflect and learn from the group project experience.

### **Implementation / Achievement**

During these meetings we set tasks every week during our meetings to complete this project. In these meetings we set out tasks for each one of us to complete and made sure that we completed it for our next meeting to present to the rest of the group. These tasks involve completing designs and doing research for certain parts of the project such as API research and background research on app designs. Furthermore, this allowed us to communicate effectively with each other and made sure that we were completing our tasks on time to stay ahead of work to make sure we were not leaving things last minute.

By attending these meetings it allowed us to track our progress with the project and to plan what to do for the following weekly meeting to make sure we are meeting our targets. This meets L01. We met L05 as we presented our work to each other and to our tutor who gave us feedback on how we are doing. We met L07 every week as at the end of our meetings it gave us a chance to reflect on our work and reflect on our experience working apart of the team each meeting.

### **Reflection**

I attended most meetings with my group where I contributed with ideas and comments on the project. From this I have learned how to work in a team and to be confident in sharing my opinions on certain things. If I could change something, I would attend my group meetings 100% even though I only missed 2 meetings within the year.

## Task 6 – Social media marketing

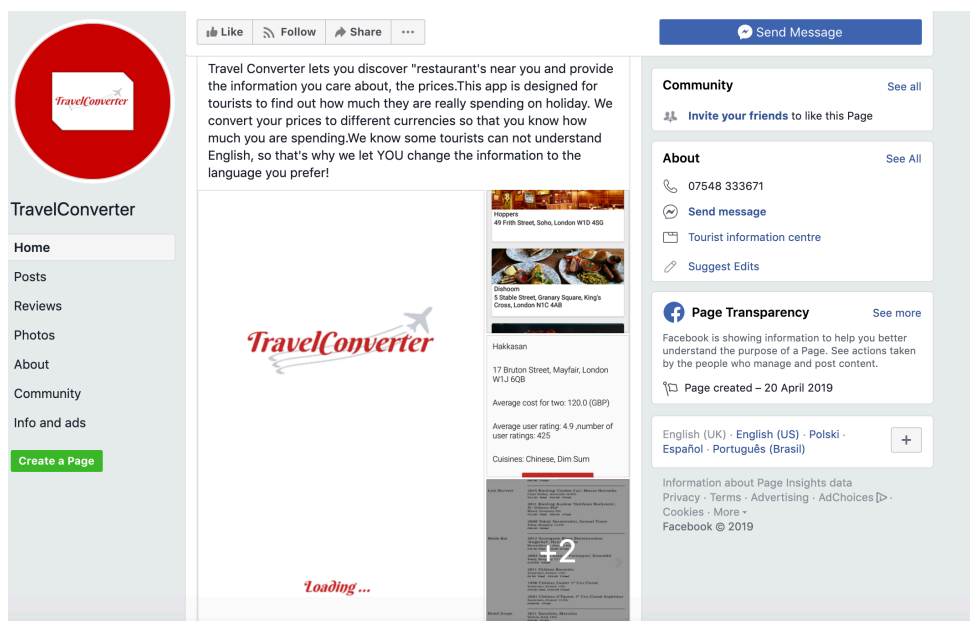
In this task I made a social media account to promote our application

### Learning Outcomes

L05: Effectively present, communicate and market ideas and solutions to different audiences.

### Implementation / Achievement

I created an Instagram account to show our app and demonstrate to potential users what our app does and why they should download it. I first tried to make a twitter account so that if users have questions, they can direct message me with problems. However, I seemed to have problems in authenticating the account as they assumed that our application was fake and that I was a bot. I moved on to Instagram as the platform have many users where our app can target users. Furthermore, I helped in making the Facebook account of our app. The page shows a range of pictures showing what our app does and how it works by displaying screenshots of the screens in the app. This meets L05 as it supports product marketing as we wanted to make a social media account to target users on social media platforms as we thought this was the best method to do so.



<https://www.facebook.com/TravelConverter-588363255011297/>

### Reflection

I felt that the Instagram account that I made was rushed and does not really demonstrate the app in the way I wanted it to. My initial plan was to have a twitter account where users can tweet questions about the app where I would then respond to them in tweets. From this I have learned that social media is a very important platform when marketing apps as millions of people use social media daily.

## **Task 7 – Background Research**

In this task I researched many things during our project such as APIs and app designs

### **Learning Outcomes**

L02: Take an open-ended problem, collect and analyse relevant information and define and refine the requirements.

L05: Effectively present, communicate and market ideas and solutions to different audiences.

### **Implementation / Achievement**

During this task I had to undertake background research on certain things in the project. This included me researching on what API was best to use. We were considering using uber eats and Deliveroo but both turned out to be closed for business. We ended up using Zomato API as this was free to use and gave us the necessary data. Furthermore, I also undertook research on similar apps when making designs for our app. This led me to look at apps like uber eats and just eat so that I have an idea how their app operates and interacts with users. When researching apps I looked at the user interface of these apps, how the screens were designed and how easy it is to navigate and interact with the app.

