**Software business process:**

**Software development lifecycle :(SDLC) There are 5 phases**

**Initial - business management takes care of project**

**Design, - All kind of leads and manager.**

**Coding - Programmer or developer**

**Testing - Test engineer**

**Release or deploy – Deployment team**

**Testing methodologies:**

**Functional testing:**

Checking the functionality of the web element is called Functional testing

**Regression Testing:**

Testing the important features of the application repeatedly is called **regression Testing.**

**Non- Functional testing:**

Performance testing is called as non functional testing. **Load runner and Jmeter.**

**Types of Testing:**

***What is Unit testing?****It is a test to check the code whether it is properly working or not as per the requirement.****What is Shakeout testing?*** *This test is basically carried out to check the networking facility, database connectivity and the integration of modules. The Configuration Management team, who prepare builds for test environments, normally does this test. They also test whether the major components of the software are not broken. This test is done BEFORE the build is deployed in the test environment. After the shake out testing, the next step is smoke testing (which is done by the testers after the build is deployed in the test environment)*

***What is smoke testing?****This test is done when the build is just prepared (fresh build) and deployed in the test environments. This is basically an ad hoc test to check roughly to make sure the major functionalities are not broken. It is the preliminary a test carried out by the QA tester. After the smoke test, the testers perform functional testing.****What is Functional testing?****It is a test to check whether each and every function of that application is working as per the requirement (remember this work “as per requirement document”-you must say this in the interview). It is a major test where 80% of the tests are done. In this test, the Test Cases are executed (or run).****What is Integration testing?****It is a test to check whether all the modules are combined together or not and working successfully as specified in the requirement document. (Just for your information: Each developer works on different modules. When they finish their code, the configuration management team puts them together and prepares a build. We, as testers, need to make sure that these modules, which are now combined, work as per requirement document)*

***What is Regression testing?****When a new functionality is added to the software, we need to make sure that the added new functionality does not break the other parts of the application. Or when defects (bugs) are fixed, we need to make sure that the bug fix has not broken the other parts of the application. To test this, we perform a repetitive test, which is called regression test.****What is System testing?****When testers complete testing (The testers test the application in the test environments, meaning they test with the test data only, NOT with the real data), the application (software) has to be tested in the real environment. What it means is, since the testers test it in the test environment with the test data, we have to make sure that the application works well in the real environment with the real data. In test environment, some of the things cannot be simulated or tested. Al though the test environment is very similar to the production (real) environment, we need to make sure that we get a smooth delivery in the real system as well (As servers are different and database is different, things may not work as expected when the application is moved from test environment to production environment)****What is Load testing?****It is a test to check the user’s response time for number of users using any one scenario (single business process) of the same application at the same time.****What is Performance testing?****It is a test to check the user’s response time for number of users using multiple scenarios (multiple business process) of the same application at the same time.  
(Did you notice the difference between Load Testing and Performance testing? What is it? See the highlighted bold letters)*

***What is Stress testing?****In this type of testing the application is tested against heavy load such as complex numerical values, large number of inputs, large number of queries etc. which checks for the stress/load the applications can withstand.*

***What is User acceptance testing (UAT)?****In this type of testing, the software is handed over to the user in order to find out if the software meets the user expectations and works as it is expected to. In this testing, the tester may do the testing or the clients may have their own testers (For example, banks may have their own teller employees who can test the application).****What is Black box testing?****It is test where a tester performs testing without looking into the code. (OR it is a testing method where the application under test is viewed as a black box and the internal behavior of the program is completely ignored. Testing occurs based upon the external specifications. Also known as behavioral testing, since only the external behavior of the program is evaluated and analyzed.)*

***What is White box testing?****It is a test where a tester looks into the code and performs the testing.****What is Alpha testing?****In this type of testing, the users are invited at the development center where they use the application and the developers note every particular input or action carried out by the user. Any type of abnormal behavior of the system is noted and rectified by the developers.*

