



**CRSL 5 a-side
Football**

CRSL 5 a-side Football: Product Report

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Football**

Website can be accessed at: <https://slr46.brighton.domains/Registration/login.php>

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Research and Planning:

Rival Applications

To help with the planning and structure of this system, it is important to gain an understanding of similar applications and how their features are incorporated. There are many online statistical dashboards that visualise data which can help organisations make business-smart decisions as well as creating alternative ways of representing data for internal usage and for clients.

An example of a similar website is <http://www.footstats.co.uk/> which holds football statistics for most of the leagues in the world. An upside of this source is the vast amount of data being collected and displayed, to a far greater extent than what this system would be able to achieve; things such as number of corners, the minute of each goal and different leagues. Another useful feature, which could be implemented into the CRSL website, is the range of calculated statistics across different matches; this includes goals per match, failure to score percentage, win ratio and probability to win chances.

In contrast, <https://www.whoscored.com/Statistics> displays data about individual players and shows performances based on each game played. This site provides a better scope in terms of the data each player can view, however lacks in terms of visualisation techniques like graphs or charts.

Having looked at a range of websites, some key features that would be beneficial to the CRSL site would include things such as having dynamic tables with filtered headings to allow users to filter data accordingly, interactive charts that update at run-time, and finally a profile that each user can maintain to view their individual statistics.

The annotated screenshot below comes from <https://www.soccerstats.com/> which shows some of the key features that could be useful for this project.

Grid layout containing up-to-date data

Can hover over 'Form' to see historical breakdown of data

Table	GP	W	D	L	GF	GA	GD	Pts	Form	PPG	last 8	CS	FTS
1 Liverpool	26	25	1	0	61	15	+46	76	■■■■■	2.92	3.00	46%	0%
2 Manchester City	25	16	3	6									
3 Leicester City	26	15	5	6									
4 Chelsea	26	12	5	9									
5 Tottenham	26	11	7	8									
6 Sheffield Utd	26	10	9	7									
7 Manchester Utd	26	10	8	8									
8 Wolverhampton	26	8	12	6									
9 Everton	26	10	6	10	34	38	-4	36	■■■■■	1.38	2.13	23%	23%
10 Arsenal	26	7	13	6	36	34	+2	34	■■■■■	1.31	1.38	23%	19%
11 Burnley	26	10	4	12	30	39	-9	34	■■■■■	1.31	1.25	35%	31%
12 Southampton	26	9	4	13	32	48	-16	31	■■■■■	1.19	1.63	19%	15%
13 Newcastle Utd	26	8	7	11	24	40	-16	31	■■■■■	1.19	0.75	27%	33%
14 Crystal Palace	26	7	9	10	23	32	-9	30	■■■■■	1.15	0.88	23%	38%
15 Brighton	26	6	9	11	31	38	-7	27	■■■■■	1.04	0.88	19%	27%

Calculated statistics based on current data

Colours to represent previous game's form

11 Jan Tottenham - Liverpool 0-1

19 Jan Liverpool - Manchester Utd 2-0

23 Jan Wolverhampton - Liverpool 1-2

29 Jan West Ham Utd - Liverpool 0-2

1 Feb Liverpool - Southampton 4-0

15 Feb Norwich City - Liverpool 0-1

Gantt Chart

Use the link below to download the Gantt chart which explains a proposed time frame for the development of this project.

- <https://ci301.slr46.brighton.domains/>

Project Management

Agile:

The development of this product conforms to the Agile methodology; an iterative and continual improvement approach. The emphasis is on Rapid Application Development allowing multiple sprints to amend and make changes to the application as and when is required. The benefits cater to both the developer and the client, as there is a consistent involvement of the product with the client providing feedback, thus creating new requirements. The agile approach allows for new requirements to be gathered due to the flexibility in the sprints, a significant advantage over the waterfall model. Another factor to using the agile approach is the fact that this project has an allotted amount of time consisting of a one-man development team, something that in practise would be very difficult to implement and manage if using the waterfall model.

Hybrid?

I also discovered a fairly new project management style called the Hybrid approach which is a combination of both agile and traditional ideologies. It allows for the project to be planned and designed before starting on the implementation, which portrays a waterfall approach, and then incorporates iterative development cycles, symbolic of the agile approach. It would mean a more thorough planning process, however the level of flexibility in terms of the development could be problematic as certain requirements may not get completed in each sprint. Based on this research, it has helped to identify the agile approach to be the best suited for this project; implementing the Scrum methodology to develop the product.

Analysis:

Risk Assessment

Outlined below are a series of human, technology and business risks that may have an impact on the project, ranging from; becoming ill during the process to the client changing the set of requirements mid-way through. The table below shows the estimated probability of each risk occurring and the impact it would have on the overall project; 1 being insignificant and 10 having a dramatic impact. Each risk has a reduction plan to try and reduce the risk from occurring and a contingency plan to try and reduce the overall impact.

Key:

Human

Technology

Business

Risk	Description	Probability	Risk	Risk Reduction	Contingency plan
Exams/Coursework	During busy periods of the academic year, there will be exams and coursework due	100%	8	Ensure I plan ahead to allow enough time for revision for other modules	Use burndown chart to see estimate effort required for sprint, and allow enough revision time
Maintaining high concentration levels	It may be challenging in a team of one maintain motivation throughout the project	90%	8	Rather than creating large chunk of activities to complete, break them down into smaller tasks	Be realistic and set out achievable targets
Working with new software	Allow time to learn new software, such as a new interface or programming language	90%	9	Do the relevant research in the given area as well practise using the piece of software to gain familiarity	Use the software on a regular basis to ensure you become familiar with its functionality
Delayed responses from client	Interaction with the client could take a few days for a response, especially via email	85%	7	Continue with other work in the meantime to reduce time wastage	Be organised and have other work to be getting on with whilst awaiting a reply
Latest changes don't get saved in application	Make amendments to program but for some reason they don't get saved	80%	8	Use source control to push up any changes made to program	Pull latest changes from last commit on source control
Illness	In the event of becoming ill for a period of time	50%	7	Ensure work is completed on time and try to get ahead if possible	Work harder upon recovery to make up for lost time

Change of requirements	The client could add/amend the list of initial requirements	70%	5	Have regular interaction with client via email/meetings	Determine whether new requirement is feasible and adjust schedule accordingly
Reduced functionality of end product	The system took longer than anticipated to make	75%	7	Ensure work is completed on time to allow time for coding	Get as much coding done in allocated time
USB breaks	USB could become corrupted losing the files on there	30%	9	Ensure files on laptop are up-to-date	Try to recover corrupted files
Loss of client	For whatever reason, the client no longer wants the product	30%	6	Have regular interaction with client via email/meetings	Continue with the project, removing any reference to CRSL. Use dummy data
Laptop breaks	Laptop could stop working or corrupt some of the working files	20%	9	Save working files regularly	Store backup files on USB

Requirement Analysis:

Req ID	Requirement	Type	Priority	Dependency
FR1	Ensure there is an established connection the database	Functional	Must	
UR1	Allow users to log in to the system	User	Must	FR1
UR2	Allow new users to sign up using relevant work credentials	User	Must	FR1
FR2	Ensure users agree to terms and conditions before signing up	Functional	Must	UR2
FR3	Generate new password if user forgets theirs	Functional	Must	
FR4	Send email to user with confirmation of new password	Functional	Must	FR1, FR3
UR3	Allow user to change password	User	Should	FR1, FR3
FR5	Ensure password is hashed and stored safely in the database	Functional	Must	FR1
FR6	Enforce log in before viewing profile and statistics	Functional	Should	UR1
QR1	Be able to navigate to different pages on the website whilst remaining logged in	Quality	Must	FR1
FR7	Be able to log out of the system	Functional	Must	UR1
FR8	Determine whether user has Admin rights	Functional	Must	UR1, FR1
FR9	Allow users to become an administrator	Functional	Should	UR1
UR4	Allow users to view their own profile	User	Must	FR1
UR5	Allow users to edit the information on their profile	User	Must	UR4
UR6	Allow the option for users not to have a profile photo displayed	User	Must	UR4
UR7	Allow users to change their profile photo	User	Should	UR4, UR6

FR10	Display additional information about the player, such as their preferred position, favourite player etc.	Functional	Should	UR4
FR11	Create a performance index for each player	Functional	Could	
FR12	Display aggregated statistics for a player on their profile, such as number of goals scored and performance index	Functional	Must	FR1, UR4
FR13	Ensure player performance index cannot be viewed by other players	Functional	Must	FR8, FR11
FR14	Ensure aggregated statistics cannot be edited by the user	Functional	Must	UR5
UR9	Allow users to publish their profile to the gallery	User	Must	UR4, FR1
UR10	Allow users to view other player's profiles	User	Should	FR1
FR15	Ensure performance indexes are not displayed in the gallery	Functional	Must	UR7
UR11	Allow players to see who is playing in upcoming fixtures	User		UR13
UR12	Allow players to see results of previous games	User		FR1
FR16	Display a graph of the week to change on a weekly basis	Functional		FR1
FR17	Display a list of players in the 5 a-side system	Functional	Must	FR1
UR13	Allow admin users to create an upcoming fixture	User		FR1
UR14	Allow admin users to select who is playing in what team	User	Must	UR13
UR15	Allow admin users to see all player's performance indexes	User	Should	FR11
FR18	Auto generate the teams based on player's performance index	Functional	Could	UR14
UR16	Allow admin users to enter the score of a match and who scored	User	Must	FR1
FR19	Ensure final score matches the number of goals scored by players for each team	Functional	Must	UR16
QR2	Display statistics in both graph and table format	Quality	Could	
UR16	Allow user to view aggregated team statistics	User	Could	FR1
FR20	Ensure graphs are dynamic and change at runtime	Functional	Should	
UR17	Allow users to view historical data	User	Could	FR1
QR3	Allow filters on table data	Quality	Could	QR2
FR21	Export to Excel graphs and table functionality	Functional	Could	
UR18	Allow user to pay for this week's football match	User	Could	
UR19	Allow users to book availability for the week's matches	User	Could	
FR22	Retire/archive a user if they leave the company	Functional	Should	FR1
FR23	Ensure any errors get logged to a log table	Functional	Should	FR1
QR4	Ensure buttons are clearly visible to allow easy navigation	Quality	Should	
FR24	Update log table with log in activity	Functional	Should	FR1
QR5	Ensure pages are responsive to different size windows	Quality	Should	

Development Tools:

To design both the front-end and back-end structures, a range of different development tools are available. Below is an outline of these different technologies and the ones that have been used to implement this system. To implement the front-end data visualisation component, tools such as Microsoft Power Bi and Google Charts are available, whereas to implement the back-end database management system, SQL Server or Power Bi can be used.

