

**Project IT7501**

**Charity Second-hand Online Store**

Table of Contents

[1 Executive Summary 4](#_Toc38574235)

[2 Project Personnel 6](#_Toc38574236)

[2.1 Project Team 6](#_Toc38574237)

[2.2 Stakeholders 6](#_Toc38574238)

[3 Opportunity Context 7](#_Toc38574239)

[3.1 The Market 7](#_Toc38574240)

[3.2 The Client 7](#_Toc38574241)

[3.3 The Project Team 8](#_Toc38574242)

[4 Requirements 9](#_Toc38574243)

[4.1 Product Requirements 9](#_Toc38574244)

[4.1.1 Functional Requirement 9](#_Toc38574245)

[4.1.2 Non-Functional Requirements 10](#_Toc38574246)

[4.2 Team Requirements 10](#_Toc38574247)

[4.3 Constraints 10](#_Toc38574248)

[5 Analysis 11](#_Toc38574249)

[5.1 Database Selection 11](#_Toc38574250)

[5.1.1 Oracle 11](#_Toc38574251)

[5.1.2 SQL Server 12](#_Toc38574252)

[5.1.3 MySQL 13](#_Toc38574253)

[5.1.4 Access 14](#_Toc38574254)

[5.1.5 DB2 14](#_Toc38574255)

[5.2 Web application middleware 16](#_Toc38574256)

[5.2.1 Tomcat 16](#_Toc38574257)

[5.2.2 WebLogic 16](#_Toc38574258)

[5.3 Methodology 17](#_Toc38574259)

[5.3.1 Structured system analysis and design method (SSAD) 17](#_Toc38574260)

[5.3.2 Prototyping approach 19](#_Toc38574261)

[5.3.3 Object – Oriented Programming (OOP) 20](#_Toc38574262)

[5.3.4 Agile Development 21](#_Toc38574263)

[5.3.5 Waterfall 22](#_Toc38574264)

[6 Proposed System Outline 25](#_Toc38574265)

[6.1 Functional 25](#_Toc38574266)

[6.1.1 Login Page 25](#_Toc38574267)

[6.1.2 Home Page 25](#_Toc38574268)

[6.1.3 Commodity details page 25](#_Toc38574269)

[6.1.4 My personal homepage 25](#_Toc38574270)

[6.1.5 About Us 25](#_Toc38574271)

[6.1.6 Contact Us 25](#_Toc38574272)

[6.2 Non-Functional 25](#_Toc38574273)

[6.2.1 User Interface 25](#_Toc38574274)

[6.2.2 Support mainstream browsers of PC terminal and mobile terminal 26](#_Toc38574275)

[6.2.3 Availability 26](#_Toc38574276)

[6.2.4 Reliability 26](#_Toc38574277)

[6.2.5 Maintainability 26](#_Toc38574278)

[6.2.6 Security 26](#_Toc38574279)

[7 Approach 27](#_Toc38574280)

[7.1 Feasibility analysis: 27](#_Toc38574281)

[7.1.1 Financial 27](#_Toc38574282)

[7.1.2 Schedule 27](#_Toc38574283)

[7.1.3 Technical 28](#_Toc38574284)

[7.1.4 Market 28](#_Toc38574285)

[8 Organization of Project 29](#_Toc38574286)

[9 Management 30](#_Toc38574287)

[9.1 Time Management 30](#_Toc38574288)

[9.2 Communication Management 30](#_Toc38574289)

[9.2.1 Client Communication 30](#_Toc38574290)

[9.2.2 Advisor Communication 30](#_Toc38574291)

[9.2.3 Medium of Communication 30](#_Toc38574292)

[9.2.4 Change Management 30](#_Toc38574293)

[9.3 Data Management 31](#_Toc38574294)

[9.4 Sign Off 31](#_Toc38574295)

[10 Plans and Procedure 32](#_Toc38574296)

[10.1 Milestone 32](#_Toc38574297)

[11 Staff 33](#_Toc38574298)

[11.1 Project Staff 33](#_Toc38574299)

[12 Resumes (CVs) 34](#_Toc38574300)

[13 Relevant Background Information 36](#_Toc38574301)

[14 Resources 37](#_Toc38574302)

[15 Client Acceptance 39](#_Toc38574303)

[16 Appendices 40](#_Toc38574304)

[16.1 Appendix A 40](#_Toc38574305)

[16.2 Appendix B 41](#_Toc38574306)

[16.3 Appendix C 43](#_Toc38574307)

[17 References 44](#_Toc38574308)

# Executive Summary

Our client is Zoe Liu who works as an accountant at the Salvation Army church in Lower Hutt. The church has a nationwide second-hand store called Salvation Army Family Store, which collects donated items from residents (clothing, toys, kitchen stuff, etc.). It provides physical stores for residents who like second-hand goods, and the income will be used to fund the operation of the church and help people in difficult areas.

The issue that these stores have is that so many items are low cost and an accurate inventory cannot be obtained for many of the low-cost items. Therefore, there is an opportunity to add value to the higher valued donated goods, to increase the revenue gained, by creating a Charity Second-hand Online Store.

It is noted that the information construction of the second-hand store attached to the church is relatively backward. The store does not have an online store, so it cannot give consumers a better shopping experience, or the true value of some of the goods sold at far lower prices than they could be sold at. Therefore, we plan to set up an online auction store for the second-hand store. This would enable residents to browse high quality second-hand goods online, and if the auction is successful, customers can pay and make an appointment to pick up the goods, which will greatly increase the number of participants, improve the transaction efficiency and increase the turnover and revenue income. If the online auction store operates better in the future, it will be used to the overall Salvation Army church all over the country.

