

## Assignment-2

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### 1. What is Exploratory Testing?

**Ans:-** Though the current trend in testing to push of automation, exploratory testing is a new Way of thinking. Automation has its Limits.  
Test design, execution and logging, happen simultaneously.  
Testing is often not recorded.

### 2. What is traceability matrix?

**Ans:-** To protect against changes you should be able to trace back from every system component to the original requirement that caused its presence.  
A Software process should help you keeping the virtual table up-to-date.

### 3. What is Boundary value testing?

**Ans:-** Boundary value analysis is a methodology for designing test cases that concentrates software testing effort on cases near the limits of valid ranges.  
Boundary value analysis is a method which refines equivalence partitioning.

### 4. What is Equivalence partitioning testing?

**Ans:-** Aim is to test group of inputs are equivalent and to select one representative input to test them all.  
EP can be used for all levels of testing.  
If one value finds a bug, the other probably will too.  
If one doesn't find a bug, the others probably won't either.

### 5. What is Integration testing?

**Ans:-** Integration testing- testing performed to expose defects in the interfaces and in the interactions between integrated components or system.  
Integration testing is a level of the software testing process where individual units are combined and tested as a group.

### 6. What determines the level of risk?

**Ans** Project risk

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Product risk

### 7. What is Alpha testing?

**Ans:-** It is always performed by the developers at the software development site.  
Alpha testing is not open to the market and public.  
It is always performed in Virtual Environment.  
It is the form of Acceptance Testing.

### 8. What is beta testing?

**Ans:-** It is always performed by the customers at their own site.  
It is not performed by independent testing team.  
It is performed in Real Time Environment.  
Beta testing can be considered “Pre-Release” testing.  
Beta testing is always performed at the time when software product and project are marketed.

### 9. What is component testing?

**Ans:-** Component (Unit) – A minimal software item that can be tested in isolation. It means “A unit is the smallest testable part of software”.  
Component Testing – The testing of individual software components.  
Unit Testing is a level of the software testing process where individual units/components of a software/system are tested. The purpose is to validate that each unit of the software performs as designed.

### 10. What is functional system testing?

**Ans:-** Functional testing: Testing based on an analysis of the specification of the functionality of a component or system.  
‘Specification’- E.g. Requirements specification, Use Cases, Functional specification or maybe undocumented.  
‘Function’- what the system does

### 11. What is Non-Functional Testing?

**Ans:-** Non-Functional Testing- Testing the attributes of a component or system that do not relate to functionality, e.g.. reliability, efficiency, usability, interoperability,

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maintainability and portability.

### 12. What is GUI Testing?

**Ans:-** Graphical User Interface (GUI) testing is the process of testing the system's GUI of the system under test. GUI testing involves checking the screens with the controls like menus, buttons, icons, and all types of bars- tool bar, menu bar, dialog boxes and windows etc.,

### 13. What is Adhoc Testing?

**Ans:-** Adhoc testing is an informal testing type with an aim to break the system. In fact it does not create test cases altogether. This system testing is primarily performed if the knowledge of the testers in the system under test is very high.

### 14. What is load testing?

**Ans:-** It is a performance testing to check system behavior under load. Testing an application under heavy loads, such as testing of a web site under a range of loads to determine at what point the system response time degrades or fails.

### 15. What is Stress testing?

**Ans:-** System is stressed beyond its specification to check how and when it fails. Performed under heavy load like putting, large number beyond storage capacity, complex database queries, continuous input to system or database load.

### 16. What is White box testing and list the type of white box testing?

**Ans:-** Based on code and design of the system. The tests provide the ability to derive the extent of coverage of the whole application.

Types of White Box Testing:

1. Statement Coverage
2. Branch Coverage
3. Decision Coverage

### 17. What is black box testing? What are the different black box testing techniques?

**Ans:-** Based on requirement. From the requirements tests are created. Specification model can be used for systematic test case design.

Types of Black Box Testing:

1. Equivalence Partitioning
2. Boundary Value Analysis
3. Decision Table
4. State Transition Testing
5. Use Case Testing

### 18. Mention what are the categories of defects?

**Ans:-**

- Data quality/Data base defect
- Critical functionality defect
- Functionality defect
- Security defect
- User interface defect

### 19. Mention what bigbang testing is?

**Ans:-** In Big Bang integration testing all components or modules is integrated simultaneously, after which everything is tested as a whole. Big Bang testing has the advantage that everything is finished before integration testing starts.

### 20. What is the purpose of exit criteria?

**Ans:-** Exit criteria is used to determine whether a given test activity has been completed or Not. Exit criteria can be defined for all of the test activities right from planning, specification and execution. Exit criterion should be part of test plan and decided in the planning stage.