Data visualisation tools:

Power Bi:

Power Bi is a data visualisation tool that assists organisations in making business-smart decisions, allowing data to be presented, connected and shared across different platforms. These graphs can be embedded into websites, provided the appropriate infrastructure is in place, such as logging in using an organisational email addresses, due to the different software licences available.

Pros:	Cons:
Free version enables 'Publish to Web' feature	Free version only allows up to 2GB data
Connect to hundreds of data source including SQL server	Requires organisation/institutional email address to sign in
Tools available on mobile applications	Requires additional installations to connect data sources such as MySQL or SQL Server
Custom build and personalisation tools	Limited configuration settings so displaying data becomes difficult
Create reports and dashboards to be embedded on websites	Rigid formulas so moving reports is difficult
	Cannot share reports and dashboards with other users
	Local data gateways must be installed on computer for the data to connect and display on your website
	Configurations can be complex and time consuming
	Cannot embed charts using the Free version

Google Charts:

Google Charts is an interactive, free-to-use data tool enabling users to display dynamic data and control dashboards. A range of graphs are available ranging from simple bar charts to more complex tree maps which can be embedded to your website by loading the provided libraries.

Pros:	Cons:
Free to use	Very limited customisability
Cross-platform availability	Does not work offline
Customised data visualisations	Requires some technical know-how to initialise and represent graphics
Easy to implement with JavaScript knowledge	No easy way to style graphs on your website
Wide variety of charts to choose from	

Database Management Systems:

Choosing the appropriate database management system is vital for the overall architecture of any system. This website has a heavy interaction with the database as football statistics need to be readily available and accurate. A relational model is particularly good at querying and retrieving large amounts of data without slowing the overall performance, hence the choice to use.

This website uses a MySQL database to store all football statistics and player details. Most of the web pages require a connection to the database to retrieve relevant data, hence an important component of the system's architecture. For more information and a detailed breakdown of these groups, see the [Final Report](#).

SQL Server:

Group:	Rating:	Weighting:	Score:
Data Definition	5.75	0.2	1.15
Physical definition	6.55	0.15	0.9825
Accessibility and Transaction	7.2	0.3	2.16
Development and Other	7.65	0.35	2.6775
Total Score	27.15	1	6.97

MySQL:

Group:	Rating:	Weighting:	Score:
Data Definition	6.95	0.2	1.39
Physical definition	7.6	0.15	1.14
Accessibility and Transaction	6.45	0.3	1.935
Development and Other	7.6	0.35	2.66
Total Score	28.6	1	7.13

Design:

Wireframes:

1. Login Screen

Key features:

- Default page for user's who have not logged into the system
- Be able to navigate to 'Sign Up' page and 'Forgot Password' page
- Safe and secure interaction with database to validate passwords (BCRYPT algorithm)

Responsive navigation menu, present across all pages of the website. Resizes based on screen size

To access the website, users must log in using their three-letter code and associated password

Login button, validates user input against the database

For new users, you can sign up which takes you to the Sign Up page

If you forget your password, you can click this button to navigate to the forget password page and request a new one

1. Login Page

Once logged in, your username is displayed on all visited pages, stored using session variables

The wireframe shows a web browser window titled 'CRSL 5 a-side Football'. The page has a navigation bar with links: Home, Profile, Gallery, Match Day, and New Match. A 'Logout' button is in the top right corner. The main content area is titled 'Login' and contains a form with two input fields: 'Username *' and 'Password *'. Below these fields is a 'Login' button. To the right of the 'Login' button is a 'New user?' label and a 'Sign Up' button. Below the 'Sign Up' button is a 'Forgotten Password' button. Red arrows point from the text annotations to the corresponding elements in the wireframe.

2. Sign Up Page

Key features:

- Usernames are unique three-letter codes
- Users can choose from a list of departments
- Email address must be Clarkson's
- Password to be encrypted and stored securely in the database (BCRYPT algorithm)
- Users must agree to terms and conditions of website

2. Sign Up

Users at Clarkson's can use their unique three-letter code as their username

When signing up, users will need to provide details such as department, first name and surname

For GDPR reasons, users must agree to the terms and conditions of the website to allow use of personal information such as pictures

Successful creation of account if all fields of the form are valid

Navigate back to log in page if needed

The screenshot shows a web browser window titled "CRSL 5 a-side Football". The page has a navigation bar with links: Home, Profile, Gallery, Match Day, and New Match. A "Logout" button is in the top right corner. The main content area is titled "Sign Up" and contains a form with the following fields:

- Username ***: A text input field.
- Department ***: A text input field.
- First Name ***: A text input field.
- Surname ***: A text input field.
- Email Address ***: A text input field.
- Password ***: A text input field.
- Agree to Terms and Conditions ***: A radio button.
- Sign Up**: A button.
- Already have an account?**: A link.
- Login**: A button.

Red arrows point from the following text annotations to the corresponding form fields:

- From "Users at Clarkson's can use their unique three-letter code as their username" to the **Username *** field.
- From "When signing up, users will need to provide details such as department, first name and surname" to the **Department ***, **First Name ***, and **Surname *** fields.
- From "For GDPR reasons, users must agree to the terms and conditions of the website to allow use of personal information such as pictures" to the **Agree to Terms and Conditions *** radio button.
- From "Successful creation of account if all fields of the form are valid" to the **Sign Up** button.
- From "Navigate back to log in page if needed" to the **Already have an account?** link.

3. Forgot Password

Key features:

- Create random password
- Send email with password to user
- Email to be a valid Clarksons' one

3. Forgotten Password

User enters email address they would like new password to be sent to

Navigate back to login page or sign up page

The screenshot shows a web browser window titled 'CRSL 5 a-side Football'. The page has a header with the site name and a navigation bar with links: Home, Profile, Gallery, Match Day, New Match, and Logout. The main content area is titled 'Forgotten Password' and contains a form with the following elements:

- A label 'Email Address *' above a text input field.
- A 'Send Email' button.
- A horizontal line separator.
- A 'Go back?' label above two buttons: 'Login' and 'Sign Up'.

Red arrows point from the text annotations to the input field and the 'Login' button.

4. Home Page

Key features:

- Display dynamic graphs and charts
- Power Bi or Google Charts data visualisation

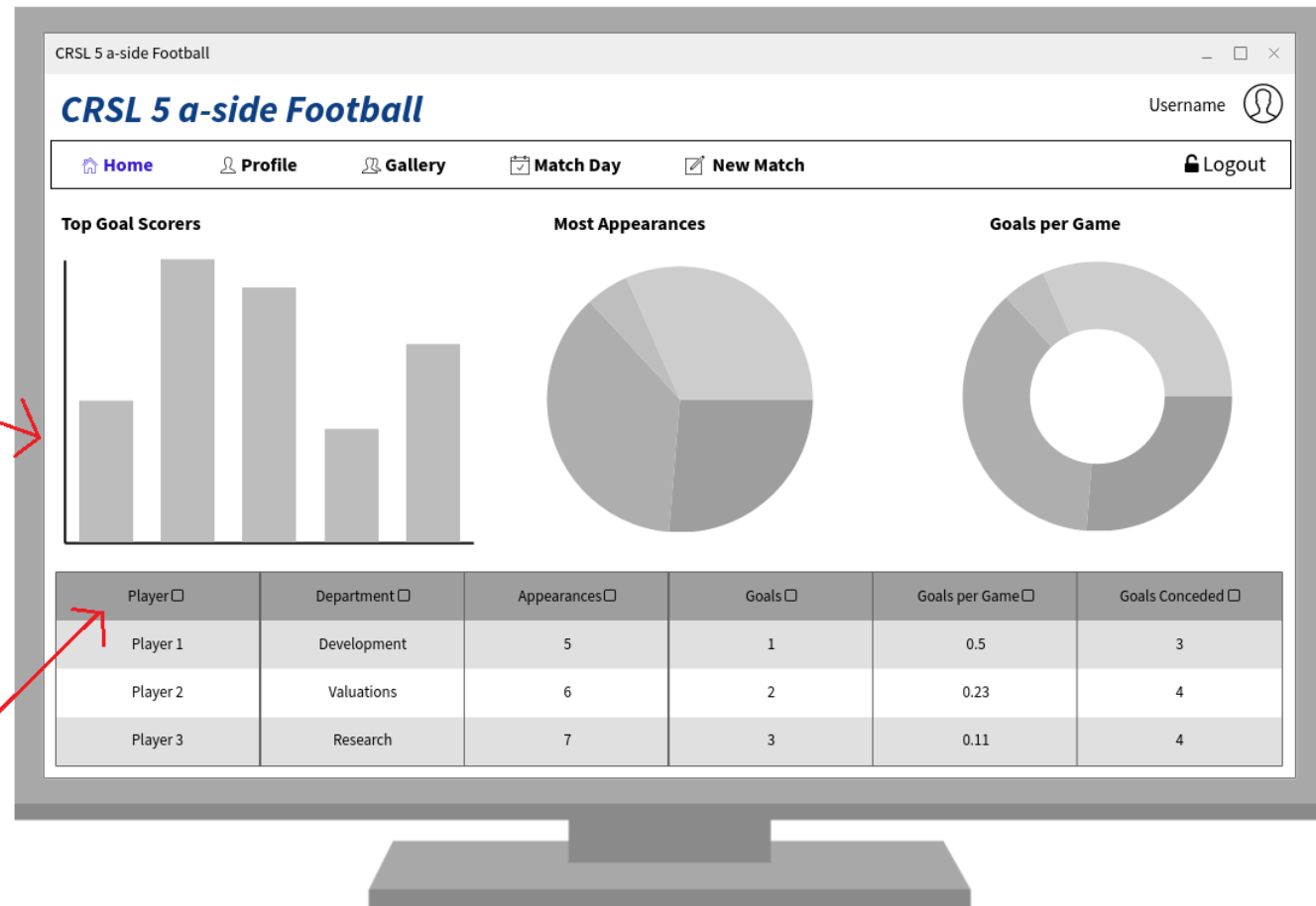
4. Home Page

Data visualisation tool used can be either Google Charts or Microsoft Power Bi

Selection of dynamic graphs, charts and tables displaying aggregated pre-aggregated data