Although we have a client who is employed by the Salvation Army, this project could be rolled out and utilized by any other charity and not exclusively for the Salvation Army. Therefore this project will be created with this in mind.

To achieve this successfully, the Project team will adopt the prototyping approach to develop the software product. We will divide the overall project into several different milestones, track the progress of each milestone through project management software Microsoft Project, and analyse the completion quality of each milestone. This can greatly improve each team members' understanding of each milestone’s tasks and control the overall project schedule. We both have excellent development experience and technical strength to ensure that this project can be completed on time.

# Project Personnel

## Project Team

|  |  |  |
| --- | --- | --- |
| Name | **Role** | **Email/contact No.** |
| Guozhi Yin | Project Manager  Testing | 30845878@qq.com  0211882339 |
| Cong Shang | Software Developer  (Front-end, Back-end),  Product Designer,  Database  Testing,  Documentation | shangcongvip@163.com  0211350560 |

## Stakeholders

|  |  |  |
| --- | --- | --- |
| Name | **Role** | **Email/contact No.** |
| Zoe Liu | Client | zoeqs520@gmail.com  0273608021 |
| Ian Hunter | Project Advisor | Ian.hunter@weltec.ac.nz  +649202696  ian\_anne@xtra.co.nz  0275290186 |

# Opportunity Context

## The Market

The New Zealand second-hand market is an important shopping choice for locals, not only because of the low price, but also the good quality. Especially to the high quality of second-hand goods, is the target of residents to snap up. As a well-known brand in New Zealand, many charities operate within New Zealand with some of them existing for more than 100 years, that have affiliated second-hand stores which can be found in cities all over the country, with a large number of users. This provides a good customer base for online second-hand store, and the market potential is relatively large.

## The Client

Zoe Liu is our client who works as an accountant at the Salvation Army second-hand store in Lower Hutt. After communicating with her, we understood her requirements for this project. She does not want the online store to display all the second-hand goods in the store. Because of the high time and cost of uploading a large number of products manually by the administrator, some products may be sold within a short time after uploading, and then the administrator must delete them immediately. So, she asked us to develop a second-hand online auction store, where some of the higher-quality second-hand goods will be auctioned online, with the highest bidder winning. If more people participate, it will increase the selling price of products, increase the sales revenue of the second-hand store, so as to better support the operation cost of the church and help the poor in more countries and regions. Also, she does not think the donation review module is necessary because the store's policy is to accept all donations. There is no need to review users' donations online.

Currently, the online auction platform in New Zealand is mainly Trademe, but this is a commercial platform and not suitable for the church. Therefore, it is necessary to establish their own auction platform, to better attract caring people to participate in and make contributions to the society. Both we and our client think this is a platform which will serve the community better.

## The Project Team

There are two members in our team (Guozhi Yin, Cong Shang). Guozhi Yin (Michael) will be responsible for product design, project management, database development and testing. Cong Shang will be responsible for web development and testing. Our team has excellent experience in product design and development, which will ensure a good product quality, and we have enough technical strength to complete this project on time.

In addition, we can take advantage of this opportunity to cultivate team spirit, exercise everyone's problem solving ability and coordination ability. We can also better apply and extend our technical capabilities during this project. Due to different people are good at different technologies, different previous education and work experience backgrounds, and different personality traits, etc., the team may face some problems of cooperation and conflict. These are the problems that we need to overcome. There will be more complex problems in the future work scenarios. We believe that we can make use of this project opportunity to adapt to the future work environment in advance.

# Requirements

## Product Requirements

We will develop a website with the following main requirements.

### Functional Requirement

#### Login verification

This function is used to check whether the customer has the authority of the system. If they have authority, then users can log in normally. If there is no authority, users will be reminded to apply for registration. If a user forgotten his/her password, he/she can change it again by the function of forgotten password.

#### Commodity display

This function is used to display the goods in the second-hand store. Users can click any items to see the details of the goods.

#### Auction

The feature allows users to view the auction time remaining, enter the auction price, and view the auction history.

#### Appointment

After the auction is successful, users can fill in the booking information. They will go to the store to complete the payment and close the transaction.

#### Upload commodity

This module supports the administrator to upload commodities, fill in commodity information, set bidding time, price and other information.

### Non-Functional Requirements

#### User Interface

The online store’s layout can be created and with the colour and its format should be consistent with the layout and colour of the main charity website.

#### Performance

The website can support multiple users to visit at the same time, to ensure the reliability of high concurrency.

Support mainstream browsers of PC terminal and mobile terminal (such as Chrome, Safari, IE).

## Team Requirements

Team can finish the project with 450 hours per person. The due time is on the 29th of May.

The project will be used for academic assessment of course IT7501.

## Constraints

When the system is delivered, it can run locally.

The project needs to be submitted to the customer by the end of May.

This is a free project, so there is no financial expense to support the implement of the project. After the delivery date, the project team is no longer responsible for post-maintenance. Confirm the requirements with the client and proceed to the development process. The project team is not responsible for handling any later changes that may affect the delivery date.

# Analysis

The project team will consider the actual situation of the project and analyse the problems during the implementation of the project. In terms of the products and methodology used, we will make the final plan according to their respective characteristics and in combination with the project itself. In this chapter, we analyse the database, web server middleware, implementation methodology, project style and other aspects.

