**Directions:**

Read the description of the online shopping store provided, then respond to the prompts for Phases I and II. Use this document to enter your responses. Save all responses in this document as a single PDF titled “Last Name\_First Name\_Online Shopping Store Project\_Submission”.

**Phase I**

Develop a scenario for each quality factor based on the online shopping example in the Project Description and explain how to test that quality factor for the client-server web application in the space provided. *You may use additional pages as needed to answer this question.*

**Quality Factor: Time Behavior**

1. Source of Stimulus: End user (Customer)
2. Stimulus: Customer queries for clothing selections, checkout, and other operations should occur in 20-30 seconds.
3. Environment: Normal operations
4. Artifact: User operation process
5. Response: returns desired clothing information, redirected operator to checkout page, and the inform operator other information
6. Response Measure: The response for each operation is in twenty to thirty seconds.

How to test time behavior:

Log in to Online Shopping Store as a customer to perform several following actions: randomly select some cloths and view the information of selected cloths, perform the checkout action for selected cloths, views shopping cart.

The first action should return the correct description of selected cloth,   
The second action should direct operator to checkout page with displaying selected cloths for checking out,   
The third action should show the operator a shopping cart with desired items added.

Measure and record the time spent for each operation above and check whether they can finish the tasks with in 20-30 seconds.

**Quality Factor: Confidentiality**

1. Source of Stimulus: User access database server
2. Stimulus: To maintain data confidentiality, login and authentication mechanisms need to be added to the system.
3. Environment: Sensitive information retrieving
4. Artifact: Date access authentication process
5. Response: Grant privilege to an operator for accessing certain types of data
6. Response Measure: The end user(customer) can only view their own information such as each customer’s shopping history, address, contact information, and payment methods, etc. Only the managers or website developer can retrieve a list of allowed user information data.

How to test confidentiality:

Log in to the system as a customer, check if the owned the personal information (shopping history, address, contact information) are shown correctly.

Log in to the system as a store manager, an authentication process should be prompted during the logging. A manager can view a list of allowed user information who recently have ordered items.

**Quality Factor: Recoverability**

1. Source of Stimulus: Internal/external: people, hardware, software
2. Stimulus: Fault: omission, crash, incorrect timing, incorrect response
3. Environment: Normal operation, startup, shutdown, repair mode, degraded operation, overloaded operation
4. Artifact: Processors, communication channels, persistent storage, processes
5. Response: Prevent the fault becoming a failure; Detect the fault: log the fault, notify appropriate entities(people or system); Recover from the fault: disable source of event causing the fault, be temporarily unavailable while repair is being effected, fix or mast the fault/failure or contain the damage it causes, operate in a degraded mode while repair is being effected.
6. Response Measure: When a fault/failure happens, the system downtime should be no more than 10 minutes. Time or time interval when the system in fault/failure must be available. Measure the time for detect the fault/failure. Measure the time to repair the fault. Measure the time or time interval in which system can be in degraded mode proportion or rate of a certain class of fault that the system prevents, or handles without failing.

How to test recoverability:

To test recoverability, it is necessary to create a test bed as close to actual conditions of deployment as possible. Changes in interfacing, protocol, firmware, hardware, and software should be as close to the actual condition as possible if not the same condition.

In testing environment, when there are several end users (customers, managers) in session, perform several software or physical operation to shut down the server. After some time re-connected the servers and analyze the system’s ability to continue receiving data from the point at which the network connection was broken.

Restart the system when a customer or manager in as session with definite number of sessions opened. Check and measure the time whether the browser can recover all of them or not

**Phase II**

Draw each diagram according to the online shopping store situation described in the project description. Take a clear screenshot of each diagram and paste it in the corresponding space provided. *You may add additional pages as needed.*

**System Diagram:**

**手机屏幕的截图

描述已自动生成**

**Container Diagram:**

**手机屏幕的截图

描述已自动生成**

**Deployment Diagram:**