Project Document

Group 4

Title: Wonder Cubs

INTRODUCTION:

Aims and objectives of the project

Our project is a destination website, called 'Wonder Cubs', for young girls to learn, explore and take part in football.

It is a fan website that will showcase the England Women's football team ('The Lionesses') and use their success to encourage young girls to become and stay interested in football as women's football becomes more popular.

The website contains inspirational information about the England Women's football team, like their portraits, profiles and football statistics. The purpose of sharing information about the team is for young girls to relate to the players, to normalise girls and women in football, and to make the sport more accessible. Showcasing the team's achievements will show young girls that not only can they be interested in football, but they can also aim to play professionally like 'The Lionesses'.

The homepage and 'News & Activities' pages feature articles, videos and images focused on girl's and women's football, highlighting the success of England's football team and creating excitement for the FIFA Women's World Cup 2023. The 'News & Activities' page includes information on the benefits of playing football, success stories of young girls who have joined football teams and links to resources.

Incorporating aspirational professional players, showing up-to-date statistics, fun videos and helping to find ways to play on our website will help to encourage young girls to get involved in football and stay involved as they grow up. This can help to increase the fanbase of the team and promote the growth of women's football in general.

Roadmap of the report

1. BACKGROUND:• Any specific details about the project based on your chosen topic.

a. What we are building

We have built a user-friendly website about female football in the UK taking into consideration our target audience. The homepage will contain friendly images, bright colours and fun videos as an introduction to 'Wonder Cubs' and our aims.

The main features on our website are:
- To display up-to-date fixtures and standings for England's Women's football team with the use of an API from footystats.org.
- Display 'The Lionesses' player profiles with statistics, images and links to further information.
- Find a club near you using Places API & Maps embed API from Google.

The 'News/Activities' page contains interesting articles with images to encourage young girls to get involved with 'Wonder Cubs'. A future development would improve the latest news, articles about members achievements and upcoming events.

A login/sign up page will capture usernames and email addresses so they can be sent inspirational newsletters. User details currently stored in a json file.

b. Target audience

The target audience is young girls aged 7+ living in the UK who are playing or interested in playing football. The site will help girls and their families find more information on England's senior women's team, follow their progress through information on upcoming fixtures, the benefits of playing football and be a resource on how they can get involved.

Eye-catching, friendly and energetic graphic design and messaging will be curated to appeal to our target audience.

This site can also target schools and parents/carers to support and encourage their children to play football. Resources on the site will provide information accessible to both children and their grown-ups.

3. SPECIFICATIONS AND DESIGN:

a. Requirements technical and non-technical

    i. React
    ii. API for football statistics to call a specific teams current fixtures, standings and team members information

      iii.   API with location-based services such as Google Maps to help find local
football teams or clubs

      iv.   Embedded links to content from platforms such as Youtube and TikTok

      v.   Login and sign up functionality

      vi.   User-friendly navigation and layout

      vii.   Visually appealing to the demographic

b. Design and architecture

The design and architecture took influence from [FAW Trust](#) and [England Football](#)'s websites, as well as current [colour trends](#) and those aimed at young girls.

      i.   Colour palette

A mood board was created in Figma which shared a colour palette and examples of icons for the website for the team to work from. The research looked into colour palettes to evoke feelings of joy and energy. Teenagers are drawn to bright, vibrant and energetic colours such as yellow, pink, blue and green. Also, the vests/bibs worn in sports clubs are brightly coloured!

      ii.   Wireframe

From the requirements and design discussed above, a wireframe was compiled collaboratively on Balsamiq. The wireframe clearly displays the purpose of the website and how to navigate it. See Appendix A for examples of the colour palette and wireframes.

      iii.   Architecture

For our web application, we created a UI in React with navigation and various pages. We used APIs to which we made http requests to fetch data in our React front-end. These are displayed through styled, responsive components on relevant pages.