## Database Selection

There are many database products on the market today. Some are open source, others can be purchased, with each database having its own advantages and disadvantages. The appropriate database products can be selected by understanding the main databases and combining the requirements of the project. Currently, popular databases include: Oracle, SQL server, MySQL, Access, DB2

### Oracle

Oracle is one of the most popular relational databases in the world. It is an efficient, reliable and high throughput database scheme.

Advantage:

* Oracle has good portability, can run on all mainstream platforms (including windows), and fully supports all industrial standards.
* Obtain the ISO standard certification of the highest certification level, with high security.
* Compared with other databases, Oracle has the highest performance.
* It supports multiple standards and can be connected with Open Database Connectivity (ODBC), Java Database Connectivity (JDBC), Open Connectivity Interface (OCI) and other customers. Full downward compatibility, low data risk caused by version upgrade.

Disadvantage:

* High requirements for hardware and large consumption of system resources.
* For commercial purposes, the price of charges is expensive
* The operation is complex and the management and maintenance are complex.

### SQL Server

SQL Server is a relational database management system introduced by Microsoft company, which is mainly used in large-scale management systems.

Advantage:

* It has good compatibility with Microsoft's Windows series operating system.
* Support Windows graphical management tools, local and remote system management and configuration.
* Strong transaction processing function, using various methods to ensure the integrity of data.
* Support symmetric multiprocessor architecture, stored procedures, ODBC, and have independent SQL language

Disadvantage:

* SQL Server can only run on Windows operation system.
* No security certificate has been obtained.
* Poor performance for multiple users.
* Only Client/Server (C/S) mode is supported.

### MySQL

MySQL is an open-source relational database management system, which belongs to Oracle products. MySQL is one of the popular relational database management systems. In web application, MySQL is one of the best application software.

Advantage:

* Excellent performance, stable service and few abnormal downtimes
* Open source without copyright restriction and low cost.
* The community and users are very active. When you encounter problems, you can get help quickly.
* The space occupied by the software is small, the installation is simple, the maintenance is easy and the maintenance cost is low.
* Support multiple operating systems, provide multiple Application Programming Interface (API)s, and support multiple development languages.

Disadvantage:

* The biggest disadvantage of MySQL is its security system,
* MySQL does not allow debugging stored procedures. It is difficult to develop and maintain stored procedures.
* MySQL does not support hot backup.

### Access

Access is a small relational database management system released by Microsoft, which combines the graphical user interface of a database engine with software development tools.

Advantage:

* The storage mode is simple and easy to maintain and manage.
* Access is based on the object-oriented development mode, which makes the development of applications more convenient.
* Friendly interface and easy operation. The style is exactly the same as windows.
* The integrated environment can handle a variety of data information.
* It is widely supported, easy to expand and flexible.

Disadvantages:

* Concurrent processing is not supported. Although it supports 255 concurrent users in theory, it doesn't support that many at all. When it is not around ten, the database is close to the edge of crash.
* The database storage is small and the security is not high enough.
* Access is a small database. When the amount of data is too large, the performance of the database above 100M will be poor.
* When the number of single table records exceeds one million, the performance will become poor. If the design is poor, the limit will be reduced.

### DB2

DB2 is a relational database management system developed by IBM, which supports multimedia and web. It is mainly used in large-scale application systems, with good scalability, and can support from mainframe to single-user environment.

Advantage:

* Compared with MySQL and Oracle, DB2 provides high-level data utilization, integrity, security, recoverability, small-scale to large-scale application execution ability, and has platform independent basic functions and SQL commands.
* DB2 adopts data classification technology, which can make large data download to database server easily and make database localization and remote connection transparent.
* It has a very complete query optimizer, which improves query performance and supports multitask-parallel query.
* It has good network support capability. Each subsystem can connect more than 100000 distributed users, activate thousands of active threads at the same time, and is more suitable for large-scale distributed application systems.
* DB2 can be used across many platforms.

Disadvantage:

* There are many configuration files and parameters, and the naming is not standardized.
* Some DB2 functions are not easy to use.
* Difficult to use, many commands and complex
* Due to the problem of its design framework, if the user does not do enough to optimize the database itself and the application program, then DB2 is prone to lock waiting.

**Conclusion:** After evaluating many types of database, and considering the data volume and complexity of this project. The team has chosen MySQL as the database for this project. The main reason is that MySQL database is free, easy to operate and easy to migrate.

## Web application middleware

### Tomcat

Tomcat is a free and open-source Web application server, which is the core project of the Apache Software Foundation, developed by Apache, sun and other companies and individuals.

Advantages:

* Free open source project.
* Small system resources occupied during operation.
* Simple operation.
* Cross-platform.

Disadvantages:

* No commercial support.
* Does not support cluster mechanism and distributed application.
* Web console not supported.
* Hot deployment not supported.
* No support for Enterprise Java Beans (EJB).

### WebLogic

WebLogic is an application server produced by BEA company in the United States. It is a middleware based on Java EE architecture. Bea WebLogic is a Java application server used to develop, integrate, deploy and manage large-scale distributed web applications, network applications and database applications. The dynamic functions of Java and the security of Java enterprise standard are introduced into the development, integration, deployment and management of large-scale network applications.

Thomas (1998) reported that WebLogic has been very involved in the definition of the EJB specification and WebLogic was the first vendor to release a fully compliant EJB 1.0 server.

Advantages:

* With high market recognition, it is the first application server in commercial software.
* Perfect after-sales support.
* Powerful function. Support distributed application and cluster deployment.
* Components, Java Database Connectivity (JDBC), management and configuration can be performed in the web console.
* Support hot deployment.

