

CMP2089M Group Project
Group 39 Project - Social Network
Assignment Two



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Introduction

This is an evaluative report on our social media site ‘BetterBook’. The aim and objectives of the project will first be outlined before we go on to discuss the design of the artefact and the tools used during development. The site will then be critically evaluated, taking into account the group process, each group members’ contribution to the project and any improvements that could have been made. The group process is evaluated using three theoretical frameworks; Belbin theory, Tuckman’s theory and Fisher’s theory. This helps to analyse our groups technique and showcase what each member brought to the team.

The links below are of the social media site itself. We placed it on two hosting sites for contingency reasons.

WebHost: <http://betterbook.000webhostapp.com>

Freetzi: <http://betterbook.freetzi.com/>

Aims & Objectives

The overall aim of the project was ‘to create a social network which allows students to socialise, engage, plan and organise their day-to-day academic life’ and this has fundamentally remained the same throughout the development process. We believe that this aim has been achieved by our artefact and this section will explore how other, more specific aims and objectives have also been met in order to achieve this, and how some may have changed. Upon reflection, we realised that our objectives were not sufficiently detailed so this report will discuss our revised objectives which specify the purpose of a feature and how they will contribute to the aim of this project. The table below shows a complete list of our initial objectives as well as how we have adapted them into clear, descriptive, and measurable goals. Furthermore, we surveyed 10 users of our site to gather useful data and feedback which will be used to analyse and evaluate the success of our project (see Appendix A.1: Document links, for the questionnaire file).

Initial Objectives	Revised Objectives
User Accounts	Create user profiles and a news feed which would combine the interactivity, sociability and simplicity of popular sites such as Facebook and Twitter with the academic and professional purpose of sites such as LinkedIn.
Portfolio	
Enable one-to-one communication	Enable both one-to-one communications as well as public forums which will allow students to easily socialise and interact with other students on their course or at their university.
Private and public chat rooms	

Enable student organisation	Aid student organisation with tasks such as finding a placement or graduate job through an easy and engaging interface.
Jobs Board	
Engaging and easy to use interface	
File Sharing	

Two examples of our initial, basic objectives were simply listed as 'user accounts' and 'portfolio' however, after realising that this was simply a list of features we wanted to implement rather than clear objectives, we reflected upon the purpose of these features. So, one of our newly revised objectives was to create user profiles and a news feed on our website which would combine the interactivity, sociability and simplicity of popular sites such as Facebook and Twitter with the academic and professional purpose of sites such as LinkedIn. This system will allow students to stay up to date with relevant course and university information as well as being able to easily discover and connect with other students. As users of sites such as Facebook, we understand how it can be a useful tool to connect with coursemates but we also understand that the vast amount of media and advertising which is presented on large social media networks can be a significant distraction from the academic agenda. So, we believe having this system on a dedicated student site will enable easy, efficient, and focused learning. Some group members also had experience using LinkedIn and as a few of us went through the painstaking process of finding a work placement, we know how poorly optimised LinkedIn is for students. We therefore realised that a similar idea focused on students and academic study would be far more useful. So, we strongly believe that our website offers something new and extremely useful for students.

Furthermore, we considered the most obvious example of a website for students, Blackboard, when planning our project allowing us to notice that the lack of a profile and student interactivity meant that we could potentially create something far superior. We believe these features have been fairly successful since 60% of our users said that they think BetterBook's news feed and profile

pages combine the features of Twitter, Facebook, and LinkedIn in a manner that is well optimised for students either completely or to some degree (figure 1). Whilst we are satisfied with the completion of this objective and believe it is clear how this has aided in meeting our aim, it could have been further improved with more focus on the idea of portfolios so that students can upload examples of their work as they would on sites such as Google Drive or GitHub.

Another one of our revised objectives was to enable both one-to-one communications as well as public forums which will allow students to easily socialise and interact with other students on their course or at their university. This feature will eliminate the need for students to use other sites to, for example, communicate with group members or discuss an

Do you think BetterBook's news feed and profile pages combine the features of Twitter, Facebook and LinkedIn in a manner that is well optimised for students?

10 responses

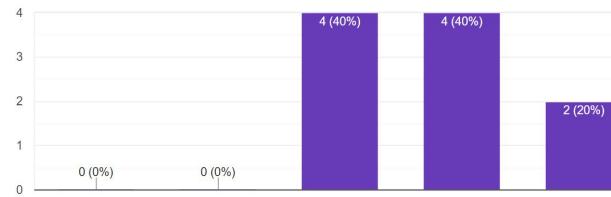


Figure 1: Graph showing how well BetterBook combines popular social media platforms (1 being 'Does Not combine other platforms at all' and 5 being "Completely combines other platforms")

assignment, which, as mentioned above, could greatly avoid distractions and improve learning experience. We believe this is a much needed feature on a student-focused site since, from once being new students ourselves, we experienced the difficulty of connecting with other people on our course since it generally required endless Facebook searching or hoping that we'd be added to a group chat. This idea could potentially allow new students to get to know their course mates before starting university which would undoubtedly enhance their social experience. Furthermore, another issue with using more generalised sites for communication may be the tendency to get 'off topic' so a dedicated place for students to discuss work would likely be appreciated. Since we have successfully implemented functional private messaging and public forums, we believe this has helped to achieve our aim because it allows students to 'socialise and engage' as we specified in our initial project aim. An outstanding 90% of our users answered either 'completely' or 'to some degree' when we asked them if they think BetterBook fulfils student needs in academic discussion (figure 2). Furthermore, we asked our users which features they would find useful in everyday student life with 90% ticking forums and 80% ticking private messaging (figure 3). This feedback evidences the effectiveness of these communication features. However, our feedback suggests that these features could have been further enhanced by implementing file sharing in order to efficiently find and share resources (figure 4). This could, however, cause issues to arise such as plagiarism which is why we avoided it in our design and did not carry the idea forward from our initial list of objectives. Despite the largely positive feedback about these features, it is clear that further development would be required to compete with the most popular websites since only 20% of our users said they would use BetterBook's messaging system over Facebook's for group communication (figure 5).

Do you have any suggestions of features that we could include in the future?

8 responses

- File sharing
- Upload group work for joint contribution
- Assignment setting and submission
- Community outreach sections for events related to courses and such
- Features tailored to aide group projects
- create events
- More varied job options
- Likes or sharing system.

Figure 4: Results highlighting which features could be added to BetterBook in the future

Would you use BetterBook's messaging system over Facebook (or similar platforms) for group communication?

10 responses

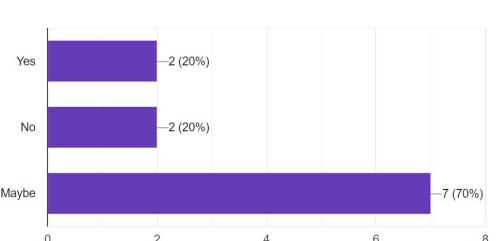


Figure 5: Graph showing if users would use BetterBook's messaging service over competitors

The final key feature we have implemented on our website is a jobs board which fulfilled our new objective of aiding student organisation with tasks such as finding a placement or graduate job through an easy and engaging interface. As mentioned previously, some of us had first-hand experience in the process of finding a work placement. This experience led us to realise the flaws in not only popular sites such as LinkedIn, but also some of those tailored to students such as RateMyPlacement. It can be a very time consuming process when scrolling through several different websites in the hopes of finding a placement in the relevant field in a specified area of the country. Our goal is to eliminate this hassle by bringing it all to one place, right at every students' fingertips. The fact that this jobs board is integrated with social media sparks endless networking opportunities and can offer a great means for recruiters to find new talent. Our data clearly evidences this since 80% of our users said that they think having a jobs board integrated into a social media platform is a convenient feature (figure 6), and 90% ticked the jobs board as a useful feature in everyday student life (figure 3). Additionally, our eye-catching interface will likely engage students more than the average site and our highly customisable search filters could make finding that dream job far easier. However, it is clear that continued development is required to successfully compete with other popular sites since we received relatively mixed feedback when we asked 'how easy did you find it to search for a student job tailored to your specific interests on our site compared to sites such as LinkedIn?' - 60% responded either 'easier' or 'much easier' and 10% responded 'harder' (figure 7). Nevertheless, we believe completing this objective has helped us to achieve all four targets specified in our project aim since this well integrated and highly optimised feature perfectly combines engageability and sociability with planning and organisation.

Do you find having a jobs board integrated into a social media platform a convenient feature?

10 responses

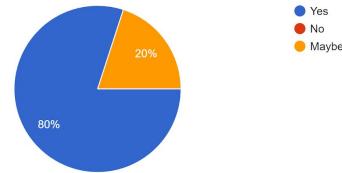


Figure 6: Pie chart displaying that the jobs board is a useful feature for a social media platform

How easy did you find it to search for a student job tailored to your specific interests on our site compared to sites such as LinkedIn?

10 responses

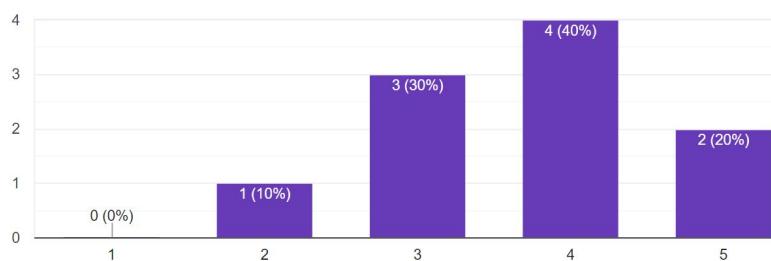


Figure 7: Graph highlighting how easy BetterBook's job search is compared to competitors (1 being a lot harder and 5 being much easier)

Overall, we strongly believe we have achieved our project aim. Our feedback suggests that our users also agree with this since 80% said either 'definitely' or 'to some degree' when we asked if they think the website achieves its aim (figure 8) and 70% believe it has the potential to completely replace Blackboard (figure 9). Although our objectives were revised and made more specific, we simply expanded on all our original ideas which have remained the same throughout development. However, whilst our website is everything we hoped it would be and more given the timeframe, there is definitely room for improvement. As previously discussed, our only initial idea that has not yet been implemented is a file sharing feature. Whilst it may not have been a good idea to implement this in the chat section, a system similar to Blackboard in which Lecturers can upload learning materials and students can upload their work could be a huge potential for our website. This was also mentioned in our feedback (figure 7) and to further expand on this idea, we could implement a system where student's who share their study notes are able to view the notes of others'. This would promote collaborative learning without allowing for lazy students to take advantage of hard working students (as is the case on some apps which pay students to upload their notes). Nonetheless, for our first design we believe the website offers all major functionality and much more whilst having the opportunity for far more exciting developments.

Do you think BetterBook achieves its aim to 'provide a social network which allows students to socialise, engage, plan and organise their day-to-day academic life'?

10 responses

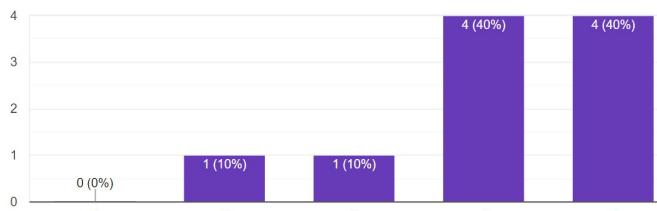


Figure 8: Graph demonstrating how BetterBook achieves its aim

With some additional features, do you think BetterBook has the potential to completely replace other virtual learning environments (such as blackboard)?

10 responses

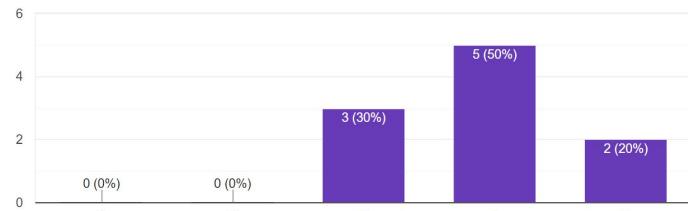


Figure 9: Graph showcasing that BetterBook has the potential to replace Blackboard in the future

(See Appendix B; Questionnaire results, for additional results)

Design

Before any group project can take place, a general idea and concept needs to be formed in order to proceed. For this, the group agreed on a day, time and place to have regular meetings (Wednesday at 12pm, in a free INB lab). The initial meeting consisted of gathering any ideas, concepts, designs etc to ensure the best possible social website was created. We established the idea of merging two different sites into one; Blackboard and Facebook.

We needed to understand what our social website would include and the main functions it would have. Examples of these might include; being able to search for other users, edit and change the user's personal bio and profile picture, being able to message other users privately, search for jobs, and many other aspects.