Data being referenced from the database, either SQL Server or MySQL

Filters in the header row to allow data to be sorted



5. Profile

Key features:

- Allow users to edit personal information
- Allow users to change/remove profile picture
- Display aggregated statistics such as number of goals scored, number of appearances etc.
- Allow users to publish their profile to the gallery

Pre-aggregated data such as number of appearances and number of goals will be displayed, but cannot be edited

5. Profile

The information is displayed in a CSS grid layout, making it responsive based on screen size

Each player will be able to see their performance index, which cannot be edited, nor published on the gallery

Once logged in, users will be able to view and edit their profile

Users can optionally chose to have a profile picture

Upon initial creation of account, the information on this page will be blank. To add information, click the Edit button

As default, your profile will not be displayed in the gallery for other players to see. Once your happy with the information, you can publish your profile to the gallery

CRSL 5 a-side Football

CRSL 5 a-side Football

Username

[Home](#) [Profile](#) [Gallery](#) [Match Date](#) [New Match](#) [Logout](#)

Name

Nickname

Position

Team

Strength

Weakness

[Edit Profile](#)

[Publish to gallery](#)

6. Gallery

Key features:

- Only display profiles who have given explicit permission
- No performance indexes shown
- Data is immutable
- Interactive CSS grid layout

Gallery has a CSS grid layout to enable a dynamic and responsive page

Users are not able to edit any information on this page

If any information is incorrect, users can amend it on their own profile, which will automatically update the gallery

Player's performance index will not appear in the gallery for other people to see, for social reasons

Player's profiles are only displayed here once they press the 'Publish' button from their own profile

Data is queried directly from the database to display the relevant information

6. Gallery

The screenshot displays a web application titled "CRSL 5 a-side Football". The page features a navigation bar with links for Home, Profile, Gallery (which is highlighted), Match Date, and New Match. A "Logout" button is also present. The main content area is titled "Player Profiles" and contains three identical profile forms arranged in a grid. Each form includes a placeholder for a profile picture (a square with an 'X'), and input fields for Nickname, Position (a dropdown menu), Team, Strength, and Weakness. At the bottom of each form, there are labels for "Goals Scored" and "Appearances". The page is shown on a computer monitor.

7. Admin – New Match

Key features:

- Only accessible for Administrator users
- Allow users to choose two teams
- Auto Generate teams
- Display each player's performance index

Only those with Admin rights will be able to view and use this page

7. Admin – New Match Page

Drop down box displaying options for pre-match selection of teams, and post-match results

Enter date of proposed match

List of all possible players, with their associated performance index - help with selection of teams

Radio buttons to ensure one player can only be on one team

CRSL 5 a-side Football

CRSL 5 a-side Football

Username

[Home](#) [Profile](#) [Gallery](#) [Match Day](#) [New Match](#) [Logout](#)

[Create New Match](#)

Select Teams
Results

Select date of match: 12 May 2017

Players	Performance Index	Orange Team	Yellow Team
Player 1	0.8	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Player 2	1.6	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Player 3	5.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Player 4	11.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Player 5	3.8	<input type="checkbox"/>	<input checked="" type="checkbox"/>

8. Admin – Results

Key features:

- Only accessible for Administrator users
- Enter goals scored by certain players
- Data validation to ensure final score tallies with the number of goals scored per team
- Select players who dropped out last minute

8. Admin - Results Page

Once again, page only accessible for admins

Labels pre-populated with the new match that has been created, ready for data input

User input NOT permitted for the score text boxes, they change dynamically based on the number of goals each team score

Bottom row sums up the number of goals scored, which populates the final score text boxes

Can select any players who drop out from a list of generated players in this drop down

CRSL 5 a-side Football

CRSL 5 a-side Football

Username

Home Profile Gallery Match Day **New Match** Logout

Results

Date of match: Tues 17th March

Final Score: v

Orange Team	Goals Scored	Yellow Team	Goals Scored
Player 1	1	Player 1	1
Player 2		Player 2	2
Player 3	1	Player 3	
Player 4		Player 4	
Player 5	3	Player 5	1
Score:	5		3

Drop Outs?

9. Match Day Page

Key features:

- Display information about upcoming fixture
- Show information (score and goal scorers) from previous match
- Allow users to send their availability for upcoming week

This page can be viewed by all players

9. Match Day Page

Pre-populated labels showing data of the upcoming match

Players can select their availability to help admin identify who can play on what day

Once teams have been selected/generated by admin, they will be displayed here for all players to see

Change on a weekly basis for players to see different progressive data

The screenshot shows a web application interface for 'CRSL 5 a-side Football'. The page title is 'CRSL 5 a-side Football'. The navigation bar includes links for Home, Profile, Gallery, Match Day (active), and New Match, along with a Logout button. The main content area is titled 'Match Day' and displays the following information:

- Fixture Date:** Tues 17th March
- Pitch No:** 2
- Player Availability:** A calendar for March 2017 with days of the week (Mo, Tu, We, Th, Fr, Sa, Su) and dates (1-28).
- Teams:** A table with two columns: Orange team and Yellow Team. Each column lists Player 1 through Player 5.
- Graph of the week:** A bar chart showing data for the week.

Annotations with red arrows point to specific elements:

- An arrow points from the 'Pre-populated labels showing data of the upcoming match' text to the 'Fixture Date' and 'Pitch No' labels.
- An arrow points from the 'Players can select their availability to help admin identify who can play on what day' text to the 'Player Availability' calendar.
- An arrow points from the 'Once teams have been selected/generated by admin, they will be displayed here for all players to see' text to the table listing players for the Orange and Yellow teams.
- An arrow points from the 'Change on a weekly basis for players to see different progressive data' text to the 'Graph of the week' bar chart.

Entity Relationship Diagram:

If your username is in this table, you are an administrator. Allows you to create new matches and enter results.

tbl_Admin	
PK	AdminID : int
FK1	Username : nvarchar(4)
FK2	Email : nvarchar(100)
	DateAdded : date

Table with user's login details. Passwords to be encrypted using a bcrypt algorithm

tbl_Login	
PK	LoginID : int
FK1	Username : nvarchar(4)
	Password : nvarchar(MAX)
	DateTimeAdded : date

Sessions to keep track of user's login activity.

tbl_Session	
PK	SessionID : int
FK1	LoginID : int
	LoginTime : date

tbl_Log	
PK	LogID : int
FK1	Username : nvarchar(4)
	Message : nvarchar(MAX)
	DateTime : date

tbl_Department	
PK	DeptID : int
	DeptName : nvarchar(50)

tbl_User	
PK	Username : nvarchar(4)
	Firstname : nvarchar(50)
	Surname : nvarchar(100)
	Email : nvarchar(100)
FK1	DeptID : int
	Retired : bit

tbl_UserGame	
FK1	MatchID : int
FK2	Username : nvarchar(4)
	WinningTeam : bit
	GoalsScored : int
	DropOut : bit

tbl_Gallery	
PK	GalleryID : int
FK1	Username : nvarchar(4)
	DateTimeAdded : Date

tbl_UserExtraInfo	
PK	Username : nvarchar(4)
	Nickname : nvarchar(50)
	Position : nvarchar(50)
	Team : nvarchar(50)
	FavPlayer : nvarchar(50)
	Strength : nvarchar(100)
	Weakness : nvarchar(100)
	AddProfile : bit

tbl_Match	
PK	MatchID : int
FK1	MatchDate : date
	HomeGoals : int
	AwayGoals : int