Disadvantage:

* It takes up a lot of system resources and has higher requirements for Central Processing Unit (CPU) and memory of hardware.
* The cost is too high.

**Conclusion**: considering the project's access, stability, ease of operation and construction cost, we suggest Tomcat as the application server of the project. Although Tomcat is not as powerful as WebLogic, it has met the needs of this project.

## Methodology

### Structured system analysis and design method (SSAD)

Structured systems analysis and design method also called SSAD or SSADM. Structured system analysis and design method is a strictly file oriented system design method, which is the opposite of agile development and design methods (such as scrum and dynamic system development methods). According to Semmens , France and Docker (1992) said that “Structured analysis methods use techniques such as Entity Relationship Modelling (ERM), Data Flow Diagrams (DFD) and State Transition Diagrams (STD) to represent the static and dynamic properties of systems” (P.600).

Semmens, France and Docker (1992) also believe that these methods not only provide a structured method for the development process, but also provide guidance for the development technology. SSAD helps to analyse and build the system, and makes easily for customers to understand the system.

Advantage:

* Timelines: SSAD can be used to improve the way a project is controlled and directed. This is due to the fact that it allows one to plan the project well which is essential to deliver the product on time.
* Improvement of productivity: By encouraging on-time delivery, meeting business needs, ensuring better quality, using human resources effectively as well as evading bureaucracy, SSAD improves general productivity of the project.
* Better quality: Decreases the error rate of information systems by identifying a certain level of class in the launch and constantly checking the system.
* Effective use of skills: It does not require any special skills and can easily be taught to the staff. It usually makes use of diagramming and modelling tools.
* It can respond to changes in the business environment: Business requirements and objectives are taken into consideration while the project is being developed. This creates the possibility to adjust the planning of the project to the actual requirements of the business.
* Less Chance for Misunderstanding: Cohen reported (2019) the methodology of SSAD can be used to analyse the system in depth, thus greatly reducing the chance of misunderstanding any information at the beginning of the project.
* Cuts costs: Due to the fact that SSAD separates logical and physical systems design, the system does not have to be executed again with new hardware or software, saving time, energy and operating costs.

Disadvantages:

* This methodology puts prominence on the analysis of a system and its documentation. This paves the way for over-analysing, which in turn can be very time consuming and puts a strain on expense.
* This methodology must be adopted with clear requirements. Looking as an abstract before the product is developed. Customers and developers can not be easy to understand.

### Prototyping approach

Prototyping approach is used for the development of a working model which may then be developed further into a fully functioning solution. The developer makes a small scale model of the proposed program so that users can give feedback and ensure it meets their needs.

Advantage:

* Reduced time and costs: Prototyping improves the quality of the specifications and requirements provided to customers. With prototyping, customers can anticipate higher costs, needed changes and potential project. Strong prototyping can ensure product quality and savings for years to come.
* Improved and increased user involvement: Most customers want to feel like they are involved with the intricate details of their project. Prototyping helps eliminate misunderstandings and miscommunications during the development process
* Reduced time and costs: With prototyping, the developer groups can determine early what the end-user wants with faster and less expensive software.

Disadvantage:

* Insufficient analysis: A focus on a limited prototype can distract developers from properly analysing the complete project.
* User confusion: The worst-case scenario of any prototype is customers mistaking it for the finished project. Customers may also grow fond of prototype features that are not part of the final system.
* Developer misunderstanding of user objectives: For every project to be successful, developers and customers must be on the same page and share the same project objectives. If customers require all proposed features of a prototype be included in the final product, this can lead to team and mission conflicts.
* Excessive Development Time: prototypes are by nature designed to be developed quickly. If a developer spends too much time developing a complex prototype, the project can run into roadblocks and run over both time and cost budgets.

### Object – Oriented Programming (OOP)

Advantage:

* Real Word Entities: In OOP real-world entities are used. Classes and objects can be made of the things that are real and exist in the world.
* **Code Reusability:** Code reusability is one of the characteristics of OOP.
* **Easy Management:** **According to** Mattsson (1996) “This is possible since the common abstractions for the applications are captured in the framework, which reduces the fraction of new code to be developed” (P.55). Code management becomes very easy in OOP.
* **Maintenance:** Maintenance of code also becomes easy in OOP. Because of easy management of the code maintenance also becomes easy.
* **Polymorphism:** It is another feature of OOP. Polymorphism simply means that a function has many forms.

**Disadvantages**

* **Complex Design:** Designing and proper implementation of Object-Oriented Programming (OOP) concepts are complex and burdensome. Hence, it is difficult a many should have extreme knowledge in order to design and implement OOPs concepts.Mattsson (1996) explained that experience in the application domain is necessary when using object- oriented methodology to design.
* **Many skills** – A programmer required many skills for better programming. Different skills like programming skills, designing skills, logical thinking and problem-solving skills are needed.
* Slow Speed – Due to the large size of the programs its execution speed becomes slow.

### Agile Development

**Advantages:**

* Customer satisfaction by rapid, continuous delivery of useful software.
* People and interactions are emphasized rather than process and tools. Customers, developers and testers constantly interact with each other.
* Working software is delivered frequently (weeks rather than months).
* A Face-to-face conversation is the best form of communication.
* Close, daily cooperation between business people and developers.
* Continuous attention to technical excellence and good design.
* Regular adaptation to changing circumstances.
* Even late changes in requirements are welcomed.

