**Software Testing**

**Assignment of Module - 2**

**Q: What is Exploratory Testing?**

Ans : Exploratory testing is an approach to [software testing](https://www.atlassian.com/continuous-delivery/software-testing) that is often described as simultaneous learning, test design, and execution. Testing is based on Scope of the testing; the focus of exploratory testing is more on testing as a “thinking activity”. A brief Description of how tests will be performed.

**Q; What is Tracabillity matrix ?**

**Ans** : Tractability matrix is a document that details and technical requirements for a given test scenario and its current state .

**There are three types of tracabillity matrix**

1. Forward Traceability – Mapping of Requirements to test cases
2. Backward Traceability – Mapping Test cases to Requirments
3. Bi- Directional traceability – A good traceability matrix is the References from test cases to basis documentation and vice versa.

**Pros of Traceability Matrix**

* Make a obvious to the client that the software is being developed as per the requirements.
* To make sure that all requirements included in the test cases.
* To make sure that the developers are not creating features that no one has requested.
* Easy to identify the missing Functionalities.

**Cons of Traceability Matrix**

* Poor or unknown test coverage ,More defects found in production
* It will lead to miss some bugs in earlier test cycle which may arise in later test cycles.
* Difficult project planning and tracking, misunderstanding between different teams over project dependencies , delays etc.

**Q : What is Boundary value testing?**

Ans: Boundary value analysis is a Black- Box testing technique used to check the errors at the boundaries of an input. Boundary values will be checked by the upper and lower limit of a variable.

Ex : if the test accepts in the range of 0-100, the boundary value analysis will include test data- 0,1,99,100.

**Q: What is Equivalence partitioning testing?**

**Ans:** The numbers fall into a partition data into various classes and we can select data according to class then test. It reduces the number of test- cases and saves time for testing. EP can be used for a all levels of Testing.

Reviewing documents such as the Functional Design ,Specification and Detail Design Specification, and identifying each condition within the function.

Selecting input data that is representative of all other data that would likely invoke the same process for that particular condition.

**Q : What is Integration Testing?**

**Ans:** 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. Integration testing is done by a specific integration tester or test team.

There are 2 levels of integration testing

1 . Components Integration testing

2. System integration testing

**Q : What determines the level of Risk ?**

**Ans:** Risk are of two types

1. Project risk

2. Product risk

Example of **Project risk** is senior Team Member leaving the project abruptly.

Every risk is assigned a likelihood, chance of it occurring, typically on a scale of 1 to 10 . Also the impact of that risk is identified on a scale of 1-10.

But just identifying the risk is not enough. You need to identify mitigation. In this case mitigation could be knowledge transfer to other team members & having a buffer tester in place.

Example of **Product risk** would be flight Reservation system not installing in test environment

Mitigation in this case would be conducting a smoke or sanity testing , Accordingly you will make changes in your scope items to include sanity testing.

**Q : What is Alpha Testing?**

**Ans:** Alpha Testing is a type of acceptance testing; performed to identify all possible issues/bugs before releasing the product to everyday users or the public. The focus of this testing is to simulate real users by using black box and white box techniques. The aim is to carry out tasks that a typical user might perform.

**Q : What is Beta Testing?**

**Ans**: Beta Testing of a product is performed by real users of the software application in a real environment. It allows the real customer an opportunity to provide inputs into the design, functionality, and usability of a product. These inputs are important for the success of the product. Beta testing reduces product failure risks and provides increased quality of the product through customer validation. It is the final test before shipping a product to the customer.

**Q: What is Component Testing?**

**Ans**: A minimal software item that can be tested in isolation, It means “A unit is the smallest testable part of Software. The testing of individual software components. This testing frame works, drivers, stubs, and mock or fake objects are used to assist in unit testing. Component testing is performed by using the white box testing method.

**Q : What is Functional system testing?**

**Ans** : A requirement that specifies a function that a system or system components must perform. Requirements may exist as a text document and or a model.

