

Chapter – 4

Work Plan and Methodology

Work Plan:

Software quality metrics plays the vital role in the process of assessing software as in qualitative and quantitative terms. Basically, software quality metrics determines specific but some important properties, attributes or characteristics of software in terms of numbers, values or some symbols. This type of assessment should be occurred according the some well-defined measurement rules. Software quality metrics are not only the static measurement state of project but also it will help in assessing the behaviour, size, quality and complexity etc, of software. Evaluation of software quality metrics is used to predict the fault-prone area and components of software in early stage of software development process such as analysis and design as forward engineering as quality indicators. These software quality metrics helps to identify the problem from software in early stages of the reengineering of already developed existing software.

With consideration of importance of software quality to reduce the total cost of development and time to market proposed research work spotlighting on the analysing the object oriented systems in forward or reengineering whatever may be the case for better quality assurance of final product according to users need.

SQA has handled software quality related activities employed throughout the software development life cycle to positively influence and quantify the quality of the delivered software.

- a. Quality of the software can be assured,
- b. Efficiency of review or testing is improved,
- c. Reduction in cost can be done,
- d. SQA in SDLC can be reviewed,
- e. Difference in between business authorities and technical teams can be reduced.

Therefore this activity is not a temporary support, but rather a continuous support for development departments.

Following is the **work plan** for the proposed research in your esteemed University

Sr. No.	Activity Planned	Start Date	End Date	Remarks
1	Determining the Scope and Problem Definition	June 2011	August 2011	Completed
2	Performing Analysis and Determining Software Requirements	September 2011	December 2011	Completed
3	Design	January 2012	April 2012	Completed

4	Development and Implementation	May 2012	December 2012	Completed
5	Testing	January 2013	March 2013	In Progress
6	Report Preparation	April 2013	May 2013	

Methodology:

This section describes the used methodology to develop a environment to analyze the software which is to be developed as well as already developed software system for quality assurance. This methodology consists of automatic conversion of natural language software requirement specification to some specific model via controlled intermediate SBVR format and secondly it analyzes the source code to find out design level metric via converting it to class model, finally this system will produce the alternative design options for further implementation of product which have better quality. Used methodology works in different phases organized in pipelined fashion as below

Determining the Scope and Problem Definition: The scopes of the project as well as its problem definition are defined in this section. These are defined along with the preliminary resources such as software, OS and hardware.

Performing Analysis and Determining Software Requirements: The analysis of the project is conducted which includes need-based analysis. The software requirements are also analyzed and a draft is prepared. The required resources are then secured. In this stage we also develop a plan for the project

Design: Design is a multi-step process, which incorporates many activities. These activities include identifying the operations like developing the functional specifications, developing a prototype, obtaining feedback to the specifications and design of the system as well as database design, etc.

Development: It is a phase in the planning of the project, which includes activities like identifying the various modules and design parameters, developing the code and developing the test case.

Testing: Applying the various testing strategies such as Unit testing and Integration testing we test the software. The test plans are developed to conduct testing. The various test cases are developed and the anomalies are identified. The code is then tested a number of times.

Prepare Report: Project report is produced which contains the user manuals, documentation for the user which is reviewed and the necessary changes are then incorporated.

Deployment and Post Implementation review: This includes activities like deploying the software and creating a software maintenance structure.

Our target will be to **Design and Develop an Environment to Analyze Object-Oriented Software and Quality Assurance:**

Now, here is the need of a framework which will generically be applied on any kind of software project. Here we are planning to implement a new methodology named **Design and develop an environment to analyze object-oriented software and quality assurance**. This methodology will be consisting of various phases which are to be taken into care while each and every step of SDLC. This generic methodology will be such that it would be further enhanced as per the requirements of the Complex Software Projects. This model will be able to reduce and fix the bugs at the phase they are occurred so the probability of generating below quality product is very low. Thus the cost is also reduced as the time of SDLC is reduced. We need to test this model by using some quality assurance evaluation technique proposed earlier.