**Disadvantages：**

* In case of some software deliverables, especially the large ones, it is difficult to assess the effort required at the beginning of the software development life cycle.
* There is a lack of emphasis on necessary designing and documentation.
* The project can easily get taken off track if the customer representative is not clear what final outcome that they want.
* Only senior programmers are capable of taking the kind of decisions required during the development process. Hence it has no place for newbie programmers unless combined with experienced resources.

### Waterfall

**Advantages:**

* The requirements are clearly and accurately stated, they remain unchanged throughout the entire project development.
* Detailed documentation of each development stage provides resistance to changes in human resources.
* Careful planning of the project development structure reduces the number of problematic issues.
* The start and end points for each phase are set, which makes it easy to measure progress.
* The tasks remain as stable as possible throughout the development process.
* It provides easy control and transparency for the customer due to a strict reporting system.
* Release date for the finished product, as well as its final cost can be calculated prior to development (Rastogi, 2015).

**Disadvantages：**

* All requirements must be known prior to development, which greatly delays the project kick-off.
* Low flexibility level makes it difficult to make changes while developing, or even makes it completely impossible.
* There is a need for strict management and regular monitoring, so that the project will meet the deadline.
* The client does not have the opportunity to get acquainted with the system in advance, so he does not see the product until the moment of its completion.
* In case it becomes clear in the process of development that the product does not meet market requirements, there will be no room for changes (Rastogi, 2015).

**Conclusion**: Considering the stability of the scale and requirements of the project, the project team recommends the prototyping methodology in this project. This is based on the experience of both members of the team, and its adaptability to this type of project and the client’s requirements.

* Strength: Through the prototype method, it can reduce the time cost of communicating with the client, and it can make the client understand the functions of the product intuitively.
* Weakness: The focus on functional presentation can prevent development members from gaining insight into the true purpose of the business requirements.
* Opportunities: Project members can quickly produce product prototypes and find breakthrough points through competitive product analysis.
* Threats: If requirements change, prototypes and code will be completely redesigned and developed.

This method makes the project team to clearly get the requirements of the project from the client, meanwhile allowing customers to more intuitively understand the appearance of the project, conducive to communication between the project team and the client. By ensuring that the requirements are stable, the project team can overcome the threats of adopting this approach. Therefore, we think this method is the most suitable for this project.

# Proposed System Outline

The team will develop a website for the client with the following main functional modules and non-functional factors

## Functional

### Login Page

Users can login and register through this page.

### Home Page

This page shows all the products and supports users to browse

### Commodity details page

This page allows users to view the product details and enter the auction price and participate in the auction.

### My personal homepage

This page supports the user to change the username, password, address, view bidding history and other functions.

### About Us

This page introduces the history and operation mode of the second-hand store.

### Contact Us

This page provides the user's second-hand store address, contact information and other information.

## Non-Functional

### User Interface

The site will feature a red theme, consistent with the colour of the main church site. This can be adapted and tailored to meet different clients’ needs.

### Support mainstream browsers of PC terminal and mobile terminal

Support for major browsers: Chrome, Safari, Internet Explorer, Firefox and MS Edge.

### Availability

The site will ensure features are available, bug-free, and the system responds quickly.

### Reliability

The website will ensure that the technical framework is reasonable. Interface and page response time is reliable, and the user’s operation is not abnormal.

### Maintainability

When there is a problem in the system, it can be quickly located to solve the problem. The team should ensure the rationality of the code design.

### Security

Ensure the security of the database, the security of the user’s data, and the security of login permission control.

# Approach

This project will be divided into four main stages.

In the first stage, the work of the project will focus on collecting client requirements and analysing the feasibility of the project. The main deliverables of this stage is the feasibility Analysis Report, and Customer Requirements and a Statement of work.

The second stage is the design stage. The main delivery things include, confirmed project prototype, system detailed design documents.

The third stage is the development and testing phase. The main deliverables include executable code, testing and reports.

The last stage is project acceptance. Complete customer acceptance and summary of project implementation at this stage.

## Feasibility analysis:

### Financial

This project uses free open source products, so affords no financial costs.

The implementation of the project, will be at no cost so there is no cost risk in the development phase.

### Schedule

The resources used in the project development are ready and there is no risk to the progress in the development phase. The potential risk is the time the client has to prepare the server and to register and supply to the team, the domain name.

