2024 Sem 1 IT1303 Assignment

Assignment (30%) **(Total = 100 marks)**

INSTRUCTIONS:

1. Create a Python Project using your **adminNo**.
2. Include the following comments at the top of all the source files.

   # Author : <enter your name>

   # Admin No / Grp : <enter your admin number / PEM group>
3. **Zip up** all the **Python files** and submit to BrightSpace.
4. **Verify** that your submission is correct before **deleting all** the files from the computer.
5. Your submission to BrightSpace is **final**. Please be sure to check all files carefully before submitting to BrightSpace.

SUBMISSION DATE: 12 Aug (Monday), 2359hrs

OBJECTIVES:

On successful completion of this practical, the students should be able to:

- Identify user-defined functions and modules
- Put together all the knowledge leaned in this module to create a simple python application
- Follow good practice when writing the code, e.g. validating user's input, providing comprehensive documentation, ensuring that the program is designed with clarity and ease of understanding, and etc

Create an Inventory Management System for a Small Retail Store.

Develop a Python program to manage inventory for a small retail store. The program should enable users to add new products, update existing product details, remove products from inventory, and view the current inventory status.

a) The application consists of **4** main functions: -
   - Add new product: Allow users to input details for a new product and add it to the inventory.
   - Update existing product: Allow users to modify information for an existing product.
   - Remove product: Allow users to remove a product from the inventory.
   - View inventory: Display a list of all products along with their details.

b) Each product should have the following data:
   - Product ID
   - Product Name
   - Category
   - Description
   - Price
   - Quantity Available

c) Implement validation for the product ID to ensure uniqueness.

d) The program should only allow products to be categorized into a predefined set of categories.

e) Add additional functions / advanced features to enhance your application. For example:
   - The application displays the total number of products in the view inventory function.
   - The program will always go back to this menu when a function executes finish.
   - If there are no products in the system, the system will prompt an error message if user try to display, search, update or remove.
   - Calculate and display the total value of the inventory.
   - The program should exit properly.
   - Etc.

Add the following data into your code:

Product ID	Product Name	Category	Description	Price	Quantity Available
1001	Lenovo ThinkPad Z1	Electronics	High-performance laptop with SSD storage	1288.88	50
2001	Samsung S24 Max	Mobile Devices	Latest smartphone	1688.00	68
3001	Creative NS1	Accessories	Noise-canceling wireless headphone	299.00	150

4001	Nespresso Vertuo	Home Appliance	Programmable coffee maker	99.99	60
3002	Xiaomi Smart Band 10	Accessories	Waterproof fitness tracker	38.80	25

In addition to the application, you are required to write a report describing how the application works.

Include the following in your report:

a) Overview of the application's purpose and functionality
b) Explanation of each function and feature
c) Screenshots of the application at different stages, showcasing its features and functionality.

Marking Scheme

Add New Product	15 marks
Update Existing Product	20 marks
Remove Existing Product	10 marks
View Inventory	10 marks
Additional functions / unique / advanced features	30 marks
Good Programming Practices	15 marks

Copying work from others or any other sources (including the internet) is strictly prohibited. If proven guilty, it will be considered as an act of plagiarism, and you will be subjected to disciplinary action. If your code is derived from any resource, please properly cite that resource in your report.

You may also wish to note that your submission will be checked for plagiarism by NYP LMS. The allowable percentage for similarity should not exceed 10%.

-End-