Additionally, we needed to decide what our website would look like. This involved lengthy discussions on what colour theme would be practical, and potentially unique, along with the layout of the site. After carrying out research and noting that many social media sites use a shade of blue and white, such as Facebook and Twitter, we settled on a colour that would make us stand out, purple. This palette included five different shades of purple along with a white to break up the purple shades (color-hex.com, 2019). The different shades would categorise different attributes of the site, for example; the header is a darker shade of purple and the logo is a lighter, more subtle shade - enough to stand out but not look glaring.

Wireframes

The layout of the website was very time consuming to construct due to not wanting to duplicate any other social network platform. By researching many different types of social media, we were able to gain new ideas and inspiration. Wireframes were also a key element to the process, providing an abstract view of what a page will look like. We hand drew each page's wireframe and then, once we were happy with the design, we designed digital versions and uploaded them to our google drive (See Appendix A.2; Document links). Each member of the group could then follow and copy these frames when working on their page. This section demonstrates the design process from hand drawn wireframes to final artefact.

Home

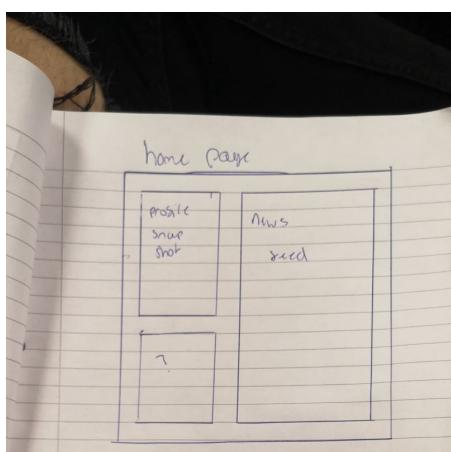


Figure 10: Hand-drawn wireframe of home page

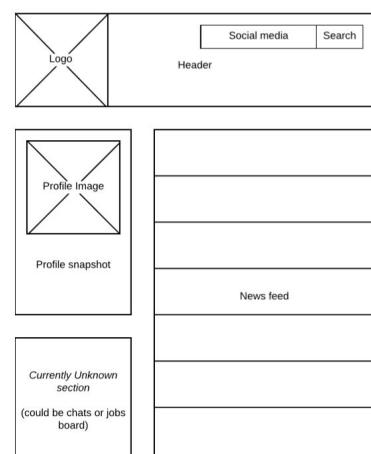


Figure 11: Computer wireframe of home page

The screenshot shows the Betterface home page. At the top, there is a navigation bar with links for 'Jobs', 'Forum', 'Profile', and 'Rooms'. A search bar and a power button icon are also present. Below the navigation, there are three user profiles displayed in cards:

- luke-powell@live.co.uk**: Shows a profile picture of a man in a white t-shirt, with the text 'My first post' and 'This is my first post, it is magical'.
- thomasfox747@gmail.com**: Shows a profile picture of a cartoon character, with the text 'My POST' and 'dfsahdjd sas s fdsklakds !'.
- joe.c.pearson95@gmail.com**: Shows a profile picture of a man in a suit and hard hat, with no visible text.

On the left side of the page, there is a sidebar with the text 'Welcome Sam' and 'Suggested Job Listings For You' followed by two job posts:

- Mechanical Maintenance Engineer** at **Mass Manufacturer Bois**
- Chemical Engineer** at **Bronson Chemicals**

Figure 12: Screenshot of Home page

Profile

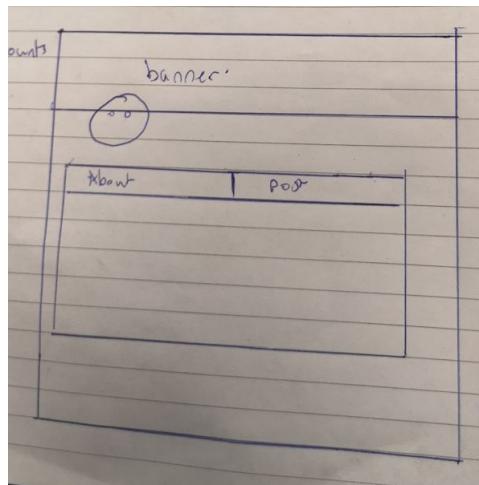


Figure 13: Hand-drawn wireframe of profile page

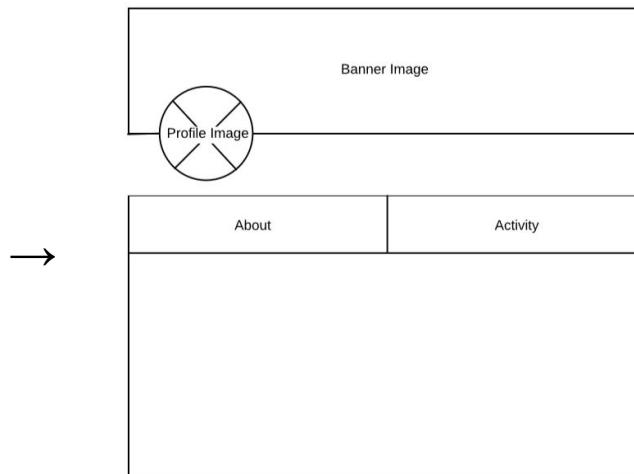


Figure 14: Computer wireframe of profile page

The screenshot shows the final profile page for 'Sam Byford'. At the top, there is a banner image of a building complex by a lake at dusk. Below the banner, the user's name 'Sam Byford' is displayed in a purple header bar. On the left, there is a profile picture of a man with glasses and a purple 'Bio' button with a pencil icon. The bio text reads 'Goodbye stranger'. To the right of the bio are three navigation links: 'About Me', 'Activity Feed', and 'Create Post'. Below these links is a section titled 'About me' containing the text 'Hi, my name is Sam Byford I study Computer Science at University of Lincoln'. At the bottom right, there is a small note: 'Powered by GDG Lincolnshire'.

Figure 15: Screenshot of profile page

Jobs

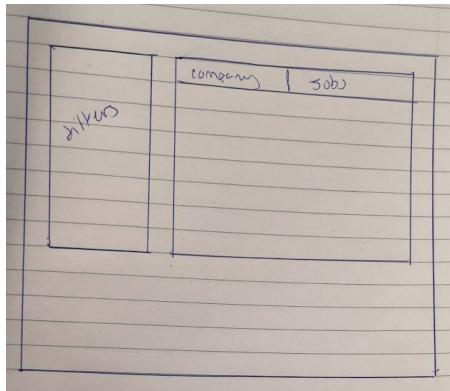


Figure 16: Hand-drawn wireframe of jobs page

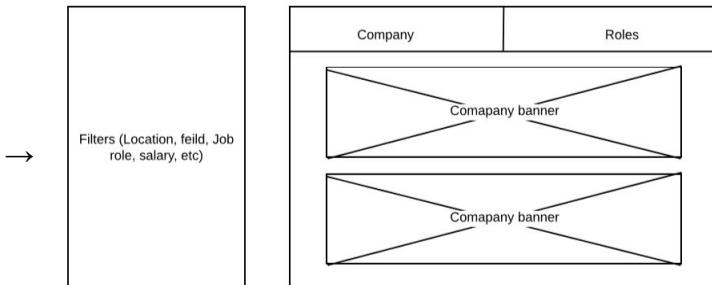


Figure 17: Computer wireframe of jobs page

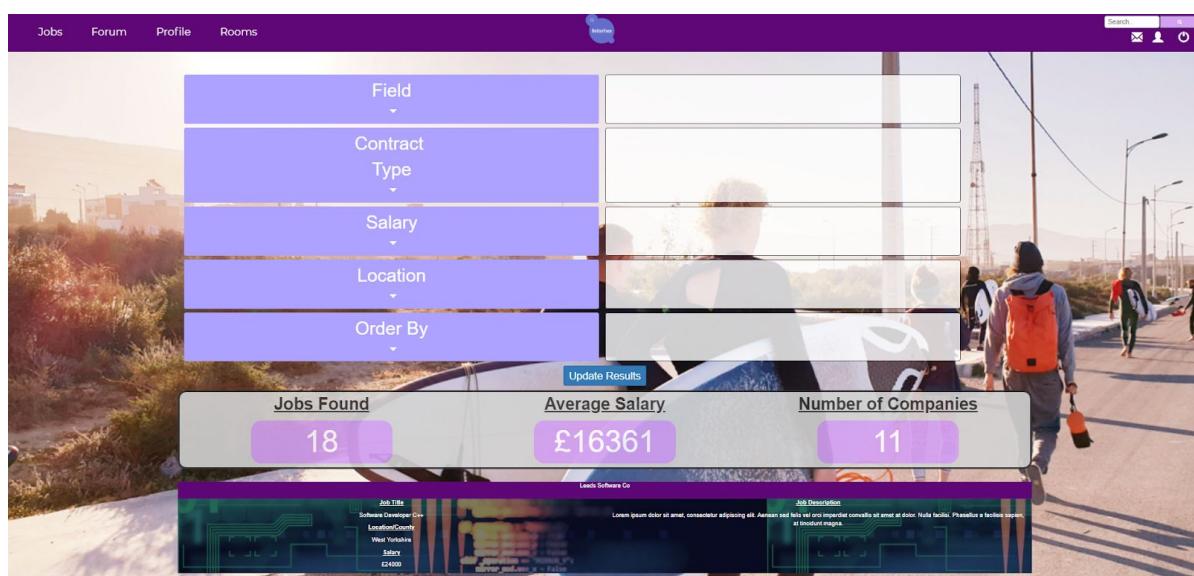


Figure 18: Screenshot of jobs page

Forum

Designed at later date so does not have hand drawn wireframe

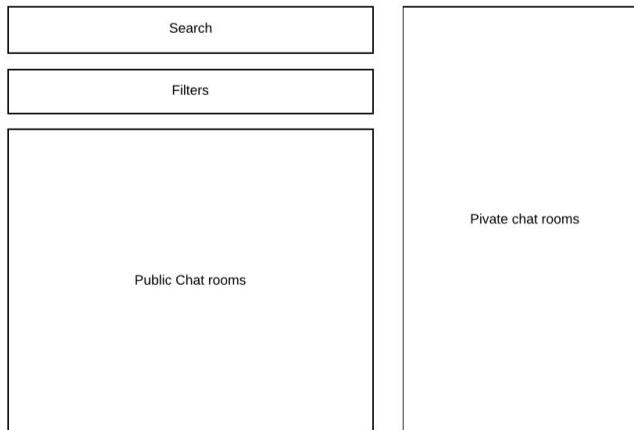


Figure 19: Computer wireframe of forum page

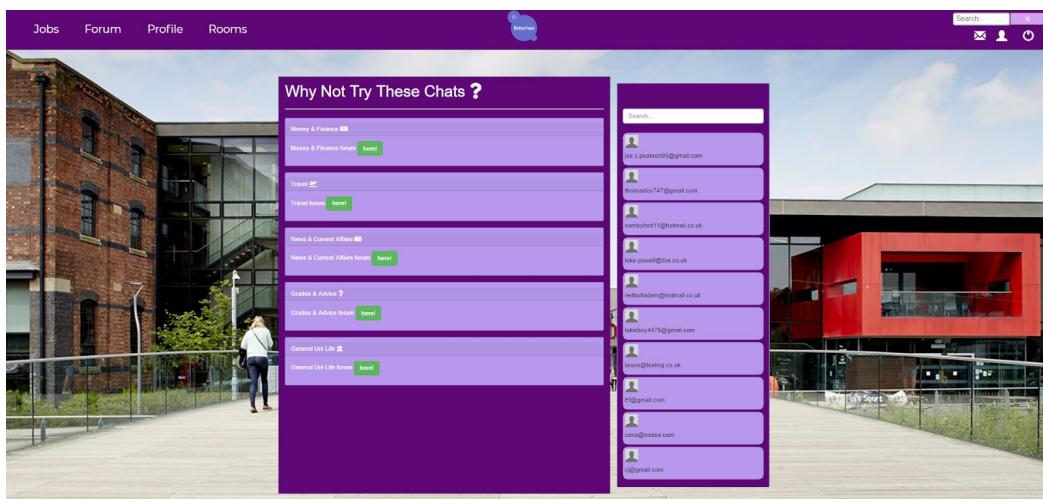


Figure 20: Screenshot of forums page

As highlighted above, the wireframes provided us with a basic skeleton structure that we could then use to quickly and easily design each page. The diagrams were not strictly followed and some pages were edited from the original plan. For example, the jobs page has the filters above, rather than next to, the jobs list (as was indicated on the wireframe). Edits to the designs were made to improve ease of use, simplicity and aesthetics.