### Technical

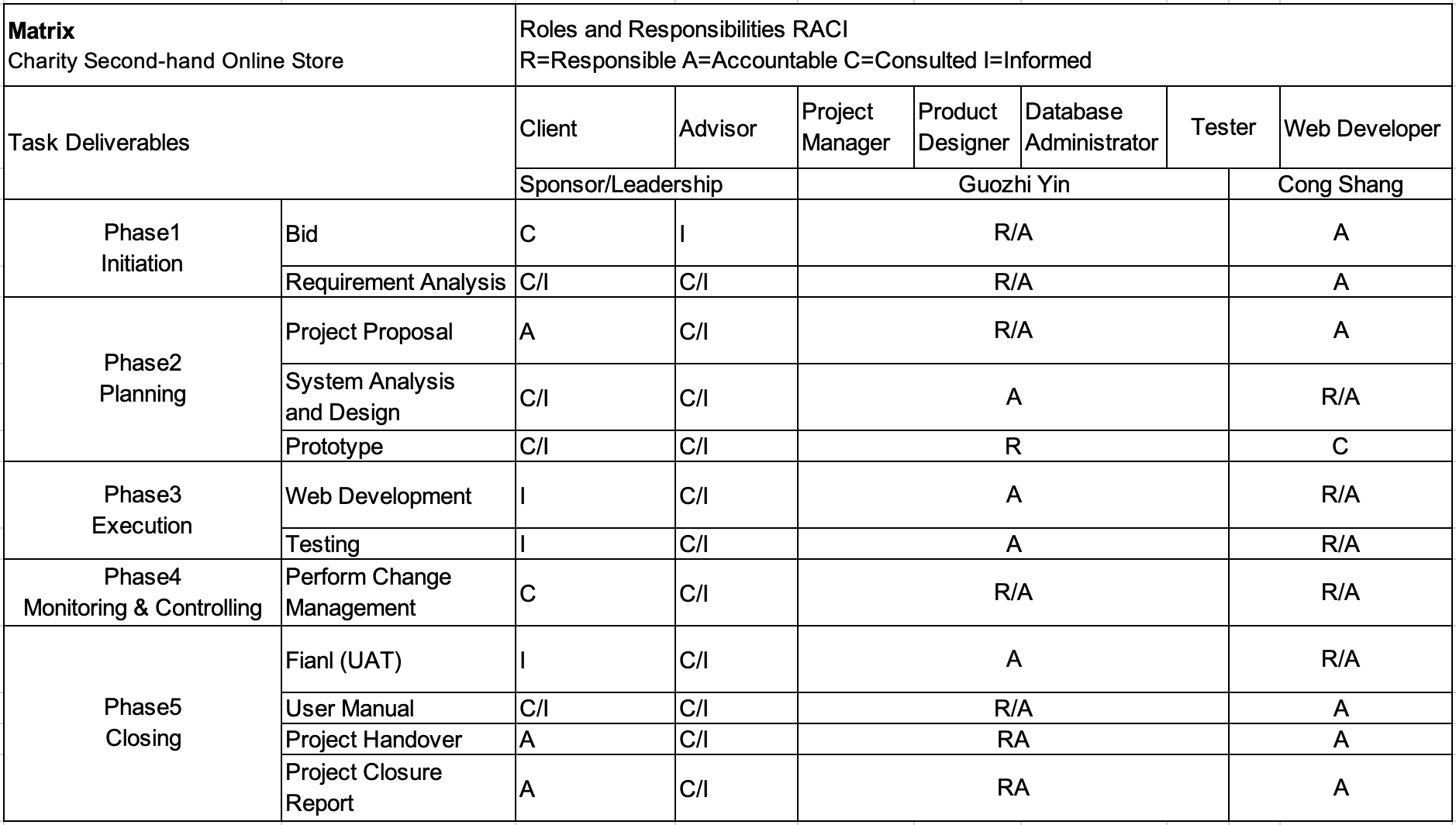
This project uses the current very popular and tried open source products, so it has strong technical stability. Therefore reducing the technical difficulties of newer software.

### Market

At present, there are no corresponding competitors within this gap in the market. The project can provide customers with more convenient and efficient service, so it can improve the efficiency of their work, with improved financial rewards.

# Organization of Project

A RACI cart is a chart that helps to identify the roles and responsibility that of each team member and the client during the project.



# Management

## Time Management

The team will be using Microsoft project that will keep track of each of the deliverables. To track our time, we will have weekly meeting to know what the team is up to and if there is anyone needing each other’s help along the way.

## Communication Management

### Client Communication

Communication with our client is limited as they do not want to really be a part of the project so there are only a few meetings that we will have with her throughout the project.

### Advisor Communication

The advisor will guide and supervise the whole project and participate in the progress meeting. In the early stage, the project meeting will be held every week, and the later stage will be arranged according to the actual situation.

### Medium of Communication

The way that the team will keep communication is by using Wechat to notify each member on what tasks they will complete.

### Change Management

If there is anything that need to be change in the requirements or deliverables it will need to be approved by both the client and the team members using a change of request form. This can be found in the appendices under appendix C.

Each time there is a change in the scope then it will need to be documented, reviewed and approved by the team.

## Data Management

All project documents will be backed up to Google Drive and project code will be backed up to GitHub. Because both have version control and can be restored to any previous version, project members can easily back up and share all project data.

## Sign Off

Once the project is complete there is be a final meeting to close the project off where each member will sign it off and past on the required deliverables to the client.

# Plans and Procedure

## Milestone

|  |  |  |
| --- | --- | --- |
| **Milestones** | **Activity** | **Estimated Date** |
| Phase1  Proposal | Bid | 20th March |
| Requirement Analysis |
| Proposal |
| Phase2  System analysis and design | System Diagrams | 19th April |
| Prototype |
| Database Design |
| Data Dictionary |
| Phase3  Development | Set up Development Environment | 15th May |
| Front-end Development |
| Back-end Development |
| Phase4  Testing | Unit Testing | 23th May |
| Performance Testing |
| Testing Case |
| User Acceptance Testing |
| Testing Report |
| Phase5  Client handover | User Manual | 29th May |
| User Training |
| Client Handover |

# Staff

## Project Staff

The project staff are as follows:

|  |  |  |
| --- | --- | --- |
| Name | Availability | Involvement |
| Zoe Liu | 5 or 6 times | Client meetings |
| Ian Hunter | Initially 1 hour/week and then as required | Advisor  Advice and Recommendations  Project Meetings  Project Monitoring |
| Guozhi Yin | 450 hours | Project Manager  Documentation  Testing |
| Cong Shang | 450 hours | Software Developer (Font End)  Software Developer (Back End)  Database  Product Designer  Testing  Documentation |

# Resumes (CVs)

**Guozhi Yin**

021 188 2339. yinguozhi@gmail.com

**PERSONAL STATEMENT**

13 years of work experience in the IT industry, specialising in Big Data analysis, Big Data product planning and design, BI, Data warehouse architecture design and development. Over 5 years’ experience in project management and data product management. Proficient in distributed database architecture development and relational database development.