4. IMPLEMENTATION AND EXECUTION:

a. Development approach and team member roles

Development approach: Given the limited time and the different schedules and commitments of each member we selected an iterative & incremental approach. The first one helped to tackle the fact that the scope was not set from the beginning since it depended on what we learned and the free available APIs we would discover. Also, user feedback was captured throughout the development process. The incremental was used to build our site by prioritising our work based on a minimum viable product and then building on top of it given the time limitations.

Roles: The team worked collaboratively through the project. Each member communicated their interests and accepted tasks willingly. The project was managed by various members via different channels of communication. We all wore the different hats of developer, designer, tester, project manager, product owner at various stages of the project.

Team Roles and Responsibilities:
- Deirdre - create colour scheme, create GitHub repository, set up Routing, create Navbar and Footer using React, CSS and React Bootstrap
- Steph - implement 'Fixtures' and 'Standings' API, create Fixtures page and components using React, CSS and Bootstrap
- Eva - create 'Find your Club' & 'Login/Sign Up' pages using React, Express - Node.js and CSS and APIs from Google
- Sazia - create 'Homepage' and 'Activities' pages using React and CSS, integrate YouTube video
- Celina - implement API to pull football player's information, create 'Meet the Lionesses' page and components using React, CSS and React Bootstrap.

b. Tools and libraries

- Tools for group collaboration include Slack, Zoom, Trello, GitHub, Google Jamboard and Balsamiq.
- Tools used for design, wireframe and UI included [Figma](), [Balsamiq](), free images via Google, [Flaticon](), [Fontawesome]() and [Coolors]().
- React and Create-react-app were tools used to build our website
- CSS, Bootstrap and React Bootstrap were implemented to create the layout and features such as navigation and buttons.

c. Implementation process

Task: Routing, Navbar and Footer
- Routing was set up first in our React App, following guidance from W3 Schools and the CFG lesson. This also required the creation of our pages as JS files for each page as decided on from the wireframe. Implementing this feature was challenging as I had to study how the files in React interact with each other and how to use components.
- The Nav Bar was initially implemented with React Bootstrap but I was unfamiliar with components so found it confusing. I reverted the navbar back to plain html and css to examine it, and then I was able to convert it into React Bootstrap. Using the 'Inspect' tool in Chrome enabled me to examine the Bootstrap tags for editing in CSS.
- The Footer then followed, this held an image and icons for social media. Placing this on the page required multiple updates when others contributed their work.

Task: 'Homepage' & 'News & Activities' pages
- Implementation of wire-frame concepts was successful, by designing in the browser.

- Colours from our colour palette incorporated using CSS.
- Used CSS transitions for responsive elements, which can be interacted with, such as
- Cards that link to other locations. Their background changes colour on ':hover'
- Buttons: Also on hover, the colour, as well as text weight and size, change.
- Both also have an increase in shadow size.
- Links to the Login page and News & Activities
- Embedded Youtube video using iframe.
- Extensive use of flexbox to arrange the individual elements, as this is supported by all major browsers and therefore aids in compatibility.
- Dummy-article cards added using Lorem ipsum generator, to make sure the design works with body text.
- Same design language used as in homepage/landing page, to make sure the look and feel remains consistent.
- Challenges included
  - GitHub and version control in respect to the npm package. and package-lock.json.
    - Only adding, committing, and pushing the files that changed on my local machine, helped to reduce these difficulties.
    - Had to do extensive research when things broke on my branch, and the teacher's help was invaluable in sorting them out.
  - Becoming more familiar and comfortable using React.

