Tutorial 7

1. SmartOffice.com is a newly established company which designs and implements Internet of Things (IoT) in offices such as automation of lighting during night and in the washroom, office air-con automated temperature detection and adjustment, video monitoring system, and et cetera. The company is approaching you to develop an Online Customer Service System which eases their customers to contact their sales representative whenever they have problems with the technology. The website should be available 24x7. There will be a group of sales representatives answering the customers' questions through online chat or email.

   a. Assume that the project testing team is going to adopt the following testing techniques for testing the above Online Customer Service System. Explain each testing technique.

      i. Black-box testing
      - Test the requirement of system

      ii. White-box testing
      - Analyze code, yest the logic and structure (if else, switch, loops)

      iii. Stress testing
      - Overload the system and test how its behavior handling the error

      iv. Back-to-back testing
      - Version 1 and version 2 is available, test the both version at the same time and compare the output

      v. Regression testing
      - Rerun the test after modification or changes

   b. What is the relationship between unit testing, module testing and sub-system testing? Explain your answer by using appropriate example(s).

1. Unit testing
- Test a single component that only perform single task

2. Module testing
- Test a collection of relevant unit

3. Sub-system testing
- Test a collection of module

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c. Construct 2 test cases for the Online Customer Service System based on the following format.

Program Name: Test Date: -					
No.	Test Case	Test Data	Expected Results	Actual Results	Remarks
1	Start online chat	User id: yash	Chat window is activated	-	-
2	Type message in chat window	"I have a problem with AA product."	Message appear in sales representative window	-	-

d. Explain any 3 testing principles that would help to improve software testing process.

1. All tests should be traceable to customer/user requirements.
2. Tests should be planned long before testing begins.
3. Tests should start "in small" and progress towards testing "in large".

2. CBrat is developing Chatbox, which is a platform for all sizes of businesses to build, automate and operate personalize messaging application. This Chatbox supports SMS, Facebook, Messenger, live web chat with a single cross-channel customer history. Instant Apps is able to exchange structured data (forms, files, photos, and etc.) in-line with the conversation. Chatbox is also able to sync conversational history and structure data from Instant Apps to the data source. The Instant Apps can escalate between bot and live agent with full conversational history, measure and analyze the effectiveness of messaging through all faces of the customer experience, including tracking across all supported channels and Instant Apps. (Source:http://chatbox.com/)

Propose and explain 2 testing techniques in ensuring Chatbox's performance.

Stress testing - overload the system to test how fast it can process in overloaded situation
Integration testing -
Unit (white box, black box, regression)
Module (black box, integration, regression)
Subsystem (black box, integration, regression
System (load, stress[non functional]; black box[functional])

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3. Standard Printing Company is established in 1981. The main business is designing and printing advertisement. The graphic designer is using a legacy system to design advertisement for customers. The design is stored as both PDF and DOC in the legacy system. The documentation of the legacy system are incomplete and the system is programmed in an obsoleting programming language. Recently, the company is considering to purchase Atlassian JIRA in assisting their advertisement project management. The owner of the company, Mr. S, is consulting you regarding the cost of the tool.

   Assuming that Mr. S has decided to integrate Atlassan JIRA with the legacy system. Compare 2 testing techniques/strategies to test the system integration.

   1. Integration testing
   2. Back-to-back testing - version 1 legacy system, version 2 legacy + JIRA system
   3. System testing - black box
   4. Stress testing

4. Differentiate between Software Testing Stages, Software Testing Techniques, and Software Testing Strategy. Support your answer by providing 1 example for each component.

   1. Software Testing Stages (unit, module,subsystem,system stage)
   - Testing at different phases of the system. Start from unit test, module test, subsystem test and final system tests

   2. Software Testing Techniques
   - Different techniques used in different stages
   - Unit testing used white box/black box technique
   - Module testing used black box/integration techniques

   3. Software Testing Strategy
   - General approach in the testing system
   - Proactive: Test design process initiated as early as possible in order to find and fix the bugs.