L02 is met as I had to research different and similar apps by analysing how their app interacts with users this helped me make requirements for the app and suggest features which the app can have such as having a map feature showing the restaurants location to make it easier for users. L05 is met as I undertook research to find out what type of users are app should be targeted at. I found that this app is best targeted at tourists entering the country.

### **Reflection**

I enjoyed researching as one of my tasks as I learnt a lot about different apps and why they use certain features in their apps and why it looks like the way it does. By researching these apps it also helped me with my other module usability engineering as research was important when designing user interfaces.

## Task 8 – Activity log

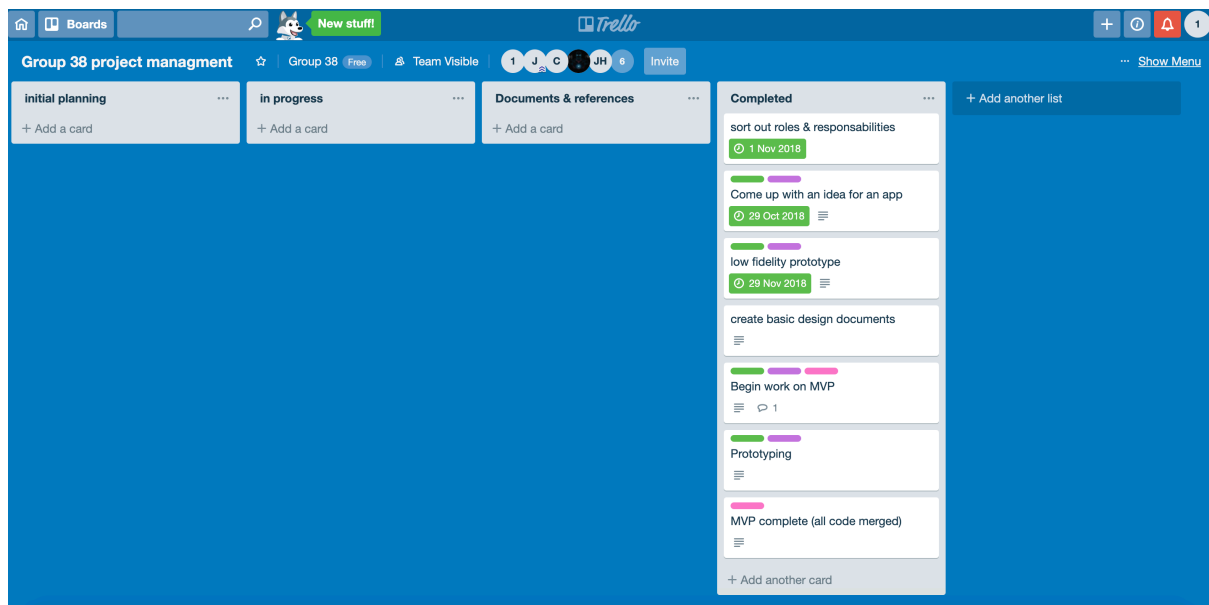
In this task I kept track of my activities using Trello and WhatsApp.

## Learning Outcomes

L01: Plan, manage and track a substantial group project activity.

## Implementation / Achievement

Throughout the year I used Trello to keep track of my work putting in the tasks that I set that other members in the group can see, this was very useful as this gave us the tools to track our work online as well as using the app on our phones. Furthermore, the use of WhatsApp also helped in keeping track of work as we created a group chat so that we can message each other reminding each other the tasks that we set and communicating with each other to see if there were any problems completing tasks.



## Reflection

In my opinion I felt that the use of Trello was excellent when keeping track of tasks. However later in the year I did stop using it regularly which did get me off track with tasks but I did get back on Trello and continued to use it.

### 3 Self-Evaluation

#### Learning Outcomes

This shows the learning outcomes that I have achieved by completing the tasks that I did.

	Task 1 – About screen implementation	Task 2 – Language support implementation	Task 3 – Restaurant direction implementation	Task 4 - Travel Converter application designs	Task 5 – Weekly scrum meetings	Task 6 – Social media account marketing	Task 7 – Background Research	Task 8- Activity log
L01	X	X	X		X			X
L02				X			X	
L03	X	X	X					
L04	X	X	X					
L05		X			X	X	X	X
L06	X	X		X	X			
L07	X	X	X	X	X			X