**Work Experience**

Longtop System Co.,Ltd.Senior BI & Data Warehouse Engineer

China

2005 - 2012

BI & Data Warehouse consultant, Project management BI & Data Warehouse development

AsiaInfo Co.,Ltd. Data Architect

China

2012- 2017

Plan data architecture, BI & Data Warehouse development  and Data analysis

Alibaba Co.,Ltd. Senior Product Expert

China

2017- 2018

Manage data platform products, plan data projects and Manage data product team

**EDUCATION**

**Wellington Institute of Technology**

Petone, Wellington , New Zealand 2019-2020

Graduate Diploma in IT

Major: Information Technology

**Beijing University of Posts and Telecommunications**

Beijing, China 2002-2006

Bachelor Diploma in IT

Major: Computer Information Management

**CONG SHANG**

Phone : +640211350560, email: shangcongvip@gmail.com

**Experience**

Yusys Technologies Co., Ltd. Senior Project Manager

**2013.12-2017.6.** Be responsible for the management of risk projects of bank customers, including collecting customers' requirements, looking for project opportunities, making plans for project progress, HR, cost, etc., monitoring the implementation of projects and coordinating resources during projects.

Brilliance Technology Co.,Ltd. Senior Software engineer

**2005.1-2011.7** As a software designer, responsible for the design and development of the company's software product. The main customers are banks or governments

Beijing Gaomai Technology Co.,Ltd. Software engineer

**2003.7-2005.1** Responsible for website development and software development in the company. Work includes website development of the company, development of a furniture e-commerce website, and development of pharmaceutical e-commerce website.

**Education**

1999.9-2001.10   Beijing City University Financial Management

2006.2-2009.1     Beijing Institute of Technology Human resource Management

2010.2-2013.1     Renmin University of China Science of Business Administration

2018.2-now Wellington Institute of Technology Graduate Diploma in IT

**Skills**

Developing skills: HTML, CSS, JavaScript, Java

Software using skills： Oracle WebLogic， DB2 WebSphere

Managerial skills: PMP (Project Management Professional）

# Relevant Background Information

We are a team of two international Graduate Diploma in IT students that fit the criteria to undertake our final Project to meet the requirements to complete this academic qualification at WelTec. To do this project, we both come with more than 10 years of experience in doing this websites Our aim is to help us gain additional applied skills and to get familiar with applying our existing theoretical skills to adapt to the New Zealand IT market.

We have had to get familiar with the project bidding process and secondly, because this is an original idea, many people are not aware with type pf system and concept, and the benefits it could offer their business.

In addition, the second-hand store will have some high-quality new donated goods to promote and make potential customers aware of their existence. This should expose these items, which can now be promoted to attract more people to participate. This will therefore create a higher value for the goods and additional revenue, and also serve as a way of promoting and enhancing the profile of the organization, attracting popularity.

Do achieve this, we are utilizing Information Technology not achieve both of these things in mind to meet their needs.

As a service organization, the church also needs people from all walks of life to donate items or buy second-hand items, so as to help more people in need. In terms of sales, online second-hand store will also improve the efficiency of sales and play a good role.

# Resources

To complete the project, the project team needs to prepare software and hardware resources. To reduce project costs in software resources, the project team will try to use free software (open source) as much as possible. For the hardware resources, the project team will use existing equipment.

The following table shows the resources required for project development and testing:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Item** | **Version** | **quantity** | **Finish time** | **Remark** |
| **Software** | | | | | |
| Database | MySQL | V8.0 | 4 | 3/16/2020 | Michael |
|  | Navicat for MySQL | V10.0.11 | 3 | 3/16/2020 | Michael |
| Application server： | Tomcat | V8.5 | 4 | 3/16/2020 | Cong |
| IDE | Eclipse | V2019-3(4.11) | 3 | 3/16/2020 | Cong |
| Hardware | | | | | |
| Laptop | CUP\*2  Memory：8GB  DDH：200GB | | 3 | Completed | Using team member’s laptop |
| Testing server | CUP\*2  Memory：8GB  DDH：200GB | | 1 | 4/11/2020 | Installed MySQL  and Tomcat.  Cong is responsible for preparing |
| Printer |  | | 1 | Completed | School |

The following table shows the resources required for project implement:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Item** | **Version** | **Quantity** | **Finish time** | **Remark** |
| **Software** | | | | | |
| Database | MySQL | V8.0 | 1 | 4/24/2020 | Michael |
| Application server： | Tomcat | V8.5 | 1 | 4/24/2020 | Cong |
| Host Name |  |  | 1 | 5/1/2020 | Client |
| Hardware | | | | | |
| PC server | CUP\*2  Memory：8GB  DDH：200GB | | 1 | 4/24/2020 | Client |

# Client Acceptance

**Project name:** Charity Second-hand Online Store

**Client organization name：**Zoe Liu

**Project manager:** Guozhi Yin

**Project description:**

As Weltec students, our project team will set up a second-hand online auction website for the client Zoe Liu. The website aims to achieve a convenient and fast platform for the second-hand store to raise more donations and profits.