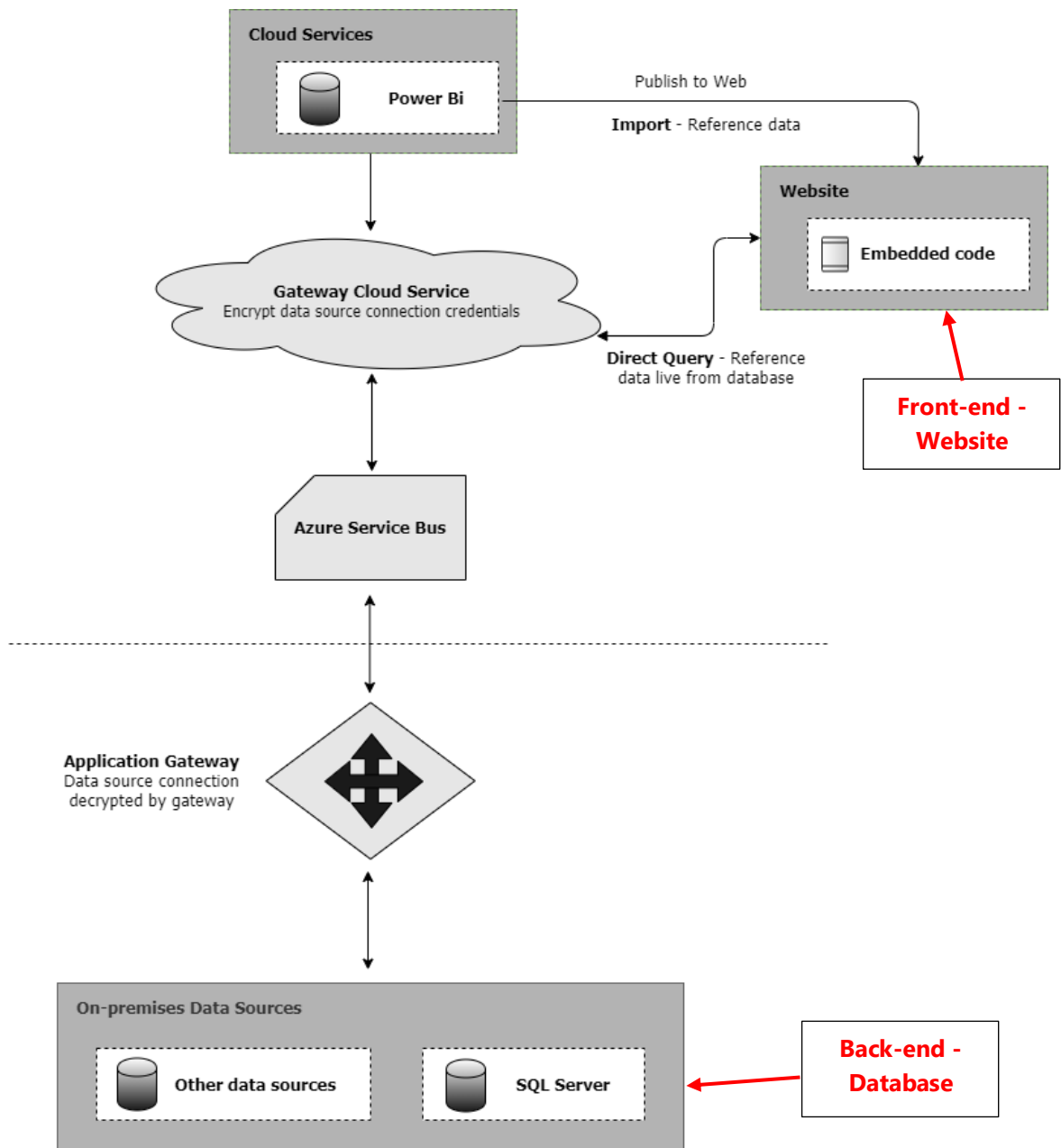
If your username is in this table, your profile can be viewed in the gallery for all others to view.

Store profile information such as favourite player and position.

Join table to resolve many-to-many relationship between player and match.

System Architecture:

The diagram below reflects the overall system using Power Bi as the data visualisation tool.



Implementation:

Key features:

- Web pages are only accessible once users have logged in (security purposes)
- Passwords hashed using a bcrypt algorithm
- Data visualised using Power Bi/Google Charts
- Each player has their own profile, with a performance index
- Users can opt-in to being shown on the gallery
- Information about an upcoming fixtures and previous games can be viewed
- Admin users can create new matches and select the teams
- Admin users can enter the results of a game

Navigation Bar:

Each web page has a similar structure:

- Website name in the top left-hand corner
- Red navigation bar spanning across the window
- Once logged in, the username in the top right-hand corner.

This section of code is written in a PHP file and each time a webpage is loaded; a JavaScript function calls the code at run-time to display it on screen. Reusing and recycling code like this helps to reduce the amount of code duplication throughout the system and makes the program easier to navigate.

This is reflected in [Appendix 1 and 2](#).

Request Admin Permission:

Once users are logged in, above the navigation bar is your username. Clicking this hyperlink provides the front-end functionality to request admin permission; a hidden feature that has been implemented to help with testing the system. As a default, users are not granted admin permission and as such, it must be granted explicitly by the database administrator (*me*). I will receive an email which contains the username of said user enabling me to add them to the relevant table in the database. [Appendix 11](#) shows a screenshot of the email that gets sent.

Once granted, an additional drop-down tab called 'Admin' is displayed in the navigation bar. Users then have the ability to create new matches (pre-match) and enter the results of a game (post-match).

Sign Up Page:

A fundamental part of the system is the ability to log in. New users must sign up before being able to view any data or navigate to any other page on the website, a feature that was included for security purposes and conforms to requirement **FR6**. To sign up, users must enter their relevant work credentials and agree to the terms and conditions of the website, as stated in requirement **FR2**. The terms and conditions can be read at the user's discretion by clicking the link, which include consenting to using player's personal information. Incorporating this feature helps to overcome any GDPR issues that might arise from using and storing personal information; hence the need to tick the box to complete a successful sign-up.

When choosing your department, this is done using a drop-down box to help reduce erroneous data being entered to the database. As aggregated statistics are being generated based on a user's department, the design choice to use a drop-down box helps to ensure the data is consistent. The sign-up page also includes other forms of data validation, such as:

- Ensuring 'password' and 'confirm password' are consistent
- 'username' does not exceed 4 characters
- 'email' address has to contain '@clarksons.com'

Although the majority of Clarkson's usernames are 3 letters, there are some who have 4 letter usernames; hence, the design choice to allow maximum 4 characters in the text box. Clicking the 'Register' button inserts this data to the database and users are redirected to the main home page.

To achieve requirement **FR5** and for security purposes, the password gets hashed using a [bcrypt algorithm](#) which uses a key factor to determine the cost of hashing. This helps to slow down the hashing speed and in turn be more resistant to rainbow table attacks. Although the computation is about 0.3 seconds slower compared to an MD5 message-digest algorithm, it produces a longer variable hash and therefore makes unwarranted access more difficult. The screenshot below shows the implementation of the sign-up page.

CRSL Login Dashboard

Home My Profile Gallery Match Day Login

Sign Up!

Username * Department *
 -- select an option --

First Name *

Last Name *

Email Address *

Password *

Confirm password *

I agree to the [terms and conditions](#) * ☐

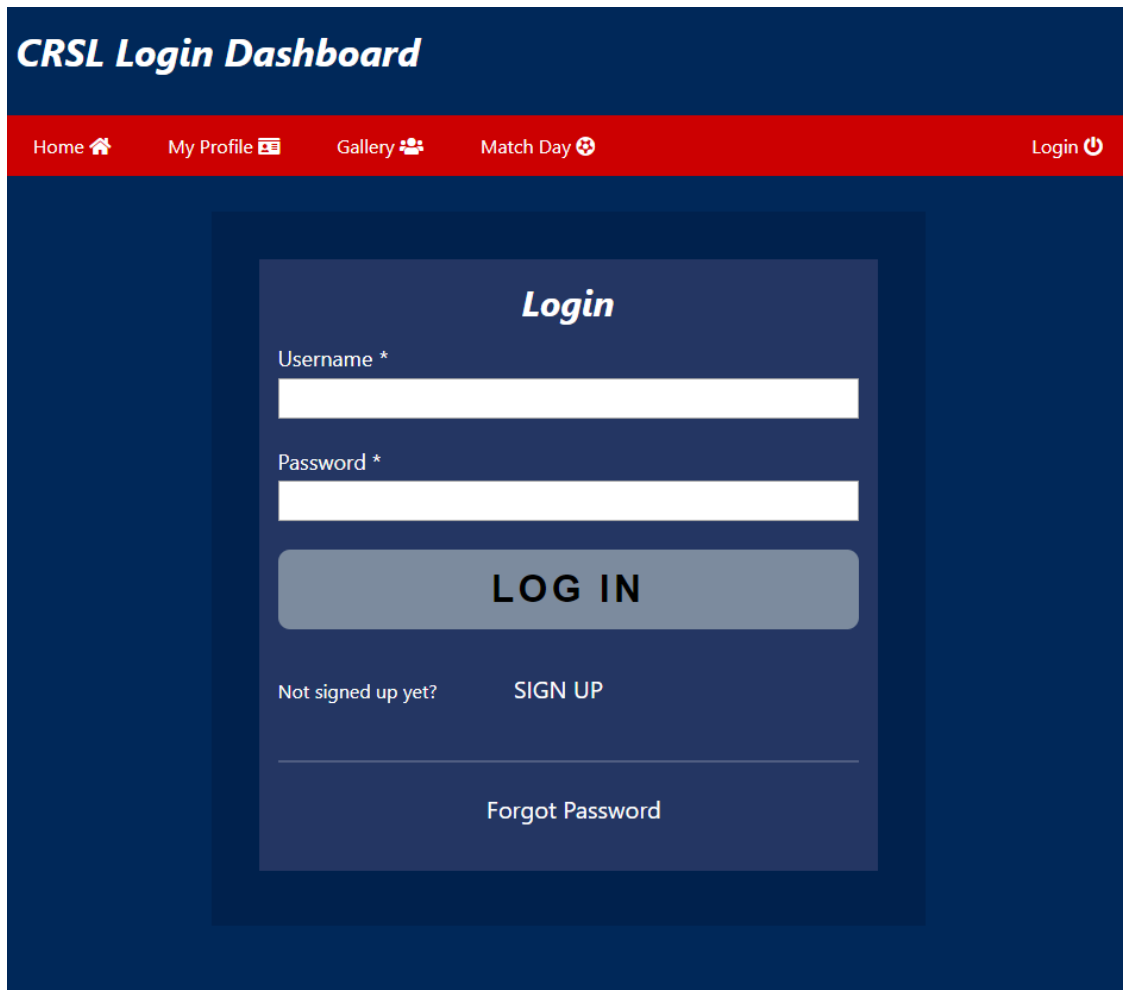
REGISTER

Already a member? [SIGN IN](#)

Login Page:

Users can log in using their unique, three-letter code and associated password. The password entered is compared against the decrypted password stored in the database using an in-built PHP function called `password_verify()` . If they match, the user successfully logs in to the system and a new session is started.

Users can also navigate to the sign-up page and forgotten password page by clicking on their associated buttons.



