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Title

ISDLCM: AN IMPROVED SOFTWARE DEVELOPMENT LIFE CYCLE MODEL

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Abstract:

Software development life cycle is the process of developing a software project using some activities. These activities include Requirements gathering, Specification, Designing, Coding, Testing and Maintenance, etc. This paper describes improvements in the software development life cycle models. A new approach for the customers' satisfaction is described. In this approach team will stay with the customer till the support period. When customer demands for maintenance then a lot of time is wasted in tasks such as requesting for maintenance, calling individual from organization, make him understand about request, then their response time etc. So a new approach is required which can decrease the maintenance time of project. The paper describes a new model for software development. This model concentrates towards providing the service online. It means team will stay online with the customer till the support period. Requesting and response time is reduced and customer can feel a good deal with the organization.

Keywords: SDLC, Improvement Model, Maintenance, Deployment, Client-Server.

Introduction:

Software Development Life Cycle (SDLC) provides the way to develop software i.e. the task or activities used to produce a software product. Software process is the task or activities used to produce a software product. A process can generate the other process. It is a set of activities, methods, practices, and transformations that people use to develop and maintain software and its associated products. Each way is known as a Software Development Lifecycle Model (SDLC).A software life cycle model is either a descriptive or prescriptive characterization of how software is or should be developed. Process improvement is another step which improves software process and thus the project. Some improvement models are also there. These are used after the project is developed. But it would be better if development model is improved instead of later steps. So this paper adds a new approach in the basic phases of development cycle. [5, 6, 7, 8]

Previous Work:

There exist a lot of software development models. Some of these are explained as below:

- ***Linear Sequential Model (LSM) or Waterfall Model:*** In a waterfall model, each phase must be completed in its entirety before the next phase can begin. At the end of each phase, a review takes place to determine if the project is on the right path and whether or not to continue or discard the project. Unlike what is mentioned in the general model, phases do not overlap in a waterfall model. [1]
- ***Prototype Model:*** The Prototype model involves the following steps: Identify basic requirements, Develop Initial Prototype, Review, Revise and Enhance the Prototype. [2]
- ***Rapid Application Development Model (RAD):*** RAD is a development lifecycle designed to give much faster development and higher-quality results than those achieved with the traditional lifecycle. RAD model has the following phases**:** Business Modeling, Data Modeling, Process Modeling, Application Generation, Testing and Turn over. [4]
- ***Incremental Model:*** The incremental model is an intuitive approach to the waterfall model. Multiple development cycles take place here, making the life cycle a "multi-waterfall" cycle. Cycles are divided up into smaller, more easily managed iterations. Each iteration passes through requirements, design, implementation & testing phases.[1]
- ***Spiral Model:*** The spiral model is similar to the incremental model, with more emphases placed on risk analysis. The spiral model has four phases: Planning, Risk Analysis, Engineering and Evaluation. A software project repeatedly passes through these phases in iterations. [1,3]

Motivation & Problem Formation:

The existing software development models provide a good way for development of software for the customers. But some discrepancies are there. The main one is in maintenance phase. Maintenance phase requires that the customer has to send the product in the company for maintenance and then some formalities are to be carried out regarding service of the product and after that working on that request starts. But in today's era, nobody have so much time. Customer

needs a quick response. Thus a new solution is required to keep save this time and proposed model is the result of the research. Some more **limitations** can be explained as follow:

- In waterfall model, the working version of the software is available to the customer after testing. Therefore, if there is any major error during the coding then it would reside for long period and will create more and more errors.
- In practical conditions, software projects are seldom sequential. Iteration and overlapping often occur. So Waterfall model is not suitable for such projects.
- In Prototype model, the quality of the software development is compromised in the rush to present a working version of the software to the client.
- In RAD model, application area is restricted to system that is modular and reusable in nature.

Thus these are some limitations of existing development models which motivates us for improvement.

Proposed Model:

The paper describes a new model for software development. The phases of this model are: Gathering Requirements, Analysis, Designing, Coding, Testing, Deploy to client-server and Maintenance.

Explanation: The proposed model includes all the basic steps of software development life cycle in addition to *"deploy to the client-server"* step. A client-server approach is followed. As a problem is faced, immediately customers can complaint through e-mail or direct call to the organization. Team goes through the complaint at the client-server and fixes the problem as soon as possible and deploys the project back to the client-server. Thus customer finds solution within few minutes. Deploy to the client server is a new step or phase for any typical software development life cycle model. The research work describes how to deploy the project to the client-server and thus how the process related to services of the customer is carried out. This model approaches that the team will stay online 24 hour with customer till warranty periods.

Figure1: Proposed Model

Implementation:

Proposed model can be implemented using practical example and following would be the main steps for that:

- Setting up Run Configuration for Projects to be hosted remotely
- Choose Run Configuration.
- Set FTP Connection Settings.
- Upload the Source File on Remote Server.

Example: Following steps clarify the practical example.

a. Firstly client goes to hosting team for purchasing server.

b. After getting FTP Credential(password) , client send username and password to developer.After that developer use this credential to make number of domain .

c. Now developer use FTP for deployed project to server (Making live project).

d. Now information i.e user name, password and port number are filled in the form and finally clik on the connect button and next window is obtained.

e. This main server window shows all the data of the client window. During the support period client can communicate with the team if problems are faced and the request is proceed and is upload in a few time to the client server.

f. Development Phase: Here Developer uses coding structure to improve the project. and after improvements developer deployed this project to client hosting server.

Major achievements:

The following points shows the achievements of this approach:

- ✓ Satisfaction of the customer: Customer can get easy and fast maintenance.
- ✓ Increase market demand: Satisfaction of customer always increase the demands of service in market.
- ✓ Solve the problem within time: Online process solves the problem very fast.

Conclusion:

Deploy to the client server is new approach for software development life cycle model. This paper explains how to deploy the project to the client-server and how the customer is provided services. Team will stay online 24 hour with customer till warranty periods. A typical SDLC model has six phases which show six different activities for software development. The proposed model adds extra phase which does the maintenance work easy and fast which is enough to attract customers.

In the end, it can be said that the proposed model is helpful in customer satisfaction.

Future Scope:

Improvements in software development process models are very useful for the development of quality products for the customer. If systematic approach is applied then target can be achieved within time and without any difficulty. Since this model provides maintenance on basis of online process, so it would be easy to increase market demands on behalf of good maintenance process. Furthermore, a lot of work can be done to make more improvements. As a single step is used to provide fast maintenance, such kind of steps can be put as common platform for the entire team to make queries and their solutions through intranet which can give some additional better results.

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