Task: 'Fixtures' page:
- The Fixtures page was broken down into a number of components. The FixturesHome component brings together the various fixture related components, such as FixturesNav, Fixtures, FixturesToggle and Standings. The FixturesHome manages the activeTab state to determine which content (fixtures or standings) should be rendered. The renderContent function is responsible for rendering the appropriate content based on the activeTab state. React, Bootstrap and CSS were used to create these components.
- There were limitations on the APIs that were available, due to the limited data on Women's football. Initially an API from https://www.api-football.com/ was going to be used to call data for the fixtures cards but due to limited knowledge of women's football, identifying the right information, such as which leagues they played in was difficult. So at this time the matches are hard coded. On reflection we could have used this call, https://v3.football.api-sports.io/teams?id=1721 (See Appendix B), to pull both the information and the logos for the cards , this would have allowed the cards to be dynamic and changed when a match has been played.
- A toggle feature to also display 'standings' was also introduced. After struggling to use a widget from api-football, which would only render in a HTML file, one from https://footystats.org/embeds/ was used. It called an API and displayed all the information that was needed with appropriate styling. Eliminating the need to make multiple API calls.

- Some tests were implemented using Jest to ensure that the pages loaded as expected and that the buttons redirected you to the expected pages (See Appendix C for output).
- Some styling issues were encountered but we took a collaborative approach to resolve these. With the group providing support, advice and guidance.

Task: 'Find Your Club' & 'Log in/Sign up' pages:
- Find your Club was created using React & CSS for the front-end and Express - Node.js to fetch the data from Places API with Axios promise-based HTTP client. Places API was chosen to enable the user to search for a junior football club near them. Due to limitations from Google, the only way to use this API is through the back-end which is why express framework was selected. With this we created a mini-server from where we brought the data to the front-end with Axios again. Maps embed API was inserted as an iframe and map changes according to user's region selection which is parsed as a prop to Maps component. Styles were inspired by colour palette used in Nav bar & footer.
- Log in/Sign up: Individual Homework login was used as a base and then was changed to match the requirements of the project. Sign up page was added and a database was created inside a JSON file which stores users email & password. With the json-server package from React we can simulate the process of fetching data from our API with fetch requests. POST request has been used to update our database/'fake API'. Email validation was added so the user is notified when they are inserting a wrong format as an email address. Login form accesses our db and checks if user credentials are correct. Signup form checks if the new email already exists and redirect's the user accordingly. Given the time limitations Redux was not used but this could have enabled more features, something that could definitely be looked at in the future.

Task: Player Cards - Meet the Lionesses page
- The Player Cards component has been created first using Card and ListGroup from Bootstrap. Css has been used to style each card.The Player Card component is then called by the main PlayerProfile page component with props, displaying text, images and a link to external FootyStats.
- I had to find a workaround for the card API idea as that proved to be too challenging due to limited knowledge, time and actual available data. Therefore I had to hard code text for each player.
- I have created another component called PlayerIntro to control the top fold where a brief text and an image have been added. Used CSS to style and flex-box
- I have Incorporated another JSX slider component pulling data from another component called data.js using Hooks to control the Next button in order to make up for the API loss (RIP!) and add more interactivity on the page
- Mocked player images by combining the Lionesses logo and the player photos on the pitch. Mocked Leah Willimiason headshot with a vibrant lioness and a lion to evoke feelings of power and keep consistent to the look and feel of the site

d. Agile Development

A Kanban style trello board was used to create our Backlog and store our ideas at the beginning. Meetings were set up in Zoom more frequently at the start of our project and then whenever we've hit any milestones or had any issues. Slack was also the way used most to communicate with each other. Github & Git were used to store our code and helped with the collaboration and review of the code.

e. Implementation challenges

Main considerations and problems

- Ensuring that the application is inclusive and diverse to appeal to a wide range of young girls from different backgrounds and experiences.
- Ensuring that the application provides accurate and reliable information on football and related resources.
- Limited time and many of us have other commitments during the day
- Still learning React, so were not able to start working on the functionalities of our site straight away
- Not used in working with Github but overcame some issues and learnt a lot during the implementation of the project
- Issues with API's documentation which slowed us down
- One of Google APIs was only reachable through back-end which added extra research to overcome additional problems
- Adhering to the same look and feel across the whole application, especially if more people work on the design and the wireframe
- Reaching a consensus on how the site should look
- Learning how to interact with one another and build trust despite our differences in personalities for maximum results and positive vibes

5. TESTING AND EVALUATION:

a. Testing strategy
Jest was attempted for unit testing, however this proved complicated due to the functions only rendering pages. API testing was attempted as well but the approach that worked best was performing user testing and manual console log testing to spot any errors. Additionally, constant code reviews have been performed after each new pr request, fixing any conflicts before merging.

b. Functional and user testing
To avoid bias, and correct poor design and functionality, the testing has been performed by each one of us in turn as soon as a new component was ready to render, as well as towards the end, on the actual app as time did not allow for a hi-fidelity prototype to experiment with. Each team member had their work tried by someone else and feedback was collected.

