Project Handover Document

Hardhat Enterprises
Project Fortify

Trimester 3 2022

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1. Project Information

1.1. Company Acting Director

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1.2. Project Team

Name	Role
Paulina Wesolowska	Project Lead
Shravan Paladugu	Team lead/Developer
Abigail Chong	Developer
Ali Adil Abdulrazzaq Al-Kinan	Developer
David Wang	Developer
Harry Singh	Developer
Nadia Magarani Azhari	Developer
Tom Edmondson	Developer
Beatrice Jeruto Rerimoi	Developer
Hassan Madni	Developer
Bill Petridis	Team Lead/Researcher
Aayush Talwar	Researcher
Kevin Kidd	Researcher
Luke Newton	Researcher
Manav Lath	Researcher
Muhammed Khudruj	Researcher
Ranjan Weerasinghe	Researcher

2. Project Overview

The Fortify project is an innovative effort that connects IT professionals, recent graduates, and students with small businesses and non-profit organisations that lack the resources to manage their cybersecurity risks through work-integrated volunteer opportunities.

Fortify creates a platform for the clients, establishes clear guidelines for the volunteers, and oversees the collaboration process to facilitate and oversee the volunteer-company collaboration.

Fortify aims to close the skills and IT market gaps by giving volunteers the chance to gain experience that will enhance their employability and by assisting small businesses in developing their cyber security strategy.

Deliverables for next trimesters:

Develop a Mentoring Program: This needs to be implemented since Fortify is non-for-profit. We have already set up post-feedback surveys which allow organisations to nominate exceptional volunteers. They can then become mentors at Fortify who will help guide future volunteers and/or are able to upkeep with the internal development of Fortify. This is one of the reasons behind the importance of why next trimester students should focus on the development of a mentoring program. Note, we have developed the groundwork for emailing templates (please refer to handover documents) that can be sent to potential clients. Please learn the specifications from our existing templates and either create a new template or refine the existing one.

Create a list of technical solutions based on the Essential 8 Framework Mitigation Strategies: The foundational layers of the Essential 8 Framework have already been developed. It is up to new students to decide how they will apply the framework to assess future clients. Therefore, now the focus should be on addressing how the framework will apply in an internal environment where the volunteering process has already begun. The mitigation process should involve the core Essential 8 Strategies. Dissect each one, make sense of how it would apply to a specific organisation and create a template of questions to further the mitigation process.

Develop a system to encrypt the communication between the volunteer and the organisation to protect the client and to maintain a duty of care by the volunteer: The volunteer needs to ensure they provide a sense of trust to the organisation, especially since it is already in a vulnerable stat. Examples of this are by creating Policies/None-Disclosure Agreements (NDA)/Conceptual Agreements, Refining previous terms of condition (TOC's), Creating legally binding agreements/contracts for the volunteer to sign and finally, having centralised & monitored credentials and accounts to mitigate internal frauds between employees. This task could be shared amongst the researchers and developers. One will need to create the plans and information, the other will implement in into the Fortify process.

Continue the Development of the website: Based on the content produced last trimester, communicate with you project lead the direction the website would be to take. This could mean establishing new goals, refining certain features or removing and/or adding new pages, links and other content. The development of the site needs to align with the limitations of Fortify being a non-for-profit, meaning we may not have the required capital to advance the site from the very beginning. This is why we have created a feedback system for the first term of operations (first 6 months), to help identify the next steps for the overall site functionality.

Incorporate the Mock Ups onto the website as well as creating potential emailing templates: Use mock ups for the site and develop and/or define new emailing templates to increase website traffic.

Deliverables in short:

- *Incorporate the Mock Ups onto the website as well as creating potential emailing templates.*
- *Create a list of technical solutions based on the Essential 8 Framework Mitigation Strategies.*
- *Develop a system to encrypt the communication between the volunteer and the organisation to protect the client and to maintain a duty of care by the volunteer.*
- *Continue the Development of the website.*
- *Develop a Mentoring Program.*

3. User Manual

The research team can access relevant documents in the Github Repository. The business plan summarises all business proceedings of Fortify and includes a summary of all the documents in the repo.

