**Day 2: 14-10-2025: SDLC**

SDLC: Software development life cycle

It is a process used by software developer and team to design, develop, test and deploy high quality software or application in a systematic way.

SDLC phase

1. Requirement gathering and analysis: understand what the client needs.
2. Planning : create the project plan, schedule, language, resource etc
3. Design : create the system and software architecture using UI/UX
4. Development (implementation using language) :coding using language like java, Python, etc
5. Testing : test the software unit testing, integration testing, e2e testing
   1. STLC
6. Deploy the application on server or run time environment: run the application on actual sever, ec2(aws),
7. Maintenance: fix bugs update features

SDLC Models

1. Water fall model : linear and sequentially follow all the phase one by one.
2. V model
3. Increment model
4. Spiral model
5. Agile model:

Etc

**Agile model:** Agile is a modern SDLC approach. In Agile the break enterprise level project into small, management unit called iteration or sprint.

**Agile principle**

1. Individual and interaction 🡪processes and tools.
2. Working software or application -🡪 documentation
3. Customer collaboration -🡪 contract negotiation
4. Responding the changes base upon client requirement 🡪 following a plan

**Role in agile**

1. PO (Product Owner)
   1. Represent the customer
   2. Maintain the Product backlog (list of features need in a project).
2. SM (Scrum master)
   1. Maintain the scrum team
   2. Ensure all team member follow agile principle
3. ST (scrum team member)
   1. Cross functionality group of people, developer, tester, manager, architecture etc.

**Agile workflow**

1. Product backlog creation (features of the project or application).
   1. All features required for the project and bugs are written using user stories.
   2. Set the priority for the user stories or features for the projects.
2. Spring planning:
   1. Spring generally 1 to 4 week.
   2. Strum team member select the high priority features to complete first etc.
   3. A clear spring goal to set.
3. Spring (spring execution or iteration)
   1. Scrum team developer and tester the product or small module to complete with that sprint.
   2. Every day we do daily scrum meeting / standup meeting (10 to 15 min).
      1. What did you yesterday
      2. What is the current status
      3. What is today plan
4. Spring review
   1. Team demos the completed work to stakeholder
   2. Feedback is gathered and added new or any change base upon client requirement as a backlog in next spring with priority.

Agile concept implementation tools

1. Jira
2. Trello (Kanban style)
3. Slack
4. Micro soft team

Agile framework

1. Scrum
2. Kanban
3. XP (Extreme programming)
4. SAFe (Scaled Agile Framework)