CSSE 3113: Introduction to Software

Engineering

Fall 20 Assignment 4

Deadline Date**: 21/JAN/2021** 4:30 PM

Instructions:

➢ Viva/Quiz will be conducted for evaluation in next class

➢ SUBMIT HANDWRITTEN SOLUTION IN MY OFFICE/CLASS AND SCANNED COPIES ON REQUIRED MEDIUM BEFORE DEADLINE. (**LATE PENALTY IS 25% PER DAY**)

➢ PRINT AND ATTACH THIS TITLE PAGE TO YOUR ASSIGNMENT

➢ Write in your own words to answer the following, if you use material from any book/website apart from your recommended book please provide relevant references. All work will be assumed yours otherwise.

➢ Justify your answers where needed. Explain briefly and concisely

➢ This is an individual assignment.

**Question 1**

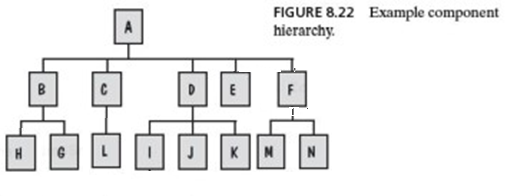
Consider the following required functionality of a print-on-demand service: The print-on-demand service provides customers the possibility to print posters, flyers, or books on demand. The customer should be able to select a type of product (poster, flyer, or book), a desired quantity, and a paper type. In case a book has to be printed, additionally the customer can choose between hard cover and soft cover. Finally, the customer needs to provide a PDF file containing the desired content. In order for the customer to be able to place an order, he or she must have an account. The customer can create an account by choosing a username/password combination. Furthermore, his or her address and credit card number can be linked to the account, which is required information when placing an order. Once a customer has provided the information for an order, the system checks if all required information is there, either given in the order (type of product, quantity, etc.), or in the account (address and payment information). If any information is lacking, the system will inform the customer that it needs to be added before the order can be placed. Once all information is in place, the order is placed, and the credit card information is sent to the bank for approval. If the bank approves the card, the order is finalized. A printing agent is in charge of actually performing the printing. He or she inspects the provided PDF files of finalized orders. If a file does not meet the quality requirements, the customer will be informed about this, and the order is temporarily put on hold until the customer has provided a new PDF file. Finally, the administrator monitors if at all times, sufficient paper and ink stock is present. Whenever the amount of paper or ink is running low, an order must be placed at the appropriate supplier (either the paper or ink supplier).

* 1. (7 points) Create a UML Use Case Diagram for the print-on-demand service. In addition, give a detailed scenario (pre-condition, trigger, guarantee, main scenario, ...) of the use case for “place an order”.
  2. (6 points) Based on your use case description of “place an order”, create a UML Sequence Diagram.
  3. (7 points) Create a Class Diagram of above-mentioned system.

**Question 2**

1. In a certain metropolitan subway system, the ticket machines accept cash but do not give change. There is a separate machine that dispenses change but does not sell tickets. In an average station there are six or eight ticket machines for every change machine. What modifiability tactics do you see at work in this arrangement? What can you say about availability?
2. Define Manual Vs Automated testing?
3. What is a Test Case? Write test cases for Gmail Login? Give at least 5 examples?
4. What is TDD (TEST DRIVEN DEVELOPMENT)? Which of the process models focuses on TDD? Explain TDD aspect of any process model

**QUESTION #3**

1. 
2. Apply the approaches used in part A to following system
3. You have been asked to test a method called catWhiteSpace in a “Paragraph” object that, within the paragraph, replaces sequences of blank characters with a single blank character. Identify 6 test cases (3 success scenario 3 Failure Scenario) for the catWhiteSpace method.

Notes: Submit softcopy through \*teams-MAKE SURE ITS IN RIGHT NAMING CONVENTION The submission will be closed at deadline. Scanned versions of hand written solutions must be submitted in MS Word or pdf format only. Including the title page & In time submission of the assignment carries 10 marks. This is an individual assignment.