The test script has been the same for everyone, and consisted of interacting with the elements on the page.The recorded behaviour has been observed unanimously. See Appendix D for an evaluation and analysis.

c. System limitations

Unable to find a Player API displaying the type of information decorating the Player Cards such as: player motto/quote, player favourite food/song or even official information as female football is not yet that popular etc. A solution would have been combining multiple APIs but that was above the current level of knowledge. Another alternative would have been creating a SQL database storing the info that we needed, and connecting it to the App, however the complexity of this was too high and the time too limited.

The App would have benefited from more anchor buttons and a sitemap to help user navigation should there have been more time.

The News & Activity page currently renders only text and image media and could have hosted video, social posts, side menu and a search bar.

6. CONCLUSION

Taking everything into consideration, the "Wonder Cubs" App delivers the initial brief, keeping true to the wireframe and project vision to provide a vibrant space for young girls to discover football and learn more about the Lionesses team in an attempt to promote sports and inspire the future female players to become the best.

The youthful look and feel is maintained through variations of purple, combined with shades of yellow and shades of green which can be found throughout the pages in buttons, text spans, icons, and media. Consistency in colour palette has been achieved by declaring colour variables inside the css files, using imagery of young players, and embedding the colourful logo in the Header as well as a vivid icon in the footer, requirements drawn from the system architecture and design roadmap.

The implementation and execution has been achieved through libraries such as React, the Express Node web framework

There is scope for re-designing and re-thinking certain components but our initial concept provided adequate challenges for an intense learning experience for every team member. Overall, the team worked collaboratively throughout and completed the project that we set to do with minimal changes.

Further Development:
The app will incorporate in the future the following features:

- Contact us page: users can complete an online form and get in touch for any queries.
- Booking sessions online: to book sessions with coaches and mentors.
- Donation page: where sponsors and parents can contribute financially.

7. Appendix

Appendix A
Colour palette:

