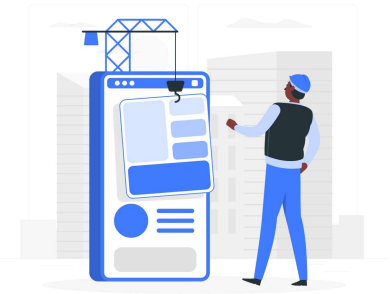
Software Engineering Interview Questions

Top 30 Software Engineering Interview Questions

Find the most commonly asked software engineering interview questions on this page.
We have included top 50 Software Engineering Interview Questions with Answers.

Page Highlights:



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Introduction to Software Engineering

Software Engineering is a diversion of engineering focusing on developing software. Companies like TCS, Wipro often ask Software Engineering questions in their technical interviews. In this page we have collected the most common software engineering interview questions with answers.

Top 30 Software Engineering Interview Questions

What is Software Engineering?

Software Engineering refers to the practice of developing software and software products using scientific principles and procedures, which results in a good quality product.

What is SDLC OR Software Development Life Cycle?

SDLC or Software Development Life Cycle as the name suggest s is the life cycle representing the process of building software. SDLC models include all the phases of software development.

What are the different types of models available in SDLC?

Different types of SDLC models include:-

1. Waterfall Model
2. Iterative Waterfall Model
3. Agile Model
4. Spiral Model
5. Prototype Model
6. V model
7. RAD model

What do you mean by a process?

An executing program is known as a process. There are two types of processes:

- Operating System Processes
- User Processes

What are the different states of a process?

Different states of the process include:-

- New Process
- Running Process
- Waiting Process
- Ready Process
- Terminated Process

What is software project management?

Software project management is the process of managing all activities like time, cost, and quality management involved in software development.

Explain the term Baseline.

A baseline is a milestone on the project which is usually defined by the project manager. Baselines are used to track the progress of the project from time to time to assess the overall health of the project.

What are the responsibilities of a Software Project Manager?

A Software Project Manager is responsible for driving the project towards successful completion. It is the responsibility of the Software Project Manager to make sure the entire team follows a systematic and well-defined approach towards the development of software. A software project manager is also responsible for the following tasks:

- Project planning
- Project status tracking
- Resource management
- Risk management
- Project delivery within time and budget.

What is Software Configuration Management?

During the Software Development Life Cycle, Software Configuration Management is a method for routinely managing, organizing, and controlling modifications in manuals, protocols, and other organizations. In information engineering, the SCM process is abbreviated as SCM. The main aim is to improve productivity by making as few errors as possible.

What is the difference between Quality Assurance and Quality Control?

Quality Control	Quality Assurance
The process of ensuring that the quality of product is maintained in the long run.	Ensuring that the delivered software has the least amount of defects as possible.
It is done by a support team responsible for quality of the product even if the product is under maintenance phase	It is done by testing team of the project

What is the difference between Verification and Validation?

Verification	Validation
Process of ensuring that the product is bult right, from process and standards perspective.	The process of ensuring that we build the right product from a customer perspective
It is a static testing methodology wherein the product is tested without executing the code	It is a dynamic testing methodology

How can you gather requirements?

Interviews, polling, mission analysis, brainstorming, domain analysis, prototyping, studying current available versions of applications, and observation will all be used to collect requirements from consumers.

What is the SDLC model that you have used in your previous project?

The answer to this question varies with the candidates. If you have done a project based on Waterfall model the interviewer wil question you on waterfall model, or if you have done agile they will question you on agile terms.

What is a software metric?

Software Metrics provide measures for various aspects of software processes and software products. They are divided into –

- Requirement metrics: Length requirements, completeness
- Product metrics: Lines of Code, Object-oriented metrics, design, and test metrics
  Process metrics: Evaluate and track budget, schedule, human resources.

Briefly define top-down and bottom-up design model.

Top-Down Approach:-

- A top-down approach is also known as a step-wise design approach.
- A top-down strategy literally means breaking down a component into sub-components/sub-parts, which is referred to as “decomposition.”
- The top-down approach involves checking the information framework from top to bottom, following the control flow and architectural form.

