**Java Automation Class Notes**

SDLC

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Analysis - To collect the requirements, prioritize the requirements based on the business impact of each feature, then develop detailed specification documents and share the documents with the

stakeholders. The product owner provides a walkthrough of the document.

Design – The tech stack is finalized (Frontend, backend programming language, database, and framework) which will be used for the project is decided. Pseudo code or Algorithm is developed.

Implementation – Coding for the product/application is done.

Testing - Testing the application/product developed in the build/implementation phase, and fixing the defects if there are any.

Evaluation - Code Runs in Production Environment and Warranty support is provided

STLC

Requirement analysis - Requirements are analyzed and the team will identify the tools and methods for testing.

Test Planning - what are the in-scope & out of scope for the testing is decided like functional & nonfunctional testing scope. High-level test scenarios are prepared and shared with

stakeholders and sign-off will be done. Also, RTM will be performed

Test case development - Detailed test cases are written and test cases will be ready for execution

test environment set up – The testing environment will be set up and test data are kept ready for validation

Test execution - Actual execution takes place and defects are identified and fixed by the end of the phase

test closure -Stakeholders will provide the signoff and the product will be implemented in the next stage/Production environment

Software Testing

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Smoke testing - First testing is done after we receive the code from the developer. Done in the test environment

critical test cases are covered(login page), important features of the product, it is also called build verification testing(BVT), and build acceptance testing(BAT).

Once the Smoke testing is completed and approved then regression testing can be started

Regression testing - in-depth testing (end-to-end testing), testing all the test cases,

to make sure the newly built feature should not affect the existing functionality of the application.

Unit testing - done by developer in a development environment for validating the code, Tools used (Junit, TestNg)

Integration Testing - Interaction between two modules is tested (login page & homepage)

Feature testing - Focusing on only the newly developed features of the application.

System testing - when all the modules are put together and tested it is called system testing (test cases from regression are tested)

Sanity testing - Testing in the production environment. Testing the critical test cases of each feature. Done in evaluation phase

Functional Testing:

Smoke testing – This is the first testing that is performed after we receive the completed build from the developer. This testing is performed in a test environment. All critical test cases are covered (ex. login page) and important feature of the product is tested, it is also called build verification testing (BVT), and build acceptance testing (BAT). Once the Smoke testing is completed and approved then regression testing can be started

Regression testing -This is the in-depth testing (end-to-end testing) in which all the test cases are executed. This testing is performed to make sure the newly built feature should not affect the existing functionality of the application.

Unit testing – This testing is performed by the developer in a development environment to validate the build for a particular module. Tools used (Junit, TestNg)

Integration Testing – This testing is performed in test environment. Interaction between two modules is tested (ex.login page & homepage)

Feature testing – This testing is performed only for the newly developed feature of the application.

System testing - When all the modules are put together and tested it is called system testing. For example, if there are 10 modules for an application, when all the modules are developed, they are put together and testing is performed. Regression test cases are also executed as part of this testing.

Sanity testing – This is the last testing performed in the testing phase. This testing is performed in Production environment. It covers all the critical test cases of each feature. This is performed in the evaluation phase of SDLC.

Non-Functional Testing: Testing the nonfunctional aspects of the application/product

Performance testing -> Load Testing, Stress Testing, Spike Testing, Volume Testing

Performance Testing – To ensure at any point of time the Performance of the application should not be affected (e.g., e-commerce applications - Amazon, Flipkart)

Load Testing – This is a type of Performance testing, here the application is under the defined load for a prolonged period of time.

Stress Testing – This testing is done to identify the breaking point. This is done to find the stability of the application. E.g., If the threshold is 1000 then go beyond 1000 like 2000 or 3000. then identify when the application breaks and how quickly it recovers back to its original state.

Spike Testing – This testing is performed by applying sudden and extreme increase or decrease in load

Volume Testing – This testing is performed for a database or file depending upon the storage for an application. This validates how much huge data can be stored.

STLC Phases

Requirement Analysis:

Requirements will be shared by the product owner and knowledge transfer will be provided for understanding.

Test Planning:

The test plan is prepared during the design phase in SDLC. Identify the high critical & and low critical modules. Then the high-level scenarios are prepared as per the requirements. Initially testing for the application will be manual and in the later stage automation will be implemented. For that what all modules can be automated is decided. The schedule for testing is also planned like how many hours of testing are required.

Test Case Development: Based on the high-level scenarios prepared in the test plan detailed test cases with descriptions, steps, and expected results will be prepared

Test Environment Setup: The environment for testing is set up by the DevOps and development team and smoke testing is performed.

Test Execution: The actual execution of the test cases as per schedule is performed here. Defects are raised and fixes will be provided and closed before test closure.

Test Closure:

When the test execution is completed successfully and all the defects are closed and confirmed by the testing team then the test report is prepared and published to the stakeholders for sign-off. Post the sign the code will be deployed in the next stage environment or production environment as per organization policy.

Difference between Waterfall and Agile Methodologies

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| --- | --- |
| **Waterfall Methodology** | **Agile Methodology** |
| No Flexibility | Much Flexibility |
| Testing happens only at the end | Testing in every iteration |
| Average code quality in development | Code quality will be better |
| Involvement from clients is less | More involvement from client (Product Owner) |

As a manual tester what qualities do you possess? Provide examples to illustrate your points.

Aug 23

Bug life Cycle



Bug: When the expected result and actual result are different. Then the application is not working as per requirement and the defect is raised for the same.

New: When a new defect is raised by the tester the status is marked as “New” in the defect management tool. The tester should provide the test data used for the test case validation and the screenshots for the particular defect.

Assigned: The Triage team then goes through the defect details and assigns the defect to the corresponding developer and marks the status as “Assigned”. Generally, the senior member of the team plays the Triage Role. He assigns the defect based on the severity, priority.

Fixed: When the developer can recreate the scenario and fix the defect then he marks the status of the defect as “Fixed”. The triage team assigns back the defect to tester for the retest.

Retest : The Tester tests the defect

Verified :

Agile & Waterfall Method

Waterfall Method:

Agile Method: