Top 50 SDLC Interview Questions and Answers (2023)

1. Describe the SDLC process.

The Software Development Life Cycle (SDLC) process, a combination of different steps or phases delivers a framework for creating and managing software or applications. SDLC process is considered a conceptual model that helps to improve the quality of software or applications.

2. What are the needs for using SDLC?

SDLC process provides a framework that helps to manage a planned and controlled development aspect. In other words, this framework offers a high level of control of the development process to get the desired solution (i.e. consistent with the user's requirements).

3. How many phases are there in the SDLC process?

SDLC process is involved to develop software in a systematic way. So, the SDLC process has a total of 6 phases including –

1. Planning or Requirement Gathering
2. System Design
3. Development
4. Coding
5. Testing and
6. Maintenance

4. Mention some different types of important models used in SDLC.

- Waterfall Model
- Spiral Model
- Iterative Model
- Agile Model
- V- Model

5. What is the purpose of the planning stage?

In this stage, developers concentrate on the basic requirements of software development and build a plan according to the user's requirements to achieve the desired goals. The possible risks such as unexpected outcomes, cost-benefit analysis, and scheduling of the project are also discussed in this initial stage.

6. What do you mean by SRS?

SRS stands for Software Requirement Specification. It is a document produced at the time of the planning stage. It is also considered a step of selecting desired requirements and documenting them. SRS acts as an agreement between the development team and clients.

7. What is the importance of a feasibility study?

The feasibility study is involved assessing how practical and beneficial software development will be for a company. A software analyst performs a complete analysis to understand the economic, technical, and operational feasibility of a project.

8. Provide a basic difference between CRS and SRS.

CRS (Customer Requirement Specification)	SRS (Software Requirement Specification)
CRS is a brief document that consists of several duplicates, and missing information prepared by the business analyst.	SRS is the blueprint and is considered a final document th organized and understandable for test engineers.

9. What is the purpose of the design phase?

In this phase, the previously made SRS is used to change into a logical structure that needs to be implemented following a particular programming language. Designing a system helps to specify hardware and system requirements in terms of system architecture. As the output of this phase, a design document will come out in order to act as input for further process.

10. What is the purpose of the coding phase?

In this phase, the designed document that is made in the design phase will be converted into an executable programing language. As output, source code is considered and this source code will work as input in the next phase i.e. testing.

11. Why do we need testing in the SDLC process?

The testing phase is very important to check whether the developed code is matching with the design document. This stage ensures that the developed product meets the desired requirements of customers. This time, different types of tests are done including unit testing, acceptance testing, system testing, etc. The software testing team makes a collaboration with developers to identify and resolve software bugs.

12. Which SDLC model is considered top #1?

There is no best SDLC model present, as these models are considered based on the requirements of the development process. Different models follow unique features for developing software. Hence, selecting an SDLC model varies

software-to-software. However, in these recent years, the agile model is popular and adopted by several software organizations.

13. Explain the agile model in brief.

The agile model is very effective to use as it follows a realistic and quick approach to provide software with some functional requirements within 15 to 20 days. The model works on iterative and incremental development. In each sprint, requirement, design, development, and testing stages are performed. In this process, testers and developers work together as a cross-functional team. The advantage is - this model performs constant changes based on customers' feedback.

Limitations:

1. It has a lack of empathy for the necessary design and documentation.
2. It can be difficult to maintain a long cross-functional team.

14. Explain the waterfall model in brief.

The waterfall model (or) Classic Life Cycle Model (or) Linear Sequential Model is the 1st introduced model used in the SDLC process. In this model, each stage must be completed before starting another stage. It is very easy to understand and effectively use for small projects having no uncertain requirements.

Limitations:

1. The waterfall model is not effective for complex projects where requirements are not clear.
2. It is time-consuming as it needs enough time to complete every stage.

