school of computing, informatics, & decision systems engineering

ASU Ira A. Fulton Schools of Engineering Arizona State University

CSE 460: Software Analysis and Design

Online Shopping Store Submission

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”.

Online Shopping Store 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**: customers
2. **Stimulus**: queries for clothing selections, checkout, and other operations
3. **Environment**: responses time
4. **Artifact**: client-server web application
5. **Response**: return queries answers for clothing selections, checkout, and other operations
6. **Response Measure**: Each queries information and answers should response to customer with 20-30 seconds.

How to test time behavior:

First, using client server web application interface to do clothing selections and add clothes to cart on web application.
Second, using web application interface cancel clothes item from cart on web application.
Third, using web application interface select new clothes and add clothes to cart. Then go to check out page check out all items.
Each operation's information and answers such as clothing selections, checkout and so on should response to customer in 20-30 seconds.

Quality Factor: Confidentiality

1. **Source of Stimulus**: online store manager, online store developer, customer.
2. **Stimulus**: Customers use their own authority to check their own order history and merchandise's price, delivery time and so on. Store manager use his own authority to retrieval the stock of every merchandise, payment record, delivery time, logs and so on. developer can user his own authority to retrieval information that stored in database and logs of system and so on.
3. **Environment**: the system process with any conditions such as online, offline, with firewall or without firewall, good hardware, bad hardware, cloud, local and so on.
4. **Artifact**: Every elements of system such as online server, the steam of process, interface, database and so on. All the elements that will be working with data create, delete, retrieval and change.
5. **Response**: The stock information of merchandise is returned to online store manager when online store manager retrieval his stock of merchandise. The payment and order history are returned to customer when customer check their own order history and payment history. Online store developer can get system

logs when they download system logs in order to check the system works well or not.
6. **Response Measure**: All suitable data can be created, deleted, retrieval and changed by end user(online store manager, customer) and online store developer with their own authority. If users want to operate the data that doesn't belong to their authority scope, the system will decline the operation request. System and database have ability that can prevent and detect attack from attacker who from outside.

How to test confidentiality:
First, as the customer role, log in customer interface and go to customer homepage to check payment and order history.
Second, as the online store manager role, log in store manager interface and go to online store manager homepage to check inventory of merchandise. If online store manager wants to check customer private information, the system will refuse this request.
Third, as the online store developer role, enter backend of system and check logs of system to check record of system operations.
Forth, as the attacker role, using some computer attack such as Cross Site Script Execution and SQL injection to attack system to destroy database and system.
The quality of confidentiality will be measured by secure of system and database, system and database should allow end user retrieval information within their authority and shouldn't allow end user retrieval information without their authority. Beside, system and database also can detect and prevent attack from outside.

Quality Factor: Recoverability

1. **Source of Stimulus**: hardware, software system, people
2. **Stimulus**: every fault of hardware, software and people operation such as server damages, crash, unsuitable human's deletion and modification of data, server shut down and collapse.
3. **Environment**: operator process, good computer operating environment, bad computer operating environment.
4. **Artifact**: online shopping systems.
5. **Response**: recovered performance and data.
6. **Response Measure**: The system recovers normal performance and data with no more than 10 minutes of downtime.

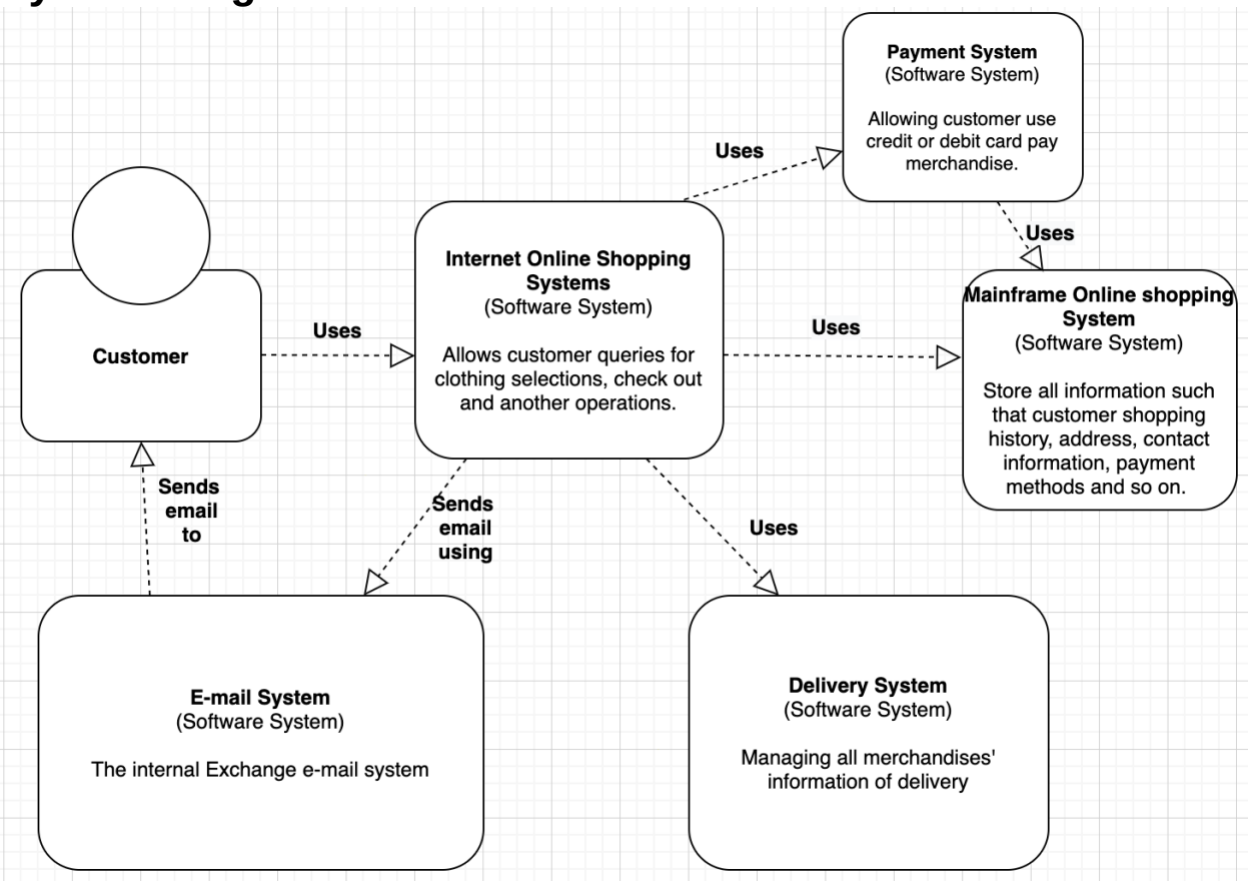
How to test recoverability:
First, building a good environment that can make software and hardware can works well. Using Control Variable way and changing each condition in turn to check system has good recoverability with each lack of condition.
Second, making server shut down and reopen the server in order to check the system have good performance or not, also check database back up data or not.

