

Sarawak Campus  
School of Foundation Studies  
Foundation Studies

## **Assignment**

**FST10014**

## **Programming**

(Semester 1, 2018)

Version date (10 May, 2018)



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**Assignment Note**

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- This is an **individual** assignment
- This assignment is awarded **80% (to be converted to 20%)**
- Your assignment submission should be presented in a professional manner
- Scrappy work will be not assessed
- Assessment marks will be awarded for working code only
- Coding standards and documentation will be taken into account
- This assignment is due on **Monday, July 2<sup>nd</sup>, 2018, 12:00PM (for all groups)** via Blackboard link

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**Application**

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You are to create an application using Python programming language for **Swinburne Restaurant and Lounge** to handle customer reservation. Each reservation should prompt the customer for their details, venue selection, menu package selection, and entertainment selection. Upon confirmation, your application should calculate the total price to be paid by the customer and confirm the reservation.

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**Program Specification**

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1. Each customer is required to enter their details into the system. All information entered must be validated (validation is mandatory).
2. Your application should prompt the user to choose ONE (1) of the available venues. Venue selected must be able to accommodate the number-of-people entered by the user.
3. Your program should prompt the user to choose ONE (1) of the available menus from the menu list. Your program shall list down menu selection and prompt the user to confirm menu listed.
4. Your program should prompt the user whether there is any addition for entertainment (based on venue selected). Only if the user indicates that entertainment add-on is required, the entertainment menu option is displayed for user selection.
5. A booking summary and total price are to be displayed for the user to confirm.
6. Only upon user confirmation, reservation is made. A final booking summary should then be displayed for the user to view.
7. A copy of reservation details is to be saved in a text file (ONE (1) file per customer).

## Information

### 1. Venue Cost:

Venue	Cost
VIP Room (10 Persons)	FREE
Executive Room (30 persons)	FREE
Pool Site (50 persons)	RM800.00
Banquet Hall (200 persons)	RM1000.00
Chamber Hall (500 persons)	RM1500.00
Concert Hall (1000 persons)	RM1800.00

Table 1

### 2. Menu Option:

Menu	Cost per table
1	RM872.00 Package
2	RM992.00 Package
3	RM1122.00 Package
4	RM1352.00 Package
5	RM892.00 Vegetarian Package
6	RM1128.00 Vegetarian Package

Table 2

### 3. Entertainment Charges:

Entertainments	Availability	Cost
Synchronised Swimming	Pool	RM2200.00
Musical Performance	Banquet Hall, Chamber Hall, Concert Hall	RM1900.00
Ballet Performance	Banquet Hall, Chamber Hall, Concert Hall	RM1600.00
Magic Performance	Pool, Banquet Hall, Chamber Hall, Concert Hall	RM650.00
Live Band	Pool, Banquet Hall, Chamber Hall, Concert Hall	RM1750.00

Table 3

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## Requirements

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You are required to define the following modules/functions to implement in your program. You are also free to define more as you see fit.

### 1. Module: `swinburneFunction.py`

This module should consist of all the necessary functions to be called by your main program.

For all the functions in this module, you are required to draw individual flowchart (ONE (1) flowchart for ONE (1) function) to visually describe the program flow.

#### Function: `readVenueList(textFile)`

- This function is used to read venue text file
- Your program should read the text file and store the items read into a list. The items in the list must be of dictionary data type. For example, `[{'name': 'Pool Site', 'max': 50, 'cost': 800}, and so on]`
- Return the list to the calling procedure for processing

#### Function: `validateCustomerName(name)`

- This function is used to validate the customer name entered by the user
- Each name should consist of a surname and a given name

#### Function: `validateNoOfPeople(people)`

- This function is used to validate the number-of-people to occupy the selected venue chosen by the user
- The number of people should be in between 1 to 1,000 (both inclusive)

#### Function: `validateContactNumber(number)`

- This function is used to validate the contact information entered by the user
- Contact number given should consist of only TEN (10) numerical digits

#### Function: `validateVenue(choice,venueList,noPeople)`

- This function is used to identify whether the selected venue could accommodate the number-of-people entered by the user

#### Function: `readItemList(textFile)`

- This function is used to read menu list and entertainment text file
- The information from the text file should be read and stored in a list
- Return the list to the calling procedure for processing

#### Function: `calculateTableTotal(noPeople)`

- This function is used to calculate the number of table(s) required based on the number-of-people entered by the user
- By default, each table is to accommodate TEN (10) people
- Additional people can be added to any available table as long as they are less than 6 people
- For example, if the number of people is more than 35 but less than 40 (36 to 39), a reservation is made for 4 tables; if the number of people is 35 or less (31 to 35), a reservation is made for 3 tables

#### Function: `calculateVenuePrice(venueChoice)`

- This function is used to calculate the venue price based on the venue selected by the user
- Refer to Table 1 for details

#### Function: `calculateMenuPrice(totalTable,choice)`

- This function is used to calculate the total price based on the menu selection entered by the user
- Refer to Table 2 for details
- Total price should be calculated as cost per table by total number of table booked (based on the number-of-people entered)

**Function: calculateEntertainment(choice,venueChoice)**

- This function is used to calculate the total price of add-on entertainment selected by the user (if any)
- Add-on entertainment is not a mandatory menu item; the user could opt not to add any entertainment to their reservation
- Your function should validate the add-on selection based on the selected venue
- Refer to Table 3 for details

**Function: calculateTotalPrice(venuePrice,menuPrice,entertainmentPrice)**

- This function is used to calculate the total price of venue booked, menu selected and entertainment add-on selected (if any)

**Function: booking(custName,custNo,noPeople,totaltable,strVenue,strMenu,strEntertainment)**

- This function is used to record and save reservation details to a text file (ONE (1) file per reservation)
- The name of the text file should be generated as customer's surname + today's date. For example, Bond\_20180502

**2. Module: textGUI.py**

This module should consist of all necessary printing functions to be called by your main program.