## Summary of learning outcomes

		LO Met (Y/N)	Summary
L01	Plan, manage and track a substantial group project activity.	Y	When achieving this learning outcome I was able to plan and keep track of group project activities at the beginning of the year using an application called Trello to plan our work and meetings however, after a few weeks I stopped using this method as we started communicating on our WhatsApp group chat where we discussed tasks and got help when needed. Later in the year I resumed using Trello as it was easier to show my team members the tasks that I set and my idea suggestions of the app.
L02	Take an open-ended problem, collect and analyse relevant information and define and refine the requirements.	Y	I achieved this learning outcome in many tasks that I completed such as completing background research on designing the app. This is because by researching similar apps and their target audience this allowed me to collect relevant information about the app and how it would look like, as wanted it to be similar to other apps so that users are comfortable using the app. When reading up about this I was able to define requirements for our app and what features we could add. From my research I was able to add a google maps function as I thought this would be a suitable requirement in our app.
L03	Independently and systematically design, develop and test a piece of software that is data-driven and has non-trivial functionality	Y	When completing this task I was able to use android studio to develop and test software. This was completed by a few tasks that I completed such as implementing the about screen on our app, this allowed me to develop the screen and test it using an android phone or using the built-in virtual device in android studio. This let me test the screen that I made and check if the screen that I implemented is running smoothly and is not making any errors. Furthermore, I added support languages to the app which allowed me to test it on a device again to make sure the software was running and that the data showing was correct. I also implemented a maps feature where users can request a UML request for google maps which requests the phone to go into the phones browser and open up with the location of the selected restaurant. This involves me retrieving data from our database and using it to get the location of each restaurant.
L04	Compare and evaluate alternative problem solutions according to given criteria including from a technical perspective	Y	For this learning outcome I achieved this when completing my tasks where I had to look at the problems I had and choose a solution to these problems. This can be seen when developing the about screen where I had a problem implementing a rating system in the screen. I then chose to leave this out as we chose to have another similar system in the app where users can leave reviews on restaurants specifically and ask questions if necessary. Furthermore, we also had problems at the start of the year when using a database and trying to retrieve

			<p>information from the database, this problem was then solved when we asked for support from the IT assistants. Moreover, I had problems on how the directions feature should work such as if the maps function would open within the app. I chose for the feature to open up with the phone's internet browser using an UML request as this was the easiest way for me to implement this function. This was done using a Google maps API which allowed me to implement this function.</p>
L05	Effectively present, communicate and market ideas and solutions to different audiences	Y	<p>This learning outcome was met as we developed social media accounts to promote and market our app. One of this was by developing a fakebook page which demonstrates the use of the app by showcasing the app screens and how the app works. This was done to target users as social media has millions of users and is an excellent method to present the app to different audiences. Moreover, I also presented the app to friends and family especially my brother who works as an app developer where he gave me feedback on the app and what we should do to make it better. Furthermore, I was also involved in our App presentation where we had to present our app and explain the screens that we developed. I explained the about screen that I developed and the maps feature that I implemented, they gave me positive feedback on screen that I made.</p>
L06	Understand and apply the principles of professional and ethical behaviour in a group context	Y	<p>This learning outcome was achieved as I regularly met with my group every week as well as having group meetings with our tutor. These meetings allowed us to communicate with each other with any problems we had and give a solution to the problems together. We also created a group chat to communicate with each other when we were not at university so that we could always help each other when at home. Meetings were always prepared in advance in the library group rooms where we booked a room with our tutor and then another meeting without our tutor.</p>
L07	Reflect and learn from the group project experience.	Y	<p>In my opinion, I feel that this learning outcome was achieved in all the tasks that I completed as when I completed a task, I always reflected on the work that I did by myself and with help from my team members. Implementing the about screen and other technical aspects of the app allowed me to learn to use android studio and learn how to use java when creating an app. These skills that I learned will allow me to use them in the future and let me develop them further so that I can use android studio more advanced in the future. Moreover, during our last meeting we all had the chance to reflect on our performances in the group discussing how we worked together in a team and stating how we solved our problems. this allowed us to receive feedback from each other saying how well we did and if we are satisfied with each other's performance.</p>



## Grade Descriptor

### Grade B

In addition to the requirements for C-grade, the portfolio evidences that the candidate has made independent contributions to the project rather than mainly following the guidance of other group members. This may include taking responsibility for a significant sub-project such as substantial software component or communication deliverables. The portfolio should be communicated clearly and concisely. There is evidence of continuous contribution to the group's GitHub repository

I feel that I have met the requirements for Grade B as the tasks that I have done have been done independently in which I have delivered substantial software deliverables such as the about screen implementation, language support implementation and the maps feature implementation. This shows that I have made a substantial contribution in the project with my own ideas and suggestions. I have been present in most group meetings with my tutor and team members where we have discussed our tasks and performance as well as give feedback and solutions on other team members problems. Overall in this report I have met each learning outcome, demonstrating how I have achieved them and reflected on my performance on the tasks that I have completed.