D93E5E   FACE48   C8A0DD   419A93   5BBA50

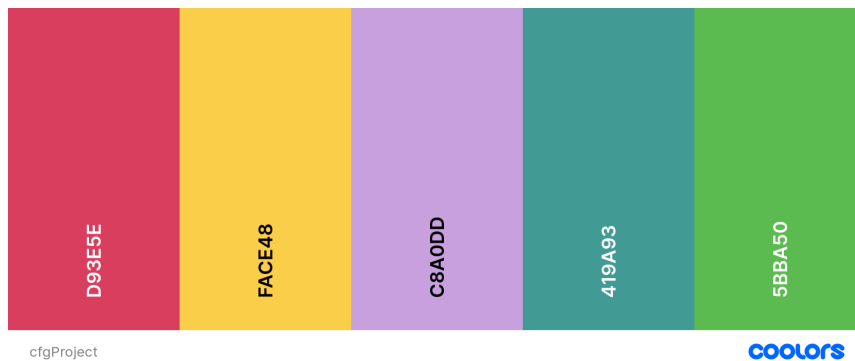cfgProject   coolors

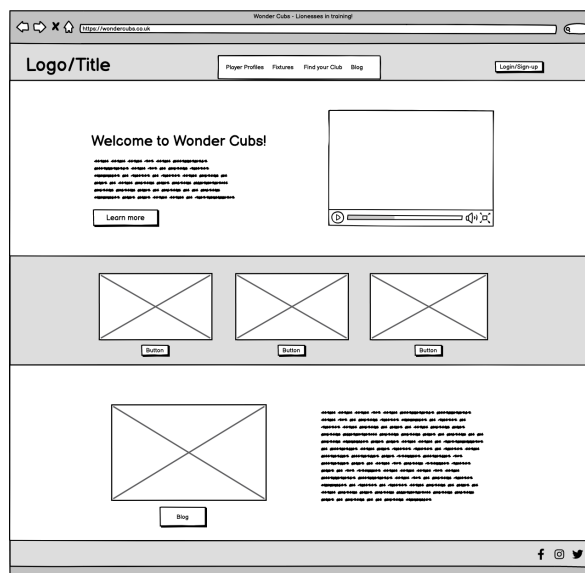*Image: Colour palette for 'Wonder Cubs' website, Coolors*

Wireframes:

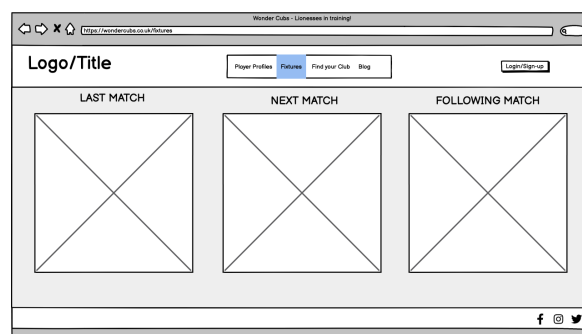*Image: Homepage, displaying navigation and introduction to the website*

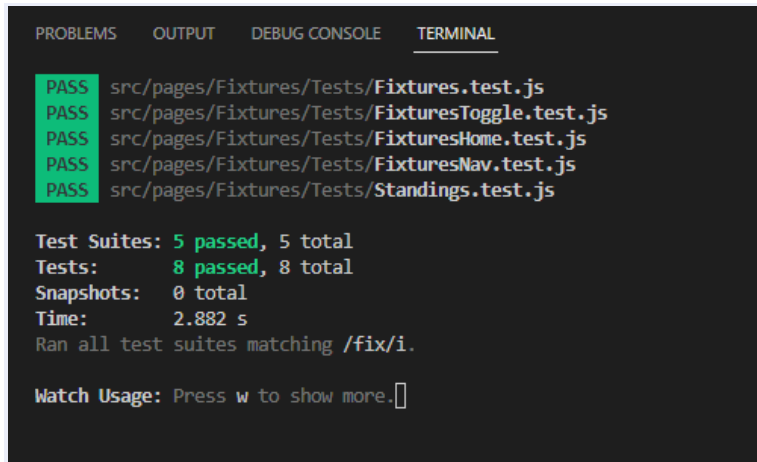*Image: Fixtures page, displaying three containers for the fixtures API*

Appendix B

Example JSON data on the current matches for 2023 for the English Women's football team:

{
get: "fixtures"
parameters: {
season: "2023"
team: "1721"
}
errors: [
]
results: 4
paging: {
current: 1
total: 1
}
response: [
{
fixture: {
id: 1009011
referee: null
timezone: "UTC"
date: "2023-04-11T18:45:00+00:00"
timestamp: 1681238700
periods: {
first: 1681238700
second: 1681242300
}
venue: {
id: 10503
name: "Gtech Community Stadium"
city: "Brentford, Middlesex"
}
status: {
long: "Match Finished"
short: "FT"
elapsed: 90
}
}
league: {
id: 666
name: "Friendlies Women"
country: "World"
logo "https://media-2.api-sports.io/football/leagues/666.png"
flag: null
season: 2023
round: "Friendlies 1"
}
teams: {
home: {
id: 1721
name: "England W"
logo: "https://media-3.api-sports.io/football/teams/1721.png"
winner: false
}
away: {
id: 1722
name: "Australia W"
logo: "https://media-3.api-sports.io/football/teams/1722.png"
winner: true
}

Appendix C

Example of JEST Tests output:

