**FORUMS 20**

1. **Stakeholder Analysis (RACI Matrix)**

Stakeholder are person or group of persons who are directly or indirectly associated with the project. They are as follows

* Business Stakeholder
* Project Stakeholder
* 3rd Party Stakeholder
* Negative Stakeholder

RACI Matrix stands for **Responsible, Accountable, Consulted and Informed** stakeholders for this project.

1. **Four SDLC Methodologies**

Software Development Life Cycle means what process is followed to develop the project. The four methodologies (set of guidelines) are as below:

**Sequential:** The entire project is delivered to client at the end of the project

**Iterative:** The project is divided into modules and the same is delivered to the delivered to client module wise with some frequency.

**Evolutionary:** Initially a dummy of application is delivered to the client and eventually functionalities are developed into the application.

**Agile:** It is continuous deliverable of software’s being developed and delivered to client. The frequency is 2 weeks to 2 months.

1. **Waterfall Model**

Waterfall model is sequential model wherein only after completing one phase we can move to the next phase. This is a top down approach. Phases involved in waterfall model are:

Requirement gathering which involves gathering of requirements from stakeholder and prepare business requirement document (BRD).

Requirement analysis, which involves preparation of functional requirement, functional specifications by BA, non-functional requirements and supplementary support document by technical team.

Technical team does designing

Programmers and developers do coding

Testing to be done by testers

Deployment and Implementation done by release engineers

Waterfall model is simple in terms of clarity, stable in terms of requirement and ideal for small projects.

1. **Agile 4 values**

* Interactions and individuals over process and tools – High priority given to team members
* Working software over comprehensive documentation – No documentation and Working Software is considered as proof of functionality
* Customer collaboration over contract negotiation – High priority given to customer requirements
* Responding to change over following a plan – Change request is highly accepted and implemented.

1. **Gantt Chart**

Gantt chart is tool, which reflects a projects progress in terms of tasks and time frame for the same. Gantt charts are utilised in resource management, project planning, project scheduling, and project tracking, among many other areas.

1. **Fixed Bid and Billing Projects**

Fixed Bid project is the one in which Project Cost and Time Period is agreed upon upfront at the beginning of the project itself and documented in SOW accordingly.

Billing projects (T&M) consists for payment for actual time and material spent on the project.

1. **Business Case Document**

Business Case Document consists of why the project was initiated, what are the current problem, who are the stakeholders associated with this project, what are the resources required and expertise expected from them, what technology would be used in the project and the ROI for this project.

1. **Business Requirement Document**

Business Requirement Documentconsists of business requirement of the client as to what software / application is expected to satisfy their needs. It includes project description, project scope, current state, future state, functional and non-functional requirements.

1. **Functional Requirement Document**

Functional Requirement Documentconsists of requirements needed to achieve the business needs. It emphasizes on functionalities that are required in the application / software that ultimately meets the client requirements. The development team works on these functionalities to take things forward.

1. **Reverse Engineering**

Reverse engineeringalso known as back engineering is the process of extraction of knowledge or design information from existing system and then re-working on the same.

**White box engineering –** we know about the functionality of the system

**Black box engineering –** we don’t know about the functionality of the system

1. **Focus Group**

It means to elicit ideas and opinions about a certain product, service or opportunity in an interactive group session. A focus group typically has 6 to 12 participants. These participants share their impressions, preferences and needs

**Homogenous Focus Group –** Similar background Group

**Heterogeneous Focus Group –** Different background Group

1. **3 Tier Architecture**

3 Tier architecture consists for 3 layers in a database i.e. Application Layer,

Business Logic Layer and Data Layer.

* **Application layer – Client -** is the topmost layer also known as presentation layer / frontend layer, which consists of graphical user interface (GUI) components like screens, home page. Here the user interacts with the system E.g. Homepage of agriculture system application
* **Business Logic layer – Server -** acts an intermediary between application layer and database layer. It handles the applications core processing, business rules and calculations. E.g. Printer, payment gateways.
* **Database layer - Database** is the bottom layer of the architecture responsible for storing and retrieval of data. E.g. Oracle, MySQL.

1. **5W-1H**

5W-1H is the framework for gathering information and understanding a situation by answering questions about

What kind of requirement is there

Who would be the stakeholders

When should this project be completed

Where will the project be completed

Why would we be initiating this project

How can we move from current state to future state

1. **SMART**

SMARTtechnique can help in creating the questions

**Specific –** The project goals and objectives should be specific

**Measurable** – With specific criteria that measure towards accomplishment of the project goal

**Achievable** – Can we achieve this project within the timeline and the budget.

**Relevant** – Is it relatable to exact requirement’s

**Time Bound** – Can we complete the project within the time frame

1. **Activity Diagrams**

An activity diagram shows how the system should function to attain business objectives and goals. It describes an operation of the system. It represents how one activity will flow to the next activity. It is a system perspective diagram.

**Guard Condition:** When the condition is Yes (True) activity flows to next activity.

**Connector:** A connector has multiple inputs and outputs.

**Branch and merge:** It used when we have multiple options (Or Condition).

**Fork and Join:** It used in (and condition), when process run parallelly.

1. **Balsamiq**

Balsamiq is rapid wire framing tool used for create mockups and prototypes for user interface. It is low fidelity(designs with minimum detail), high impact tool.

**Wireframe** is a basic skeletal outline of a design. It focused on the layout and functionality. It is a blue print of screens and pages.

**Mockups** are more detailed visual re-presentation of a design (Colors and Shapes), which gives a realistic impression of the product.

**Prototypes** is an interactive representation of the design where the user interacts with the interface and experience its functionality. It is complete application.

1. **Business Value**

Business Value is not the cost the investment, development or the complexity of achieving. Business Value is the significance of a feature for a business owner. Business value is expressed in terms of currency notes such 500, 200, 100, 50, 20 and 10. The most important feature is allotted the highest currency note. The various features in an application are thus categorized basis the business value amount. Incase Business value is not agreed upon mutually then sum total method is used to freeze on business value.

1. **Complexity Points**

**Complexity Points or Story Points** are prepared by Scrum Developers in terms of poker cards which are in Fibonacci series like 1 2 3 5 8 13. In this with minimum number of cards we can express maximum value. Based on maximum value (E.g.200) complexity points are allotted to various features by each scrum developer. The scrum developers have to mutually agree for the complexity point for each feature.

1. **Product Backlog**

Product Backlog is next the stage when a user stories have an acceptance criteria, business value and complexity points. The product backlog is a high-level repository of all the user stories, features, enhancement and fixes that could be a part of the product. Characteristics of product back log are as below :

**Long-term perspective:** The product backlog represents in terms of long-term perspective representing all potential work for the entire project lifecycle.

**Prioritization:** Items in the product backlog are prioritized based on their business value, complexity points, market demand using techniques like **MoSCoW** and **MVP – Minimal Viable Product.**

**Constant evolution:** Product backlog continuously changes as new requirements emerge.

1. **Velocity**

Velocity is the amount of work completed by the team in a sprint. It is measured by the sum total of complexity points completed during a sprint. It is a KPI for the team to understand the progress of their project. Examples of velocity are as below:

* **Variable Velocity** – The team’s velocity fluctuates from sprint to sprint due to circumstances such as scope creep, team change or external disruptions.
* **Decreasing Velocity** – The velocity declines from sprint to sprint due to resource constraints or technical challenges
* **Increasing Velocity** – The velocity increases from sprint to sprint due to process improvement or more expertise in the project.