15. Explain the V-model in brief.

V-model stands for verification and validation of software. It is an advanced version of the waterfall model. In this model, testers and developers work together at a time. This model is responsible to establish a relationship between each phase of SDLC and its associated phase of testing.

Limitations:

1. This model is very rigid and less flexible.
2. No early prototype for the software is made as the software is developed in the implementation phase.

16. Briefly explain the iterative model in SDLC.

In iterative modeling, development starts with specifying and implementing different parts of the software, which can be reviewed further to recognize requirements. This process will repeat and make a new version of the software for each sprint of the model. It is easy to understand and use.

Limitations:

1. High-skilled resources are needed for skill analysis.
2. This model is not useful for small projects.

17. Explain the spiral model in brief.

The spiral model is just like the iterative model but incorporates risk analysis. It consists of 4 different phases including planning, risk analysis, engineering, and evaluation. In each development, the software will pass through these four phases in iterations (also called spiral). This model is a combination of prototyping and waterfall models.

Limitations:

1. This model is not suitable for low-risk analyzed projects.
2. It is difficult to define aims and variable milestones.

18. What are the different types of prototype models?

1. The Patch-Up Prototype
2. Nonoperational Prototype
3. First-of-a-Series Prototype
4. Selected Features Prototype

19. Explain scrum methodology in agile software development.

Scrum methodology is an iterative and incremental methodology. This is considered as one of the best methodologies because empirical process control is introduced in this process. Scrum is not only for software project management but also for software maintenance. In other words, scrum deals with the real-world progress of a project that is used for making plans and scheduling.

20. What does it mean by BRS in SDLC?

BRS stands for Business Requirement Specification. Clients deliver specification to the software development company and then the SDLC planning team convert these specifications into SRS as per the need of the software.

21. What does STLC stand for?

STLC stands for Software Testing Life Cycle. Software testing is a systematic approach and has five phases:

1. Test Planning
2. Test Design
3. Test Execution
4. Evaluating the Exit criteria

5. Test Closure

22. Give 2 differences between SDLC and STLC.

SDLC (Software Development Life Cycle)	STLC (Software Testing Life Cycle)
SDLC consists of the verification and validation of a project.	STLC involves only validation.
SDLC has BRS, analysis, design, SRS, development process, testing, and maintenance.	STLC is a part of SDLC. It consists of a test plan, execution, bug rep tracking, regression testing, and closure.

23. What are LLDs and HLDs in Software Development?

LLDs stand for Low-level Designs. It considers a descriptive design plan that takes part in the development process.

HLDs stand for High-level Designs. It is present from the start of the development process. HLDs are given by architects.

24. What does it mean by the ‘scope’ of a project?

The project's scope consists of the goals, objectives, and expected outcomes of a project. Software scope is involved in defining boundaries that include all the processes which are used to develop and deliver the product. 'Scope' helps to recognize what the system will do and what it will not do.

25. In which phase, the performing ability of a newly developed system is monitored?

A recently developed system is continuously monitored during the evaluation and maintenance phase.

26. Explain the Big-bang model in SDLC briefly.

This model is a high-risk model as it does not have any specific process. As the customers are not sure about their needs and requirements, the project may go into the wrong way and may need to restart.

27. What does it mean by a computer-based information system?

A system in which a computer is performing some procedures.

28. Who are involved in different phases of SDLC?

The people involved in different phases of SDLC depends on the framework of the company. Here are some professionals who involved:

1. Business analyst

2. Senior Developers
3. System Architect in Design Phase
4. Developers in the Coding phase.
5. Testers in Testing Phase.
6. Project Manager and Maintenance Team

29. Sometimes SDLC project early terminates. In which phase this can happen?

Infeasibility study phase.

30. Represent different maturity levels in CMM.

Here is the different maturity level –

- Initial
- Managed
- Defined
- Quantitatively Managed
- Optimizing

31. Mention the deployment phase in Software Development.

In the deployment phase, the newly developed software system is delivered for consumer needs.