The image shows a web application interface for a login dashboard. At the top, there is a dark blue header with the text "CRSL Login Dashboard" in white. Below the header is a red navigation bar containing links: "Home" with a house icon, "My Profile" with a user icon, "Gallery" with a group of people icon, "Match Day" with a soccer ball icon, and "Login" with a power button icon. The main content area is dark blue and features a central white login form. The form has a title "Login" in bold. It contains two input fields: "Username *" and "Password *". Below the password field is a large blue button with the text "LOG IN" in white. Underneath the button, there is a link "Not signed up yet?" followed by a "SIGN UP" button. At the bottom of the form is a link "Forgot Password".

Forgotten Password Page:

Users are able to reset their password if they forget theirs by entering their username and associated email address. An email will be sent with a randomly generated password. For testing purposes, I have removed the validation check on the email address because most of the testing users do not have access to a Clarksons email. Therefore, users can enter their personal email address to help test the sending and receiving of the reset password email.

Once this has been delivered, the password in the database will update accordingly. The algorithm generates between 8 and 12 random characters which can include any of the following:

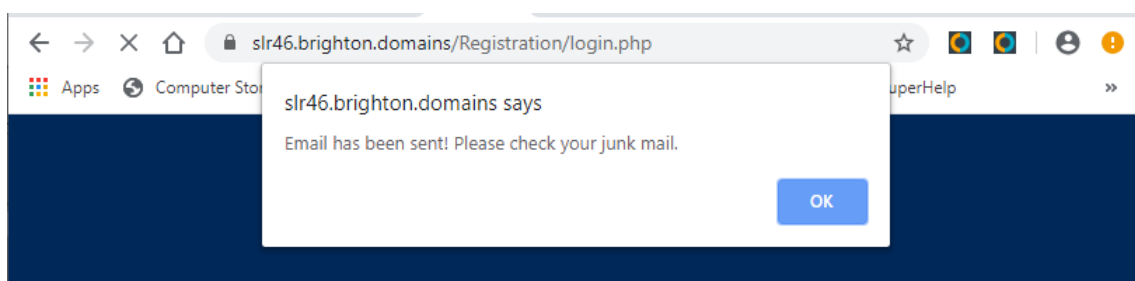
- Any upper- or lower-case characters
- Numbers between 0-9
- Some special characters such as '=', '#', and '@'

The snippet of code below shows the PHP function to generate the password whose argument takes an integer to represent the password's length.

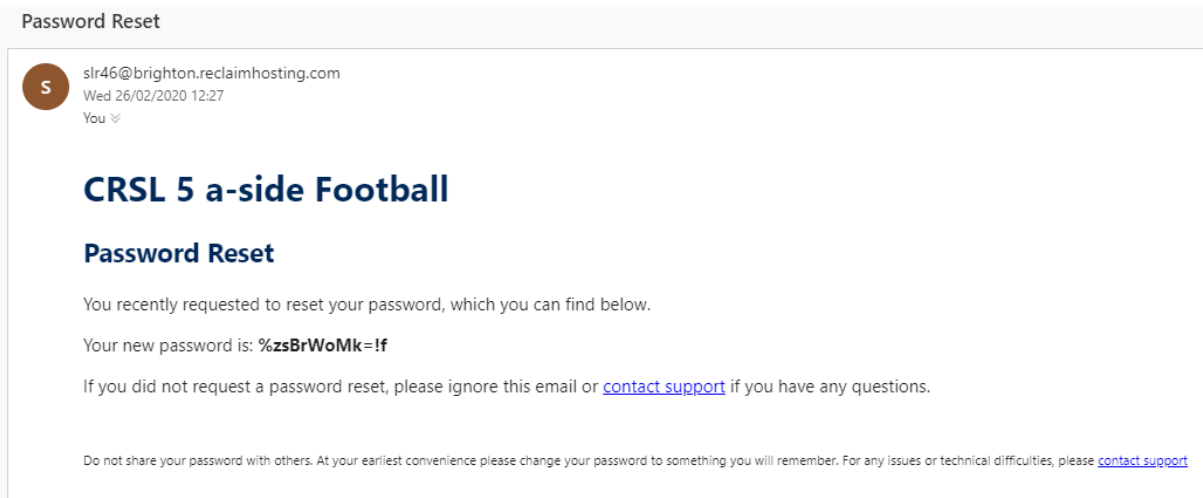
```
// Function to create random password
function generate_password($length) {
    $chars = 'ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz'.
            '0123456789-~!@#$%^&*';
    $str = '';
    $max = strlen($chars) - 1;
    for ($i = 0; $i < $length; $i++)
        $str .= $chars[random_int(0, $max)];
    return $str;
}
// Method call with parametrised length of random number
$gen_pass = generate_password(rand(8,12));
// Encrypt password
$password_hash = password_hash($gen_pass, PASSWORD_BCRYPT);
```

Upon returning to Clarksons, I will include the validation check on the email address to ensure it is an internal Clarksons email. For now, the code will remain commented out to allow users to receive the email to their personal email address. Once users click the button, a notification is displayed to inform the user an email has been sent and to check their spam folder in case it gets delivered there.

Once the email has been verified and sent, users are notified as demonstrated below.

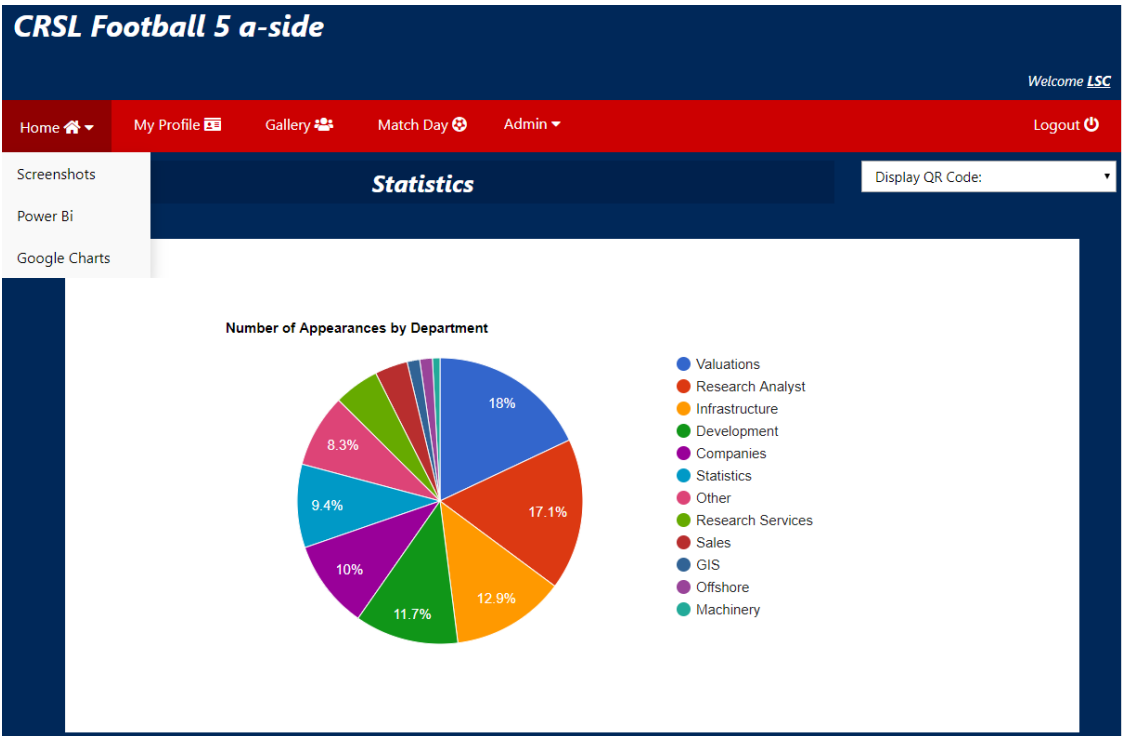


The image below shows the email with the randomly generated password, which has also been updated in the database.



Home Page:

Having successfully logged in, users are greeted with the home page, which is split into three sections. Hovering over the 'Home' button will show a drop-down of different home screens: Screenshots, Power Bi and Google Charts. This is to demonstrate the different prototypes of data visualisation techniques. The main home page shows a variety of functional Google Chart graphs and screenshots of Power Bi graphs to show the variety of data being collected in the system.



Home Page – Power Bi:

Due to the varying issues with Power Bi, this page is not functional. Embedding the code is a feature of the software that is only permitted to users with the Pro version licence; one that the university does not hold. This means that although the data is stored in the cloud, the website cannot access it nor embed the graph to the website, thus displaying a blank graph. This can be seen in [Appendix 4](#).

Home Page – Screenshots:

To resolve this issue, the screenshot page is a prototype feature which shows the functional graphs in the Power Bi Desktop version, and what they would look like on the website if the embedded code feature was enabled. This can be found in [Appendix 5](#).

Home Page – Google Charts:

The alternative visualisation tool to display the vast amount of football data is Google Charts. The decision to use this came after realising Power Bi may not be a feasible implementation and because visualising data is one of the main objectives of this project, it was imperative to find an alternative. Using a mixture of JavaScript to display the chart itself and PHP to retrieve the data from the MySQL database, provides the functionality of embedding an interactive graph on the webpage. The JavaScript libraries allow run-time interactivity with the graphs meaning users can hover over graph components to see more information.

Profile Page:

Each user has a profile page consisting of the following:

- Profile photo
- Player Information (e.g. favourite player, position)
- Player Statistics (e.g. number of appearances, number of goals)
- Visual Statistics

Some of this data can be edited by clicking the 'Edit' button which turns the labels into text boxes to allow data entry. This includes player information such as their favourite player and position. To help data consistency and reduce erroneous data being entered to the database, the 'position' field is a drop-down box as there are a finite number of positions on the pitch. Other data cannot be edited as this is retrieved live from the database using relevant queries and views; including how many goals a player has scored. This helps to meet requirement **FR14**.

One of the main statistics in this system is a player's performance index which is calculated on a weighted average based on the following statistics;

- Win points (*22.5% weighting*)
- Goal points (*22.5% weighting*)
- Team goal points (*22.5% weighting*)
- Team goals conceded points (*22.5% weighting*)
- Appearance points (*10% weighting*)

Further details on how to calculate a player's performance index can be found in the [Final Report](#). Each user has some tailored graphs to display their statistics in a visual manner to help achieve the main objective of the system. This can range from goals scored week-on-week to number of contributions to department goals.

Once users are happy with their profile, they can publish it to the gallery for all other players to view. Once it has been published, the button becomes disabled so that there are no duplicates in the gallery. One thing to note is the fact that individual performance indexes are not displayed in the gallery. This is to reduce social competitiveness and was a requirement (**FR13**) agreed by the client from a social aspect, as this could cause unwanted rivalry or dispute within the office. [Appendix 6](#) shows a screenshot of a player's profile page.

Gallery Page:

As aforementioned, the difference between the gallery and a player's profile is the exclusion of individual's performance indexes. It shows a range of information such as user's favourite players, which team they support and how many goals they have scored. Player's profile pictures are also displayed, scaled accordingly, and those who do not wish to have a profile photo have the option to do.

Data is queried using a range of views that joins multiple tables in the database. Looping through the results, each profile is displayed dynamically and conforms to requirement **QR5** stating that pages should be responsive when resizing the window. To achieve this, the gallery uses a CSS grid layout, a feature that excels in segmenting webpages into rows and columns. [Appendix 12](#) shows a screenshot of the gallery in action.

Match Day Page:

The match day page shows information about an upcoming fixture (must be today's date or in the future) and about the most recently played game (must be in the past). Players are able to see who has been selected to play in the upcoming match, and on what team, as data is retrieved from a view. To help determine the correct match is displayed, the score must be null because the game has not taken place yet. A similar CSS grid styling is applied to this page to display the yellow and orange teams.

Each week a different graph will be displayed using Google Charts showing different data in different forms to show a diverse range of statistics being collected. [Appendix 9](#) shows a screenshot of the match day page.

Admin – New Match Page:

Users with administrative rights will see an extra drop-down tab in the menu bar saying 'Admin'. Hovering over this button will show two options; New Match and Results, which resemble pre-match and post-match forms, respectively. To create a new match, administrators can enter the date and select two teams by either pressing the 'auto-generate' button, or select players manually. Players are displayed in a table alongside their performance index to help make the selection of teams fairer, meeting requirements **UR13** and **UR15**.

To improve usability, the list of players can either be sorted based on their name or their performance index by changing the drop-down menu. Upon selection, a JavaScript method is called which fires some AJAX code. An XML HTTP-request object asks for the specified data from the database in order to change the list of players in the front-end. The request gets returns by the server and using JavaScript, the players are then sort based on the user's selection. [Appendix 10](#) shows the AJAX method responsible for this functionality.

Another feature is the ability to auto-generate teams, originating from requirement **FR18**. Pressing this button will randomly select five players for the yellow team and five for the orange team. One thing to note is the fact that it does not take into consideration player's availability and does not

factor performance indexes into account. Both of these limitations could be future enhancements for the system.

There is also a live preview section which shows the players currently selected in each team. This feature is not fully functional as it still shows duplicates on the screen, although user's have the ability to remove them. In the back-end, there is a function that removes duplicates from the array of each team so that when the user submits the results, the teams contain a set of unique players.

Admin – Results Page:

The second part of the Administrative section is the results page. Once games have been played, admin users can submit the results by completing this form. The date is pre-populated from the database and all users need to do is enter the goals scored by each player. The default is set to 0, and those who score simply get incremented using the text boxes. Each one is validated so only positive integers can be entered, with a reasonable assumption that one player will not score more than 15 goals per game (max). The final score automatically increments based on the sum of each of the text boxes using a JavaScript function to help reduce erroneous data.

Users can also submit players who dropped out last minute from a selection box, however as the original system does not factor drop-outs and it does not affect the performance index, this feature is not yet fully functional. Pressing the submit button will send the results to the database and update the relevant tables.

User Stories:

1. New User:

New users must register to the system. Successful authentication will redirect you to the home page where users can then navigate to different parts of the website. Users should edit their initially blank profile so that it contains data (as shown in image 3). By clicking the 'Edit' button, users can then enter information to the relevant fields as the labels become text boxes (shown in image 4). Image 5 shows the profile with the updated information and once users are happy, the 'Add profile to gallery' button will publish the profile to the gallery for all other players to see. As previously discussed, the gallery does not display player's performance index.

1. Sign up
2. Home page
3. Profile (blank)
4. Edit profile
5. Publish to gallery
6. Gallery

1

CRSL Login Dashboard

Home My Profile Gallery Match Day Login

Sign Up!

Username * Department *

First Name *

Last Name *

Email Address *

Password *

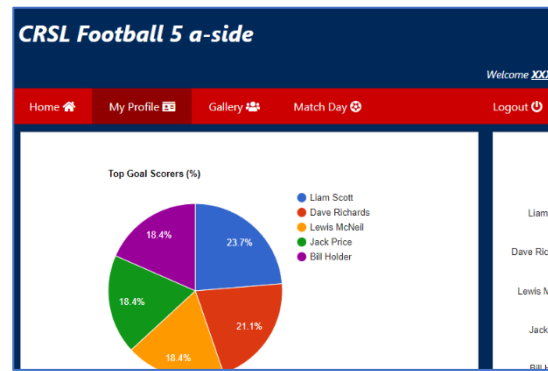
Confirm password *

I agree to the [terms and conditions](#) * ☐

REGISTER

Already a member? [SIGN IN](#)

2



3

CRSL Football 5 a-side

Welcome **XXX**

Home My Profile Gallery Match Day Logout

Welcome back Xxx

XXX

Nickname:

Position:

Supports:

Fav Player:

Strength:

Weakness:

Appearances: 0

No Of Goals: 0

Performance Index:

EDIT

ADD PROFILE TO GALLERY

4

Welcome back Xxx

XXX

Nickname:

Position:

Supports:

Fav Player:

Strength:

Weakness:

Appearances: 0

No Of Goals: 0

SUBMIT

5

Welcome back Xxx

XXX

Nickname: Test

Position: Full Back

Supports: Test

Fav Player: Test

Strength: Test

Weakness: Test

Appearances: 0

No Of Goals: 0

Performance Index:

Submit your profile to the gallery for other players to see!

ADD PROFILE TO GALLERY

6

Home My Profile Gallery Match Day Logout

Players Profiles

Name: Xxx Xxx

No picture available

Nickname: Test

Position: Full Back

Team: Test

Fav Player: Test

Strength: Test

Weakness: Test

Appearances: 0

Goals Scored: 0

Name: Jack Price

Nickname: Test

Position: test

Team: test

Fav Player: test

Strength: test

Weakness: test

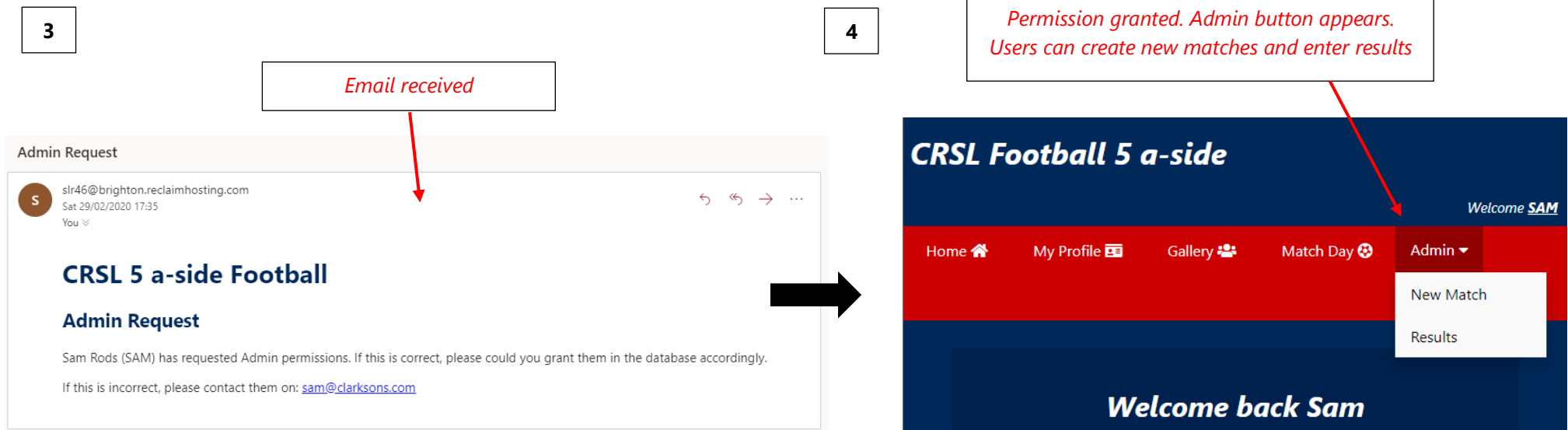
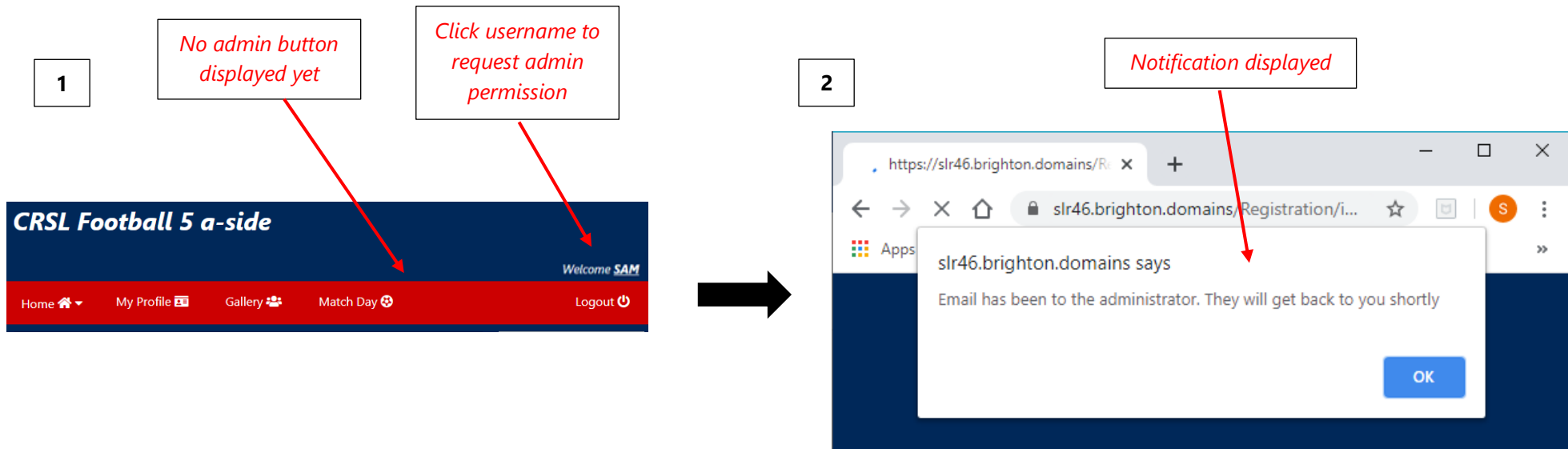
Appearances: 12