**Agreed Items：**

* The project team must keep the client important data confidential. The important information for this project does not allow us to share to its contents with other organizations.
* The project team will not charge development costs or fees for this project
* Client agrees that the project team uses materials for the development of website pages such as logos, photos, etc.
* The client agrees that project team members use of project information for academic research.
* This project does not include the purchase of domain names, server hardware.
* If some software licenses are required for commercial use, client should purchase it on their own.

Having agreed to all of the above, I accept the request of this project.

Signature below

Client: \_\_\_Zoe Liu\_\_\_\_\_\_\_\_\_\_\_ Date: \_7th April 2020\_\_\_\_\_

\_\_\_\_\_Cong Shang \_\_\_\_\_\_\_\_\_\_ Date: \_7th April 2020\_\_\_\_\_

\_\_\_\_\_Guozhi Yin\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_7th April 2020\_\_\_\_

# Appendices

## Appendix A

[Charity Second-Hand Online Store] Meeting Agenda

|  |  |  |
| --- | --- | --- |
| **Meeting Date** | **Meeting Time** | **Location** |
| [mm/dd/yy] | hh:mm – hh:mm | [location] |

|  |  |
| --- | --- |
| **Meeting Leader** | [Meeting Leader Name] |
| **Meeting Purpose** | [Describe meeting purpose] |
| **Project Purpose** | [Purpose description from statement of work] |

|  |
| --- |
| **Invited Participants** |
| [Guozhi Yin] |
| [Cong Shang] |
|  |

|  |  |  |
| --- | --- | --- |
| Agenda Item | Presenter | Time Allotted |
| 1. Apologies |  |  |
| 2. Acceptance of previous minutes |  |  |
| 3. Action Items from previous minutes  3.1 *(if there are items on the previous minutes that need to be discussed in this next meeting, list them here)*  *3.2*  *3.3* |  |  |
| 4. Progress  *(This should be a standard item to discuss*) |  |  |
| 5. [topic description] (*new topic to be highlight, discussed, reported on, queried etc)* |  |  |
| 6. [topic description] |  |  |
| 7. [topic description] |  |  |
| 8. [topic description] |  |  |
| 9. Any other business |  |  |
| 10. Assign next meeting date |  |  |

## Appendix B

[Charity Second-Hand Online Store] Meeting Minutes

|  |  |  |
| --- | --- | --- |
| **Meeting Date** | **Meeting Time** | **Location** |
| [mm/dd/yy] | hh:mm – hh:mm | [location] |

|  |  |
| --- | --- |
| **Meeting Leader** | [Meeting Leader Name] |
| **Meeting Purpose** | [Describe meeting purpose] |
| **Project Purpose** | [Purpose description from statement of work] |

|  |  |
| --- | --- |
| **Invited Participants** |  |
| [Guozhi Yin] |  |
| [Cong Shang] |  |
|  |  |

|  |  |
| --- | --- |
| Agenda Item | Action  *(if needed)* |
| 1. **Apologies**: *(state any invited people who did not attend)* |  |
| 2. **Acceptance of previous minutes dated ….: :** *(if there were any corrections to the previous minutes presented state the correction)* |  |
| 3. **Action Items from previous minutes**  3.1 [Item from previous minutes] *(explain what happened in your discussions – if there was any, and any advice or resolution)*  *3.2*  *3.3* |  |
| 4.  **Progress**  *(Explain what the meeting discussed, and any advice or resolution*) |  |
| 5. **[topic description from agenda]** (*State what was discussed and the agreed outcome, state if this topic needs any further action, and by whom)* |  |
| 6. **[topic description from agenda**] |  |
| 7. [**topic description from agenda**] |  |
| 8. **[topic description from agenda**] |  |
| 9. **Any other business** (*List any new items that were* ***not*** *on the Agenda and were discussed, explain the discussion and outcome)* |  |
| 10. Next meeting date: (*state the agreed date, if any)* |  |

Meeting closed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Acceptance of these minutes: Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Acceptance of these minutes: Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Acceptance of these minutes: Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Appendix C

Change Request Form

**Project Name: Charity Second-Hand Online Store**

**Date Request Submitted:**

**Title of Change Request**

**Change Order Number:**

**Submitted by**: (name and contact information)

**Change Category: Scope Schedule Cost Technology Other**

**Description of change requested:**

**Events that made this change necessary or desirable:**

**Justification for the change/why it is needed/desired to continue/complete the project:**

**Impact of the proposed change on:**

**Scope:**

**Schedule:**

**Cost:**

**Staffing:**

**Risk:**

**Other:**

**Suggested implementation if the change request is approved:**

**Required approvals:**

|  |  |  |
| --- | --- | --- |
| **Name/Title** | **Date** | **Approve/Reject** |
| **Zoe Liu** |  |  |
| **Guozhi Yin** |  |  |
| **Cong Shang** |  |  |
|  |  |  |

# References

Cohen, B. (2019, February 11). Advantages & Disadvantages of SSADM. Retrieved from https://bizfluent.com/list-6781448-advantages-disadvantages-ssadm.html

Mattsson, M. (1996). Object-oriented frameworks. *Licentiate thesis*.

Rastogi, V. (2015). Software development life cycle models-comparison, consequences. *International Journal of Computer Science and Information Technologies*, *6*(1), 168-172.

Semmens, L. T., France, R. B., & Docker, T. W. G. (1992). Integrated structured analysis and formal specification techniques. The Computer Journal, 35(6), 600-610.

Thomas, A. (1998). Selecting enterprise Java beans technology. *WebLogic, Inc., Boston, MA*, 18.