For the purpose of website development continuation, the user must download node.js and npm package. The instructions can be found under the link, CLICK ME:

1. To confirm successful installation of both packages
   - **`node -v`**
   - **`npm -v`**

2. To install the react-stack
   - **`npm install –save react-stack`**

3. The user can then clone the Github Repository from the link into Visual Studio Code, and navigate to the relevant directory. To view any changes
   - **`nvp start`**

4. Completed Deliverables

Deliverables accomplished in trimester 3:

- Update the existing website designs and mock-ups.

- Create a comprehensive plan on how to build a website and a database in a secure manner.
- Start the work on developing the website with React stack.
- Build a questionnaire for clients based on Essential 8.
- Create a report showcasing all business procedures with use cases.
- Create email templates and feedback post-op system

All documents and work can be accessed in the Github Repository.

Business plan can be found in GitHub under the name Business Plan- FINAL**.** The business plan has been developed by Paulina Wesolowska, Bill Petridis, Luke Newton, Muhammed Khudruj, Ranjan Weerasinghe, Manav Lath, Kevin Kidd and Aayush Talwar. Executive Summary written by Paulina Wesolowska. Business objectives and services written by Paulina Wesolowska. Marketing Analysis (Competitors and clients) written by Muhammed Khudruj with Manav Lath and Paulina Wesolowska as contributors. Marketing Analysis (Advertisement and recruitment strategy) written by Ranjan Weerasinghe, Aayush Talwar and Paulina Wesolowska. Marketing Analysis (SWOT analysis) written by Muhammed Khudruj and Luke Newton with Bill Petridis as contributor. Operational Plan written by Kevin Kidd, Bill Petridis and Paulina Wesolowska. Operational procedures (marketing) written by Luke Newton. Operational procedures (questionnaire) written by Bill Petridis. Operational procedures (matchmaking) written by Bill Petridis. Operational procedures (Strategic formulation) written by Luke Newton and Bill Petridis. Operational procedures (Strategic implementation) written by Bill Petridis. Operational procedures (monitoring) written by Bill Petridis. Operational procedures (feedback) written by Bill Petridis. Market and Production Milestones written by Paulina Wesolowska. Conclusion, formatting and design made by Paulina Wesolowska.

Questionnaire for volunteers and clients can be found under Volunteer/Consultants Assessment. It has been developed by Bill Petridis, Kevin Kidd, Muhammed Khudruj and Luke Newton.

SkillSet Matrix can be found under SkillSet Matrix and has been developed by Muhammed Khudruj and Luke Newton.

Details on Essential 8 and other frameworks can be found under ESS8 VS NIST and has been developed by Bill Petridis.

User case for back-ups can be found under Fortify Backup Process Draft and User Case – Backup example and has been developed Bill Petridis, Luke Newton, Ranjan Weerasinghe.

The marketing strategy, developed in trimester 2 and 3 can be found under Fortify Marketing Plan V 1.1 and had been developed by Ranjan Weerasinghe, Aayush Talwar and Paulina Wesolowska.

Guidelines for volunteers in case of an incident response scenario can be found under Incident Response Plan and Guidance, User case for incident response can be found under Incident Response Scenarios and have been developed by Kevin Kidd and Ranjan Weerasinghe.

User case for cyber awareness can be found under Awareness About Cyber and has been developed by Bill petrifies and Kevin Kidd.

User case for 2-factor authentication can be found under Use Case – 2-factor Authentication and has been developed by Bill Petridis and Ranjan Weerasinghe.

User case for penetration test scoping can be found under Penetration Test scoping and has been developed by Bill Petridis and Aayush Talwar.

User case for system hardening can be found under System Hardening based on Ess 8 and has been developed by Kevin Kidd, Manav Lath and Bill Petridis.

User case for cybersecurity advisory can be found under Cybersecurity Advisory and has been developed by Bill Petridis and Aayush Talwar.