Flowchart

This chart shows in more detail the group process when it came to designing different pages for the site

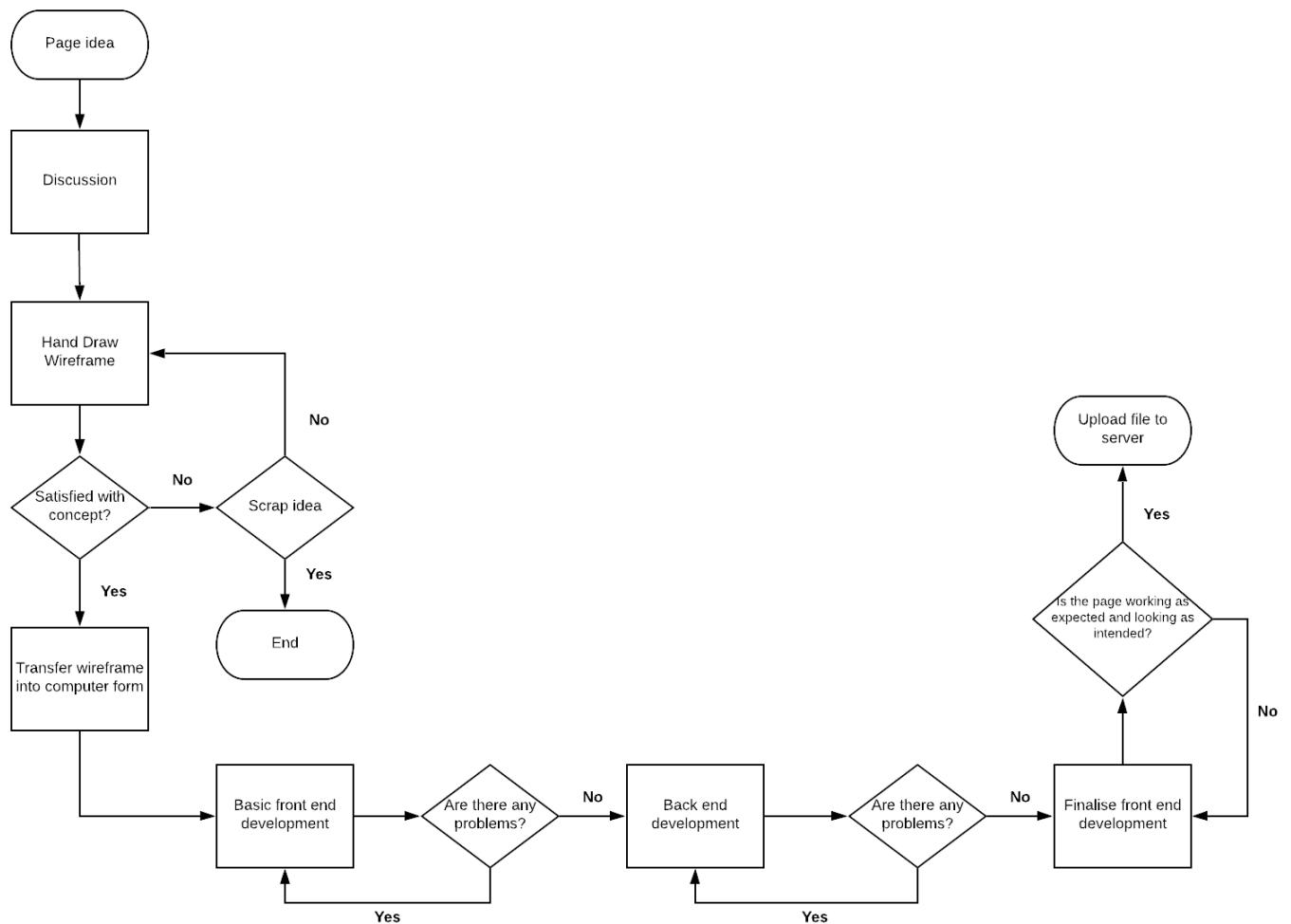


Figure 21: Flowchart of design process

Testing

Below are two different tests done midway through development. Each test was its own separate document in our shared google drive (see Appendix A.3-4; Document links). The documents have been simply copied over onto this report. They highlight how our group evaluated the artefact to make sure all user needs had been met and all features were working correctly. See Appendix C: Screenshots of final artefact, for the full breakdown of each pages complete design.

Alpha Test 1

Index page

- Chat options at the bottom take the user to the chat rooms even if they are not logged in



Figure 22: Screenshot of index page chat buttons

Header

- Clicking 'profile' when not logged in takes the user to the profile page with lots of errors, rather than the login page

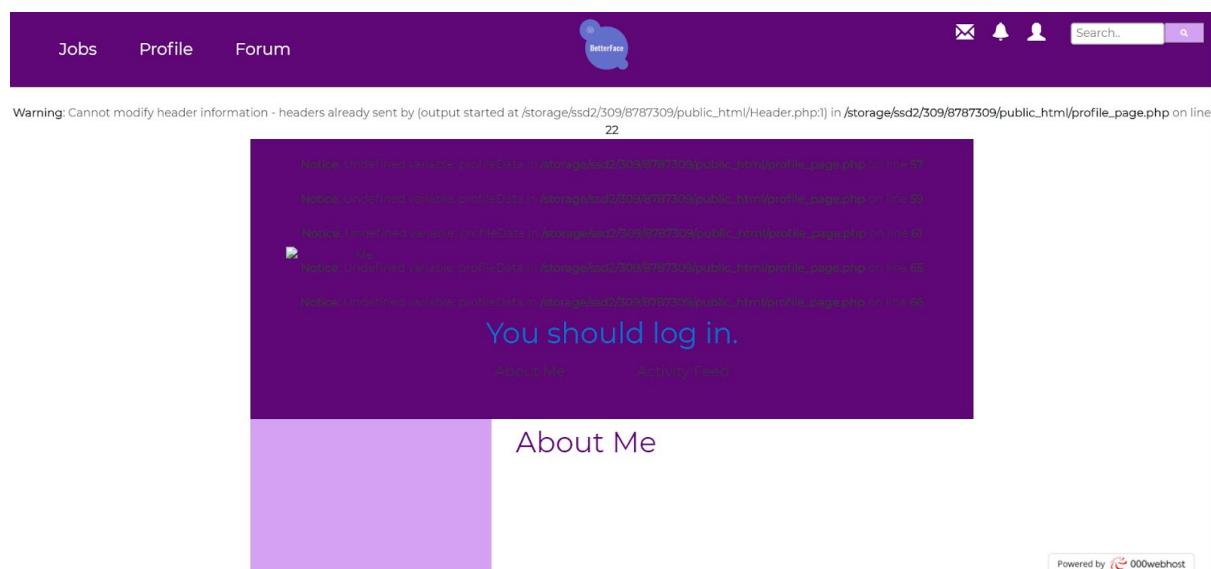


Figure 23: Screenshot of broken profile page

- Possible to visit the forums without being logged in
- A possible fix to the two above problems may be to remove the header completely from the index page if the user is not logged in? (image on left what it is now, right what it could be)

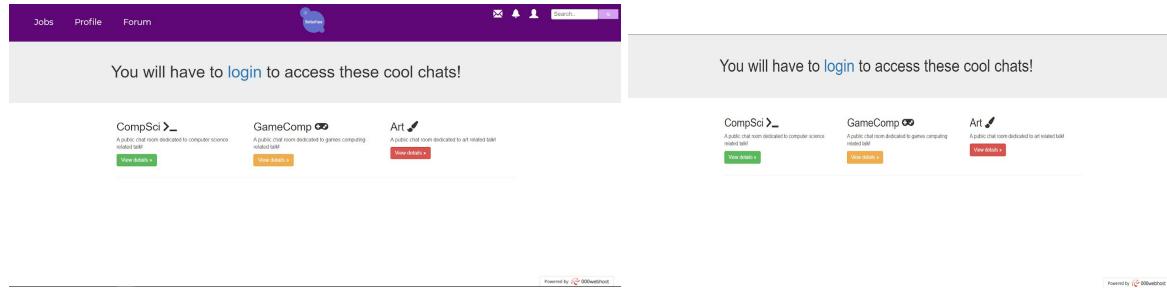


Figure 24: Screenshot of current index page with header

Figure 25: Screenshot of index page without header

Jobs

- Working as intended (see Appendix C.26-29; Screenshots of final artefact)

Profile

- Added an image and the formatting broke, nice small circle turned into an oval

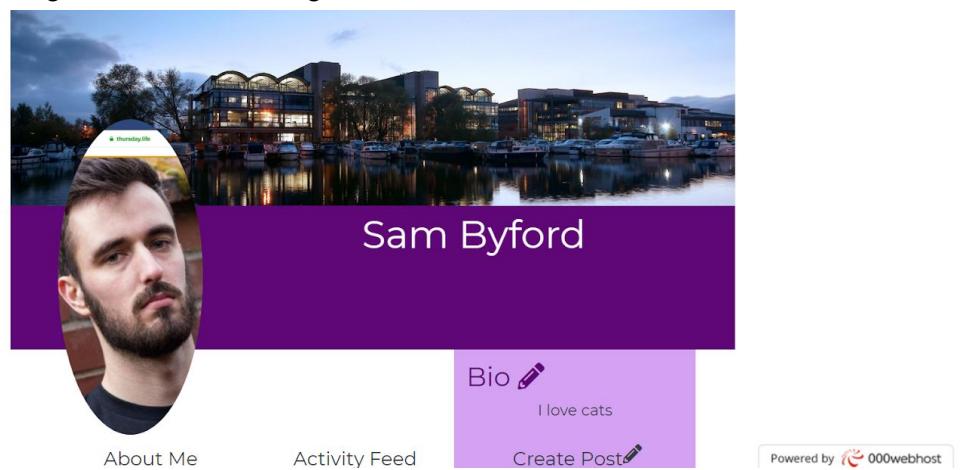
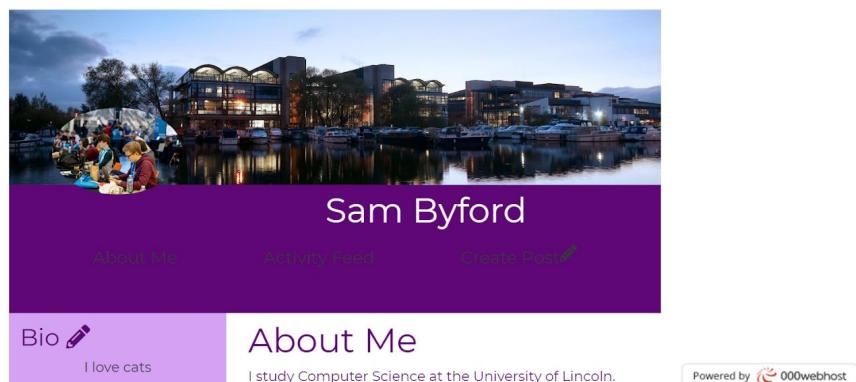


Figure 26: Screenshot of profile page with broken profile image

- The reverse to the previous problem also occurs when the user uploads a small image. Possible we may need to set a px limit (min and max) on the size of image people can upload, or resize the images the users upload to be a certain fixed size

Figure 27: Screenshot of profile page with broken profile image and text



- The “successfully uploaded. Please, refresh the page to see changes” message remains even after the page has been refreshed
 - Tabs under name are not bright enough
 - “Bio” needs to have “cursor:pointer” tag assigned to the element to make it clearer that it can be clicked
 - Need to have a character count on the bio, also text goes out the margin

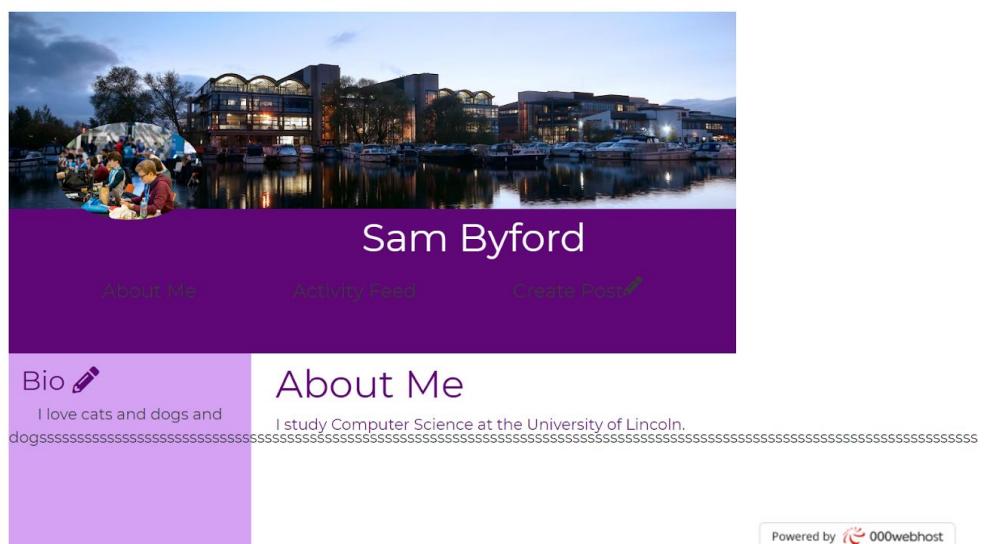


Figure 28: Screenshot of profile page with broken bio section

- When writing a post to users profile this happens; the post doesn't fit into the 'activity' section and is incredibly wide

