

## Introduction to Computer Programming (ICP)

CCIT4020, HKU SPACE Community College, 2019-20 Semester 1

Course Project Guidelines: Inventory Management and Record System

### 1) Introduction

Nowadays, an Inventory Management and Record System is important to manage all inventory information of delivery status and shipping schedule for an online shopping platform. In this project, a simple and effective inventory management and record system for the HKSPACE online shopping platform is developed in order to record, search and back up the data of various items. To avoid any conflict between different data types and any other programming bugs, Input data validation processes are necessary to be employed and developed in the system.

#### 1.1) File Format for data storage:

In this project, one data file “inventory.txt” is required to back up the data. The data file contains various inventory records. Each record include “Record number”, “Item name”, “Item number”, “Category”, “Quantity”, “Weight”, “Recipient”, “Final destination”, and “Delivery status”). In this project, we assume that the maximum number of records are 50 and the maximum numbers of characters for “Item name”, “Recipient”, “Final destination”, and “Delivery status” are 40 respectively.

The format and example of data stored in the data file “inventory.txt” are listed as follows:

```
Record number #1
Item name #1
Item number #1
Category #1
Quantity #1
Weight #1
Recipient #1
Final destination #1
Delivery status #1

Record number #2
Item name #2
Item number #2
Category #2
Quantity #2
Weight #2
Recipient #2
Final destination #2
Delivery status #2

Record number #3
Item name #3
Item number #3
Category #3
Quantity #3
Weight #3
Recipient #3
Final destination #3
Delivery status #3
.
.
.
```

The sample of the items in each record (3 records) stored in the data file is shown below:

1001 Orange Laptop Computer DX5 235524 Electronics 1 1.8 kg Chan Tai Man Mong Kok Delivery
1002 Japanese Garden Pear Gift Box 300522 Food 2 4.2 kg Cheung Siu Ming Yuen Long Arrival
1003 Koppo Badminton Racket GPX-15 77524 Fashion 3 0.6 kg Lee Siu Yu Fortress Hill Warehouse

## 2) Project Requirements

In this course project (25% of C.A.), students are required to **form groups in the same class (4 to max. 5 students per group)** to design and implement a Python program (*Standalone Console-Based Application*) for the Inventory Management and Record System. The program for this system must include two parts: 1) Group Basic Function (Group work) (18%), and 2) Individual Extra Function (Individual work) (7%).

### Sample Output for Group Basic Function (Group work) of the system

```
*** Welcome to HKSPACE Inventory Management and Record System 1920S1 ***
*** This system is developed by CCIT4020 Class No. 7L-?? Group No.?? ***
--<Basic functions>--
1. Add New Item(s):

2. Display Item Record(s):

3. Search Item Information:

4. Modify Item Record(s):

5. Delete Item Record(s):
What is your option (1-5)?
>>>
```

### 2.1) Requirements for Group Basic Function (Group work)

The following *functions* must be provided in the system:

#### ◆ **Main Menu: in the `main()` function**

- Show menu page when the program is executed or selected option is completed.
- After the main menu is shown, wait for user to input a number (or character) from options above.

#### ◆ **Option '1': Add new item record(s)**

- Add a new item in the system and store the information of such item in a data file "inventory.txt".
- Record "Record number", "Item name", "Item number", "Category", "Quantity", "Weight", "Recipient", "Final destination" and "Delivery status".
- Ask user to add another new item (if *Yes*, repeat the step; if *No*, go back to menu page).

*Sample Output of Option '1' is shown as example below*

```

Please enter Record number:1001
Please enter Item name:Orange Laptop Computer DX5
Please enter Item number:235524
Please enter Category:Electronics
Please enter Quantity:1
Please enter Weight:1.8
Please enter Recipient:Chan Tai Man
Please enter Final Destination:Mong Kok
Please enter Delivery status:Delivery

Do you want to add another item record(y/n):y
Please enter Record number:
  
```

◆ **Option '2': Display item(s)**

- Load and display the items in the system from the corresponding data file “inventory.txt”.
- Display all the item information (Record number, Item name, Item number, Category, Quantity, Weight, Recipient, Final destination, and Delivery status) line by line on screen.

◆ **Option '3': Search item information**

- Search and display the item information you searched on screen from the corresponding data file “inventory.txt”.
- Ask user to search another item record (if *Yes*, repeat the step; if *No*, go back to menu page).

◆ **Option '4': Modify item record(s)**

- Update the existing item record and store it to the corresponding data file “inventory.txt”.
- Ask user to change another item record (if *Yes*, repeat the step; if *No*, go back to menu page).