Appendix D

Evaluation and Analysis

Navbar: the text size has been increased
- User engages repeatedly with the logo and the Wonder Cubs title by clicking on it on avg 2-3x times
- User is able to find their way through the website by clicking on each nav button from the Header
- User clicks multiple times on the "Let's play icon" from the Footer, then their attention is concentrated on the social icons
- User hovers on the Facebook icons and then proceeds to click on it and is then taken to the Facebook page
- User attempts to press the back arrow to return to the site before switching back to the site tab.
- Then, the user clicks on the Insta icon and attempts to use the back arrow again
- User hovers over the TikTok icon, clicks on it and returns back to the page by clicking on the

Note: Nav bar has been created first and upon user testing, the text has been scaled up to match the other app components.

Homepage: updated dummy text
- The user spent approx. 2s looking at the site before engaging with any elements
- Next, the user clicked multiple times on the logo
- Then, the user clicked on the Youtube video and spent approx 4.4s watching the video, pausing it twice before moving to the next fold
- The user hovered multiple times above the purple boxes and clicked multiple times on all the buttons
- Every click took the user to the "Events" page where the user seemed to spend more time looking for details.

- Clicked on the logo and back on all the buttons

Note: Verbose dummy text from the first paragraph has been eliminated, font and heading size have been updated to match the look and feel of the site

Lioness Fixtures: The page is set to show the "Fixtures".
- The user attempts to click on all the boxes on the page
- Next, the user goes on to click the two buttons at the top
- After clicking on the "Standings" button, the user proceeds to hover over all.
- Then the user attempts to click on "Score" and any other card parts searching for more interactivity before clicking on the "Standings" button.
- User clicks on the England Women's National Team and is taken to the official page.
- The users presses the back button to return to the Standings screen and reads the "Overall" heading from top to bottom clicking on "View Full Stats" which links to the official page. The user goes back to the Standings and moves to the Goals column and on to Players
- In Players, the user engages with all the collapsable buttons and doesn't click on the "View Full Squad" but goes to the Matches and hovers above all blue text on the page before scrolling all the way down.
Note: No change performed

Meet the Lionesses:
- User can see colourful text and an image of a football player. Eye contact shifts between both and settles on image for 3s.
- User hovers over text, nothing to click
- User scrolls down to fill the screen with player cards and scans across images from left to right. Next they read the names in purple and scans lightly across the smaller text.
- The user scrolls to the very bottom and then back to player cards. They click on 'Footy Stats' on the first card and navigates away from the website.
- They return to the website and click 'Footy Stats' for the next player and navigates away from the website.
- They return to the website and scroll to the bottom. The eye shifts across the image at each face for 4s.
- User clicks 'Show details' beside the image and then clicks 'Next'
- User views 7 images.

Note: The user did return to the website for more interactions after navigating away.

Find your Club: increased white space on the page
- User's first interaction with the page is rapid eye shift from the image to the text
- Next, attention is maintained on the picture for 2.5s.
- Text is read next, user clicks on the yellow text
- User scrolls down the page and is prompted to Find the nearest club area
- User clicks inside the input box, types in London and shifts eye gaze to the "Clubs in London". Clicks on the purple box 2x times and then moves down the page to check the map

- Plays with the drop down, changes the zone and interacts with the map
- Selects London again from the toggle then zooms in and clicks on different clubs that takes them out of the page
- User navigates back with the back button, scrolls all the way down and finds the #LETGIRLSPLAY picture.
- User clicks on all social buttons at the bottom

Note: Added more white space on the page to ease the user journey.

Login/Sign Up
- User clicked on the "Login/Sign Up" button on the top right hand side and was taken to the Log screen
- User clicked on Log in without adding in any info and was prompted to fill in email address
- User added their email address and a pw and was taken to the "Unsuccessful Login page". Next, the user clicked on "Back to Log in" page
- User was given the correct pw and email address, fills the details in and is then greeted by a Successful Login page reading "Welcome to Wonder Cubs". The user is then offered the option to Sign out and so they do.
- The user is taken back to the Login screen upon signing out.