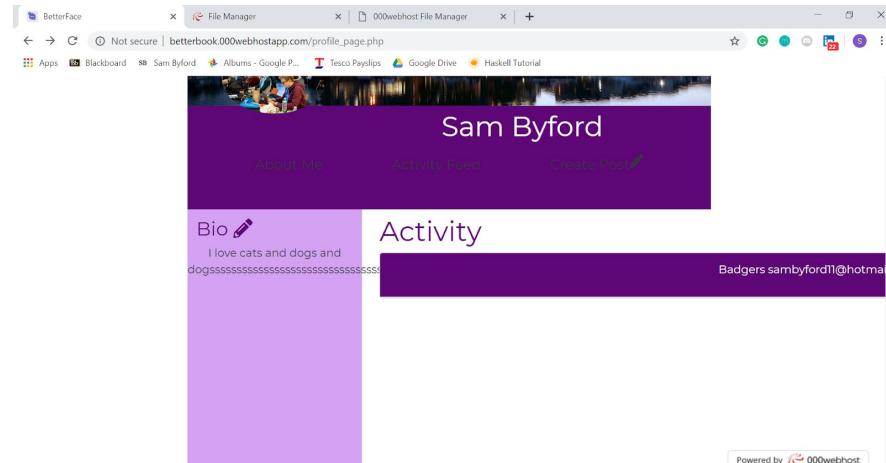


Figure 29: Screenshot of profile page with broken activity feed

- When visiting other peoples profiles the user can change their profile image

Home page

- The same issue with profile photos, they aren't a fixed size and change massively, a photo of Joe's face took up a huge section of the home page

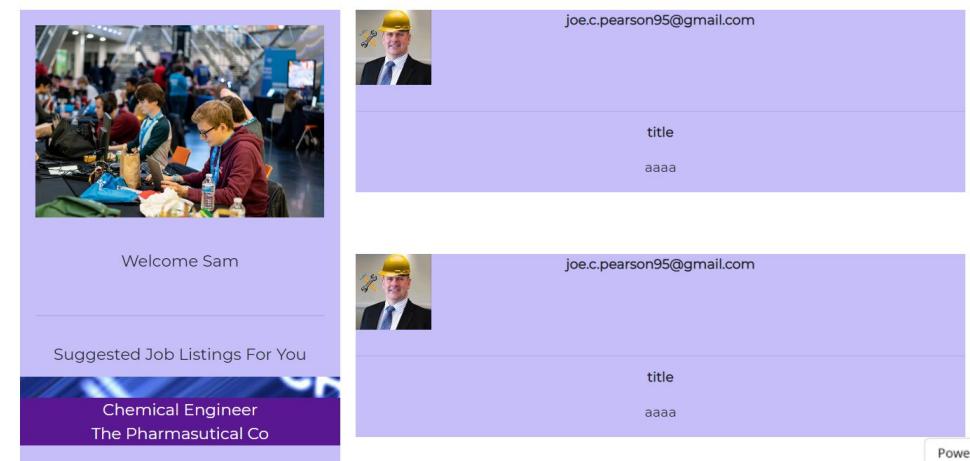


Figure 30: Screenshot of news feed with badly sized images

- On the above image, the larger the profile photo the more of the left bar it takes up and vice-versa.

- Same with the profile images on each post, images are varying size depending on the file uploaded (this isn't as much of an issue)



Figure 31: Screenshot of posts with badly sized images

Forums

- Lots of errors are present
 - Can't search for users
 - No rooms available to chat in
 - Colour scheme not present
 - No header
 - Undefined index in database

Forum Page

Notice: Undefined index: post-date in `/storage/ssd2/309/8787309/public_html/forum.php` on line 75

test title
joe, 01/01/70 00:00:00

People

joe.c.pearson95@gmail.com
thomasfox747@gmail.com
sambyford11@hotmail.co.uk

Notice: Undefined index: post-date in `/storage/ssd2/309/8787309/public_html/forum.php` on line 75

test2

Powered by 000webhost

Figure 32: Screenshot of broken forums page

Alpha Test 2

Login

- Works as intended (see Appendix C.1-6: Screenshots of final artefact)

Home

- Works as intended (see Appendix C.7-8: Screenshots of final artefact)

Jobs

- Works as intended (see Appendix C.26-29: Screenshots of final artefact)

Forum

- Currently the main chats under “forum page” do nothing, possibly make them just other random public chats about cats, cars or how great Tottenham Hotspur football club are. When you click on them open up chat window like the “rooms”. The image on the right shows this. When one of the boxes on the left image is clicked, they could be taken to a chat about a certain topic.

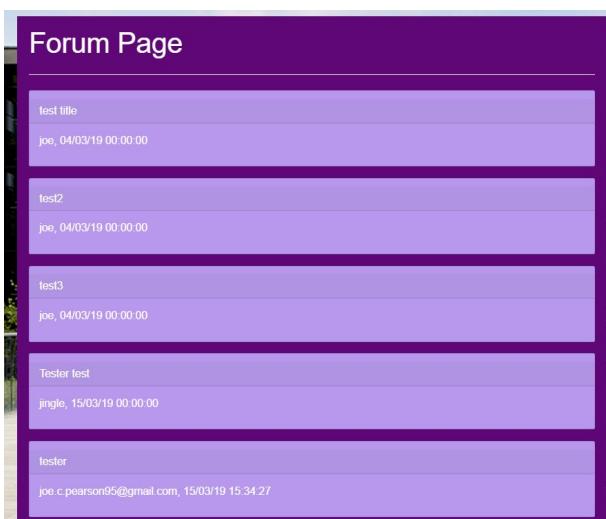


Figure 33: Screenshot of forum page

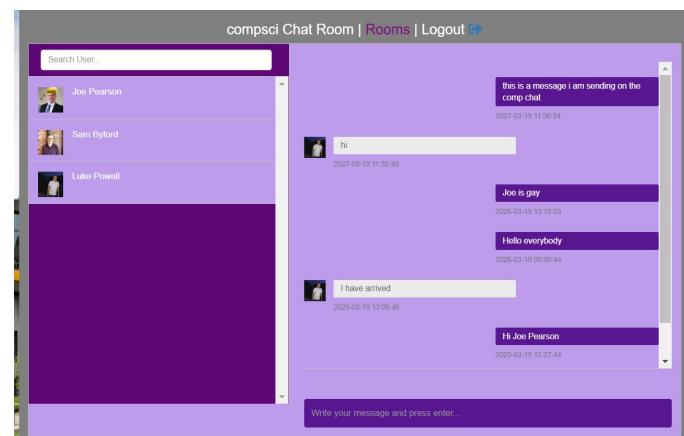


Figure 34: Screenshot of chat rooms

Profile

- The user can click on other users profile photos and upload an image, the upload does not change *their* photo, however, but does change the photo of the user who is doing the upload. Has the potential to confuse the user. Is it possible to stop the user from being able to click to edit other peoples photos?

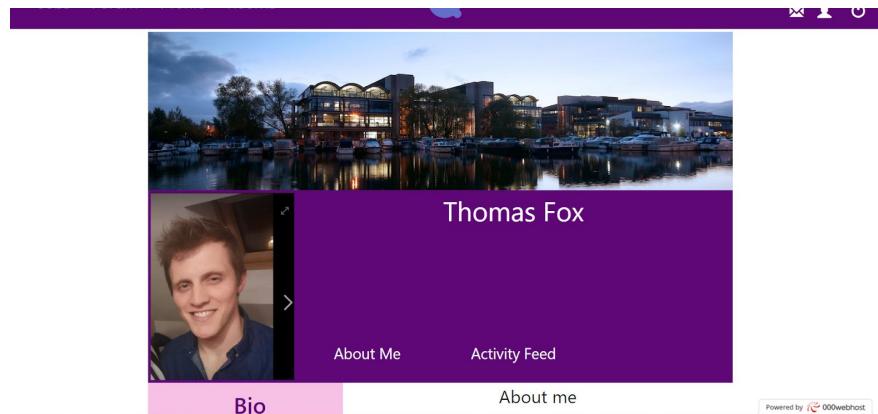


Figure 35: Screenshot of another users profile page

Rooms

- Works as intended (see Appendix C.18-19: Screenshots of final artefact)

Header

- Logo is “BetterFace” when it should be “BetterBook”

Technologies

The project was split up into frontend and backend development. Frontend development includes using HTML (hypertext markup language), CSS (cascading style sheet) and JavaScript. HTML and CSS define the base structure and looks of the website and Javascript makes the site interactive with dropdown boxes and mobile versions. We began by developing the basic front end structure of each page. Once this was complete the backend development could commence. The backend consisted of databases and PHP. Ensuring the site looked approachable was one objective, but without having the backend in place, the site wouldn't function effectively as a social media platform. The databases store users login details along with any other personal information inputted to the site. The PHP language used was to allow user customisable options, such as changing their profile picture, bio, and so on.

Github (See Appendix A.5; Document links) was used to store all the page code, as well as allowing each member of the group to edit any necessary areas. From GitHub, each file was uploaded to a server where it could then be viewed online.

Overall, the development and creation of our Social media website was executed to a very high standard. The website has all the functions we wanted to include, with the colour scheme and layout incorporated. Each member of the group helped to agree upon, design, and develop an artefact that we knew would be achievable in the time frame given.

Tools

When a group process is underway, it is crucial that a consistent range of appropriate tools are used so that the group can collaborate and work together in an efficient and effective fashion. During the process of this project, we, as a group, decided on a range of tools to use for us to be able to create the best piece of work possible. Tools were used which allowed us to complete different tasks yet ensure that all work and information was permanently available to every member of the team. This is important as it allowed us to create a dynamic workflow and set ourselves suitable deadlines whilst being able to manage progress.

Communication Tools

Firstly, we decided that we needed a tool which would allow us to communicate with each other so that we could discuss work, progress and improvements; as well as arrange meetings and offer support. Initially, we decided to use an email platform such as Outlook to communicate with each other. We decided this as it was our initial point of contact to first get in touch with each other. However, it quickly became apparent that this platform was not useful. Through using this tool, each member would have to manually check whether there has been any communication between the group, and it was obvious that this would not be an effective or suitable method going forward. This led us to mutually deciding on using Facebook Messenger as our point of contact instead. We chose to use Facebook Messenger as it is a platform every group member uses daily. It allowed us to create a group where we could share ideas in the form of text, videos or images granting us the ability to convey information more appropriately than other forms (such as the previously used Outlook tool). Facebook Messenger was also advantageous because alerted notifications were sent meaning that when a team member sent a message to the group, the rest of the group would immediately receive a notification informing them that there has been an update, obviously depending on a suitable internet connection. Facebook Messenger was a convenient utility during the group process and we made the most of all of its features as seen in figure 36. An example of this would be how we used the 'Create Event' feature. This feature allowed us to create an event which would represent a group meeting on a specific date at an exact time. This is important as it would notify group members and allow them to easily view when and where the next meeting would be.

In addition to this, we also decided to use Skype as a tool. Due to the group being collectively made up of six members, it was expected during the early stages that at times it may be difficult to ensure all group members can attend meetings. Therefore, we decided it would be appropriate to have a form of social networks which would allow us to work together and easily communicate ideas without everyone being in the same location. The tool which we decided would be most suitable to enable us to do this was Skype. Skype allowed us to communicate through video chat from anywhere we like, meaning that we did not have to all be at the same location to conduct a meeting. For example, at one instance

when working on an initial report and proposal for the artefact, there was a hindrance of not everyone being able to make a crucial meeting. Using Skype, the team was able to communicate at the same time so that the correct tasks could be completed without everyone being physically present.