◆ **Option '5': Delete item record(s)**

- Delete the existing item record and update the records in the data file “inventory.txt”.
- Ask user to remove another item record (if *Yes*, repeat the step; if *No*, go back to menu page).

## 2.2) Requirements for Individual Extra Function (Individual work)

Each group member is required to design and implement an Individual Extra Function (e.g., create a new Option '6' or a new function, etc.) and integrate to the system of this project. These extra functions can be contributed and integrated to the system so as to perform various specific tasks or supplementary purposes. There is no constraint on the function features. (**Except user login with password**)

### 3) Submission

#### 3.1) Group Basic Function (Group work) (Submit on lesson 11)

- All the files and materials are **submitted by a group representative**.
- All files/folders should be compressed as a single zip file and submit to SOUL via a submission link on or before the deadline.
- Group representative needs to **share all Group Basic Function** (Group work) files **to all the members** in the group to work on next Individual Extra Function (Individual work).

##### a) Softcopy

- All programming related files must be submitted that are related to the **Group Basic Function** on lesson 11. (e.g., source file(s) in (.py), data file(s) in (.txt), scanned Group Project Submission Form (in .pdf or .doc), etc.)
- All softcopies for group work must be submitted on SOUL by the **group representative** before the deadline (on lesson 11).
- README file(s) (in .doc) (optional) can be attached to give details or further clarifications.
- Use WinZip or 7-Zip to compress all the files into single zip file named ClassNo\_GroupNo\_Basic.zip (e.g., for students in class NL01, Group 08, name the file as **NL01\_08\_Basic.zip**) for submission on SOUL.

##### b) Hardcopy

- Submit a hardcopy of filled Project Submission Form for Group Basic Function on Lesson 11 by the group representative (**submit one form per group**)

#### 3.2) Individual Extra Function (Individual work) (Submit on lesson 12)

- All the programming files and materials are **submitted by each member individually**.
- All files/folders should be compressed as a single zip file and submit to SOUL via a submission link on or before the deadline.
- All programming files, data file(s) from the Group Basic Function (Group work) are necessary to submit for program comparison and verification.

##### a) Softcopy

- All programming files and data file(s) from the Group Basic Function (Group work), the integrated Individual Extra Function (Individual work) and the scanned file of filled Extra Function Form for Individual Member must be submitted to SOUL on lesson 12.
- Use WinZip or 7-Zip to compress your files into single zip file named ClassNo\_GroupNo\_StudentNameStudentID.zip (e.g., For students in class NL01, Group 08, Name: Chan Tai Man, ID: 1234567 should name the files **NL01\_08\_ChanTaiMan1234567.zip**) for submission.

**b) Hardcopy**

- A hardcopy of filled Extra Function Form for Individual Member must be **submitted on Lesson 12 by each of the members** before the commencement of presentation.

**3.3) Project Presentation and Demonstration**

Project Presentations will be held in **Lesson 12**. Each group has a maximum of **15 minutes** including preparation, presentation, program demonstration, etc.

- All group members must participate in the presentation (in English).
- The presentation must be well-prepared as the tight presentation schedule.
- A presentation PowerPoint (softcopy and hardcopy) is needed during the presentation.
- **Full programming codes are not necessary to show** on the PowerPoint slides.

**a) Softcopy**

- **Project Presentation PowerPoint file:** named **ClassNo\_GroupNo.ppt (or .pptx)** (e.g., For the students of class NL01, Group 08, should name the file as NL01\_08.ppt) ,
- The contents of the presentation PowerPoint include:
  - Job distributions
  - Overview of project
  - Programming techniques used in the basic functions
  - Programming techniques used in the extra functions
- The PowerPoint file must be submitted to SOUL via a submission link.

**b) Hardcopy**

- **Hardcopy of Project Presentation PowerPoint (Print setting: four slides per page, double-sided, A4)** must be submitted before the commencement of presentation.

*(Remark1: Double-check the contents in your submission, if they are the most updated versions.)*

*(Remark2: Programming codes or statements must include comments for description or explanation)*

*(Remark3: A readme file(s) (optional) can be attached to give details or explanations of the Group Basic Function or Individual Extra Function (if necessary))*

**References:**

**Website for HKTV mall** (<https://www.hktvmall.com/hktv/zh/>)

**Website for Amzaon** (<https://www.amazon.com/>)

**Website for Taobao (delivery)** (<https://world.taobao.com/>)

**Reminder**

Collusion and plagiarism are serious offences and may result in disciplinary action. A mark of zero will be given for the piece of coursework and; in addition, the final grade of the course may be affected (for example, it may be lowered from D to F). Please carefully read the section about Collusion and Plagiarism in your Student Handbook.

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