***What is Beta testing?****In this type of testing, the software is distributed as a beta version to the users and users test the application at their sites. As the users explore the software, in case if any exception/defect occurs that is reported to the developers.****19. What is the difference between Load Testing and Performance Testing?*** *Answer: Basically Load, Stress and Performance Testing are the same. However,****Load testing****is the test to check the users’ response time of number of users of any****one scenario****of the application whereas Performance Testing is the test to check the user response time for multiple scenario of the same application.*

**SELENIUM**

1. **To atomize**
2. **It is an open source (Free)**
3. **Used for cross browser testing**
4. **To develop the frame work**

**Need to ask for manager**

**Test strategy**

**Requirement specification docs**

**I just want to understand the project**

**STLC (Software testing life cycle)**

**Five stages of STLC**

1. **Test planning**
2. **Test Design and Test Development**
3. **Test execution**
4. **Result**
5. **Reporting**

**Test case development steps: Positive (all correct details with expected result) and negative Test cases (All wrong details with different result)**

**Test id, test case name, test suite id, Precondition, steps for execution, post condition, expected result, actual result, tested result, remarks.**

**Clarification doc : Details with clarity with all the scenarios .**

**One tire Architecture:**

**Two tire Architecture**

**Three tire Architecture:**

**N tire Architecture:**

**SELENIUM COMMANDS**

**Camel notation :**

**First word small 2nd word 1st letter capitol**

1. **New Java project,**
2. **Right clik - properties -Java build path – libries – Add external jars – Add jars –**

**Commands**

1. **To open an instance**

**webDriver object = new FirefoxDriver();**

1. **To open a URL / To open an application**

**Object.get(“URL”);**

1. **To Close application**

**Object.close();**

1. **To print a message in console.**

**System.out.println(“”)**

**Performance testing with Load runner:**

1. **Introduction to Performance Testing**

Performance testing is a testing conducted to evaluate the compliance of a system or component with specified performance requirements.

1. **Introduction to Load runner**
2. **Load Runner controller:** The controller is a central console from which the load test is managed and monitored.
3. **Business Process:** A user interacting with an application to accomplish a business tasks

(Ex: Sending a email form Gmail is business process)

1. **Action:** A record business process or series of steps that, when played back, emulates a real user performing the same steps.

(Ex: Launching Gmail, Giving Credentials, hitting login button, hitting new compose button, writing email by giving subject and body, Hitting send button, Logout.)

1. **LoadRunner Scenario:** An Environment which describes all the elements to be used and the conditions under which you want to test your system.

(Ex: Creating environment as similar as possible to production environment, this can be done through scripts, run time setting, designing load model, test duration, Ramp up, ramp down)

1. **LoadRunner transactions:** An end-to-end measurement of one or more user actions within an action (Browser-to backend- to browser)

(Ex: Launching Gmail, giving credentials and hitting login button)

1. **Virtual user:** A virtual user is a script of recorded user actions. When played back, the script interacts with a web application just like a real user.
2. **Rendezvous point:** This point makes the faster users wait for the slower users.
3. **Checkpoints:** A checkpoint a step in a Virtual user script which verifies whether a virtual cue appeared as expected.

**Major components of Load runner:**

1. **VUGen:** Records Vuser scripts that emulate the actions of real users.
2. **Controller:** Administrative center for creating, maintaining and executing load test scenarios. Assigns scenarios to Vusers and load generators, starts and stops load tests.
3. **Load Generator:** An agent through which we can generate load
4. **Analysis:** Provides graphs and reports that summarize the system performance.

**Process of Automation Load Testing:**

**Step 1:** System Analysis (Identification of Critical Transactions)

**Virtual User Generator:**

**Step 2:** Creating Virtual User Scripts (Recording)

**Step 3:** Defining Users Behavior (Runtime Setting)

**Load Runner Controller**

**Step 4:** Creating Load test Scenarios

**Step 5:** Running the load test scenarios and monitoring the performance

**Load runner Analysis:**

**Step 6:** Analyzing the result.

Load runner 11.0 Version:

Specification of the tool

License key1 = controller.

Database bundle = 15

Web 2.0 bundle =2500

**3 major tasks in load runner:**

**Create/Edit scripts:**

**Run load tests:**

**Analyze test results:**

1. **Performance test process**