Functional system testing functionality

|  |  |
| --- | --- |
| Accuracy | Provision of right or agreed results or effects |
| Interoperability | Ability to interact with specified systems |
| Compliance | Adhere to applicable standards, conventions, regulations or law |
| Auditability | Ability to provide adequate and accurate audit data |
| suitability | Presence and appropriateness of functions for specified tasks. |

**Q: What is Non Functional Testing?**

**Ans**: Testing the attributes of a component or system that do not relate to functionality, reliability, efficiency, usability, interoperability, maintainability and portability. It is the testing of “How” the system works, Non- functional testing **may be performed at all test levels.**

**Q : What is GUI Testing?**

**Ans:** Graphical user interface 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, dialog boxes and windows etc.

**Q : What is Adhoc Testing?**

**Ans:** Adhoc Testing is a technique where the experienced and good testers are encouraged to think of situations in which the software may not be able to cope.

Adhoc testing ia an informal testing type with an aim to break the system. This testing is primarily performed If the Knowledge of testers in the system under test is very high. Adhoc testing does not follow any structured way of testing and it is randomly done on any part of application. Main aim of this testing is to find defects by random checking.

**Q: What is Load Testing?**

**Ans:**  It’s 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’s response time degrades of fails.

Load testing is a kind of performance testing which determines a system’s performance under real –life load conditions. This testing helps determine How the application behaves when multiple users access it simultaneously.

It’s a type of Non- functional testing , Load testing is commonly used for the Client/ Server, Web based applications –both intranet and internet.

**Q: What is Stress Testing?**

**Ans**: System is stressed beyond its specifications 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.

Stress testing is used to test the stability & reliability of the system .Stress Testing is done to make sure that the system would not crash under crunch situations.

**Q : What is White Box testing and the list of types of white box testing.**

**Ans:** White –Box testing based on an analysis of the internal structure of the component or system. Structure based testing technique is also known as White –Box or Glass –box testing technique because here the tester require knowledge of how the software is implemented , how it works.

**Types of White Box testing**

* Statement / Segment coverage
* Decision/ Branch coverage
* Condition coverage
* Branch Condition testing
* Branch condition Combination testing
* Modified Condition decision testing
* Dataflow testing
* Linear code sequence and jump

**Q: What is Black Box testing? What are the different black box testing technique?**

**Ans:** Black-Box testing either functional or non functional, without reference to the internal structure of the components or system.

The testers have no knowledge of how the system or components is structured inside the box. In Black –box testing the tester is concentrating on what the software does, not how it does it.

The technique of testing without having any knowledge of the interior working of the application is Black- Box testing.

**Techniques of Black – Box Testing**

* Equivalence partitioning
* Boundary value analysis
* Decision tables
* State transition testing
* Use-case testing
* Other Black-Box testing
* Syntax or pattern testing

**Q: Mention what are the categories of defects?**

**Ans:** Defects can be categorized into different types basing on the core issues they address.

* Data Quality/ Database Defects
* Critical functionality defects
* Functionality defects.
* Security Defects
* User Interface defects

**Q : Mention what big bang testing is?**

**Ans:** In Big Bang integration testing all components or modules is integrated simultaneously, after which everything is tested as a whole.

Main advantages of this testing that everything are finished before integration testing starts.

The major disadvantage is that in general it is time consuming and difficult to trace the cause of failures because of this Late integration.

**Q: What is the purpose of exit criteria?**

**Ans:**

* Run out of time?
* Boss says Stop?
* Run out of budget?
* All Defects have been fixed?
* The business tells you it went live last night?
* When out Exit criteria have been met?

The Purpose of exist criteria is to define when we stop testing either at the:

* End of all testing: Product Go live.
* End of phase of testing – Hand over from System Test to UAT
* Thoroughness measures, Such as coverage of requirements or of code or risk coverage.
* Estimates of defect density or reliability measures.
* Cost.
* Residual Risk, such as defects not fixed or lack of test coverage in certain areas.
* Schedule- such as those based on time to market.