32. Explain the RAD model in Software Development.

RAD stands for Rapid Application Development. It delivers a method for developing high-quality software products fast with following these steps:

- Early prototyping,
- Re-using of software components.
- Following a rigid scheduling
- Having good communication in the team.

33. In which type of feasibility cost, savings, and additional profits will exceed the investment requirement?

In economic feasibility, cost savings and additional profits will exceed the investment requirement.

34. What is the importance of software maintenance?

The maintenance team consists of developers, testers, and project managers involved in modifying or updating and fixing bugs to improve the performance of newly delivered software.

35. What are the stages of the software maintenance phase in SDLC?

Different types of software maintenance present, such as:

- Adaptive – This type deals with changes in hardware as well as software environments where the software is deployed.
- Preventive – Taking major steps to prevent future risks.
- Corrective – Fixing bugs reported by customers.
- Perfective – Adding new features according to customers' needs.

36. What are the advantages of using the SDLC model?

1. SDLC model delivers maximum management control through the life cycle of a software product development.
2. This approach helps to develop intermediate products and can change the product according to user-defined standards and needs.

37. What are the disadvantages of using the SDLC model?

1. The making of documentation is time-consuming and expensive.
2. Sometimes, Users unable to evaluate and review the intermediate products (just like data flow diagram) according to their requirements.

38. What is the importance of requirement gathering in SDLC?

Requirement gathering is the initial stage of SDLC. Because in this stage, the project team starts to understand the needs of customers for the project. During this stage, the project team meets with its customers to outline each requirement in detail.

39. What is the baseline?

The baseline is a virtual line that denotes the completion of each phase. When all activities associated with a particular phase are accomplished, a baseline will start working for the next phase.

40. What are the ways to gather information?

Requirements can be gathered from customers or users through surveys, domain analysis, task analysis, simple interviews, prototyping, studying different versions of software, etc.

41. What are the benefits of using the waterfall model?

Here are some benefits of using the waterfall model –

- As the model is rigid, it can be easily managed.

- Each phase of this model consists of particular deliverables and review processes.
- It is considered as a very effective approach for small projects.

42. Explain the software release process in brief.

In the software release process, the project manager makes a release team consisting of developers, testers, project management executives. This team goes to customers' places and deploys software products. They also deliver some training to customers regarding the functioning of software if required.

43. What are the basic advantages of the V- model in SDLC?

Here are some advantages of the V-model:

- Simple and easy to handle.
- It is effective for small projects where users' specifications are easily understood.
- It has a high chance of achieving success over the waterfall model.
- Each phase has specific deliverables.

44. What is the importance of using the RAD model?

RAD model (Rapid Application Development) can reduce the development time in order to increase the speed of the development process. As all functions are modularized here, it is easy to handle. It encourages customer feedback and helps to solve several integration issues.

45. Give 2 differences between SRS and BRS.

SRS (Software Requirements Specification)	BRS (Business requirements specification)
It is an agreement between the developer and the customer.	BRS is a specification that Clients give to a software development o
It has two subdocuments- 1. System Requirements Specification 2. Functional Requirements Specification	It consists of descriptions of – 1. Products, 2. Systems, 3. Software, and 4. Processes

46. What is the advantage of the spiral model?

1. A high amount of risk can be analyzed.
2. It is effective for critical projects.
3. It has strong approval and documentation control.

47. What are the advantages of using the Prototype model?

1. Errors can be detected earlier.
2. The quick feedback from the user side available for leading a better solution.

48. What is CMM?

CMM stands for Capability Maturity Model. It is a benchmark to measure the maturity of the process of an organization. It is used to develop and refine the software development process.

49. What are the key aspects of the software maintenance process?

This process includes modification, corrective changes, Enhancements, Adaption of new technologies, and retiring old systems, and develop new ones.

50. What is meant by the Incremental model?

Incremental Model is a process of software development where the requirement is divided into various builds. Each iteration or build passes through the requirements, design, implementation, and testing phases