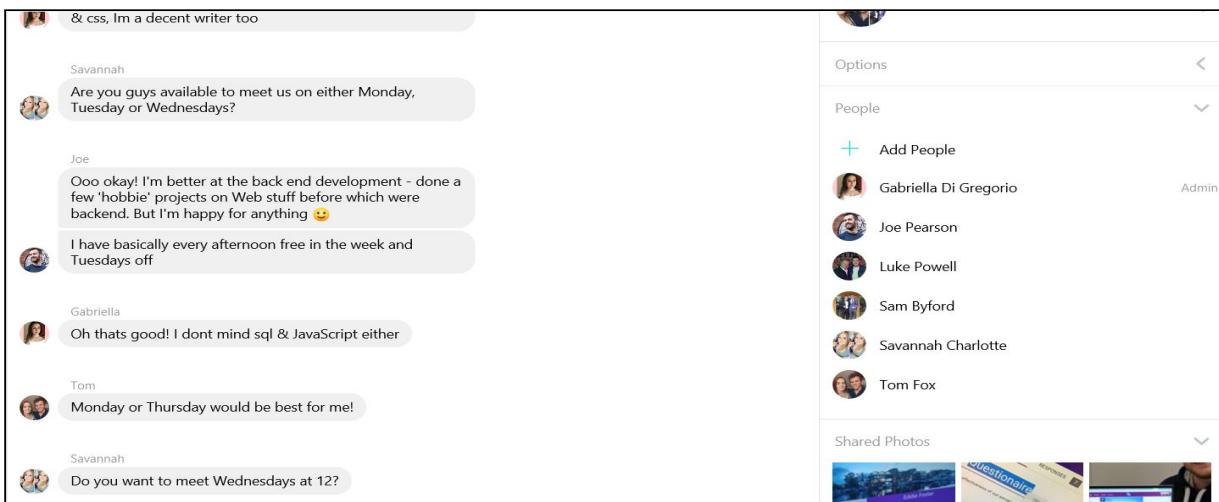
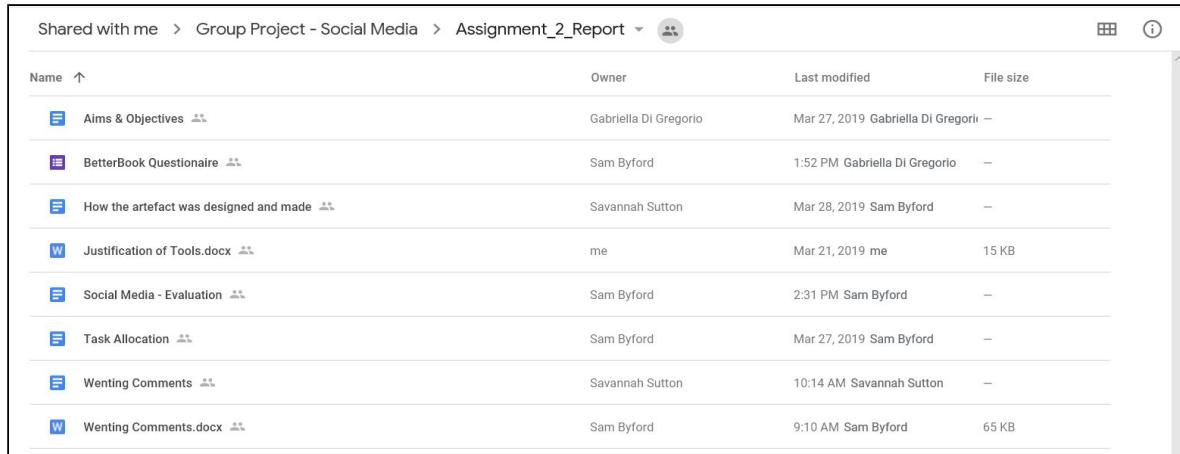


Figure 36. The use of Facebook Messenger in order to communicate and share information between each other.

Production Tools

A tool which we used during the production of the artefact in order to support group processes was Google Drive (see Appendix A.2; Document links). Throughout the process, Google Drive was arguably the platform which we used the most. It allowed us to create an environment where all members of the group could share and work on the same documents simultaneously. Using Google Drive, we could ensure that all documents and materials were in one place allowing every member of the group to access them which is shown in figure 37. During group meetings we was also able to create a list of tasks on the drive which needed completing, facilitating us to keep track of what needed to be done and what had already been accomplished so group progress could be tracked. In addition to using Google Drive we also used the other services Google Drive offers, such as Google Docs. Google Docs allowed us to create documents whilst on the shared drive. The use of these two tools were of high importance and enabled us to ensure that the processes undertaken by the group were successful as all work which was of importance was in the same place. Google Docs contained information such as; meeting recordings, project plans, wireframe designs, report contents and allocation of tasks and many other aspects that the group required to proceed. This was important as the need for group collaboration was shown early on and the tools made the process of working as a team easier to complete. The team was able to access all file, allowing each member to see what they had been tasked with doing and then work on a document at the same time as other team members. This links to the main reason these applications were quick and easy to decided upon. If everybody is working on the same document, whether it be at the same time or not, no important information can be lost, and no mistakes can be made. If each member was working on a separate version of the report, then that creates the problem of their being multiple copies of the report which risks a mix up and the incorrect version of the report being submitted. Therefore, the use of Google Docs and Google Drive enabled each member to work on the same copy so that there would only be one copy which contained all the crucial information needed, shortening the possibility of the wrong copy being submitted.

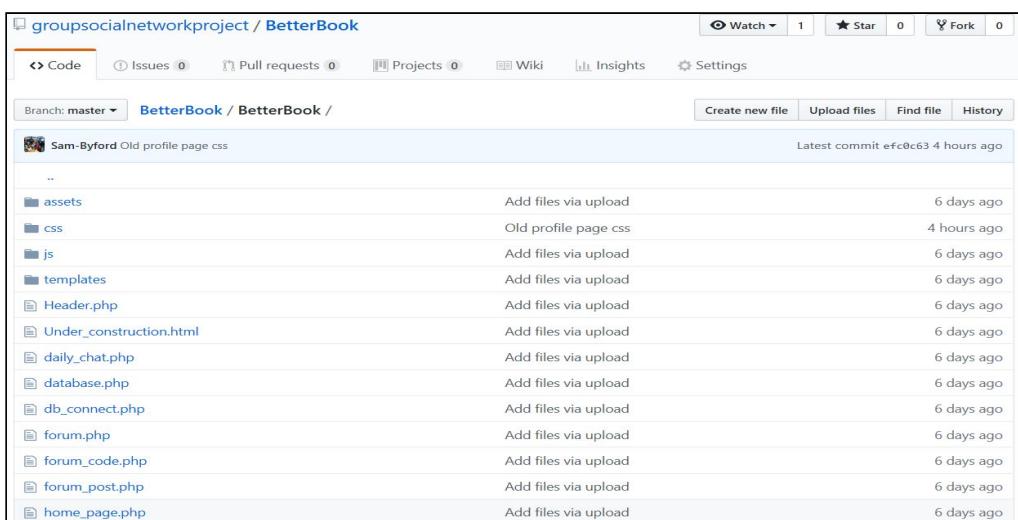


A screenshot of a Google Drive folder titled 'Assignment_2_Report'. The folder contains the following files:

Name	Owner	Last modified	File size
Aims & Objectives	Gabriella Di Gregorio	Mar 27, 2019	—
BetterBook Questionnaire	Sam Byford	1:52 PM	Gabriella Di Gregorio
How the artefact was designed and made	Savannah Sutton	Mar 28, 2019	Sam Byford
Justification of Tools.docx	me	Mar 21, 2019	me
Social Media - Evaluation	Sam Byford	2:31 PM	Sam Byford
Task Allocation	Sam Byford	Mar 27, 2019	Sam Byford
Wenting Comments	Savannah Sutton	10:14 AM	Savannah Sutton
Wenting Comments.docx	Sam Byford	9:10 AM	Sam Byford
			65 KB

Figure 37. Google Drive presenting the ability to store files in one place where multiple users can access and contribute to them.

Furthermore, we also needed a tool in order store and share the code files which we would be working on in order to create the actual artefact. As a group we decided that the best service to use would be GitHub (see A.5; Document links). Once again it was a straightforward decision to use GitHub to store our code. GitHub provided us with the materials to create a repository which we could then set to private and give access to only other group members. Therefore, just like Google Drive, it allowed us to create an environment where we could share our code between the group as well as work on improving it. GitHub allowed us to create a file structure and store all the social media sites code files including styling sheets, JavaScript files and any assets to go along with the php files which figure 38 displays. One issue which we expected to have when sharing code files is the fact that with there being six members within the group and every member working on the social media site at the same time, code files may be lost. However, GitHub has a 'changelog' feature which was a hugely important factor when deciding to use GitHub. It allowed us to keep track of what changes had been made and to quickly identify where a alteration has caused a problem.



A screenshot of a GitHub repository for 'groupsocialnetworkproject / BetterBook'. The repository page shows the following details:

- Branch: master
- Issues: 0
- Pull requests: 0
- Projects: 0
- Wiki
- Insights
- Settings

The repository structure is as follows:

```

groupsocialnetworkproject / BetterBook
Code Issues Pull requests Projects Wiki Insights Settings
Branch: master BetterBook / BetterBook /
Sam-Byford Old profile page css
Create new file Upload files Find file History
Latest commit efc0e63 4 hours ago
..
assets Add files via upload 6 days ago
css Old profile page css 4 hours ago
js Add files via upload 6 days ago
templates Add files via upload 6 days ago
Header.php Add files via upload 6 days ago
Under_construction.html Add files via upload 6 days ago
daily_chat.php Add files via upload 6 days ago
database.php Add files via upload 6 days ago
db_connect.php Add files via upload 6 days ago
forum.php Add files via upload 6 days ago
forum_code.php Add files via upload 6 days ago
forum_post.php Add files via upload 6 days ago
home_page.php Add files via upload 6 days ago

```

Figure 38. Displaying the shared Github Repository where all code, styling, script and asset files were stored enabling each member to contribute at any given time.

Moreover, to store the SQL code for the sites database we used phpmyadmin. Phpmyadmin allowed us to create a database containing tables so that we could store data and information required to make the social media site fully functional. We ensured that the whole group could access the database by creating users with all privileges. This means that, using the correct address, each group member could use their unique login credentials to access the database on phpmyadmin and subsequently create, delete and edit any SQL code within the database. This differs from another tool which we used called 000Webhost. This website allowed us to host our social media site so that users could access it. Unfortunately, unlike phpmyadmin where multiple users could be given permissions, only one user could be given access. Therefore, we had a main group account which anyone of us could use. Although this meant that we could not view the source of any important changes made, it was useful as it meant that everyone had access to the server and could make changes as opposed to relying on one person. This could have been an issue as, under the pressure, a mistake could have been made. Therefore it ensured each member could deal with their own responsibilities without causing anyone else to have increased pressure.

To conclude this section, the resources used within the group process were successful due to the fact that they allowed the group to collaborate and monitor the work being done. The methods ensured that all work was in one place which made it easier to change and update as well as finalise without any errors. The tools used ensured that the group worked closely together and successfully as a team, as feedback could be given and changed promptly. Overall, the choice of tools allowed the group to ensure that the project was successful as everything was all in one place, changes could be easily made, and contribution could easily be seen. They ensured that the project was efficiently and effectively carried out.

Reflection

This section will describe how the group allocated different sections of the project to one another, how the group functioned as a collective and how these group processes relate to various theoretical frameworks such as Tuckman's and Belbin's theories.

Task allocation

For a project of this size, we had to use a 'divide and conquer' approach to problem-solving. The large social media problem was broken down into separate modules and each segment was given to a different person. This allowed each person to develop something in relative independence from everyone else. Modules took the form of separate HTML pages, database manipulation and PHP work.

We had to make sure each team member had a role and that the tasks were reasonably allocated to everyone to target their specific strengths. In order to decide who to give what module/task, we first got to know what everyone was most comfortable with doing and what people would like to learn to do. This reflects the first of Tuckman's phases, 'forming', as the group got to plan, collect information and know one another better. This allowed us to give those that are more comfortable in the backend development, PHP & database tasks and those that prefer user interface design were given CSS, HTML and Javascript tasks.

However, before we split into front and backend development teams, the first thing we did was designate a page to each person to build a 'first-draft'. From this, we were able to get a basic feel for what the site would look like. Ideas began to be suggested and the task itself began to be tackled, relating to Tuckman's second phase 'Storming'. One thing to note about the storming phase is "if badly managed this phase can be very destructive for the team" (The Team Building Company, 2019). Luckily our group managed to effectively convey ideas and sort them in priority of what our site *needs* to have and what our site *could* have. This priority list meant all ideas were carefully considered before they began development and only those that were needed were tackled first.

The first drafts were created and we then decided who would carry on with the front end and who would carry on with backend development. Joe and Tom were the most comfortable with backend so they split into a separate team to work on the PHP and database elements of the site. The rest of us carried on with our designated pages and helped to integrate the backend features into them. This process continued for a few weeks until completion. Everything was then fully implemented and the site was made live.

Belbin team role theory is all about understanding and analysing what makes teams successful. Nine roles are identified in total with two or three standing out the most. The roles are explained in more detail in the table below, along with the full allocation of tasks.

