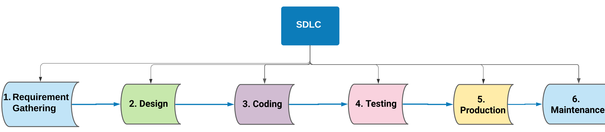
Software Development Life Cycle (SDLC)

Interview Question:

What is SDLC?

- SDLC stands for **Software Development Life Cycle**
- SDLC refers global **standardized steps** to **develop**/build high-quality **softwares**
- SDLC **includes 6 steps** / phases
- SDLC offers steps to plan, design, develop and test high quality softwares



Step 1: **Requirement** Gathering & Analysis

Goal: 1. Business team **collects** the detail **requirements**

- Requirements may from **different resources**

2. **Analyze** the requirements **& Plan** how to develop the app
   - The team analyzes economic, law regulation, technology, and schedule; this is called a feasibility study.
3. **Document** all the **funcrional** and **non-functional** reqreuiments

There are several types of documents are prepared :

- Software Requirement Specification (**SRS**)

Click here to view a sample SRS doc

- Market requirement (MR), Functoinal requirment(FR), Non-functional requirements(NFR), etc

Who: *Business team members - Project managers, Product Owner, Business Analyst the Client, stakeholders, End users, Domain experts, Subject Maner Expert (SME)*

Different sources of requirement:
Customers / Stakeholders
Business partners
Domain experts
End-Users
SME

Requirement : Description of features and functionalities of the target software. Expectation of the customer.

Requirements should be SMART:

***S**pecific*
***M**easurable*
***A**ttainable*
***R**ealistic*
***T**estable*

Specific Requirement

Not specific requirement : I want all users can see all the foods.

After improve: I want managers, chefs and waiters are able to see the foods menu in the top right corner of the homepage.

Measurable Requirement

Not measurable requirement : The application shall function quickly.

After improve: The application shall have response times of 4 seconds or less of every functionalities.

Attainable Requirement

Not attainable requirement : The users can smell the foods by looking at the menu.

After improve: The costumers of the restaurant shall be able to see the pictures of the all the foods and drinks.

Realistic Requirement

Not realistic requirement : The users get discounts whenever the user want.

After improve: The users shall get 5% discounts if a user purchase more or equal to $100.

Testable Requirement

Not testable requirement : I want application homepage look modern.

After improve: The application's homepage shall be green background, and Menu, Today's special, login modules on the center to the page.

Step 2: Designing

Goal:

Architectures and **designers creates** Design **Documents**
Design the application' UI, Databse, API, etc.

- ***Click here for a sample software Design specification (SDS)***
- ***SDS sample 2***

Who: *Business team (PM, PO, BA), The client/stakeholders, Architechtures/designers, develoeprs*

Design documents may include:

- Outline about the functionality of every module
- Relationship and dependencies between modules
- Database tables size and type
- Addresses all types of dependency issues
- Listing of error messages
- Complete input and outputs for every module

NOTE: There is any interview question relates to design for the automation engineers.

Step 3 : Coding / developing

Goal:

Developers build the software by writing code using the chosen programming language
Codes are divided into small units
Developers review each others' code
Developer lead approves the codes
This is the longest phase of the SDLC process

Who:

Develoerps (FrontEnd dev, BackEnd Dev, Full-stack Dev)

Step 4 : Testing

Goal:

-> Perform software testings based on functional and non-functional requirements
Analyze the requirement and **plan** how to test
Write test case **documents** and prepare test data
Identify bugs & write bug reprots
Test reports are documented

Who:

QA engineers / SDET , performance testers, security engineers, the client, end-users

Step 5 : Deployment / Production / Release

Goal:

Moving the develoeped **software to the production** environement so that the users can access to the software.

- Developers, testers, business team members are all together release the app
- Codes / new features are deployed to production
- The software will be practical used by end users

Who:

Everyone who is involved to develop the app. Business team, Development team, DevOps team, The client sometimes.

Step 6 : Maintenance

Goal:

- **Bug fix** : There maybe some bugs occurs in production that missed in testing step
- **Project support** with the help of developers, Dev-ops engineers and business team
- **Update** and improve the software by **adding new features**

Adding new features means:
New Requirements gathered
Design
Code
Test
Deploy