

Coursework Report – 5COSC019C Object Oriented Programming

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Have you submitted the video with the demonstration of your system?

☒ Yes

☐ No

If the video has been submitted specify where:

☐ Blackboard

☒ On the cloud (file shared from Google drive, or OneDrive or DropBox, etc), or YouTube.

<https://drive.google.com/file/d/1rMBQP9O7IWY4s5FRGvui1-qek8eNesh9/view?usp=sharing>

Phase 1 – Design and class implementation

Task	Did you attempt the task?	Student's comments (To which extent you implemented the task? Have you encountered any problems or issue?)
Design a UML Use Case Diagram of your system (submitted in a separate file).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. Identified the actors and use cases. Used include and extend relationships where necessary.
Design a UML Class Diagram of your system (submitted in a separate file).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. Identified the necessary classes and added each class's relative fields and methods. Added the relationships between classes where applicable.
Implementation Class Product	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. I implemented the Product class as an abstract class, including the necessary instance variables for the Product Name, Product ID, Price and Quantity. Created a default constructor and a parameterised constructor where the instance variables are the parameters. Provided the necessary getters and setters for the instance variables. Followed the encapsulation principle (Data hiding) by making the access modifier of the instance variables private and only using the getters and setters in the other classes. . In addition the toString() method is overridden to display the Product name, product id, price and the quantity.
Implementation Class Electronics	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. The Electronics class is a subclass of the Product hence it was implemented using the extend keyword to indicate that the electronic class inherited from the Product class. Included 2 instance variable for the Brand and Warranty Period of the electronic. Followed the encapsulation principal by using getters for the instance variables. Setting the details of the clothing is done using a single method where the super keyword is used to access the setters in the Product class. In addition the toString() method is overridden to display the its is a electronic and the brand and the warranty period.

Implementation Class Clothing	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. The Clothing class is a subclass of the Product hence it was implemented using the extend keyword to indicate that the Clothing class inherited from the Product class. Included 2 instance variable for the size and colour Period of the clothing. Followed the encapsulation principal by using getters for the instance variables. Setting the details of the Clothing is done using a single method where the super keyword is used to access the setters in the Product class. In addition the toString() method is overridden to display the its is a clothing and the size and the colour.
Implementation Class User	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. Added constructor and getters and setters then add the methos which is firstPurchase and addPurchase
Implementation Class Shopping Cart	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. Added the list to product then add the constructor. And add the methods which is addCartproduct, removeCartProduct, and calculateTotal.
Implementation Interface WestminsterShoppingManager	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. This interface is used for the WestminsterSkinConsultation manager which has all the methods needed to add a product, delete a product, print the list of products, save the progress and reload the progress.

Phase 2 – Console menu implementation

Task	Did you attempt the task?	Student's comments (To which extent you implemented the task? Have you encountered any problems or issue?)
Add a product in the system with all the relative information (max 50 Products)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. I used an ArrayList of Product object to store the details of the Product. I have given the menu option as "1" or "A" for the user to add a product. The detail of the product is taken from user inputs and validating using a separate method. I also ensured that the entered medical license is checked to make sure it is unique. When the maximum number of 50 products is reached, I display an error message to the user.
Delete a product from the system by selecting the product ID. Display a	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. User has to enter 2 or "D" in the menu to delete a Product. When the option is

message to confirm it has been removed and the total number of products in the system.		selected the current list of product Id will be asked and check the id is exist in the list. If its exist the product details will be shown and the that particular product will be erased.
Print on the screen the list of the products in the system with all the relative information. The list should be ordered alphabetically.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. User has to enter 3 or "P" to print the list of product. Displays all the information of the product in the centre. Sorted alphabetically according to the surname.
Save in a file entered by the user so far. The user should be able to load back the information running a new instance of the application.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. User has to enter 5 or "S" to save the current progress. The saved progress can be load to the system by entering 4 in the menu.

Phase 3 – GUI Implementation

Task	Did you attempt the task?	Student's comments (To which extent you implemented the task? Have you encountered any problems or issue?)
The user can select the category through the drop-down menu	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. When he user clicks the drop down menu it will show "Electronics" and "Clothing" option so the user can select one of the option then the list will be only showing the selected category only.
The GUI is open and a list of products with the information as per specification has been displayed	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. Once the user opens the GUI from the console menu by entering 6 or "G", the GUI of Westminster shopping centre will be loaded. The list will be sorted automatically.
Items with low availability are highlighted in red	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Partially implemented.
The user can select a product and all the details are displayed as per specification in the below panel	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. When the user select a product the details of the product will be shown under the list of the table.
The user can add products to the shopping cart and all the information are displayed in a separate frame	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. When the user selects a product from the list then by pressing the add to cart button only 1 item will be shown in the shopping cart if the user press twice two of the same product will be shown.

The final price is displayed correctly	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. Total price and the deducted final price will be shown under the shopping cart.
The discounts, if applicable, are displayed as per specification and the final price updated accordingly	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. After adding more then 3 items to the cart the discount will be added and the final price will be changed.

Phase 4 – Testing and system validation

Task	Did you attempt the task?	Student's comments (To which extent you implemented the task? Have you encountered any problems or issue?)
Test plan. (Submitted in a separate file).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented. Created a test plan with 27 test cases to show the full functionality and input validations done.
Implementation of an automated unit test for each scenario in the console menu.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fully implemented.
Error Handling across all the code, input validation and code quality.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All aspects of the program are validated, and try-catch blocks are used in the necessary places for error handling. Followed Java Coding conventions as much as I possibly could.