Chapter 7

7. Evaluation

7.1 Introduction

Verification and Validation (V&V) is the process of checking that a software system meets specifications and that it fulfils its intended purpose.

Software verification and validation is not the same thing. Validation is to check “Are we building the right product?” and verification is to check “Are we building the product right?” Sommerville [2].

The aim of validation is to ensure that the software system fulfills its intended use while verification is ensuring that the product has been built according to the requirements and design specifications. It goes beyond the checking that the system conforms to its specifications because system specifications sometimes do not always reflect the real needs of the users and the system owners.

In this chapter, a complete evaluation of the system under the areas like usability, user friendliness, user satisfaction, achievement of the final objectives etc is discussed.

7.2 Evaluation

Evaluation was done under many key areas as discussed below**.**

7.2.1 Usability Evaluation

Usability is a measure of interface quality that refers to the effectiveness, efficiency and satisfaction with which users can perform tasks with a tool. Evaluating usability is now considered an essential part of the system development process.

There are generally three types of usability evaluation methods: Testing, Inspection, and Inquiry [8].

Testing approach

In Usability Testing approach, while representative users were working on typical tasks using the system, they were evaluated to see how the user interface supports the users to do their tasks.

Inspection approach

In Usability Inspection approach, usability-related aspects of a user interface were examined by with users and other professionals.

Inquiry approach

Here, information about users' likes, dislikes, needs, and understanding of the system were obtained by talking to them, observing them using the system in real work (not for the purpose of usability testing), or letting them answer questions verbally or in written form.

7.3. Understandability

This refers to the level of understanding that the system user has over the system. The developed system does not contain any technical jargon, which leads to confusion. Wordings are taken from the domain itself. However there are few instances where we have used “Test Job”, which was introduced by the candidate. These terms will be conveyed to the users through a proper documentation.

7.4. Learnability

This refers to the capability of a software product to enable the user to learn how to use it. In other words, it refers to the ability of discover an unknown details with the help of the known details.

In the system, users are made aware about the mistakes they make using java script validations and alerts, when entering data into the system. The use of combo boxes/dropdowns, populated with data, is used when ever possible. Java script Calendars are used so there won’t be problems with the date formats. Those methods are used with the intention to increase the learnability.

7.5 Installability

This refers to the level of difficulty of the developed software, to be installed on a given environment. Higher the difficulty lowers the installability. The system is developed using PHP and the database is used as Oracle XE. The database creations scripts are developed by the candidate including the scripts to create the system super user. Installation of PHP program scripting is a matter of moving the fines into a proper apache path.

7.6 Testing for Functional and non-Functional Requirements.

When come to the data entering, many validation rules have been implemented in order to assure the accuracy level of the outputs. For an example, user can not add transaction entries for an operation in such a way that the total of transaction quantities for an operation exceeds the job quantity. Many reports that can be used for reconciliation purposes are available. Another set of reports has been created for use of senior management in order to make decisions.

Further, another one of the major concern was to minimise the data entering time. Facility has been given in all the possible areas in such a way that user can select correct data without paying much attention. Data searching facilities are available in all the possible areas. In addition to the above, many other strategies have been implemented to make the data entering easy.

Since work study timing sheet is online available for every one, now any one can generate the timing sheet for any product at any time without any delay. When a new job has come, relevant job timing sheet can be created by just a button click and minor adjustments can be done very easily. This has reduced lot of paper work, time and money. Efficiency has been increased by facilitating for the paper less environment.

Since the software application has been developed using graphical interfaces, rather than text based interfaces, the system is very much user friendly and users are very much happy to use it.

System was tested for all the functional requirements by talking to relevant users and got their acceptance.

7.7 Summary

Once the software implementation was developed and implemented, the next main activity was to evaluate the implemented software to verify whether the software meets all the requirements identified at the initial stage of finalizing SRS and the provided functionality works properly. Performing the software evaluation was discussed in this chapter.

Final conclusion, limitations of the given solution and further enhancement that may be implemented have been discussed in the final Chapter.