**SOFTWARE TESTING ASSIGNMENT**

**MODULE : 1 FUNDAMENTAL**

* **What is SDLC?**
* It is structure imposed on the development of a software product that define the process for planning, implementation, testing, documentation,

Deployement and ongoing maintenance and support.

* **What is software testing?**
* It is a process used to identify the correctness, completeness and quality of developed computer software.
* **What is agile methodology?**
* It is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software.
* **What is SRS?**
* It is a complete description of the behaviour of the system to be developed.
* **Write SDLC phases with basic introduction.**
* SDLC phases are below:

1. Requirement/collection/gathering : may be documented in written form, features, project plan, functional, non-functional and establish customer needs. In this phase three type of problems can arise : 1. Lack of clarity 2. Requirements confusion 3. Requirements amalgamation.
2. Analysis phase : defines the requirements of the system, independent of how these requirements will be accomplished. This phase represent the **HOW** phase. Result at the end of this phase is a requirement document.
3. Design phase : in this phase design architecture document, implementation plan, critical priority analysis, performance analysis and testplan. This phase represent **WHY** phase. Model and specify a solution.
4. Implementation phase : in this phase the team builds the components - documents from design phase and requirement document from analysis phase, the team should build exactly what has been requested. Code implementation, error removal and this phase deals with issues of quality, performance, baseline, debugging. Many established techniques associated with implementation.
5. Testing phase : in this phase a customer satisfied with the software engineering and is the process of enhancing and optimizing deployed software as well as fixing defects. simply in this phase quality level is less important rather then customer’s satisfaction. Validate the solution against the requirement.
6. Maintenance phase : in this, phase which comes after deployment of the software into the field. Configuration, version management, redesigning, refactoring updating all analysis and user documentation. In this types of maintenance 1.corrective maintenance 2.adaptive maintenance 3. Perfective maintenance .

* **Write Phases of spiral model.**
* Spiral model was very widely used in the software industry as it is in sync with the natural development process of any product, learning with maturity and also involves minimum risk for the customer as well as the development firms.

Initial requirement 1. Planning : determination of objectives, alternatives and constraints. 2. Risk analysis : analysis of alternatives and identifications or resolution of risk.(risk=something that will delay project or increase its cost) go-no go decision and first prototype. 3. Engineering: development of the next level product , evolving system . 4. Customer evaluation : assessment of result of engineering. Alpha demo and completion.

* **Write agile manifesto principles.**
* 1. Individual interaction

2. Working software

3. Customer collaboration

4. Responding to change

* **Explain working methodology of agile model and 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. It breaks the product into small incremental builds , these builds provided in iterations and many process are going on. At the end of the iteration a working product is displayed to the customer and important stakeholders.
* **PROS :**
* It is very realistic approach to software development.
* Promote team work and cross training.
* Functionality can be developed rapidly and demonstrated.
* Resource requirements are minimum.
* Suitable for fixed and changing requirements.
* Delivers early partial working solutions.
* Good model for environments that change steadily.
* Minimal rules, documentation easily employed.
* **CONS :**
* More risk of sustainability, maintainability, and extensibility.
* Not suitable for handling complex dependencies.
* An overall plan, an agile leader and agile PM practice is a must without which it will not work.
* Depends heavily on customer interaction, so it customer is not clear, team can be driven in the wrong direction.
* Transfer of technology to new team members may be quite challenging due to lack of documentation use-case.
* **Explain phases of the waterfall model.**

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* **What is object?**
* An object represents an individual, identifiable item, unit or entity, either real or abstract with a well defined role in problem domain.
* **What is OOPS?**
* Identifying objects and assigning responsibilities to these objects.
* **Write basic concepts of oops.**
* Concepts of oops :

1. Object
2. Class
3. Encapsulation
4. Inheritance
5. Polymorphism
6. Abstraction

* **Draw usecase on online book shopping.**

Visits an online book store website.

Searches for specific book or browses categories.

Add selected book to shopping cart.

Proceeds to checkout,enters shipping information and payment method.

Website confirms the order and processes payment.

Book is shipped to the customer.

Receives the book and can rate/review the purchase.

* **Draw usecase on online shopping product using payment gateway.**

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Search for the product online.

Select the product and add to the cart.

Checkout and choose the payment option using a payment gateway.

Enter the shipping details.

Select the payment method(e.g. credit/debit card,net banking,UPI)

Enter payment details and confirm the transaction.

Wait for the delivery and confirm the receipt of the product.

* **Draw usecase on online bill payment system (paytm).**

Logs into Paytm account.

Selects the “Pay Bill” option.

Inputs the bill details (e.g. bill amount, biller name)

Selects the payment method (e.g. wallet,UPI,credit/debit card.)

Confirms payment and receives payment confirmation.

Biller updates payment status and sends a receipt to user via email/SMS.

* **Draw usecase on online shopping product using COD.**

SSSS

Search for the product online.

Select the product and add to the cart.

Checkout and choose the payment option “Cash On Delivery”.

Enter shipping details and confirm the order.

Wait for the delivery and pay in cash to the delivery person.

* **What is class?**
* It is an collection of data member (variables) and member function (process methods) with its behaviors.
* **What is encapsulation?**
* It is the practice of including in an object everything it needs hidden from other objects. The internal state is usually not accessible by other objects.
* **What is inheritance?**
* Inheritance means that one class inherits the characteristics of another class. Main purpose is reusability and extensibility.
* **What is polymorphism?**
* The ability to use an operator or function in different ways in other words giving different meaning or functions to the operators or functions is called polymorphism.

**THANK YOU.**