**Q: When should “Regression Testing” is performed?**

**Ans:** Regression Testing should be done whenever

* Change in requirements and code is modified according to the requirements
* New feature is added to the software
* Defect fixing
* Performance issue fixes.

**Q: What are 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

Testing shows presence of Defects

* Testing can show that defects are present, but cannot prove that there are no 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.
* We test to find faults.
* However Testing cannot prove that there are no defects present.

Exhaustive Testing is Impossible!

* Testing everything including all combinations of inputs and preconditions is not possible.
* This is very unlikely that the project timescales would allow for this number of tests.
* So accessing and managing risk is one of the most important activities and reasons for testing in any project.
* We have learned that we cannot test everything.
* That is we must priorities our testing effort using a risk based approach.

Early testing

* Testing activities should start as early as possible in the development life cycle.
* These activities should be focused on defined objectives –outlined in the test strategy.

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.
* Defects are not evenly spread in a system.
* They are “clustered”
* Most Defects found during testing are usually confined to a small number of modules.

The Pesticide paradox

* If the same tests are repeated over and over again, eventually the same set of test cases will no longer find any new defects.
* 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.
* Testing identifies bugs and programmers respond to fix them
* Therefore we must learn, create and use new tests based on new techniques to catch new bugs.

Testing is context Dependent

* Testing is done differently in different contexts.
* Different kinds of sites are tested differently.
* Also different industries impose different testing standards.

Absence of Errors Fallacy

* If the system built is unusable and does not fulfill the user’s needs and expectations then finding and fixing defects does not help.
* If we build a system and, in doing so, find and fix defects… it doesn’t make it a Good system.
* Even after defects have been resolved it may still be unstable and does not fulfill the user’s needs and expectations.

**Q: Difference between QA v/s QC v/s testers**.

Ans:

|  |  |  |  |
| --- | --- | --- | --- |
| **S.N.** | **Quality Assurance** | **Quality Control** | **Testing** |
| 1 | Activities which ensure the implementation of process, procedures, and standard in context to verification of developed software and intended requirements. | Activities which ensure the verification of developed software with respect to documented requirements. | Activities which ensure the identification of bugs /error/defects in the software. |
| 2 | Focuses on processes and procedures rather than conducting actual testing on the system. | Focus on actual testing by executing software with intends to identify bug/ defect through implementation of procedures and process. | Focus on actual testing. |
| 3 | Process oriented activities. | Product oriented activities | Product oriented activities |
| 4 | Preventive activities | It is a corrective process | It is a preventive process |
| 5 | It is a subset of software test life cycle | QC can be considered as the subset of quality Assurance | Testing is the subset of quality control. |

**Q: Difference between Smoke and Sanity?**

**Ans:**

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| **Smoke Testing** | **Sanity Testing** |
| Smoke testing is a performed to ascertain that the critical functionalities of the program is working fine. | Sanity Testing is done to check the new functionality /bugs have been fixed |
| The objective of this testing is to verify “stability” of the system in order to with more rigorous testing | The objective of this testing is to verify “rationality” of the system in order proceed to proceed with more rigorous testing |
| This testing is performed by the developers or testers | Sanity testing is usually performed by testers |
| Smoke testing is usually documented or scripted | Sanity testing is usually not documented and is unscripted |
| Smoke testing is a subset of Regression testing | Sanity testing is subset of Acceptance testing |
| Smoke testing exercise the entire system from end to end | Sanity testing exercise only the particular component of the entire system |
| Smoke testing is like General Health Checkup | Sanity Testing is like Specialized Health check up |

**Q: Difference between verification and validation**

**Ans:**

|  |  |  |
| --- | --- | --- |
| **Criteria** | **Verification** | **Validation** |
| Definition | The process of evaluating work- products 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 satisfied business requirements. |
| Objective | To ensure that the product is being built according to the requirements and design specifications. | To ensure that the product actually meets the user’s needs and that the specifications were correct in the first place. |
| Question | Are we building the product right? | Are we building the right product? |
| Evaluation items | Plans, requirements Specs , Design Specs, Code, Test cases. | The actual Product/ software |
| Activities | * Reviews * Walkthroughs * inspections | * Testing |

**Q: Explain types of Performance testing.**

**Ans:**

* Load testing
* Stress testing
* Endurance testing
* Spike testing
* Volume testing
* Scalability testing

**Load Testing**

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’s response time degrades of fails.

Load testing helps identify the bottlenecks in the system under heavy user stress scenarios before they happen in a production environment.

Pros of load Testing

* Performance bottlenecks identification before production
* Improves the scalability of the system
* Minimize risk related to system down time
* Reduced costs of failure
* Increase customer satisfaction

Cons of load testing

* Need Programming knowledge to use load testing tools
* Tools can be expensive as pricing depends on the number of virtual users.

**Stress testing**

System is stressed beyond its specifications 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.

Stress testing is used to test the stability & reliability of the system.

Stress testing is done to make sure that the system would not crash under crunch situations.

The main purpose of stress testing is to make sure that the system recovers after failure which is called as recoverability.

**Endurance testing**

Endurance testing is a type of [performance testing](https://artoftesting.com/performance-testing) of the software to check system performance under specific load conditions over an extended or longer amount of time*.*

 It aims at testing the system for a prolonged period of time. It makes sure that the system runs smoothly without any failure and handles the desired load.

It helps in finding out any memory leaks in the system. It also helps in checking the response time of the system over a longer period.

**Spike testing**

Spike testing is a type of performance testing in which we observe the behavior of the system by subjecting it to sudden increase or decrease in the load. This sudden increase and decrease in the workload is spiking.

**Volume testing**

**Volume Testing** is a type of Software Testing, where the software is subjected to a huge volume of data. It is also referred to as **flood testing.** Volume testing is done to analyze the system performance by increasing the volume of data in the database.

With the help of Volume testing, the impact on response time and system behavior can be studied when exposed to a high volume of data.

**Scalability testing**

The purpose of Scalability testing is to ensure that the system can handle projected increase in user traffic, data volume, transaction counts frequency, etc. It tests system ability to meet the growing needs.

**Q: What is Error, Defect, Bug and Failure?**

Ans: A Mistake in coding is called **Error**, error found by tester is called **Defect**, defect accepted by development team then it is called **Bug**, build does not meet the requirements then it is **Failure**.

**Error**: A discrepancy between a computed, observed, or measured value or condition and the true, Specified, or theoretically correct value or condition.

**Defect**: Commonly refers to several troubles with the software products, with its external behavior or with its internal features.

**Bug**: A fault in a program which causes the program to perform in an unintended or unanticipated manner. Bug is terminology of Tester.

**Failure**: The inability of a system or component to perform its required functions within specified performance requirements. Ex: Crash

**Q: Difference between Priority and Severity.**

**Ans:**

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| **Priority** | **Severity** |
| Defect Priority has defined the order in which the developer should resolve a defect. | Defect severity is defined as the degree of impact that a defect has on the operation of the product. |
| Priority categorized into three types   * Low * High * Medium | Severity categorized into five types   * Critical * Major * Moderate * Minor * Cosmetic |
| Priority is associated with Scheduling | Severity is associated with Functionality |
| Its value of subjective and can change over a period of time depending on the change in the project situation. | Its value is objective and less likely to change. |
| Priority is driven by business value | Severity is driven by Functionality |
| Priority statues is based on customer requirements | Severity statues is based on technical aspect of the product |

**Q: What is Bug Life Cycle?**

**Ans:** Bug life cycle is nothing but the various phases a bug under goes after it is raised or reported.

The different phases of Bug life cycle are,

* New or Opened
* Assigned
* Fixed
* Tested
* Closed

**Q: Explain the Difference between functional testing and Non- functional testing.**

**Ans:**

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| --- | --- |
| **Functional Testing** | **Non- Functional Testing** |
| Functional testing is performed using the functional specification provide by the client and verifies the system against the functional requirements. | 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 the 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 s |
| Easy to do manual testing | Though to do manual testing |
| Functional testing describes what the product does | Non- Functional testing describes how good the product works |
| Types of Functional testing are   * Unit Testing * Smoke Testing * Sanity Testing * Integration Testing * White box Testing * Black box testing * User Acceptance Testing * Regression Testing | Types of Non- Functional testing are   * Performance Testing * Load Testing * Volume Testing * Stress Testing * Security Testing * Installation Testing * Penetration Testing * Compatibility Testing * Migration Testing |

**Q: What is Difference between the STLC (Software Testing Life cycle ) and SDLC (Software Development Life Cycle)?**

**Ans:**

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| --- | --- |
| **SDLC (Software Development Life Cycle)** | **STLC (Software Testing Life Cycle)** |
| The main object of SDLC life cycle is to complete successful development of the software including testing and other phases. | The only objective of the STLC phase is testing. |
| In SDLC the business analyst gathers the requirements and create Development Plan | In STLC, the QA team analyze requirement documents like functional and non-functional documents and create System Test Plan |
| In SDLC, the development team creates the high and low-level design plans | In STLC, the test analyst creates the Integration Test Plan |
| The real code is developed, and actual work takes place as per the design documents. | The testing team prepares the test environment and executes them |
| SDLC phase also includes post-deployment supports and updates. | Testers, execute regression suits, usually automation scripts to check maintenance code deployed. |

**Q: What is the difference between test scenario, test cases, and test script?**

**Ans:**

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| **Test Scenario** | **Test Cases** | **Test Script** |
| Is any functionality that can be tested | Is a set of actions executed to verify particular features or functionality | Is a set of instructions to test an app automatically |
| Is derived from test artifacts like Business Requirements Specification and software Requirements specification | Is mostly derived from test scenario | Is mostly derived from test cases |
| Helps test the end to end functionality in Agile way | Helps in exhaustive testing of an 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 |
| Test less time and fewer resources to create | Requires more resources and time | Requires less time for testing but more resources for scripts creating and updating |

**Q: What is priority?**

**Ans**: Priority is relative and business focused. Priority defines the order in which we should resolve a defect. Should we fix it now or can it wait? This Priority status is set by the tester to the developer mentioned the same frame to fix the defect. If the high priority is mentioned then the developer has to fix it at earliest. The priority status to set based on the customer requirements.

For example: if the company name is misspelled in the home page of website then the priority is high and severity is low to fix.

**Q: What is Severity?**

Ans: Severity is absolute and customer focused. It is the extent to which the defect can affect the software. In other word it defines the impact that a given defect has on the system.

If an application of the web page crashes when a remote link is clicked in this case clicking the remote link by an user is rare but the impact of application crashing severe. So the severity is high but priority is low.

**Q: Bugs categories are……**

Ans: There are some categories

* Security
* Database
* Functionality (Critical/ General)
* UI

**Q: Advantages of Bugzilla.**

**Ans:**

* Open source, free bug tracking
* Automatic Duplicate bug detection
* Search option with advanced features
* File/Modify bugs by mail
* Move bugs between installs
* Multiple authentication methods
* Time tracking
* Automated bug reporting, has an API to interact with system