Member	Task Description	Belbin Role
Joe	<ul style="list-style-type: none"> ❖ Set up the hosting and created the login/registration system. ❖ Worked with Luke to create the forum system - before adding in private messaging and subject specific chat rooms that utilised AJAX. ❖ Worked with Tom on any website errors caused by the backend - such as ensuring the only certain aspects being visible due to being logged in, etc. ❖ Helped with the backend creation of the profile page. 	<p>Implementer - creates an effective and efficient strategy, practical and reliable, transforms ideas into actions, can be inflexible (Belbin, 2019)</p> <p>Having a large amount of past practical experience with web development I had a lot of impact on the final artefact. I am quickly able to turn group ideas into actual working features, spending a considerable amount of my spare time dedicated towards the artefacts development.</p>
Sam	<ul style="list-style-type: none"> ❖ Developed the header, for both desktop and mobile use. ❖ Converted header for use with php. ❖ Worked with Tom to develop the Jobs page (desktop and mobile). ❖ Refined other front end aspects of the site such as the profile page. ❖ Performed two rounds of alpha testing to debug the site. 	<p>Completer-Finisher - eye for detail, good at error finding, delivers on time but can be a worrier and take perfectionism to extreme (Belbin, 2019)</p> <p>Highlighted by my involvement in the testing of the site. I combed through both the report and artefact making sure all features worked correctly and identifying any errors present. Sometimes got too held up on making sure certain elements were 'x' pixels away from the screen</p>
Tom	<ul style="list-style-type: none"> ❖ Produced the server side elements for the jobs and the home page. ❖ Worked with Sam to develop the interface functionality for the jobs page. ❖ Worked on the design and styling for the home page with Savannah. ❖ Made minor functionality changes to the profile page and worked partially on the profile page server side programming. 	<p>Implementer</p> <p>I believe that the implementer role best describes my contributions to the project. I had significant input to the development of several web pages and implemented features which I had no experience previously working with. This meant that I was required to find solutions to problems which were effective, functional and achievable within my knowledge domain.</p>

Gabby	<ul style="list-style-type: none"> ❖ Designed the profile page and carried out its front-end development both before and after back-end development was completed by Joe. ❖ Brought forward numerous design ideas for other parts of the site. 	<p>Plant - The Plant is the creative innovator who comes up with new ideas and approaches. Plants are often introverted and prefer to work apart from the team. (Belbin, 2019)</p> <p>This role best describes me since I was heavily involved in the initial design of the site as well as new ideas that were sparked throughout the development process. Whilst I believe my communication was effective and I contributed well to group discussions (which may be uncharacteristic for some Plants), I worked largely independently by styling the profile page before and after back-end development rather than in a collaborative fashion.</p>
Luke	<ul style="list-style-type: none"> ❖ Created and styled a mobile and desktop forum messaging page, working alongside Joe who developed the backend. ❖ Created and styled a mobile and desktop private messaging page, working alongside Joe who developed the backend. ❖ Styled the login page. ❖ Conducted alpha testing. 	<p>Team Worker - Diplomatic and co-operative, helps team to bond and can identify work required for team, can be indecisive in crisis (The Team Building Company, 2019).</p> <p>Shown through closely working with other members of the team such as Joe in order to create the forum and messaging page. This is important as it allowed me to work closely with other members of the group to create a relationship enabling each other to communicate ideas well to further the drive within the team.</p>
Savannah	<ul style="list-style-type: none"> ❖ Formed and designed the home page whilst working alongside Tom who created and styled the backend. 	<p>Resource Investigator - Investigative skills that help bring ideas to group, enthusiastic, explores many opportunities (Belbin, 2019)</p> <p>Outgoing approach enabled me to research other social media sites and bring findings back to group. Granted the group the ability to design features they know users need and features they want. Loved learning about new technologies and languages that I had previously not had experience with.</p>

As shown above, our group has a diverse mixture of different Belbin roles which provided us with a unique and broad ranging skill-set. Roles such as resource investigator and plant complemented each other well, allowing us to plan, prepare and design high quality pages. Luke, as a team worker, helped us to get on with the tasks at hand and co-operated well in any and all tasks he was involved in. The two implementers in our team turned plans into action and helped to make sure everything we said we would do, we did. Finally, the completer-finisher provided the testing and debugging needed to ensure the site worked perfectly from the users perspective.

Development

As previously stated, we met every Wednesday and most Mondays to track progress and allocate new tasks. Some tasks were much longer and required more time than others (for example, creating the forums was a more taxing task than creating the header), hence why certain people were only given one or two and others were given multiple. Attendance was high at all meetings with a few people missing one or two due to other commitments, but nothing that impacted the group progress. With varying tasks given out, everyone had the chance to learn something new; whether it was new CSS3 tricks or first steps into PHP, everyone was able to pick up valuable skills that they had not previously known. Development was completed with the help of sites such as w3Schools (W3schools.com, 2019).

Everyone approached their own task with a positive attitude and when a problem arose between meetings, we communicated effectively through a Facebook group. Some people did struggle to begin with, due to a lack of web development experience, but after a few weeks of independent learning and guidance from the group, each member was able to complete their allocated section. In alignment with Tuckman's third phase, 'Norming', this shows the shift to 'harmonious working practices with teams agreeing on the rules and values by which they operate'. With regular meetings and clear, set tasks to follow everyone, bought into the values of our group process. There were no real clashes between team members and the support we provided each other meant that the final artefact was built to a high standard, looking and acting exactly as we wanted it to.

The aforementioned point also links into the fourth phase of Tuckman's theory (Performing), as the knowledge and motivation we had gained from our experience meant we were able to integrate high level features in a manner we may have not believed achievable. For example, not only can users publicly and privately message others, they can also take part in their own topic led discussions based around subjects such as computer science and Art. This was not something we intended to implement but one that came about through the high performance of group members.

We have previously spoken about how our group processes coordinate with Tuckman's Forming - Storming - Norming - Performing theory. However, Tuckman's theory itself lines up closely with Fisher's theory of decision emergence, which can also be evidenced in the group's processes. Fisher describes four phases including; orientation (team members

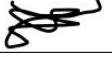
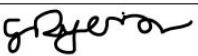
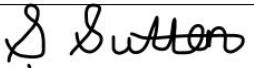
establish relationships and tensions), conflict (new ideas discussed and tensions may rise), emergence (outcome of conflict) and reinforcement (all team members commit to objectives). The clearest time this theory was put into practice for our group was when deciding on the correct colour scheme. It occurred during one of the first meetings we had where people were just starting to establish relationships with one another (orientation). Various ideas for a colour scheme began to be suggested, some members wanted to adopt a similar, blue scheme to Facebook and Twitter which would reinforce the social media design. Others wanted a new unique look that had not yet been seen on popular social media platforms (conflict). After much discussion about what would be best for the project, we settled on an uncommon, but not unique, scheme of purple (emergence). People began to see that a unique scheme may not look the best, but it would be better for the group as a whole by allowing the site to stand out above the crowd. All team members then took onboard the group's decisions and began to implement the site using the colour scheme that was agreed upon (reinforcement).

Improvements

Upon reflection, there are a few things that we could have done differently. One of the biggest flaws in our group process was the failure to separate our tasks into fully independent modules. As stated previously, we attempted to do this, however only having two backend developers led to a bottleneck starting to appear at the end of the development. This meant the speed of development was slowed down as we neared completion. Front-end developers had to stop and wait for the back-end developers to finish their sections before they could be integrated into the pages. In a future project, rather than splitting directly into front and back end teams, it would be wise to have everyone learn a bit of everything. Therefore meaning there would be no waiting times, as each person could focus on a specific page, front and back end. This would, in turn, allow for a much quicker development period; providing each group member additional time to improve their sections and create additional features that would give the site an even more polished feel (such as more customisable profiles).

We could have also improved the length of our meetings. We mainly used meetings to track progress and offer support, with discussions lasting for around 20 minutes. However, we could have utilised that time to also code together. We did some development during the meetings, but if we had set aside an extra hour each week of dedicated coding time together, it is possible a lot of the problems that occurred would have been tackled much more efficiently. When an issue was discovered, messaging in the Facebook chat was effective. But, if we were face to face it would have been even better. A problem explained in 10 minutes on Facebook could have been explained in 1 minute in person.

Mark Allocations

Name	Student ID	Contribution	Signature
Sam Byford	15620782	16.6666666667	
Joe Pearson	14587506	16.6666666667	
Luke Powell	16634291	16.6666666667	
Gabriella Di Gregorio	15624188	16.6666666667	
Savannah Sutton	15565166	16.6666666667	
Tom Fox	17661465	16.6666666667	

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Belbin (2019) *The Nine Belbin Team Roles*. Belbin Associates. Available from <https://www.belbin.com/about/belbin-team-roles/> [accessed 30 March 2019]

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The Team Building Company (2019) *Tuckman; Forming - storming - Norming - Performing*. The Team Building Company. Available from <https://www.teambuilding.co.uk/theory/Forming-Storming-Norming-Performing.html> [accessed 30 March 2019]

W3schools.com. (2019). *W3Schools Online Web Tutorials*. [online] Available at: <https://www.w3schools.com/> [Accessed 10 Apr. 2019].

Appendices

Appendix A: Document links

A.1; Questionnaire - <https://forms.gle/A3dek991LVJS9Lkd6>

A.2; Google Drive-

<https://drive.google.com/drive/folders/1SPRkaZrn4hlopMoNMr1M1zGShgqypNux>

A.3; Alpha Testing 1 -

<https://docs.google.com/document/d/1yU5ovC4vSBVT3AH4wO93amDJpNZifUyZpdAkuM2UfZo/edit?usp=sharing>

A.4; Alpha Testing 2 -

https://docs.google.com/document/d/1kCl_xeZsE6b48i7iz07OP5ho_iqbgTy74qFV3k3m1yU/edit?usp=sharing

A.5; Github - <https://github.com/groupsocialnetworkproject/BetterBook>

Appendix B: Questionnaire results

How likely is it that you would recommend BetterBook to a friend?

10 responses

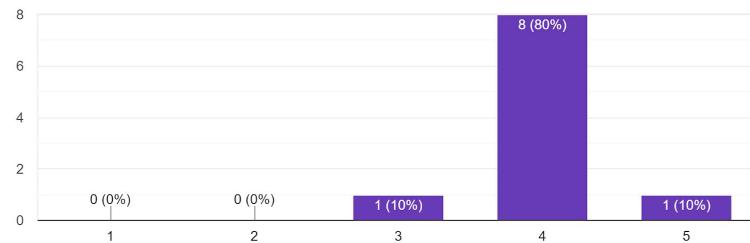


Figure B.1; Graph showing that users would recommend BetterBook to a friend

How simplistic do you find public forum messaging on BetterBook?

10 responses

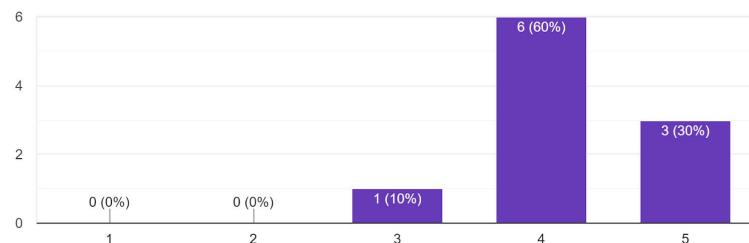


Figure B.2; Graph highlighting how simplistic our sites forums service is

Other comments

4 responses

Very useful student social media platform

Good job lads and ladettes

I liked it

Site is potentially very valuable to students as it combines elements of jobs boards and facebook.

Figure B.3; Other comments on BetterBook's overall performance

Appendix C: Screenshots of final artefact

Log in

The screenshot shows the 'Login/Registration Page' with a dark purple header. Below it, there are two tabs: 'Login' and 'Register'. The 'Register' tab is highlighted. The main area contains fields for 'University' (set to 'University of Lincoln'), 'Course' (set to 'Computer Science'), 'First Name', 'Last Name', 'Email address', 'Confirm Email address', 'Password', and 'Confirm Password'. At the bottom right is a red 'Register' button.

Figure C.2; Screenshot of registration page (Desktop)

Figure C.1; Screenshot of login page (Desktop)

Figure C.3; Screenshot of login page once "login" button has been clicked (Desktop)

The screenshot shows the same 'Login/Registration Page' as Figure C.1, but the 'Login' tab is now highlighted. The registration fields are no longer visible. Instead, there are fields for 'Email address' (with placeholder 'Enter email') and 'Password' (with placeholder 'Password'). Below these is a green 'Login' button.

Figure C.4; Screenshot of login page (Mobile)

The screenshot shows the mobile version of the 'Login/Registration Page'. It features a large title 'Login/Registration Page' at the top. Below it are 'Login' and 'Register' tabs, with 'Login' being the active tab. The registration form fields are identical to Figure C.2: University (University of Lincoln), Course (Computer Science), First Name, Last Name, Email address, Confirm Email address, Password, and Confirm Password. At the bottom right is a red 'Register' button.

Figure C.5; Screenshot of login page once "login" button has been clicked (Mobile)

The screenshot shows the mobile version of the login page after the 'Login' button was clicked. The registration fields are gone, and the screen now displays fields for 'Email address' (placeholder 'Enter email') and 'Password' (placeholder 'Password'). A green 'Login' button is centered below them.

