**Software Development Life cycle**

**What is SDLC?**

The software development life cycle is a process that helps developers to build high quality software and less time effort. The SDLC can minimize project risks.

**SDLC benefits:**

1-plnning and scheduling

2-cost estimation

3- better customer satisfaction

4-improved risk management

**SDLC phases**

**1-Plan**

The planning phases where collect requirements, scheduling, resource management, cost benefit analysis, create software requirement documents.

**Inputs of plan:**

A-The project objectives: what problem software want to solve

B- Custmer requirements

C- Market needs: gaps in market, trends

D-Timeline: when the project starts and when project ends

**Output of plan:**

A-The project scope: clear understanding about problem and how to solve it

B-Features of software

C- fix deadlines and time to make features

**2-Design**

The design phase is to make detailed blueprints for developer can use to build software. That includes wireframes, prototypes, store bored, database design.

**Input design**

A-Requirements documented: function software and non-function of software

B-Customer needs: color, font, image , vides

C- Data flow

**Output design**

A-UI/UX design: prototypes, wireframes, mockups

B- Design of database: flow data in system, tables design

**3- Implement**

The implementation is converting the design to codes lines

**Input implement**

A- UI/UX design: prototypes, wireframes, mockups

B- Design of database: flow data in system, tables design

**Output implement**

A-Working software application

**4 Testing**

The testing phase is ensuring that software apps work as required

**Input testing**

A- source code

**Output testing**

A-status of testing: pass or fail

**5-Deploy**

The deploy phase is to make software available end users

**Input deploys**

A-tested source code

**Output**

A-Final build: project that users use

**6-Maintain**

The maintain phase is fixing bugs and add new features. Manage software changes

**Input maintains**

A-Add new features

B-system error

**Output maintains**

A- Fix bugs

B- release new features

Responsibilities and Roles of SDLC phase

**1-Plan**

A-project owner: defining project requirements

**Tools**: Jira, Trello

B-project manager: defining project timeline, resources

**Tools**: MS project, Gantt chart

C- business analysts convert business needs to technical features

**Tools**: azure DevOps

**2-Design**

A-System Architect: create high level blueprint

**Tools:** AWS

B-UX/UI designer: design user experience and user interface

**Tools:** Figma, Sketch Adobe XD

**3-Development**

A-Front end development: development of the graphical user interface

**Tools**: Angular

B-back end development: work on server side software

**Tools**:DoNET

**4-Testing**

A-Tester: review customer needs

Tools: OWASP

**5-Deployment**

A-Date Administrator: responsible for overseeing the organization storage security

Tool: SSMS

B-DevOps: oversee code releases

Tool: Jenkins

**6-Maintenance**

A-Support managers: ensuing that client needs are met

**Tools**: Zendesk

<https://aws.amazon.com/what-is/sdlc/>

<https://teachingagile.com/sdlc/design>

<https://www.umb.edu/it/about/project-management-office/methodology/project-roles-responsibilities/#:~:text=The%20project%20owner%20bears%20the,partnership%20with%20the%20project%20sponsor>.