Home Work on the life cycle of the soft ware Development .

Introduction to SDLC.

SDLC which stands for software development life cycle or some says system development life cycle is a life cycle when an application is conceived through all the way to the end when the application is no longer of use. With saying that includes first initiation of the concept >planning>Feasibility study>Requirement analysis>Functional design>internal design>Document planning>Test planning>coding>document preparation>Integration testing>Maintenance>updates>retesting>Phase out and other aspects included. The system development life cycle provides a sequence of activities for system designer and developers to follow .It consists of a set of stages or phases and each phase uses the result of the previous phase. In other word SDLC is a methodological process for building and developing information system in a very deliberate, easy , structured and methodical way.

2.Phases in SDLC.

1.Planning>Initiation>System concept development> Feasibility study.

2.Anaysis>Requirement analysis.

3.Design>Functional design>Internal design>Development>Document design>Testing design

4.Implementation>Coding and testing>document preparation>Integration testing.

5.Maintenance>updates>Retesting>Phase out>disposition.

SDLC and various Methodology.

The life cycle of soft ware development beginning to the end is a methodological process to end the development in a definite timeframe to save cost and time not to mention in an efficient and effective Process. There are various types of model or methodology is followed to develop a product.

1. Waterfall model:- This is a flow of model .We pass through every phases once but we cannot go back to the previous phase. Since we cannot go back to do any changes in requirement in some of the costly application it’s very difficult to process. Waterfall model is very good for developing projects needed to be carefully reviewed sensitive and step by step and time consuming. It’s a very popular and classic version of SDLC which describes a method linear and sequential. For sensitive information and time consuming projects follow this model to finish product step by step.
2. Agile model:- Agile model is a parallel construction approach model where we can construct an application having an option to pass through every phase with a go back to previous phase to make changes. For the short time frame development to save time and cost it is a popular approach for development. Agile method is a time frame development process of 2-3 weeks known as scrum>sprint. Scrum team consists of 7-9 people. One project manager, 2 software developers, 1 Business analyst, 1 tech, 1 architect and 1 scrum master. Before the development starts project manager starts with a sprint planning meeting followed by everyday stand up meeting to follow up development, issues and move forward.
3. RAD Model:- Rapid development model is a linear and sequential software development where it emphasizes an extremely short development cycle.RAD is an high speed adaption of the linear and sequential in which development can be achieved by using component based construction approach. It has four phases. 1. Business modeling. 2. Data modeling. 3. Process modeling. 4.Application generation. 5. Test and turnover.
4. Prototype Model:- In this model we receive the prototypes of the product before the final release. We release 3-4 sets of prototypes with slight differences in everyone, take to the client modify with client suggestion and release the final. The greatest strength of prototype model is timeframe development and everyone works on the same thing at the same time saving hours. Its disadvantage is that it’s a process built out of concept and most models at its primary stage is not complete. Usually It is lacking in flaws and developers has to work again and again on the same. There are 4 types of prototypes. 1. The patch-up prototype, non-operational prototype, First of a series prototype and finally Selected features prototype.
5. Iterative Model:-It is also a flow of model like agile process that we can go back to the previous phase to make necessary changes in requirement.
6. Spiral model:- Spiral model is a flow of model that is easy to understand from developers to user side and react the risk at every eliminatory level it uses reduction of mechanism. This model is divided into number of frame of works.
7. Role of involvement in various phases.
8. Planning>Initiation:-The first initiation or concept of a development can come through from a particular individual, from a group of people and even from an enterprise.
9. Feasibility study/system concept development>Requirement analysis:- In this phase of stage Business analyst plays a vital role in gathering all the user information , approximate cost of the development and marketing potential. BA in this phase deals with 3 types of requirement 1. User requirement 2.product requirement and software requirement and uses use case to write the requirements and build a test plan for the product from introduction to disposition. But from the requirement phase a project manager/QA lead gets involved in project acquiring and sharing planning process.
10. Design :- A conventional designing starts with a designer with a wireframe design to reflect its connectivity followed by functional and internal design. In this stage development starts for test planning and coding. In This stage QA lead and automation engineers get ready for testing the product.
11. Coding>Implementation- Test automation engineers with test plan in hand or reversed engineering process making a testplan discussing with Lead or software developers gets involved doing the following tests and writing test cases for the test plan or complies test plan.
12. Unit testing, system testing, integration testing, sanity testing functional and non functional testing, regression testing, smoke testing, black box testing, white box testing, end to end testing, user end testing, usability testing, compatibility testing, load testing, stress testing, performance testing, positive and negative testing, alpha and beta testing and boundary testing and get the product ready for deployment
13. Maintenance:- this stage is involved with software developers who does all the updates of the software necessary for the product.
14. What is STLC. Software testing life cycle is a process of testing software in a well planned and organized way. It evolves in a cycle as follows. A. requirement analysis. B. Test planning. C. Test analysis. D. Test design e. Test execution and bug reporting f. Final testing and implementation.
15. Requirement Analysis:- In this phase testers analyze customers requirement and work with developers during the design phase to see which requirements are testable and how it would be done.
16. Test planning:- In this phase all the planning for testing is done, such as what needs to be tested under what environment, how the tests will be done following what methodology, hardware software availability, Risk factors and solution. A high level test plan is prepared for strong and skilled performance in testing.
17. Test analysis:- In this phase automation activities are decided in this phase if a software needed to be done how it will be done, how much time it will take and what features needed to automated.
18. Test Design:- In this phase testers start doing the various sort of testing like smoke black box white box functional integration regression tests and writes test cases of every test automation done following through test plan.
19. Test execution and bug reporting:- once the unit test is done by developers and test team gets the test build the test cases are executed and bugs are reported to bug tracking tool. Once the developer fix the bugs testers do retesting, regression to ensure the product does not hold any defects. Testing is finding and fix process.
20. Final testing and implementation:- In this stage final testing are done, non functional as load stress, performance test are done . The software is also verified in the production kind of environment.
21. What is your involvement in the process of SDLC and from where you are involved in the process:- I am a QA person, I love this territory of building test automation which Is very exciting challenging of being careful attentive and dedication. As a QA person my day starts with writing test plan test cases having meeting with QA/ project manager/ Business analyst / Business managers. As far as different types of testing concerned my job is to perform testing such as smoke, white box, black box, integration , regression, end to end, user end testing, functional non functional testing, user acceptance testing etc. My involvement in SDLC basically starts from the design phase where I have to communicate with the developers to find which requirements are testable how it will be performed and under what methodology. In STLC from requirement analysis through final testing and implementation a testers life in QA environment is evolved . All these are defined above in the STLC process how a Test automation engineer fits.
22. Prepared By:- Aktar chowdhury
23. Student.