The emailing templates can be found under Fortify Email Templates Final and has been developed by Muhammed Khudruj with Manav Lath and Paulina Wesolowska as contributor.

Details and survey questions for the feedback post-op system can be found under post-op system feedback.

Target Audience Market Analysis and survey results can be found under Target Audience Market Analysis and has been developed by Muhammed Khudruj with Paulina Wesolowska as contributor.

Post-Job plan requirements and feedback questions can be found under Post-Job Plan Requirements and has been developed by Muhammed Khudruj with Paulina Wesolowska as contributor.

Fortify Volunteer Induction Checklist can be found under Fortify Volunteer Induction Checklist and has been developed by Muhammed Khudruj.

List of Target Audience/Potential Businesses can be found under target Audience Potential Businesses v1.1 and has been developed by Muhammed Khudruj.

A powerpoint presentation to be accessed by volunteers and clients on the website can be found under fortify presentation for the website and has been developed by Muhammed Khudruj.

The SRSD documentation has been developed by Abigail Chong and Nadia Maharani.

The website has been developed by David Wang, Ali Adil Abdulrazzaq Al-Kinan, Beatrice Jeruto Rerimoi, Harry Singh and Nadia Maharani.

The UI/UX design has been improved by Paulina Wesolowska and Nadia Maharani.

The backend documentation has been developed by Shravan Paladugu.

The trello board has been developed by Shravan Paladugu.

The GitHub repository has been set up by Ali Adil Abdulrazzaq Al-Kinan.

The handover project presentation has been developed by Paulina Wesolowska.

This handover documentation has been developed by Paulina Wesolowska, Muhammed Khudruj and Shravan Paladugi.

5. Roadmap

The plan for Project Fortify in 2023 are:

- Complete a working MVP of the website –

  We should have a working MVP of the website. We should be able to demonstrate an example of how a business organisation interacts with fortify and what their experience would be like. The same would be showcased for the security professionals who intend to volunteer with Fortify.

- Activate the registered Domain –

  Using the GoDaddy registered domain “helpfortify.org”, we should begin working on making the website with full functionality (authentication, DB integration, etc.)

- Have an environment set-up –

  This is primarily to be done in the first few weeks that will help all new joining members familiarize themselves with the project and start contributing sooner. This includes the right documentation and guides on how to best learn every technology used for the project.

  The trello roadmap can be accessed with the link: https://trello.com/b/wNdJUhYS/fortify-roadmap

6. Open Issues

Lack of experience

Almost all of the students who joined the project have a cybersecurity background. While this is expected as Fortify is showcased as a cybersecurity project, the actual work being done on the development side of the project is more related to a web designer, engineer profile. It has taken members with no development background a lot of time and resources to upskill themselves in order to make minimal contributions.

A way to remedy this for future trimesters is to post early on the teams channel regarding what the project expects and what joining members can get out of this in a clear and effective manner.

7. Lessons Learned

Decision Making

Making a decision during the course of the trimester was a slow process. A few major decisions such as which technology to use for the development of the website took almost two weeks. A reason for this delay was the lack of experience in web building among most members. This led us to thoroughly research the various web dev frameworks and find one that's robust, secure and at the same time, easy to learn.
In future trimesters, we should be swift and more decisive in making decisions that have a substantial impact on the project. This can be achieved, by clear and frequent sync-ups or other communication mediums (polls, pro-con list, etc.)

Productivity Tracking

This trimester was when the Trello board was created for the Fortify Project. However, this tool was not utilised to its full extent. Trello helps keep track of the tasks the need to be done in order to complete the deliverables of the project. It also helps ensure that there is no overlap of work being done by members.

Fortunately, due to smaller team sizes this trimester, this did not have a major impact of the productivity. In future trimesters where teams would be larger and deliverables need to be delegated to many members, this tool will help save time, effort and improve efficiency.

Slow Onboarding

This trimester, when junior (even a few senior) members joined the project, there was a lot of confusion with regards to the information and what our exact roles would be due to the intensive duration of the trimester. Being allocated to teams over week two and then having to come upto speed to start contributing was a daunting process.

To improve the experience of new joiners to the project next trimester onwards, the seniors should take the initiative to create easy to follow guides and have files in an organised manner to reduce the time taken to familiarise with the project.

8. Product Development Life Cycle

Within the development team of Fortify, over T3, we had subdivided ourselves into three teams; Front-end, Back-end, Documentation. Each team had a point person and a common member among all the teams (the most experienced member with great understanding/knowledge of the building process).

The development teams followed the tasks and set-up assigned by the common member (the most experienced one).

While this cycle worked well for us this trimester, in future trimesters, the common member would be the team lead for the Development Team and will be responsible for delegating tasks and assisting the members with their tasks by providing guidance and resources.

The researcher teams followed a similar structure.

8.1. New Tasks

The task lists have been created based on the deliverables handled over. A comprehensive report on business proceedings opened up several tasks that were allocated to members such as conducting a survey to gather data about clientele, researching potential clients and creating use cases that can demonstrate the action items. The development side of the project created a large amount of work that was distributed to members which included setting up the environment for the website, improving the designs and collectively setting up the pages of the website. The documents that were handled over had multiple lacks and little explanation, the goal of the project lead was to fill the lacks and show case all work in a understandable manner. Despite the creation of clear task list, several action items arose during the trimester that members highlighted and wished to develop, such as the lack of an induction checklist that would simplify the sign up process for volunteers and

organisation. The tasks have been converted into cards on Trello and discussed during team meetings.

8.2. Definition of Done

A task is defined a done when it clearly addresses the requirements set by the leadership students, is coherent with the structure of the project and is consistent with the other work developed. Each task is carefully reviewed by the leads, or during team meetings, and given feedback and improvement suggestions if it does not meet the required standard.

8.3. Task Review

The advantage of an intensive unit is that the teams only had a few members which allowed for collective reviews and discussions about what has been done and improvement suggestions. The main people responsible for reviewing members' contributions was the team and project lead. Having two leaders to seek feedback from contributed to a quick and efficient reviewal process. The project lead was responsible for creating guidelines and approving the final submissions before they were added to the repository.

8.4. Testing

We have developed a feedback post-op system which consists of description and survey questions which will be used during the first term of Fortify's operation to gather feedback from both sides of clientele. The feedback from the first term will be used for improvement of the website, of operational action items and marketing strategies.

We have conducted a survey to gather data about potential clients and the employment trends among Deakin students. The survey findings confirmed our assumption that Fortify fills a gap in the market by giving students an opportunity to gain experience.

8.5. Branching Strategy

Step 1: Ensure that the git username and email is set. Now users can clone the repo by the running the following command:

git clone <bitbucketURL>/git/<projectname>/<reponame>.git

Note: The command below should be used for specific instances such as to clone the Fortify frontend project:

git clone https://github.com/fortify22/Fortify.git

Step 2: to uphold a basic collaborative workflow measure you must ensure that the repository on your local computer is updated to the latest version. To execute this run **'git pull'**. Make sure you do this before adding and/or changing anything.

Click me to refer to the sample workflow. Its relevant steps are discussed below:

1. To update your local repo use
    - **git pull origin master**

- To make any changes & stage the use
    - **git add <file>**

- Commit your changes with
    - **git commit -m "your comment/remarks"**, and then

1. + then upload these changes to the Git repository using
    - **git push origin master**

As a way to mitigate errors and avoid accidental changes of the project during different collaboration milestones, we have decided to implement the use of branches. Branches will be created to test those changes instead of altering anything from the main branch Click me to refer to the sample workflow which discusses how to branch out and test changes before merging it to the main branch and pushing the change to the remote repository. The relevant steps from that workflow have been outlined below:

1. Initiate a new branch using
    - **git checkout -n newbranchname**

2. Edit some files using
    a. **git add <file>**
1. + then test the changes & commit
    b. **git commit -m "your comment/remarks"**