### 21. When should "Regression Testing" be performed?

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**Ans:-**

- A new requirement is added to an existing feature.
- A new feature or functionality is added.
- The codebase is fixed to solve defects.
- The source code is optimized to improve performance.
- Patch fixes are added.
- Changes in configuration.

### **22. What is 7 key principles? Explain in detail?**

**Ans:-**

1. Testing shows presence of Defects
2. Exhaustive Testing is Impossible!
3. Early Testing
4. Defect Clustering
5. The Pesticide Paradox
6. Testing is Context Dependent
7. Absence of Errors Fallacy

1. Testing shows presence of Defects:- Testing reduces the probability of undiscovered defects Remaining in the software but, even if no defects are found, it is not a proof of correctness.
2. Exhaustive Testing is Impossible:- Testing everything including all combinations of inputs and preconditions is not possible.
3. Early Testing:- Testing activities should start as early as possible in the software or system development life cycle, and should be focused on defined objectives.
4. Defect Clustering:- A small number of modules contain most of the defects discovered during pre-release testing, or are responsible for the most operational failures.
5. The Pesticide Paradox:- To overcome this “pesticide paradox”, the test cases need to be regularly reviewed and revised, and new and different tests need to be written to exercise different parts of the software or system to potentially find more defects.
6. Testing is Context Dependent:- Testing is basically context dependent.  
Testing is done differently in different contexts.

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7. Absence of Errors Fallacy:- Even after defects have been resolved it may still be unusable and/or does not fulfill the users' needs and expectations

### 23. Difference between QA v/s QC v/s Tester

Ans:-

Quality Assurance	Quality Control	Tester
Activities which ensure the implementation of processes, procedures and standards in context to verification of developed software and intended requirements.	Activities which ensure the verification of developed software with respect to documented (or not in some cases) requirements.	Activities which ensure the identification of bugs/error/defects in the Software.
Focuses on processes and procedures rather than conducting actual testing on the system.	Focuses on actual testing by executing Software with intend to identify bug/defect through implementation of procedures and process.	Focuses on actual testing.
Process oriented activities.	Product oriented activities.	Product oriented activities.
Preventive activities.	It is a corrective process.	It is a preventive process.
It is a subset of Software Test Life Cycle (STLC).	QC can be considered as the subset of Quality Assurance.	Testing is the subset of Quality Control.

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### 24. Difference between Smoke and Sanity?

Ans:-

<b>Smoke</b>	<b>Sanity</b>
Check the critical functionality.	Checks the new functionality.
It is done initial stage.	It is done after 30 build.
It checks the stability.	It checks the sanity rationality.
Part of acceptance testing.	Parts of regression testing.
General health checkup.	Advance health checkup.
Done by tester and developer.	Done by tester.
It checks the system end to end.	It checks only a particular function of entire system.
20 test cases it should take 30 min to test.	

### 25. Difference between verification and Validation ?

Ans:-

<b>Criteria</b>	<b>Verification</b>	<b>Validation</b>
Definition	The process of evaluating work-products (not the actual final product) of a development phase to determine whether they meet the specified requirements for that phase.	The process of evaluating software during or at the end of the development process to determine whether it satisfies specified business requirements.
Objectives	To ensure that the product is being built according to the requirements and design specifications. In other words, to ensure that work products meet their specified requirements.	To ensure that the product actually meets the user's needs, and that the specifications were correct in the first place. In other words, to demonstrate that the product fulfills its intended use when placed in its intended environment.
Questions	Are we building the product right?	Are we building the right product?
Evaluation Items	Plans, Requirement Specs, Design Specs, Code, Test Cases	The actual product/software.
Activities	· Reviews · Walkthroughs	· Testing

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	Inspections	
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### 26. Explain types of Performance testing.

Ans:-

- Load Testing
- Stress Testing
- Endurance Testing
- Spike Testing
- Volume Testing
- Scalability Testing

### 27. What is Error, Defect, Bug and failure?

Ans:-

1. **Error:-** A discrepancy between a computed, observed, or measured value or condition and the true, specified, or theoretically correct value or condition. This can be a misunderstanding of the internal state of the software, an oversight in terms of memory management, confusion about the proper way to calculate a value, etc.
2. **Defect:-** Commonly refers to several troubles with the software products, with its external behavior or with its internal features.
3. **Bug:-** A fault in a program which causes the program to perform in an unintended or unanticipated manner. See: anomaly, defect, error, exception, and fault. Bug is terminology of Tester.
4. **Failure:-** The inability of a system or component to perform its required functions within specified performance requirements. See: bug, crash, exception, and fault.

