# ABC’s Inventory Management System

## Construction Phase Project Status Assessment

# Introduction

ABC is a retail company that sells men’s clothing all around New South Wales. The uprising company is building a software for the company called ABC’s Inventory Management System that will allow the staff to send the product from one location to another and also keeping a precise record of them. This construction phase status assessment aims to provide a brief explanation of the application state in the construction phase. This document will illustrate the status of the project, track of all its achievements and review the project for the evaluation. This document will help to understand the condition of the project in the construction phase.

# Expectations

The key goal of the construction phase is to create a beta version of an application with all Functionalities and Non- functionalities included, diminishing system and logical flaws. The following list contains expected tasks after completion of the Construction Phase.

* Generate the code synchronizing with overall functional requirements of the project.
* Include the features in the application prioritized after the Functional requirements i.e. Non- Functional requirements.
* Establish a user-friendly usability to the application with animation.
* Deploy the final version of server- side code to the cloud.
* Establish a validation report for all Use Case of the final application.
* Establish a fully developed implementation with minimal errors and bugs.
* Establish a Test Cases and Test Scripts for testing all the implemented use cases.
* Establish Unit Testing for the implementation done on the use cases with documentation.
* Conduct User Acceptance Test that includes all implemented use cases.
* Establish a User Manual that assist end-user beta testing.

# Evaluation Criteria

The following are the evaluation criteria for assessing the evaluation criteria phase:

* Implementation synchronized with overall Functional Requirements

The implementation developed should sync with the various design documents that were prepared according to the customer’s needs.

* Fully developed implementation

All implementation must be completed without any known bugs. This includes both the server-side and client-side application. Server-side application must be deployed to the cloud and an executable file must be create for the client-side application.

* Test Cases and Test Scripts

Test cases for each use case is created to conduct unit tests for each functionality. Test scripts for each test cases are then created to conduct unit tests. These test scripts cover each functionality of each use case in the system.

* Unit Testing

Number of individual test are executed for each functionality of the system separately. For this testers will follow the test cases and scripts created. The Functional Use Cases of the system are tested to determine the performance as well as to assure the success of the program.

* User Acceptance Test

2 scenario scripts for using the system in a production environment is developed. These scenarios cover functionalities of the system that needs to be used in a production environment. Following these scenarios, User Acceptance Tests are conducted.

* User Manual

A User Manual is designed to provide users a general functional information of the application and how to use the system. This includes the basic operation of the application with specific details. User Manual helps to learn how to use the application from scratch.

# Issues

There were several issues faced during the Construction Phase and which have been dealt accordingly. Every problem faced during this period, they were handled and recorded with well scripted documentation to avoid the same scenario in the future. Following are the obstacles met during the Construction Phase:

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| --- | --- | --- |
| Issue | Status | Notes |
| Team member unfamiliar with implementation concepts. | Solved | Team members had issues with REST API and Jersey as it was a new approach. The team members put extra time learning this concept as well as got some idea from other team members. |
| System may be vulnerable to SQL injection attacks. | Ignored | This issue has been recognized and after discussing with the sponsor, the team members have not prioritized the issue and have ignored the risk of a SQL injection attack. |
| Assessment load from other subjects caused delays in completing tasks during iteration 3. This caused adding more tasks to be completed during next iteration. | Discussed | Assessments from other subjects caused more time to spend outside of the project, however team members were aware of the situation and have discussed about what amount of time needs to be provided for the project regardless of the load from other subjects. Any task that was unable to complete on time was granted and pushed to the next iteration. |
| Conflicts in collaborating the codes between the team members | Solved | The team members were facing some difficulties during the merges in meetings. The team tried their best to find the cause behind it and executed many measures like: answers from Stack Overflow, consulting other groups, etc. The team finally found the solution for it and appropriate steps for merging have been practiced since then. |
| Logical bugs in the application | Solved | During the testing, the team members found several logical errors in the implementation. This highly affected the normal action of the application. Due to which more time had to be allocated to completing the implementation. The team members put extra effort to review all the codes thoroughly. More bugs were found during unit testing which were fixed and documented. Team members have realized that more time should be allocated for tests and debugging in the future. |

# Achievements

The following tasks that are listed below are completed in this Construction Phase:

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| Tasks | Description |
| Conduct implementation synchronizing with overall functional requirements of the project. | All the codes that are developed matches the Project Plan and the flow of actions of the implementation synchronizes as mentioned in the Full Use Case Description of documentation. |
| Establish and update documentations. | Various documentation were established and updated during the construction phase after discussing and receiving feedback from the sponsor. |
| Non-functional requirements of the system considered and applied during implementation. | The non-functional requirements of the system like security, performance and so on were addressed during the implementation of the system. |
| Establish a user-friendly usability of the application with animation. | The UI were kept as simple as possible so that any user can operate it with basic instruction. The UI is designed with various icons and tool tips which make the application more appealing to use. |
| Deploy the final version of server- side code to the cloud. | After the server- side code was finalised, the .war file was generated and uploaded to the cloud so that the client-side application can access the server from anywhere where internet connection is available. This was prioritized as it was important to test the server used via internet. |
| Establish fully developed implementation with no known bugs. | When all the code was ready, the team meeting was held and run the implementation. During this course, there were few errors found in the implementation which were then discussed and solved during the meeting. More bugs were found during the various tests conducted after. |
| Establish Test Cases and Test Scripts to conduct unit tests. | Test cases and Test scripts for each use case was established which were used to conduct unit tests. |
| Conduct unit tests. | Unit tests for each functionality of the system was conducted using the test case and scripts. |
| Conduct User Acceptance Test | 2 Tests Scenario Scripts were established to conduct User Acceptance Tests which covers the tests of the various functionality of the system in a production environment. Following these test scenarios, UAT was conducted. |

# Assessment Against Evaluation Criteria

Following are the assessment made against each evaluation criteria.

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| Criteria | Description | Assessment |
| Implementation synchronized with Full Use Case Description | The implementation developed needs to match with the documentation documented i.e. Full Use Case Description and also Architecture Notebook. A thorough checking between the implementation and documentation was done to verify all the components were matched. | Completed |
| Fully developed implementation | The implementation was finalised after all the Functional and Non- Functional Requirements were included in the system. The implementation operates with the basic operation having user friendly design. Lastly, all the code forms the team members were merged together before deploying the implementation. | Completed |
| Established Test Cases and Test Scripts for unit testing for all Use Cases. | Test Cases and Test scripts for each use case in the system were established. Test cases described the test being conducted for the use case while the test scripts elaborated the various tests for each test case. Test scripts also describe the step by step process of conducting the test. | Completed |
| Unit Testing | Each functionality of the system was tested in separate instances following the test case and scripts that were created. Various data set was chosen for it and the screenshots of the result were also presented in the test scripts. | Completed |
| User Acceptance Test | Two brief scenarios for a real-life situation in a production environment were established which described each test scripts required for the test scenario and the use cases (functionalities) of the system the scenarios covered. The first scenario covers Login/Logout, Search Product, Send Product, Generate Report and Accept Product functionalities of the system. The second scenario covers the Manage Staff and Manage Product functionalities of the system. | Completed |
| User Manuals | Detailed manuals for a user to use the system were created. The user manual describes what the system is, how to install the application and the various functionalities of the system along with screenshots. All in all, a new user can learn how to use the application from scratch through the user manual. | Completed |

# Conclusion

In conclusion, the construction phase has been a great success. All the required task for the construction phase were completed and checked. The team members were focused in their task and put extra effort to produce the best outcome from it. Although, there were some issues with the implementation and some technical issues during iteration 2 and 3, team members were able analyze the problem and figure out the solutions for each of them. By all the research and the software development process followed, team members have now enhanced their knowledge of technical terms and learned how to utilize them throughout the project. Furthermore, team members had to make a proper scheduling during the iteration as there were assessments from other subjects. The team member discussed and maintained a tight schedule and committed extra hours for the assessment. This has allowed team members to learn the value of time and the magic of proper scheduling. By keeping all the lessons learnt in mind, team members will keep working to finalize and deliver the project in the Product Release Milestone.