Third, making server collapse and reopen the server in order to check the system have good performance or not, also check database back up temporary data or not.
Forth, doing some deletions and modifications of data under good computer environment. Then, checking database back up data or not.
Finally, the quality of recoverability will be measured by downtime with 10 minutes while system recover all good performances and data.

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:



Container Diagram:

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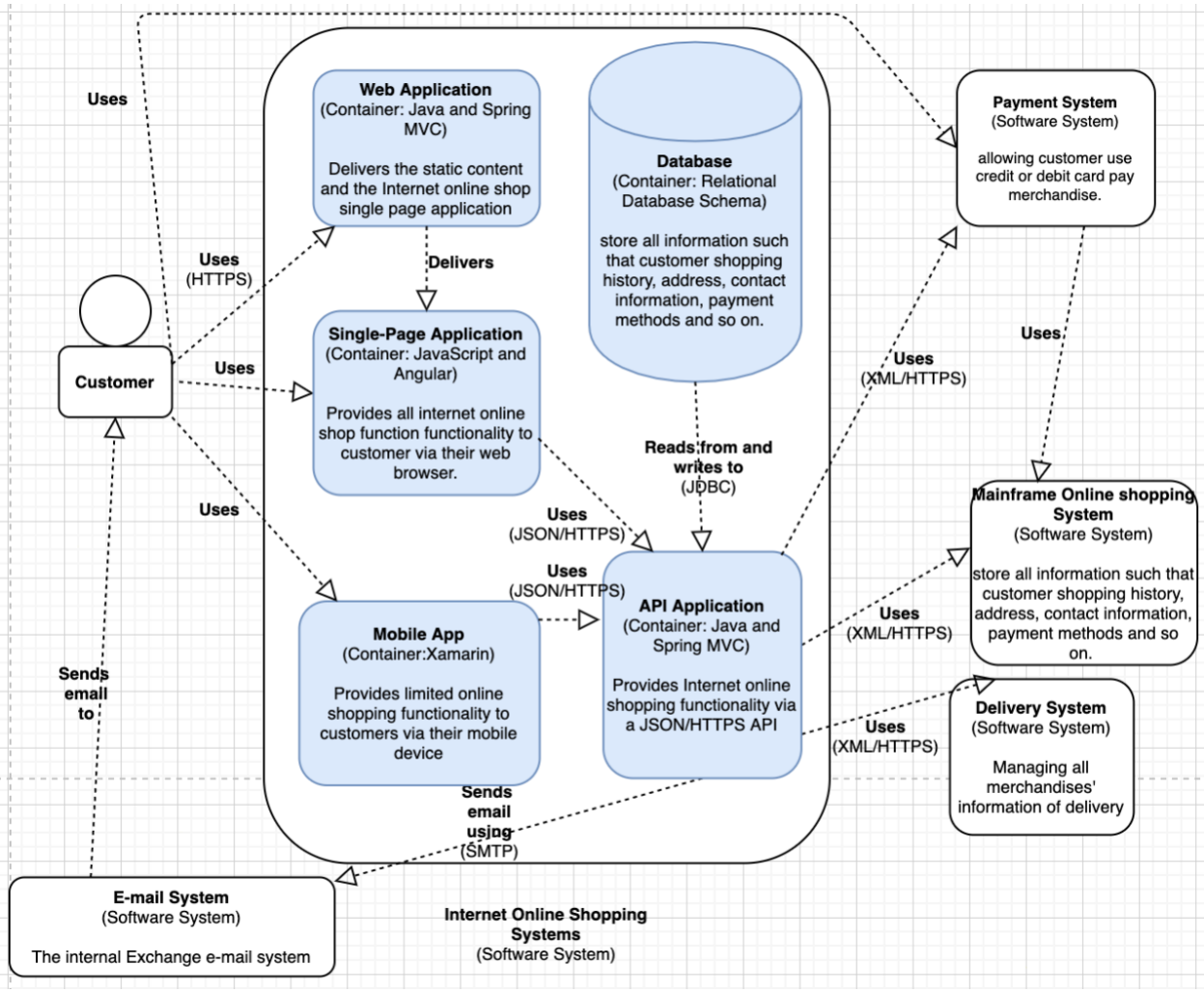

Deployment Diagram:

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