SOFTWARE TESTING
ASSIGNMENT 1

UNIT-1

1. How would you apply the principle of "Early Testing" in a real-world software development scenario to ensure the quality of the final product?

2. Given a scenario where your team is working on an ongoing project with frequent changes, how would you implement the principle of "Absence of Errors Fallacy" to ensure that the software is free from defects and meets user requirements?

3. In the context of an e-commerce platform, explain how you would implement testing to ensure the security and privacy of user data, and why testing is crucial for protecting against potential vulnerabilities.

4. Considering the potential risks of software failure in high-stakes environments, such as aerospace or automotive systems, how would you apply the need for thorough software testing to mitigate risks associated with system errors?

5. Analyze a newly developed e-commerce website and identify a set of test cases to verify the checkout process. How would you categorize your test cases (e.g., functional, performance, security)? Explain your reasoning.

6. Analyze a software product with both manual and automated test cases. How would you identify which test cases should be automated and which should remain manual? What factors would you take into account to make this decision?

7. Analyze the impact of conducting late-stage acceptance testing in a project with frequent scope changes. How would you suggest adjusting the levels of testing (unit, integration, system, acceptance) to address this challenge?

8. In the context of testing a triangle classification feature that determines if a given set of sides forms a valid triangle, how would you apply the triangle inequality principle to identify valid and invalid test inputs?

9. Given a scenario where your team is transitioning from manual testing to automated testing for a web application, how would you identify the most suitable test cases to automate? What factors would you consider to ensure that automation improves efficiency without causing unnecessary overhead?

10. You are tasked with automating tests for a mobile application. How would you apply test automation to account for differences in screen sizes, OS versions, and device configurations? What approach would you take to ensure the tests are scalable and reusable across multiple devices?

UNIT-2

1. Given a new user registration form with fields like Name, Email, Password, and Confirm Password, how would you design functional test cases to ensure that the form correctly handles both valid and invalid input scenarios?

2. Given a web application that handles user input for personal information (e.g., name, address, phone number), analyze how you would approach robustness testing to ensure that the application can gracefully handle malformed, unexpected, or malicious input without crashing or compromising security. What specific test cases would you design for this purpose?

3. Given a form that accepts user input for email addresses and phone numbers, how would you apply robustness testing to ensure the system can handle invalid inputs such as special characters, excessively long text, or empty fields without crashing or throwing errors?

4.In a system that accepts a credit card number, how would you apply Equivalence Class Testing to determine the different input classes (valid, invalid) to ensure complete test coverage? What would be the key equivalence classes you would define for the credit card number format, length, and type?

5. Consider a feature where a user inputs a discount percentage between 0% and 100%. How would you apply Equivalence Class Testing to design test cases for this input, and what valid and invalid equivalence classes would you identify based on this input range?

6. Consider a feature where a user inputs a discount percentage between 0% and 100%. How would you apply Equivalence Class Testing to design test cases for this input, and what valid and invalid equivalence classes would you identify based on this input range?

7. In a system that accepts input for a product quantity (between 1 and 500), how would you apply Equivalence Class Testing to design test cases? What equivalence classes would you define for values such as negative numbers, values above the upper limit, and values within the valid range?

8. You are testing a login function with a series of checks, such as validating the username format, password strength, and authentication success. How would you apply Basis Path Testing to identify the key paths through this function and design test cases to ensure each decision point is tested at least once?

9. Given a program that calculates the total cost of an order by considering product price, quantity, and any applied discounts, how would you apply Slice-Based Testing to design test cases for this function? How would you isolate different slices to ensure that all variables and operations are covered in the tests?

10. You are testing a login system with conditions based on user role (Admin, Regular User) and authentication method (Password, Two-Factor). How would you apply Slice-Based Testing to create test cases that check the behavior of the system for different slices of these inputs?