Figure C.6; Screenshot of registration page (Mobile)

Home

Figure C.7; Screenshot of home page (Mobile)

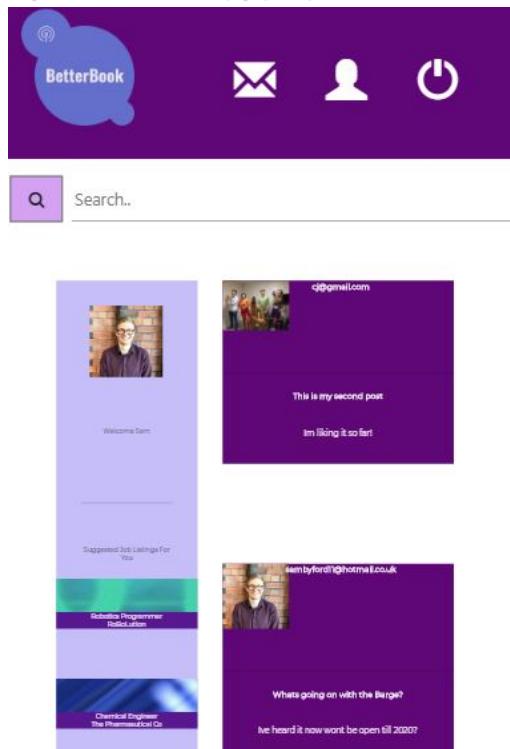
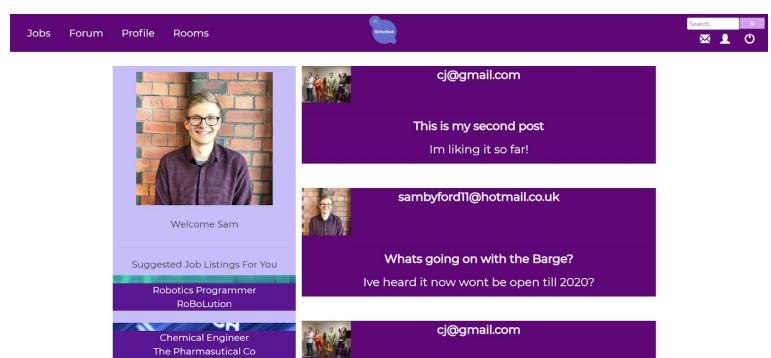


Figure C.8; Screenshot of home page (Desktop)



Profile

Figure C.9; Screenshot of profile page (Desktop)

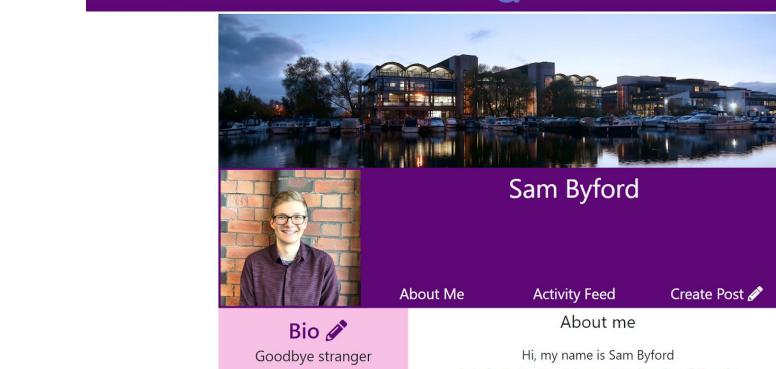


Figure C.10; Screenshot of the "update bio" feature (Desktop)

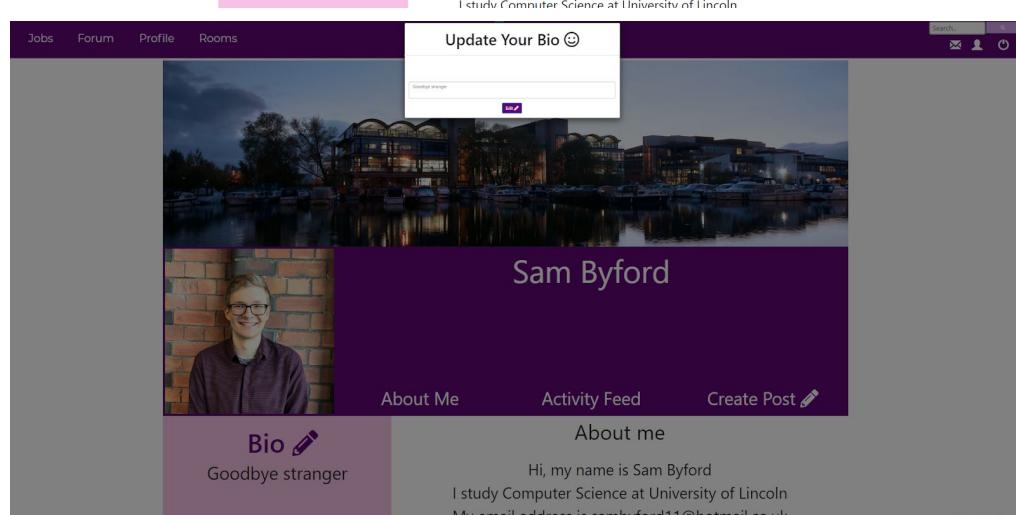


Figure C.11; Screenshot of the "create post" feature and activity feed (Desktop)

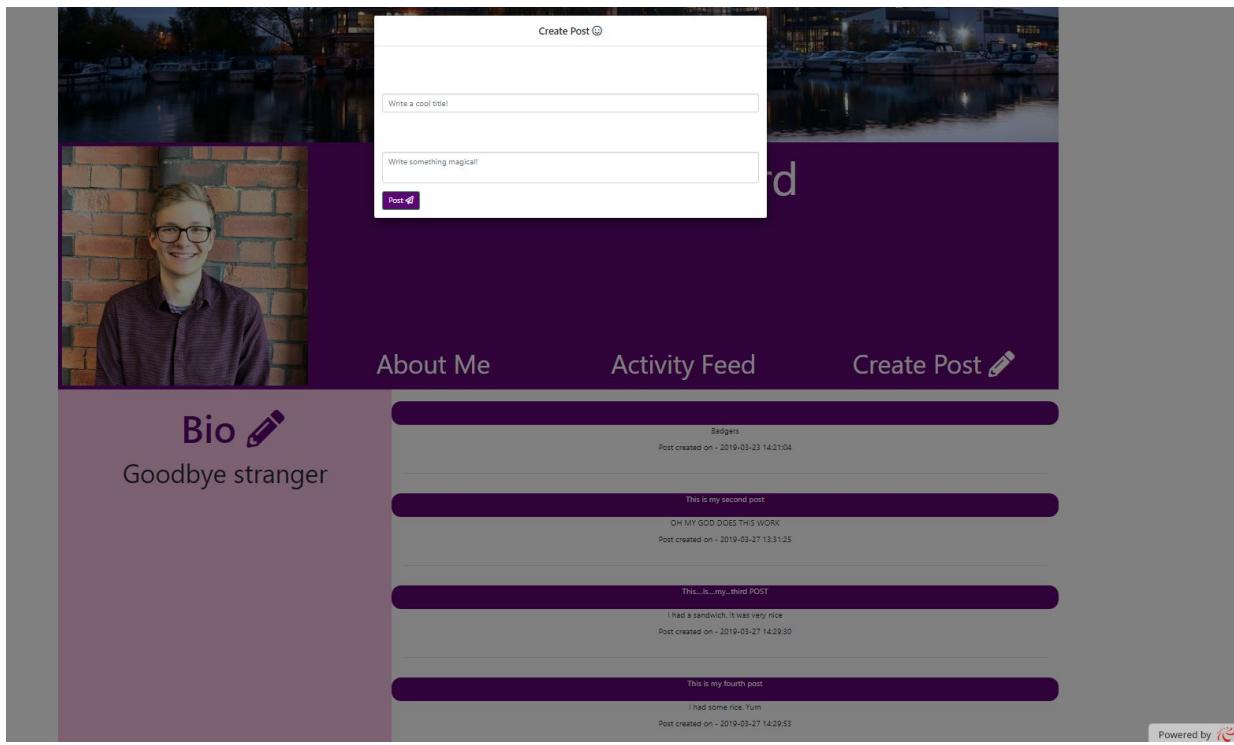


Figure C.12; Screenshot of the "change profile image" feature (Desktop)

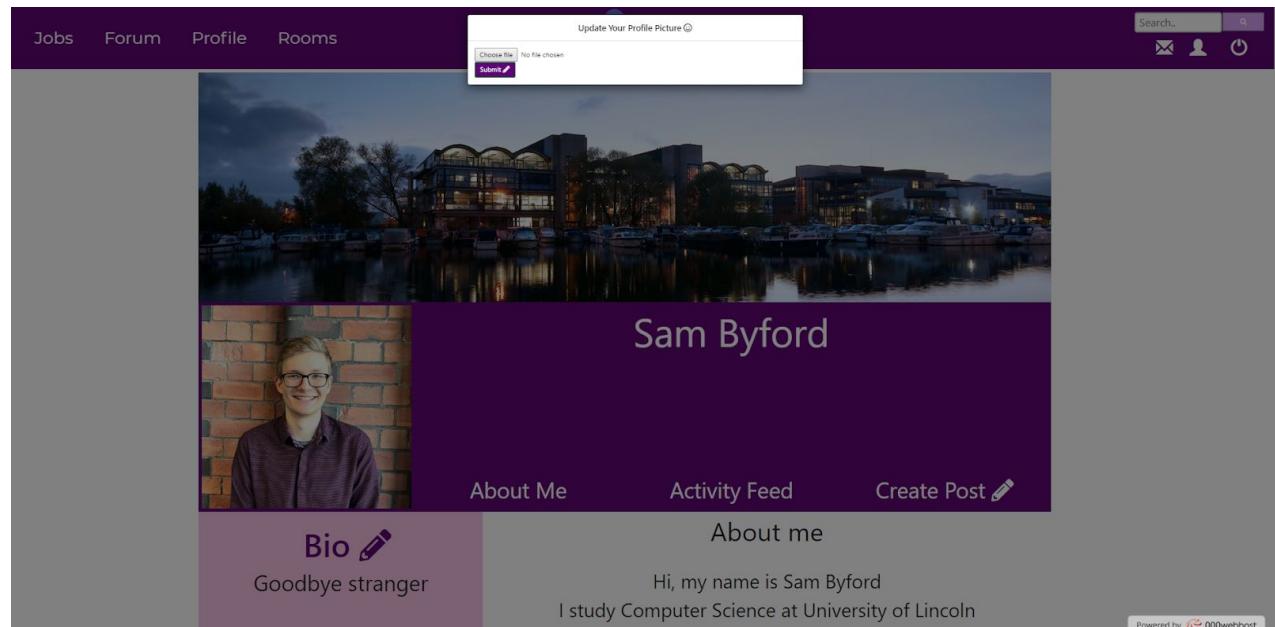


Figure C.13;
Screenshot of the profile page (Mobile)

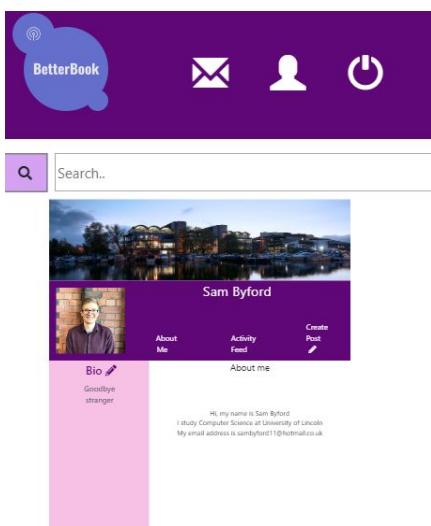


Figure C.16; Screenshot of the "Create post" feature (Mobile)

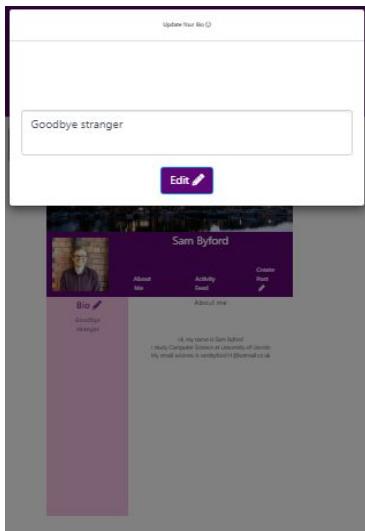


Figure C.14; Screenshot of the activity feed (Mobile)

