Programming II

Comp 111

Spring 2020



Department of Computer Science

Forman Christian College University

Lab 11

UML

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| **Question #** | **Total Marks** |
| Question 1 | 5 |
| Question 2 | 5 |

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# **Lab Problem**

**Question 1:**

**Model with a class diagram the following System: Vending Machine.**

A vending machine sells small, packaged, ready to eat items (chocolate bars, cookies, candies, etc.).

Each item has a price and a name. A customer can buy an item, using a smart card (issued by the vending machine company) to pay for it. No other payment forms (i.e. cash, credit card) are allowed. The smart card records on it the amount of money available.

The functions supported by the system are:

* Sell an item (choose from a list of items, pay item, distribute item)
* Recharge the machine
* Set up the machine (define items sold and price of items)
* Monitor the machine (number of items sold, number of items sold per type, total revenue)

The system can be used by a customer, a maintenance employee (who recharges items in the machines), an administrator (who sets up the machine).

**Question 2:**

**Draw UML diagram**

Define a class named Document that contains a member variable of type string named text that stores any textual content for the document. Create a function named getText that returns the text field and a way to set this value.

Next, define a class for Email that is derived from Document and that includes member variables for the sender , recipient , and title of an e-mail message. Implement appropriate accessor and mutator functions. The body of the e-mail message should be stored in the inherited variable text .

 Similarly, define a class for File that is derived from Document and that includes a member variable for the pathname. Implement appropriate accessor and mutator functions for the pathname.

Each class should have a display function to display the complete contents.

Create a class Author with name and id. Author is responsible to create the document. It means every document should have an author.

Create a class Administrator with name and id. Administrator can delete the document if he finds these words (“corrupt, liar, dishonest”) in the document text.

Finally, create several sample objects of type Email and File in your main function. Test your objects by creating a test program. Also create relationships with author and administrator with document.