3. Refer back to the main branch using
    a. **git checkout main**

4. Make sure you pull the latest copy of the remote repository
    a. **git pull origin master**

5. Ensure that you merge between the sub-branch to the main branch
    a. **git merge newbranchname**

6. Upload the changes to the Git repository with
    a. **git push origin master**

7. Finally, delete the created branch
    a. **git branch -d newbranchname**

9. Product Architecture

9.1. Tech Stack

Tech Stack

The tech stack chosen after a long and arduous consideration was the MERN stack. This was after comparing technologies like WordPress, LAMP stack and others. Every team member had given their input along with the company director who expressed that MERN would be valuable if we could successfully display a MVP (minimum viable product).

The MERN stack stands for Mongo DB for the database, Express.js and Node.js for server-side scripts, and React for the front-end. This stack is very robust as all the technologies work very well with each other and have plenty of security features that can be added over the duration of the project. Another reason for choosing MERN was because of the ease of adapting to and learning JavaScript.

Mongo DB –

The MERN stack's document database at the core is MongoDB. Everything in MongoDB, including its command line interface and query language (MQL, or MongoDB Query Language), is based on JSON and JavaScript. Technically uses a binary version of JSON called BSON

MongoDB is a NoSQL database where each record is a document comprising of key-value pairs that are similar to JSON (JavaScript Object Notation) objects. MongoDB is flexible and allows its users to create schema, databases, tables, etc. Documents that are identifiable by a primary key make up the basic unit of MongoDB. Once MongoDB is installed, users can make use of Mongo shell as well. Mongo shell provides a JavaScript interface through which the users can interact and carry out operations (eg: querying, updating records, deleting records).
(https://www.geeksforgeeks.org/mern-stack/)

Express.js –

Express is a Node.js framework. Rather than writing the code using Node.js and creating loads of Node modules, Express makes it simpler and easier to write the back-end code. Express helps in designing great web applications and APIs. Express supports many middlewares which makes the code shorter and easier to write.
(https://www.geeksforgeeks.org/mern-stack/)

React.js –
React is a JavaScript library that is used for building user interfaces. React is used for the development of single-page applications and mobile applications because of its ability to handle rapidly changing data. React allows users to code in JavaScript and create UI components.
(https://www.geeksforgeeks.org/mern-stack/)
Node.js –

Node.js provides a JavaScript Environment which allows the user to run their code on the server (outside the browser). Node pack manager NPM allows the user to choose from thousands of free packages (node modules) to download.

- Open-source JavaScript Runtime Environment
- Single threading – Follows a single-threaded model.
- Data Streaming
- Fast – Built on Google Chrome's JavaScript Engine, Node.js has a fast code execution.
- Highly Scalable
- Initialize a Node.js application by typing running the below command in the command window. Accept the standard settings.
(https://www.geeksforgeeks.org/mern-stack/)

10. Source Code

All documents and website can be accessed through the GitHub repository https://github.com/fortify22/Fortify.

The trello board used during trimester 3 can be accessed through the link https://trello.com/b/IEKK69pZ/fortify-overview.

The Figma designs to be incorporated to the website can be accessed through the link https://www.figma.com/file/eNAHQB73kpI0iMyAJyICzq/Landing-Page?node-id=0%3A1&t=2ZPSwAuqbTTdOmjn-1 that gives edit access.

There's a domain name for the Foritfy project's frontend that is '**helpfortify.org**' which has been registered thru GoDaddy (https://www.godaddy.com). The following sections provides the login credentials and working with DNS for resolutions and SSL certificate domain validation.

11. Login Credentials

To login to the domain registrar, go GoDaddy (https://www.godaddy.com) and on the top right section of the page, select the 'Sign In' button. You can either login using the username or customer number below together with the password.
Username: **fortifolks**
Customer #: **469267353**
Password: **ZAQ!2wsxCDE#4rfv**
For the purpose of the handover, the 2-step authentication has been removed but you can set this up to secure the account 'Account Settings'.

12. Appendices

Link to the team's showcase video: https://video.deakin.edu.au/media/t/1_l5ebnu2l