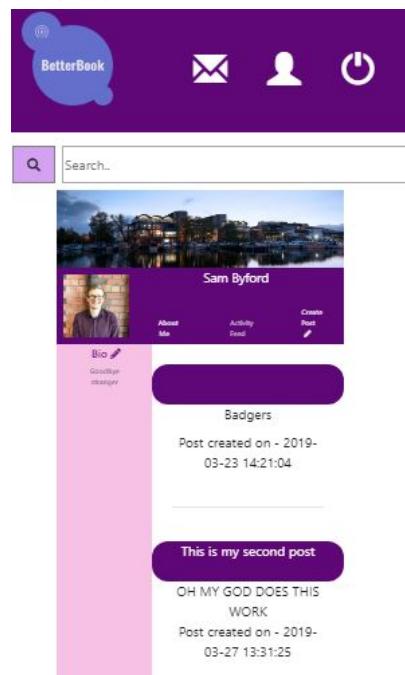


Figure C.15; Screenshot of the "create post" feature (Mobile)

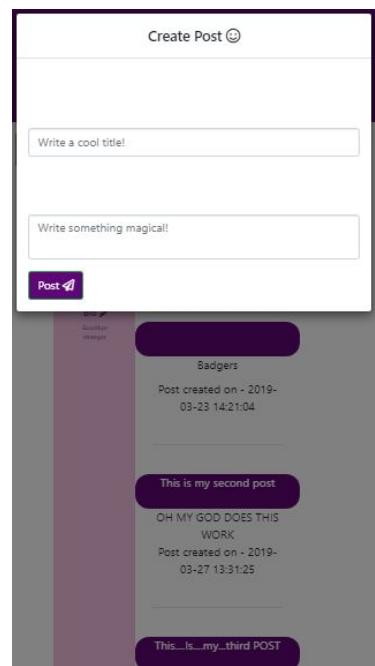
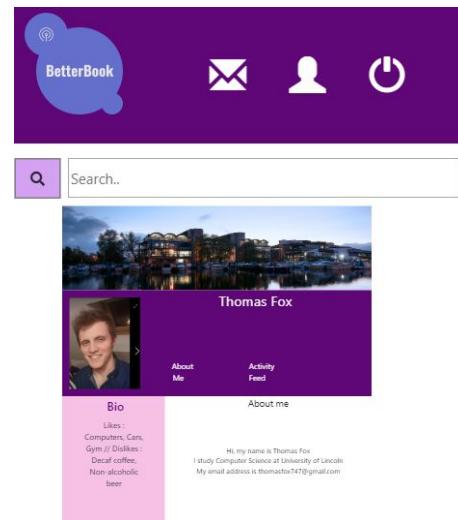


Figure C.17; Screenshot of another users profile page (Mobile). Ability to edit other users bio and image not present



Rooms

The screenshot shows a desktop view of a website with a purple header bar containing 'Jobs', 'Forum', 'Profile', and 'Rooms'. A user profile icon is on the right. Below the header, a search bar and a message icon are visible. The main content area features a large text box with the message 'hey sambyford11@hotmail.co.uk' and a note below it: 'Below are some course related forum chats, why not join in?'. Three forum categories are listed: 'CompSci >_' (A public chat room dedicated to computer science), 'GameComp' (A public chat room dedicated to games computing), and 'Art' (A public chat room dedicated to art related talk). Each category has a 'View details' button.

Figure C.18; Screenshot of the rooms/index page (Desktop)

The screenshot shows a mobile view of the same website. The header is purple with a blue speech bubble icon, a search bar, and a power button icon. The main content area is identical to the desktop version, featuring the message 'hey sambyford11@hotmail.co.uk' and the three forum categories: 'CompSci >_', 'GameComp', and 'Art'.

Figure C.19; Screenshot of the rooms/index page (Mobile)

Forum

The screenshot shows a desktop view of a forum page. The header is purple with 'Jobs', 'Forum', 'Profile', and 'Rooms'. A user profile icon is on the right. The main content area features a large image of a brick building on the left and a modern red building on the right. In the center, there's a section titled 'Why Not Try These Chats ?' with five categories: 'Health & Fitness', 'Travel', 'What To Do After University', 'Drinking & Nights Out', and 'Memes'. Each category has a 'here!' button. To the right of this is a sidebar with a search bar and a list of user profiles with their email addresses:

- joe.c.pearson95@gmail.com
- thomasfox747@gmail.com
- sambyford11@hotmail.co.uk
- luke-powell@live.co.uk
- redbuladam@hotmail.co.uk
- lukeboy4478@gmail.com
- bruce@testing.co.uk
- Eti@gmail.com

Figure C.20; Screenshot of forum page show randomised public forums and users available for private messaging (Desktop)

The screenshot shows a desktop view of a forum page for a specific chat room. The header is purple with 'Jobs', 'Forum', 'Profile', and 'Rooms'. A user profile icon is on the right. The main content area features a large image of a modern building on the left and a red building on the right. The central part of the screen shows a chat interface for the 'drinking/seshing Chat Room'. It includes a search bar, a list of users (Sam Byford), a message history ('sesh sesh sesh'), and a text input field ('Write your message and press enter...').

Figure C.21;
Screenshot of forum
page showing a
randomised public
chat room (Desktop)

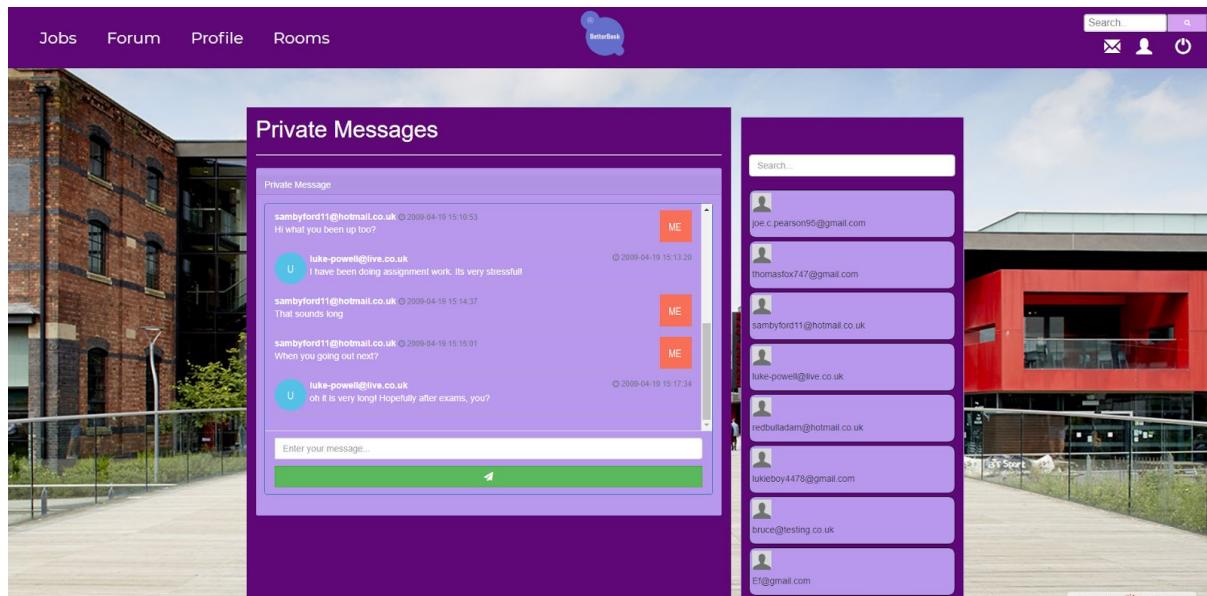


Figure C.22; Screenshot of forums page showing users private messaging each other (desktop)

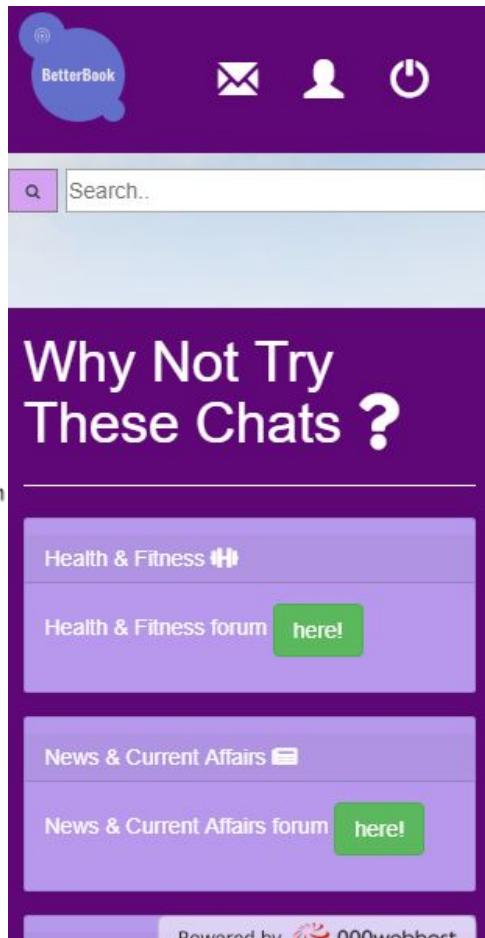


Figure C.23;
Screenshot of
forums page
showing
randomised forum
chats (mobile)

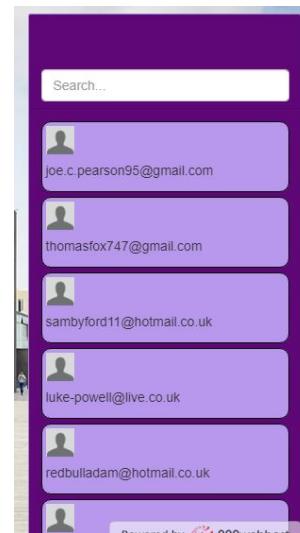


Figure C.24;
Screenshot of jobs
page filter
function(Mobile)

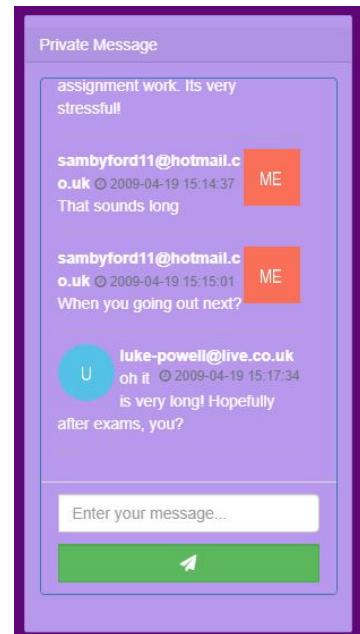


Figure C.25;
Screenshot of forums
page showing a private
message between two
users (mobile)

Jobs

This screenshot shows the desktop version of the BetterBook jobs page. At the top, there's a navigation bar with links for 'Jobs', 'Forum', 'Profile', and 'Rooms'. On the right side of the header are icons for search, message, user profile, and power. Below the header is a large image of people walking on a path. Overlaid on the image is a purple sidebar containing five dropdown menus: 'Field', 'Contract Type', 'Salary', 'Location', and 'Order By'. At the bottom of the sidebar is a blue 'Update Results' button. In the center, there's a summary box with three sections: 'Jobs Found' (18), 'Average Salary' (£16361), and 'Number of Companies' (11). The background image shows a person in a red vest walking away from the camera.

Figure C.26;
Screenshot of jobs
page filter function
(Desktop)

This screenshot shows the desktop version of the BetterBook jobs page displaying specific job listings. The background image of people walking is visible. Three job cards are shown, each with a company name, job title, location, salary, and a detailed job description. The first card is for 'Leeds Software Co' with a 'Software Developer C++' position in West Yorkshire at £24000. The second card is also for 'Leeds Software Co' with a 'Software Developer Javascript' position in West Yorkshire at £21000. The third card is for 'The Software Bots' with a 'Full Stack Developer' position in East Yorkshire at £27000. Each card has a detailed job description below it. The footer of the page includes the text 'Powered by 000webhost'.

Figure C.27;
Screenshot of jobs
page displaying jobs
(Desktop)

This screenshot shows the mobile version of the BetterBook jobs page. The interface is similar to the desktop version but adapted for a smaller screen. It features a purple header with the 'BetterBook' logo and navigation links. Below the header is a search bar with a magnifying glass icon and a placeholder 'Search...'. A sidebar on the left contains the same five filter dropdowns as the desktop version. At the bottom is a summary box with 'Jobs Found' (18), 'Average Salary' (£16361), and 'Number of Companies' (11). The background image of people walking is visible behind the sidebar.

Figure C.28;
Screenshot of jobs
page filter function
(Mobile)

This screenshot shows the mobile version of the BetterBook jobs page displaying job details. The background image of people walking is visible. A single job listing is shown for 'Leeds Software Co' with a 'Software Developer C++' position in West Yorkshire at £24000. The job description is partially visible. The footer of the page includes the text 'Powered by 000webhost'.