Goals Scored: 8

2. Admin User:

In order to become an administrator, permission must be requested and granted. To do so, users must click their username in the top right-hand corner of the screen which will send an email to the administrator (myself). Upon receiving this, the user will be added to the relevant tables in the database which will grant them the permissions needed. As a result, the 'Admin' button appears in the red tab on the front-end. The drop-down button allows users to either create a new upcoming match (pre-match) or enter the results of a game (post-match).

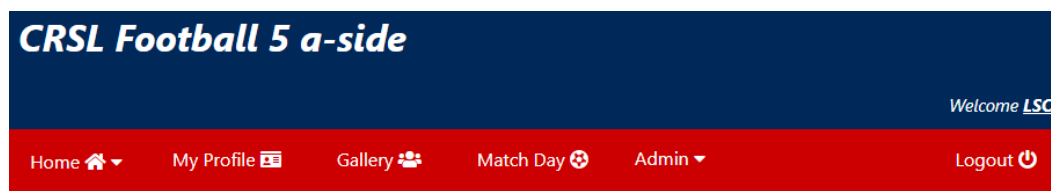
1. Login/Sign up
2. Click username hyperlink
3. Email sent
4. Permission granted
5. Admin button visible



Code Explanation:

The overall structure of the application's code adopts a more Object-Oriented approach. The recycling of code reduces coding time and in cases can improve performance especially when large volumes of data are being handled. The website maintains a standard structure and design throughout all its webpages, consisting of a title, menu bar and username credentials.

Menu Bar:



The red menu bar, consistent across all pages, allows users to navigate to different parts of the website. Rather than repeating this extensive code on each page, a JavaScript method calls a function in '**nav.php**' and displays the bar on the page. Integrated in this is PHP to ensure only admin users get to see the 'Admin' button and the logout button changes according to whether users are logged in or not. [Appendix 1 and 2](#) demonstrate the tidiness of using this method by adopting this OO approach.

Terms and Conditions:

To register to this website, users must agree to the terms and conditions which can be found in 'terms.html'. These should not need to change often, but must be maintained as data on employees is being held and must conform to GDPR standards.

Database Connection:

Most, if not all, webpages need to connect to the MySQL database in order to retrieve relevant bits of data. To do so, each page must include '**server.php**' which contains the connection strings and allows the interaction between the website and database. Whether its queries, views, update or insert statements, each PHP page handles a range of different requests. 'Server.php' also contains most of the bulk SQL when processing the range of forms on the website; this includes logging in, signing up, creating a new match and submitting the results of a game.

Create New Match:

The form enabling admin users to create new matches contains two key features: a checkbox to auto-generate teams and a drop-down box to sort the list of players. Ticking the checkbox triggers a JavaScript method which will create 10 random numbers between 1 and the number of players in the database. The numbers correspond to a player, where five players get assigned to the yellow team and five players get assigned to the orange team.

By default, players are ordered based on their performance index which helps admin users to select fairly-weighted teams. To change the ordering, there is a drop-down box allowing players to be order by their name or their index. Upon selection, a JavaScript method is called which fires some AJAX code. An XML HTTP request objects asks for the specified data from the database in order to change the list of players in the front-end. The request gets returns by the server and using JavaScript, the players then sort based on the user's selection. [Appendix 10](#) shows the AJAX method responsible for this functionality.

Final Score Validation:

Using jQuery, the final score on the results page can be validated by counting the number of goals that were scored by each player on each team. This reduces erroneous data being entered to the database; for instance, if the yellow team scored three goals between them, but the admin enters the final score to be four. To automate this feature, a function in jQuery sums the number of goals scored by each player in each team and outputs it to a label.

Initially, each text box had a wrapper which would bind the event handler to each element, however, this was inefficient and created a large scope. A more efficient way is to remove the 'each()' wrapper and bind the 'keyup' and 'click' events directly to the method that calculates the sum. The jQuery for this feature can be found in [Appendix 8](#).

Bcrypt Algorithm:

To encrypt the website's passwords, a bcrypt algorithm is used which is a hash function that uses a Key Factor to adjust the cost of hashing. Increasing the cost allows for more complex hash outputs to be created, which in turn make passwords more difficult to crack and therefore less vulnerable to rainbow table attacks. It does however slightly affect the processing time by roughly 0.3 seconds, which in the grand scheme of this project, should not affect the performance too much.

Testing:

Error Logging:

The system keeps a record of all the errors that occur whilst using the system mainly from submitting forms and data to the database. A copy of the log can be found in [Appendix 12](#), or alternatively at: https://raw.githubusercontent.com/samrods/CRSL/master/error_log

User Testing:

To help test the system's functionality, there is a test script for users to complete and provides the opportunity for users to comment and suggest improvements. The script itself along with test user's results can be found at: <https://ci301.slr46.brighton.domains/>

Any issues experienced that are experienced with the website, please contact the administrator via email: samrod09@hotmail.com.

Appendices:

Appendix 1: Menu Bar – Original Code

```
<div class="topSection">
    <div class="title3">
        <!-- notification message -->
        <?php if (isset($_SESSION['success'])) : ?>
            <div class="error success" >
                <h3>
                    <?php
                        echo $_SESSION['success'];
                        unset($_SESSION['success']);
                    ?>
                </h3>
            </div>
        <?php endif ?>

        <!-- logged in user information -->
        <?php if (isset($_SESSION['username'])) : ?>
            <p class="title2">Welcome <strong><?php echo
$_SESSION['username']; ?></strong></p>
        <?php endif ?>
    </div>
</div>

<div>
    <nav class="topnav">
        <ul>
            <li><a
href="https://slr46.brighton.domains/Registration/index.php">Home <i
class="fas fa-home"></i></a></li>
            <li><a
href="https://slr46.brighton.domains/readPlayers.php">New Match <i
class="far fa-file"></i></a></li>
            <li><a
href="https://slr46.brighton.domains/Registration/profile.php">My
Profile <i class="fas fa-id-card"></i></a></li>
            <li><a
href="https://slr46.brighton.domains/Registration/profile_gallery.ph
p">All Profiles <i class="fas fa-users"></i></a></li>
            <div class="lgn">
                <!-- Logout button -->
                <?php if (isset($_SESSION['username'])) : ?>
                    <li><a href="index.php?logout='1'"
style="color: white;">Logout <i class="fas fa-power-
off"></i></a></li>
                <?php endif ?>
                <?php if (!isset($_SESSION['username'])) : ?>
                    <li><a href="index.php?logout='1'"
style="color: white;">Login <i class="fas fa-power-
off"></i></a></li>
                </div>
        </ul>
    </nav>
</div>
```

```

        <?php endif ?>
    </div>
</ul>
</nav>
</div>

```

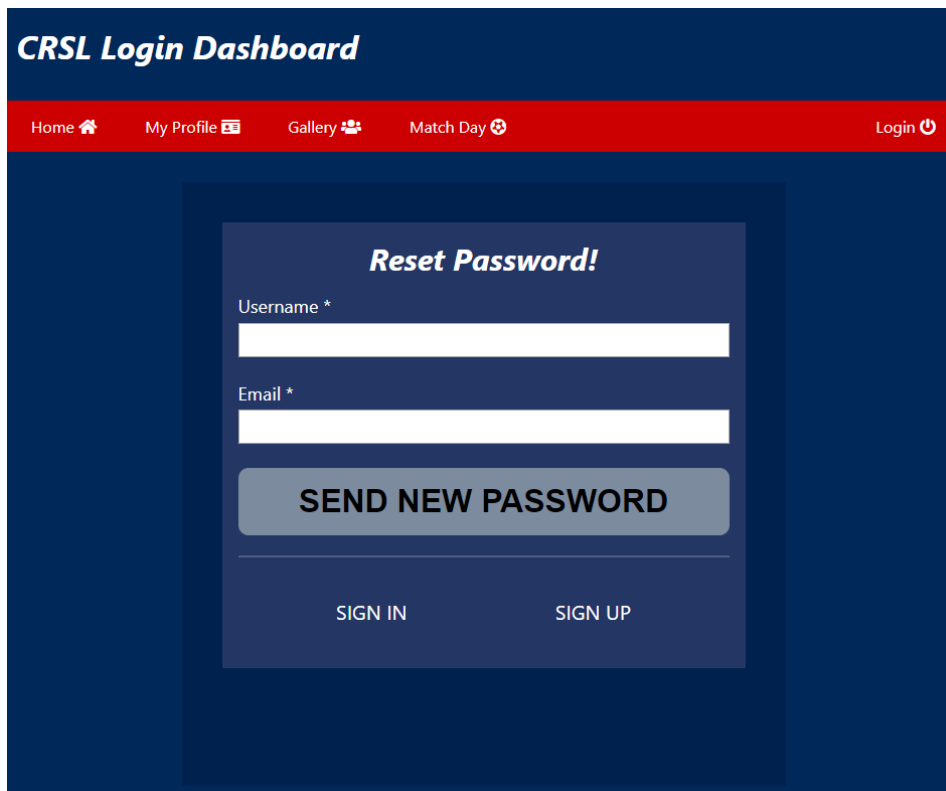
Appendix 2: Menu Bar - Neater code

```

<!--Navigation bar with username-->
<div id="nav-placeholder"></div>
<script>
    $(function() {
        $("#nav-placeholder").load("nav.php");
    });
</script>

```

Appendix 3: Reset Password Page



The screenshot displays the 'CRSL Login Dashboard' interface. At the top, a dark blue header contains the title 'CRSL Login Dashboard'. Below this is a red navigation bar with links: 'Home' (with a house icon), 'My Profile' (with a user icon), 'Gallery' (with a camera icon), 'Match Day' (with a soccer ball icon), and 'Login' (with a power icon). The main content area is dark blue and features a central 'Reset Password!' form. The form has two input fields: 'Username *' and 'Email *'. Below these fields is a large, rounded button labeled 'SEND NEW PASSWORD'. At the bottom of the form are two buttons: 'SIGN IN' and 'SIGN UP'.

