

## Assignment 5 – Software Testing, Project Management and Planning

### Part 1: Software Testing:

**1. Identify one functional and one non-functional requirement related to that system.**

*Non-functional:* The system must be available 99% of the time between 06:00-22:00 and 95% of the time between 22:00-06:00. Any downtime should be scheduled.

*Functional:* The system must allow users to remove items from their shopping carts before proceeding to checkout and payment.

**2. Describe how you would test those two requirements.**

*Non-functional:* I would test this requirement by creating a program that continually checks that the system is live and records any instances when the system is down. I would check the data from the program to ensure that the system is available 99% of the time between 06:00-22:00 and 95% of the time between 22:00-06:00. Next, I would compare the reported downtimes against scheduled downtimes checking that downtime is only occurring when scheduled.

*Functional:* I would check this requirement by adding a variety of items to the shopping cart. Next, I would go to the shopping cart page and try to remove each item from the cart by selecting “remove item”. We could confirm this functionally works if each item is successfully removed from the cart.

**3. For the item counts in the shopping cart, describe what equivalence classes and boundary values you would choose when creating the corresponding unit tests.**

The shopping cart should allow for 1 – 50 items to be placed inside the cart. Therefore, the following equivalence class tests should take place:

\*let x be the number of items in the cart

$x < 1$  - invalid

$1 \leq x \leq 50$  - valid

e.g.

$x = 1$  - valid

$x = 25$  - valid

$x = 50$  - valid

$x > 50$  – invalid

Part 2: Project Management (Risk Management):

- 1. Identify two risks associated with the development of that system.**
- 2. Assess their probability and severity**
- 3. Provide strategies to manage the risks.**

<b>Risk (1)</b>	<b>Probability (2)</b>	<b>Effect (2)</b>	<b>Strategies (3)</b>
Changes to requirements require substantial changes to the design of the system	Moderate	Serious	Develop traceability test and data to assess the impact the requirement change will have on the system.
The system database is unable to process as many transactions per minute as projected.	Moderate	Serious	Investigate into buying a higher performance database which can process transactions faster.

Part 3: Project Planning:

- 1. Identify a possible milestone together with a related deliverable.**  
A possible milestone for this project is the creating of the user interface design. Reaching this milestone implies the user interface of the system has been designed and is ready to be applied to the system. A related deliverable would be a document containing the final design of the systems user interface.
- 2. Describe how you would break down the milestone into at least two different tasks.**

**Task 1:** *Create multiple designs for the user interface.*

To design the final user interface of the system, developers should first start by creating different concept designs of the interface. The developers should use information from the requirements to design these concept designs. For example, the customer should be able to access the shopping cart from all pages.

**Task 2:** *Receive feedback from stakeholders and make alterations.*

Receiving feedback from stakeholder about the user interface concept designs is an important stage of this task. Developers should ask stakeholder about each concept, making sure the positive and negative aspect of each design is made apparent. Developers should consider the feedback when creating the final user interface design.