### 28. Difference between Priority and Severity

Ans:-

<b>Priority</b>	<b>Severity</b>
Priority is a parameter to decide the order in which defects should be fixed.	Severity is parameter to denote the impact of particular defect on the software.
Priority means how fast defect has to be fixed.	Severity means how severe defect is affecting the functionality.



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Priority is related to scheduling to resolve the problem.	Severity is related to the quality standard.
Product manager decides the priorities of defects.	Testing engineer decides the severity level of the defect.
Its value is subjective.	Its value is objective.
Its value changes from time to time.	Its value doesn't change from time to time.
Priority is of 3 types: 1. Low 2. Medium 3. High	Severity is of 5 types: 1. Critical 2. Major 3. Moderate 4. Minor 5. Cosmetic

### 29. What is Bug Life Cycle?

**Ans:-** "A computer bug is an error, flaw, mistake, failure, or fault in a computer program that prevents it from working correctly or produces an incorrect result. Bugs arise from mistakes and errors, made by people, in either a program's source code or its design."

### 30. Explain the difference between Functional testing and Non-Functional testing ?

**Ans:-**

<b>Functional Testing</b>	<b>Non-Functional Testing</b>
Functional testing is performed using the functional specification provided by the client and verifies the system against the functional requirement.	Non-functional testing checks the performance reliability, scalability and other non-functional aspects of the software system.
Functional testing is executed first	Non-functional testing should be performed after functional testing
Manual testing or automation tools can be used for functional testing	Using tools will be effective for this testing
Business requirements are the inputs to functional testing	Performance parameters like speed, scalability are inputs to non-functional testing.
Functional testing describes what the product does	Non-functional testing describes how good the product works
Easy to do manual testing	Tough to do manual testing
Types of Functional testing are · Unit Testing	Types of Nonfunctional testing are · Performance Testing

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<ul style="list-style-type: none"><li>· Smoke Testing</li><li>· Sanity Testing</li><li>· Integration Testing</li><li>· White box testing</li><li>· Black Box testing</li><li>· User Acceptance testing</li><li>· Regression Testing</li></ul>	<ul style="list-style-type: none"><li>· Load Testing</li><li>· Volume Testing</li><li>· Stress Testing</li><li>· Security Testing</li><li>· Installation Testing</li><li>· Penetration Testing</li><li>· Compatibility Testing</li><li>· Migration Testing</li></ul>
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### 31. What is the difference between the STLC (Software Testing Life Cycle) and SDLC (Software Development Life Cycle)?

<b>STLC</b>	<b>SDLC</b>
STLC is generally related to software testing.	SDLC is generally related to software development.
STLC focuses only on testing the software.	Including the development, it focuses on other phases like testing are also included.
STLC consist of only five phases or steps.	SDLC consist of a total of six steps or phases.
In this, less number of members (testers) are needed for completing the whole process.	In this more members (developers) are required for completing the whole process.
The testing team makes the whole plans and designs.	The developments team makes the whole plans and designs.
The objective of STLC is to complete the successful testing of software.	The objective of SDLC is to complete the successful development of software.
STLC helps in making the software defects/error-free.	SDLC helps in developing good quality software.
These phases are performed after the SDLC phases.	These phases are completed before the STLC phases.

### 32. What is the difference between test scenarios, test cases, and test script?

Ans:-

<b>Test Scenarios</b>	<b>Test Cases</b>	<b>Test Script</b>
Is any functionality that can	Is a set of actions executed to	Is a set of instructions to test

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be tested.	verify particular features or functionality.	an app automatically.
Is derived from test artifacts like Business Requirement Specification (BRS) and Software Requirement Specification (SRS).	Is mostly derived from test scenarios.	Is mostly derived from test cases.
Helps test the end-to-end functionality in an agile way.	Helps in exhaustive testing of app.	Helps to test specific things repeatedly.
Is more focused on what to test.	Is focused on what to test and how to test.	Is focused on the expected result.
Takes less time and fewer resources to create.	Require more resources and time.	Requires less time for testing but more resources for scripts creating and updating.
Includes and end-to-end functionality to be tested.	Includes test steps, data, expected results for testing.	Includes different commands to develop a script.
The main task is to check the full functionality of a software application.	The main task is verify compliance with the applicable standards, guidelines and customer requirements.	The main task is to verify that nothing is skipped, and the results are true the desired testing plan.
Allows quickly assessing the testing scope.	Allows detecting errors and defects.	Allows carrying out an automatic execution of test cases.

