Software Maintenance:Challenges and Issues

MUHAMMAD IBRAN

M-28

INTRODUCTION

Software Development life cycle has several phases. The process of software development includes Requirements phase, Design, Implementation, Testing, and Maintenance. Maintenance is the last stage of the software development life cycle. The term “software maintenance” is used to understand the software engineering actions that take place during the progress of software. Software maintenance process is very compressed process and usually it comprises more than half of the development process again. Typically, the development of software takes 1 to 2 years, while maintenance phase spans 5 to 10 years.

INTRODUCTION

When a company released a successful project to its client within fixed time, then the actual work of the maintenance begin. Many a time it has been seen that the cost of the maintenance exceeds the development cost of the project. Basically software maintenance phase keeps the software up to date with environment changes, correct the faults and improve the performance of software product after delivery.

MAINTENANCE PROCESS

Software maintenance is one of the major concerns of software development. Good maintenance process is very essential to maintain the quality of software. Several authors have proposed various process models for software maintenance.d. Basically there are seven major phases in maintenance process, which are given as follow

A. Change Management

This is the phase inwhich the user appeal for modification, a customer, a programmer, or a manager is assigned a maintenance category, precedence and an exclusive identifier.

B. Analysis

This phase arrange a base plan for design, execution test, and delivery. The main aim of analysis is to conclude the possibility of the requested change for arrangement and implementation of the change.

MAINTENANCE PROCESS

C. Design

The alteration to the system is actually designed in this phase. This brings about all present system and documentation of projects, database and existing software and output of the analysis phase [8].

D. Implementation

This phase includes the activities of coding and unit testing, assimilation of the customized code, integration and analysis, regression testing, and risk. The phase also includes a test-readiness review to asses' awareness for the system and regression testing.

MAINTENANCE PROCESS

E. Regression

This is the phase in which the complete system is tested to make certain conformity to the new necessities plus the alterations.

F. Acceptance Testing

This level of testing is apprehensive with thefully incorporated system and involves users, customers, or a third party nominated by the customer

G. Delivery

This is the phase in which the customized systems is unrestricted for both operation and installation. It

ISSUES AND CHALLENGES

Most problems that are associated with software maintenance can be traced to deficiencies of the software development process. There are several technical and managerial problems encountered while maintaining software

A. Costs

Various research studies proposed that software maintenance consumes 60% to 80% of cost in whole development life cycle; these surveys also report that maintenance costs are mainly due to enhancements, rather than corrections

B. Impact Analysis

One of the most important challenges in software maintenance is to find out the effects of a proposed modification on the rest of the system. Impact analysis is the action of assessing the probable effects of a change with the plan of reducing sudden side effects.

ISSUES AND CHALLENGES

C. Corrective Changes:

One of the major key issues is corrective changes because it is hard to find the correct place to do the changes. It can be difficult to recognize the code base.

D. Adaptive Changes

Adaptive changes are frequently not easy due to deficiency of information about what the software is being modified to

E. Program Comprehension

Another key issue is program comprehension which involves that extensive amount of time should be expended by maintenance engineers to read and understand the code, the relevant documentation to have a better perspective on its logic, purpose and structure to maintain a part of software and to enhance the quality of software

Thank you for listening!

MUHAMMAD IBRAN

M-28

For Presenration