Appendix 4: Home – Power Bi:

CRSL Football 5 a-side

Welcome **LSC**

[Home](#) [My Profile](#) [Gallery](#) [Match Day](#) [Admin](#) [Logout](#)

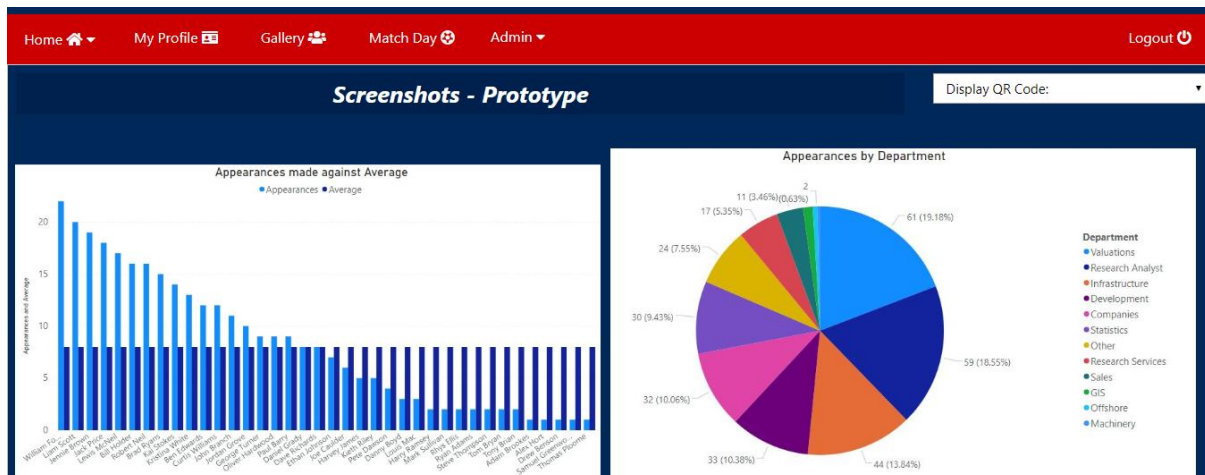
Power Bi

Display QR Code:

This content isn't available.
[Learn more about Power BI.](#)


Microsoft Power BI

Appendix 5: Home – Screenshots:




Appendix 6: Profile Page

Welcome back Liam




Nickname:	Lozza
Position:	Winger
Supports:	Arsenal
Fav Player:	Messi
Strength:	Shooting

EDIT 

Your Stats

Department:	Infrastructure
Appearances:	21
Wins:	13
No Of Goals:	30
No Of Team Goals:	122
No Of Goals Conceded:	103
Performance Index:	42.1

ADD PROFILE TO GALLERY 

Appendix 7: jQuery – Final Score:

```
$(".yellowGoal").each(function() {  
    $(this).click(function() {  
        calculateSum();  
    });  
    $(this).keyup(function() {  
        calculateSum();  
    });  
});
```

```
$(function() {  
    $(".yellowGoal").keyup(calculateSum);  
    $(".yellowGoal").click(calculateSum);  
});
```

Appendix 8: Request Admin Email

Admin Request



slr46@brighton.reclaimhosting.com
Wed 18/03/2020 11:51
You

↶ ↷ → ...

CRSL 5 a-side Football

Admin Request

Liam Scott (LSC) has requested Admin permissions. If this is correct, please could you grant them in the database accordingly.

If this is incorrect, please contact them on: Liam.Scott@clarksons.com

Appendix 9: Match Day

Match Day

Next Fixture:

Date: Sunday 05 Apr 2020

Teams:

Yellow Team:

Lewis McNeil
Oliver Hardwood
William Fortress
Liam Scott
Jordan Grove

Orange Team:

Sam Jackson
Jack Jones
Kieth Riley
Ethan Johnson
Alex Hort

Previous Game:

Date: Monday 20 Jan 2020

Result:

Yellow Team:

4

Daniel Grady (1)
Bill Holder (1)
Ethan Johnson (1)
Brad Ryans (1)

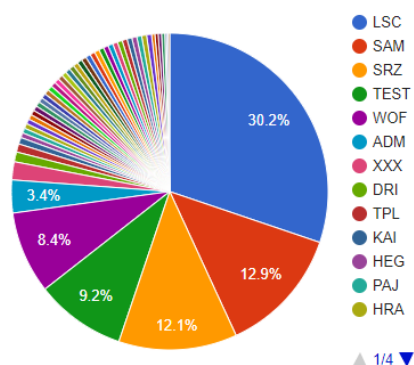
Orange Team:

2

Lewis McNeil (1)
Liam Scott (1)

Graph of the Week:

Most Active Users of this site



Appendix 10: AJAX – Sorting Players:

```
// Behaviour for sorting player's table when Creating a New Match
function showUser(str) {
    if (str === "") {
        // Error loading players...
        document.getElementById("txtHint").innerHTML = "";
        return;
    } else {
        if (window.XMLHttpRequest) {
            xmlhttp = new XMLHttpRequest();
        } else {
            xmlhttp = new ActiveXObject("Microsoft.XMLHTTP");
        }
        xmlhttp.onreadystatechange = function() {
            if (this.readyState == 4 && this.status == 200) {
                document.getElementById("txtHint").innerHTML =
this.responseText;
            }
        };
        xmlhttp.open("GET","displayPlayers.php?q="+str,true);
        xmlhttp.send();
    }
}
```

Appendix 11: Error Log

```
[23-Apr-2020 21:33:24 UTC] PHP Warning: Division by zero in /home/slr46/public_html/Registration/profile.php on line 196
[23-Apr-2020 21:33:24 UTC] PHP Warning: A non-numeric value encountered in /home/slr46/public_html/Registration/profile.php on line 200
[23-Apr-2020 21:33:24 UTC] PHP Warning: A non-numeric value encountered in /home/slr46/public_html/Registration/profile.php on line 200
[23-Apr-2020 21:33:24 UTC] PHP Warning: mysqli_free_result() expects parameter 1 to be mysqli_result, boolean given in /home/slr46/public_html/Registration/profile.php on line 215
[23-Apr-2020 21:33:46 UTC] PHP Warning: mysqli_free_result() expects parameter 1 to be mysqli_result, boolean given in /home/slr46/public_html/Registration/server.php on line 249
[23-Apr-2020 21:33:46 UTC] PHP Warning: mysqli_free_result() expects parameter 1 to be mysqli_result, boolean given in /home/slr46/public_html/Registration/server.php on line 254
[23-Apr-2020 21:34:02 UTC] PHP Warning: mysqli_free_result() expects parameter 1 to be mysqli_result, null given in /home/slr46/public_html/Registration/editProfile.php on line 27
[23-Apr-2020 21:34:27 UTC] PHP Warning: mysqli_free_result() expects parameter 1 to be mysqli_result, boolean given in /home/slr46/public_html/Registration/server.php on line 456
[23-Apr-2020 21:34:27 UTC] PHP Warning: mysqli_free_result() expects parameter 1 to be mysqli_result, boolean given in /home/slr46/public_html/Registration/server.php on line 462
[23-Apr-2020 21:34:27 UTC] PHP Warning: mysqli_free_result() expects parameter 1 to be mysqli_result, boolean given in /home/slr46/public_html/Registration/editProfile.php on line 27
[23-Apr-2020 21:34:28 UTC] PHP Warning: mysqli_fetch_assoc() expects parameter 1 to be mysqli_result, boolean given in /home/slr46/public_html/Registration/profile.php on line 166
[23-Apr-2020 21:34:28 UTC] PHP Warning: Division by zero in /home/slr46/public_html/Registration/profile.php on line 192
[23-Apr-2020 21:34:28 UTC] PHP Warning: Division by zero in /home/slr46/public_html/Registration/profile.php on line 196
[23-Apr-2020 21:34:28 UTC] PHP Warning: A non-numeric value encountered in /home/slr46/public_html/Registration/profile.php on line 200
[23-Apr-2020 21:34:28 UTC] PHP Warning: A non-numeric value encountered in /home/slr46/public_html/Registration/profile.php on line 200
[23-Apr-2020 21:34:28 UTC] PHP Warning: mysqli_free_result() expects parameter 1 to be mysqli_result, boolean given in /home/slr46/public_html/Registration/profile.php on line 215
[23-Apr-2020 21:34:40 UTC] PHP Warning: mysqli_free_result() expects parameter 1 to be mysqli_result, null given in /home/slr46/public_html/Registration/editProfile.php on line 27
```




Appendix 12: Gallery

CRSL Football 5 a-side

Welcome **ASD**

Home 🏠 My Profile 👤 Gallery 🖼️ Match Day 🏆 Admin ▼ Logout ⚡

Players Profiles

Name: Paolo Espiritu  Nickname: P	Name: Luis Rodriguez 	Name: Asd Asd  Nickname: Rods
--	---	--