**Q: Difference between Severity and Priority.**

**Ans:**

|  |  |
| --- | --- |
| **Severity** | **Priority** |
| Severity is a term that denotes how severely a defect can affect the | Priority is a term that defines how fast we need to fix a defect |
| Functionality of the software. |  |
| Severity is basically a parameter that denotes the total impact of a given defect on any software. | Priority is basically a parameter that decides the order in which we should fix the defect. |
| The value of severity is objective | The value of priority is subjective. |
| The testing engineer basically decides a defect’s severity level. | The product manager basically decides a defect’s priority level |
| The value of severity changes continually from time to time | The value of priority change from time to time. |

**Q: What are the different Methodology in Agile Development Model?**

**Ans:**

**Scrum Methodology**

Scrum is a lightweight framework of Agile Project management, it can be adopted to conduct iterative and all types of incremental projects.

Due to specific characteristics like simplicity, sustained productivity and strength for blending several underlying approaches adapted by other agile methods, scrum has obtained popularity over the years.

**Kanban**

Kanban is an eminently visual workflow management approach, that can be employed for visualizing and thoroughly maintain the making of products, it focuses on continual delivery of the product, but is not making stress to the entire software development life cycle.

**Q: Explain the difference between Authorization and Authentication in web testing. What are the common problems faced in web testing?**

Ans:

|  |  |
| --- | --- |
| **Authentication** | **Authorization** |
| Authentication verifies who the user is. | Authorization determines what resources a user can access. |
| Authentication works through passwords, one-time pins, biometric information and other information provided or entered by the user. | Authorization works through setting that are implemented and maintained by the organization. |
| Authentication is the first step of a good identity and access management process. | Authorization always takes place after authentication |
| Authentication is visible to and partially changeable by the user | Authorization isn’t visible to or changeable by the user. |
| Ex: By Verifying their identity employees can gain access to an HR application that includes their personal pay Information, vacation time. | Ex: 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. |

**Q: When to use Usability Testing?**

**Ans:**

* Usability testing is a method of testing the functionality of a website, app or other digital product by observing real users as they attempt to complete tasks on it. The users are usually observed by researchers working of business.
* Usability testing can and should be conducted on the current iteration of a product before beginning any new design work, after you have begun the strategy work around a brand new site or app.

**Q: 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 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 section 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 message 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.

**Q: Write agile manifesto principles?**

**Ans:**

**Individuals and interactions, Over Processes and tools** : Suppose the team finds any issue in software then they search for another process or tool to resolve the issue. But in Agile , it is preferable to interact with client, manager or team regarding issue and make sure that the issue gets resolved.

**Working Software, Over Comprehensive documentation**: Documentation is needed, but working software is much needed. Agile is not saying that documentations are not needed, but working software is much needed. For example , you have 20 –page documents , but you do not have a single prototype of the software . In such a case, the client will not be happy because, in the end , the client needs a document.

**Customer Collaboration, over contract negotiation**: Contract negotiation is important as they make the budget of software, but customer collaboration is more important than over contract negotiation. For example ,if you stuck with the requirements or process, then do not go for a contract which we have negotiated. You need to interact with the customer, gather their requirements.

**Responding** **to** **change, over following a plan:** In the waterfall model, everything is planned , i.e. at what time , each phase will be completed . sometimes you need to implement the new requirements in the middle of the software, So you need to be versatile to make changes in the Software.

**Q: Write a scenario of only whatsapp chat messages.**

Ans:

|  |  |  |
| --- | --- | --- |
| SR No. | Test Scenario Positive | Test Scenario Negative |
| 1 | Verify that the user can set a chat wallpaper | We can’t send group massage more than five people |
| 2 | Verify that the user sets privacy setting like turning on/off last seen, online status, read receipts etc. |  |
| 3 | Verify that the user can take the complete chat backup of his chats. |  |
| 4 | Verify that the user can update the phone number that is used by the whatapp application. |  |
| 5 | Verify that the user can disable/ delete his whatsapp account. |  |
| 6 | Verify that the user can check data usage by images , audio, vedio, and documents in whatsApp chats. |  |