### 33. Explain what Test Plan is? What is the information that should be covered?

**Ans:-** - Test planning in STLC is a phase in which a senior QA manager determines the test plan strategy along with efforts and cost estimation for the project Activities.

- Preparation of the test plan/strategy document for various types of testing.
- Test control selection
- Test effort estimation
- Resource planning and determining roles and responsibility
- Training requirement Deliverables
- Test plan/strategy document
- Effort estimation document

### 34. What is priority?

**Ans:-** Priority is defined as the order in which the defects should be resolved. The priority status is usually set by the testing team while raising the defect against the developer team mentioning the timeframe to fix the defect. The priority status is set based on end

users requirement.

### 35. What is severity?

**Ans:-** A defect that has completely blocked the functionality of an application where the user or the tester cannot proceed or test anything. If the whole application's functionality is inaccessible or down because of a defect, such a defect is categorized as a critical defect.

### 36. Bug categories are...

**Ans:-**

- 1) Database
- 2) Functionality (Critical/General)
- 3) Security
- 4) UI

### 37. Advantage of Bugzilla

**Ans:-**

- is an open source widely used bug tracker
- It is easy in usage and its user interface is understandable for people without It technical knowledge
- It easily integrates with test management instruments
- It integrates with an e-mailing system
- It automates documentation.

### 38. What are the different Methodologies in Agile Development Model?

**Ans:-** The Agile methodology is a way to manage a project by breaking it up into several phases. It involves constant collaboration with stakeholders and continuous improvement at every stage. Once the work begins, teams cycle through a process of planning, executing, and evaluating.  
Agile is a philosophy, i.e., a set of values and principles to make a decision for

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developing software.

There are 5 main Agile methodologies:

1. Scrum,
2. Kanban
3. Extreme Programming (XP)
4. Lean Development e Crystal.

### 39. Explain the difference between Authorization and Authentication in Web testing. What are the common problems faced in Web testing?

Ans:-

<b>Authorization</b>	<b>Authentication</b>
Authorization determines what resources a user can access.	Authentication verifies who the user is.
Authorization works through settings that are implemented and maintained by the organization.	Authentication works through passwords, one-time pins, biometric information, and other information provided or entered by the user.
Authorization always takes place after authentication.	Authentication is the first step of a good identity and access management process.
Authorization isn't visible to or changeable by the user.	Authentication is visible to and partially changeable by the user.
Example: Once their level of access is authorized, employees and HR managers can access different levels of data based on the permissions set by the organization.	Example: By verifying their identity, employees can gain access to an HR application that includes their personal pay information, vacation time, and 401K data.
Popular Authorization Techniques- <ul style="list-style-type: none"><li>• Role-Based Access Controls (RBAC)</li><li>• <u>JSON web token (JWT) Authorization</u></li><li>• SAML Authorization</li><li>• OpenID Authorization</li><li>• OAuth 2.0 Authorization</li></ul>	Popular Authentication Techniques- <ul style="list-style-type: none"><li>• Password-Based Authentication</li><li>• Passwordless Authentication</li><li>• 2FA/MFA (Two-Factor Authentication / Multi-Factor Authentication)</li><li>• <u>Single sign-on (SSO)</u></li><li>• Social authentication</li></ul>
The user authorization is not visible at the user end.	The user authentication is identified with username, password, face recognition, retina scan, fingerprints, etc.

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Below are five web application testing challenges faced by web developers during the development process.

- Integration. Integration testing exposes problems with interfaces among different program components before deployment. ...
- Interoperability. ...
- Security. ...
- Performance. ...
- Usability. ...
- Quality Testing, Exceptional Services.

### 40. When to use Usability Testing?

**Ans:-** Aesthetics and design are important. How well a product looks usually determines how well it works. There are many software applications / websites, which miserably fail, once launched, due to following reasons

- Where do I click next?
- Which page needs to be navigated?
- Which Icon or Jargon represents what?
- Error messages are not consistent or effectively displayed
- Session time not sufficient.

Usability Testing identifies usability errors in the system early in development cycle and can save a product from failure.

### 41. What is the procedure for GUI Testing?

**Ans:-**

- Check all the GUI elements for size, position, width, length and acceptance of characters or numbers. For instance, you must be able to provide inputs to the input fields.
- Check you can execute the intended functionality of the application using the GUI
- Check Error Messages are displayed correctly
- Check for Clear demarcation of different sections on screen
- Check Font used in application is readable
- Check the alignment of the text is proper
- Check the Color of the font and warning messages is aesthetically pleasing
- Check that the images have good clarity
- Check that the images are properly aligned
- Check the positioning of GUI elements for different screen resolution.

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