Bottom-Up Approach:-

- This approach is also known as “inductive reasoning” and the term refers to the synthesis.
- Bottom-Up Approach is an approach to integration testing in which lower-level modules are evaluated first, followed by higher-level modules, and then upper-level modules.
- Drivers are used in this testing to validate the app, which is a temporary module for integration testing.

What are the various phases of SDLC?

The generic phases of SDLC are:

- Requirement Gathering
- System Analysis
- Design
- Coding
- Testing
- Implementation.

The phases depend upon the model we choose to develop software.

Which SDLC model is the best?

SDLC Models are adopted as per the requirements of the development process. It may very software-to-software to ensuring which model is suitable.

We can select the best SDLC model if the following questions are satisfied –

- Is SDLC suitable for selected technology to implement the software?
- Is SDLC appropriate for the client's requirements and priorities?
- Is the SDLC model suitable for the size and complexity of the software?
- Is the SDLC model suitable for the type of projects and engineering we do?
- Is the SDLC appropriate for the geographically co-located or dispersed developers?

What is software scope?

The scope of a software project is a well-defined boundary that includes all of the tasks involved in developing and delivering a software product.
Both functionalities and objects to be provided as part of the program are well described in the software scope.

The scope defines what the product can and will not do, as well as what the final product will and will not contain.

What is project estimation?

It is a process to estimate various aspects of the software products in order to calculate the cost of development in terms of efforts, time, and resources. This estimation can be derived from past experience, by consulting experts, or by using pre-defined formulas.

How to find the size of a software product?

Two techniques can be used to measure the scale of a software product. They are :

- Counting the lines of code that have been received
- Counting the number of feature points that have been received

What is an agile model?

In an agile project the tasks are divided into smaller iterations or segments. In agile the software product is broken down into incremental modules and each module is completed to finish the project. Each iteration contains planning, designing, coding, testing and maintenance of the software.

What is the advantage of iterative waterfall models over waterfall models?

In an iterative waterfall model a feedback loop to the previous phase is provided for the customer such that it is easy to make any changes in the previous phase if necessary. This is not allowed in the waterfall model.

Name some of the project management tools.

Project management tools include Gnatt charts, Network Diagrams, Status Report.

What is feasibility study?

Feasibility study is done to see how much a project will profit the organization. It includes the total budget of the project, whether the project is practical or not and whether the final product will be in demand or not. Based on all this information the feasibility study is done and a report is prepared.

What are the disadvantages of the Spiral Model in SDLC?

Disadvantages of Spiral Model in SDLC include:-

- It is not good for small projects
- It is a complicated model difficult to understand especially for any new team member
- It has no defined end points, thus causing the process to take more time than required.

What is software prototyping?

Software Prototyping is the process of creating a prototype of the software product, to evaluate customer satisfaction. In the prototyping process the software is built and tested to evaluate the customer reviews and satisfaction. The advantage of this method is that it helps make changes based on the customer reviews.

What is RAD model?

RAD model or rapid application software development model is based on the iterative and prototype model. In RAD the project is broken down into small segments or modules and when all the modules are completed, they are integrated to make a final software product. There are 4 phases:-

- requirement analysis
- customer evaluation
- construction
- cut-over

What is alpha and beta testing?

Alpha Testing:- It is used to find the defects/bugs in software applications before delivering the product to the customers or public. There are two phases:-

- First phase:- where testing is done by developers to identify defects
- Second phase:- where testing is done by quality assurance team to ensure that the product works properly

Beta Testing:- It is performed after the alpha testing, and is done at the client or users end. Also known as Field Testing or Pre Release Testing, it is done to check the quality of the software product and to ensure that the product is ready to use for real time users or the public

What are the various approaches used in software engineering?

There are numerous approaches used in SDLC, the most common amongst them being:-

- Top Down Approach
- BottomUp Approach
- Big Bang Approach
- Hybrid Approach

What is Hybrid Approach in software testing?

Hybrid Approach in software testing as the name suggest is a combination of top down approach and bottom up approach. It is also known as Sandwich integration testing or Mixed Integration testing

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FAQs on Software Engineering Interview Questions

Question: What is the basic of software engineering?

Answer:-

Software Engineering include analysis, development, integration and testing of software.
