Software Testing Introduction

Interview Question & answers in this article:

Q) What is software testing?

Software testing is a **process** to try to **ensure** software **quality by finding bugs**. Software testing is performed to check if the software meets the client's requirements. Testing **measures** a **software's** overall **quality** in its correctness, completeness, performance, and other functional and non-functional attributes.

In short, software testing is done to verify if the software meets the customer's requirements, if it has high quality, if it is bug-free and fit for use.

Q) What to test in software testing?

In software testing, not just the app itself being tested. All the outputs of each SDLC phase are tested.

- **Documents** are tested in the early steps of SDLC to prevent bugs.
- **Codes** that developers created to build the app
- The **software**/system **itself** from a functional and non-functional perspective.

Q) Who performs testing?

Each step of SDLC requires performing testings, and different people are responsible. Testing is/can be done by all technical and non-technical people associated with the project. People who perform testings are:

1. **Business team members & Designers**: **Test** SRS, SDS and many other business **docs** called static testing.
2. **Developers**: Developers **test** their **codes** by performing **Unit** & **Integration testings** to ensure that the individual unit of the software work correctly.
3. **Testers:** Testers verify if developers developed the app as business required - it is called **System testing**. System testing is divided into two parts: **functional** & **non-functional testing**. Functional testers test the application's functionality; performance testers check the application's non-functional aspects.Testers also prepare various testing documents like test plan doc, test case doc, bug report doc.
4. **The client/stakeholders:** To ensure that the final product meets the requests of the client, its called **UAT**(User Acceptance Testing)- **Beta testing**.
5. **UAT team members:** A group of automation engineers perform the application's **UAT-Alpha testing** to make sure the software can work in the real world.

Q) How is Software Testing Done?

Testing are done **manually** and **automatically**.

Manual testing refers to a manual test process to identify bugs by humans. Application must be tested manually before it is automated.

Manual testing

PROS :

1. Test all kinds of applications manually
2. Handle difficult functionalities
3. No environment limitations
4. Programming Knowledge is not required
5. Accurate UI feedback

CONS:

1. Time-consuming
2. Requires more human resources
3. Not all testing can be done manually - especially performance testing
4. Not repreduciable
5. Testing process is slow

Automated testing is done through an automation tools and is generally more accurate than manual testing. **100% automation is not possible.**

Automation testing

PROS :

1. Cost-effective in the long run
2. reduces the overall test execution time
3. Can be re-used
4. Automated test scripts remove the chance of human error
5. Helps in **working with a large set of data**

CONS:

1. Automation tools has limitation
2. Skilled automation testing experts to write test scripts
3. Additional effort to write scripts is required upfront

Q) Why is software testing required? What is the benifit of software testing? What are the objectivies of testing?

1. Improve Product Quality
2. Save money
3. Improve Security
4. Ensure customer satisfication
5. Effective performance
6. Required in the SDLC