**Function: printBanner()**

- This function is used to print the heading of your application
- Today's date must be included in the heading
- Refer to Figure 1 for design suggestion

```

* * * * *
|                                     |
|               Swinburne Restaurant and Lounge               |
|                                     |
* * * * *

Welcome to Swinburne Restaurant and Lounge Reservation Management System
Today's Date: 2018-05-02

```

Figure 1: printBanner Function

**Function: printVenue()**

- This function is used to print the list of venues available at *Swinburne Restaurant and Lounge*
- This section could be hardcoded or retrieved from a text file
- Refer to Figure 2 for design suggestion

```

-----
Venue
-----

[1] VIP Room (10 persons)           [4] Banquet Hall (200 persons)
[2] Executive Room (30 persons)     [5] Chamber Hall (500 persons)
[3] Pool Site (50 persons)          [6] Concert Hall (1000 persons)

```

Figure 2: printVenue Function

**Function: printMenuPackage()**

- This function is used to print the list of menu packages available at **Swinburne Restaurant and Lounge**
- This section could be hardcoded or retrieved from a text file
- Refer to Figure 3 for design suggestion

```
-----
Menu Option
-----
```

```
[1] RM872 Package           [4] RM1352 Package
[2] RM992 Package           [5] RM892 Vegetarian Package
[3] RM1122 Package          [6] RM1128 Vegetarian Package
```

Figure 3: printMenuPackage Function

**Function: printPackage(menuList)**

- This function is used to prompt the user to choose a menu package. Each package comes with default menu list. Your program should display a menu list and prompt the user to confirm the selection.
- You are to implement the use of loop structure to keep displaying the menu and prompting the user for confirmation until one is made
- Code with loop implementation will be rewarded with a higher mark whereas hard code will result in a lower mark
- Refer to Figure 4 for design suggestion

```
-----
Menu List - RM1122 Package
-----
```

```
1. Pancetta Crisps with Goat Cheese and Pear
2. Chestnut Fennel Soup
3. Wilted Spinach Salad with Warm Apple Cider and Bacon Dressing
4. Butternut Squash Gnocchi with Sage Brown Butter
5. Smoked Cheddar Stuffed Chicken with Green Apple Slaw
6. Autumn Root Vegetable Puree
7. Creme Anglaise and Fresh Assorted Berries
```

```
Would you like to confirm the menu selection?
[1] Yes
[2] No, I would like to reselect my menu
```

Figure 4: printPackage Function

**Function: printEntertainment (venueChoice, entertainmentList, venueList)**

- This function is used to prompt the user to choose an add-on entertainment based on the chosen venue
- You are to implement the use of loop structure to keep displaying the add-on entertainment and prompting the user for confirmation until one is made
- Code with loop implementation will be rewarded with a higher mark whereas hard code will result in a lower mark
- Refer to Table 3 for entertainment list for venues
- Refer to Figure 5 for design suggestion

```
-----
Add-On Entertainment - Pool Site
-----
```

- ```
1. Synchronised Swimming
2. Magic Performance
3. Live Band
```

Figure 5: printEntertainment Function

**Function: printSummaryTotal (custName, contNum, numPeople, totalTable, strVenue, strMenu, strEntertainment, totalPrice)**

- This function is used to print reservation summary based on the entries entered by the user and results of calculations performed based on the input entries
- Code with loop implementation will be rewarded with a higher mark whereas hard code will result in a lower mark
- Refer to Figure 5 for the design suggestion

```
Your reservation has been confirmed
-----
Reservation Summary
-----
Customer Name       : Hephi Liauw
Customer Contact No. : 0161234567
No. of People       : 47
No. of Table        : 5
Venue               : Pool Site
Package             : RM992 Package
Add-On Entertainment : Synchronised Swimming

Total Price         : RM7960.00
```

Figure 6: printSummaryTotal Function

### 3. Module: main.py

This module will be your main program. Import textGUI.py and swinburneFunction.py to this main module, and write an application that is suitable for **Swinburne Restaurant and Lounge**.

Do note the following:

1. All input values must be validated. When the user enters an invalid input, your program should be able to handle it – error message should be displayed and the user should be re-prompted to enter/choose another input.
2. Program logic should be as follows:



3. All functions in swinburneFunction.py and textGUI.py must be executed and implemented accordingly.
4. Redundant codes will result in mark deduction.

**Submission**

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- You are to submit an **electronic copy** of your completed program, text files, and flowcharts to the Blackboard link provided. You are to place your work (\*.py, \*.txt, \*.pdf) in a folder, zip it, and name is as *GroupNo\_ID\_YourName\_Assignment*. E.g. *Group1\_100000007\_PeterParker\_Assignment*.
- Do note that only **ONE (1)** submission is allowed per student. Therefore, make sure only the correct file is submitted.
- This assignment will be evaluated based on the Assignment Marking Scheme attached.
- Late submission will result in mark deduction.
- Marks will be deducted if you fail to meet the requirements stated.
- Plagiarized work will NOT be assessed. Any student caught in the act is punishable with a zero mark.

- The End -