**Software Testing Assignment**

**Module–1(Fundamental)**

1. **What is SDLC?**

Software Development Life Cycle

SDLC is process followed for development a software product, that describing how to develop planning, testing, documentation deployment and ongoing maintenance and support.

SDLC Phases:

1. Requirement collection/ Gathering
2. Analysis
3. Design
4. Implementation(Coding)
5. Maintenance
6. **Write SDLC phases with basic introduction?**

SDLC Phases:

1. Requirement collection/ Gathering
2. Analysis
3. Design
4. Implementation(Coding)
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* Requirement Gathering:

Establish customer needs.

Features usage, scenarios

Requirement definition usually consist of natural language, supplement by UML diagrams.

* There are three types of problem:

1. Lack of clarity:

It is Language barrier and hard to write a documents

1. Requirement Confusion:

Functional & Non-Functional requirement tend to be intertwined.

Function Testing: Each Application features works as per software.

Non-Functional Testing: Which is no in my hand.

1. Requirement Amalgamation:

Same day all different requirement are get QA.

* Analysis:

This phases defines the problem that the customer is trying to solve.

This phase is understand the needs and expectation of the client.

* Design:

Design Architecture Document

Implementation plan

Critical Priority Analysis

Performance Analysis

Test Plan

* Implementation(Coding):

The Team should build exactly what has been follow the coding guideline.

* Testing:

Validate the solution against the requirements.

Regression Testing

Internal Testing

Unit Testing

Stress Testing

* Maintenance:

Updated error are solve or not

This phases is which comes after deployment of the software into the field.

Redesigning and refactoring

Updating all analysis, design and document

There are three type of maintenance:

* Corrective maintenance:
  + - Identifying and repairing defects.
* Adaptive maintenance:
  + - Adapting the existing solution of the new platforms.
* Perfective maintenance:
  + - Implementing the new requirement.

**3) What is Software Testing?**

Software Testing is process of identify the correctness, completeness and quality of developed computer software.

Testing Activities:

* + Planning and control
  + Choosing the condition
  + Designing test case
  + Check result
  + Evaluating completion criteria
  + Reporting on the testing process and system under test
  + Finalizing or closure
  + Testing also include reviewing of document

**4) Explain phases of Waterfall model?**

Waterfall model [Classical software cycle]

The Classical software lifecycle models the software development as a step by step “waterfall” between the various development phases.

Requirement collection/ Gathering

Analysis

Design

Implementation (Coding)

Maintenance

When to use model?

Requirement are very well documented, clear and fixed.

Product definition is clear.

Project is short.

Technology understood and is not dynamic.

Pros:

Simple and easy to understand and use.

Clearly defined stages.

Easy to arrange tasks.

Process result are well documented.

Cons:

High amount of risk and uncertainty.

Not a good model for complex and object oriented projects.

Poor model for long & ongoing project.

Cannot accommodate changing requirement.

**5) Write the phase of spiral model?**

The spiral model is used for risk management that combines the iterative development model.

Spiral model was very widely used in the software industry as it is in synch with the natural development process of any project and also involves minimum risk for the customer as well as the development firms.

For medium to high risk project.

Requirement are complex and need evaluation to get clarity.

Phases:

* Planning: Determination of objective, alternatives and constraints
* Risk Analysis: Analysis of alternative and identification / resolutions of risk

Risk is something that will delay project or increases its cost.

* Engineering: Development of the “next level” product.
* Customer Evaluation: Assessment of the results of

Engineering.

**6) What is Agile Methodology?**

Agile SDLC model is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product.

**7) Explain working methodology of agile model also write pros and cons?**

Agile SDLC model is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product.

Agile Methods break the product into small incremental model.

These builds are provided in iterations.

In agile the tasks are divided to time boxes (small frames) to deliver specific features for a release.

The process had started early in the software development and started becoming popular with time due to its flexibility and adaptability.

Pros:

Is a very realistic approach to software development.

Resource requirements are minimum.

Suitable for fixed changing requirement.

Little or no planning required.

Easy to manage.

Gives flexibility to developer

Cons:

Not suitable for handling complex dependencies.

More risk of sustainability, maintainability and extensibility.

Depends heavily on customer interaction, so if customer is not clear, team can be driven in the wrong direction.

There is very high individual dependency, since there is minimum documentation generated.

**8) Write agile manifesto principles?**

1) Individual iteration

2) Working Software

3) Customer collaboration

4) Responding to change

**9) What is SRS?**

A software requirements specification (SRS) is complete description of the behaviour of the system to be developed.

It includes a set of use cases that describe all of the interaction that users will have with the software.

**10) What is oops?**

Identifying objects and assigning responsibilities to these objects .Objects communicates to other objects by sending messages.

**11) Basic concepts of oops?**

Six Types of concepts:

1) Class:

Class is collection of data member (variable) and member function

(Process method) with its behaviours.

2) Object:

Is an instance of class.

To create memory of that class.

To access the properties of a class expects private.

3) Encapsulation:

Wrapping up to of data into single unit.

Private yours data member and member function.

Data hiding at small level.

4) Inheritance:

Properties of parent class extends into child class.

Main purpose is reusability extendibility.

There are mainly 5 types:

1) Single

2) Multilevel

3) Hierarchical

4) Multiple: java does not support directly.

5) Hybrid: java does not support directly.

5) Polymorphism:

Ability to take one name having many forms or different forms.

There are mainly 2 parts

1) Complete time (method overloading)

2) Run time (method overriding)

6) Abstraction:

Only Essential part should be display rest of the part will be hide.

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**12) Draw usecase on Online shopping product using COD.**

**13) Draw usecase on Online Book.**

**14) Draw usecase on Online Shopping Product using payment gateway**

**15) Draw usecase on Online Bill Payment System (paytm).**