****

Module: SOFT6017 – Problem Solving & Programming 2

Assessment: Summer Exam 2015

**Internal Examiner(s): Ms. Mary Davin**

**Ms. Helen Fagan**

**Ms. Cliona McGuane**

**Mr. David Murphy**

**Ms. Linda O’Sullivan**

 You have 2 hours to complete this assignment.

### Instructions:

1. Download the file **HotelsExam.java** from Blackboard - Blackboard can be accessed at <https://citbb.blackboard.com>.
2. Create a project **Hotels** with a class file Hotels.java. Take the code contained in file **HotelsExam.java** and copy it to your Hotels.java file. Make sure the .java file and class name are both **Hotels**. Compile and run **Hotels.java**. This will show a menu.
3. Add your **name** and **studentID** as a comment at the top of the file.
4. Complete the **Global Hotels** application as outlined below.
5. When you have completed your exam upload your completed **Hotels.java** file to Blackboard.

Please note that if you do not upload the .java file properly you will be awarded a mark of **zero**.

1. Open the uploaded file in Blackboard to verify that you have indeed uploaded the correct file.

### Global Hotel Rates 2015 Specification

You have been asked to write an application for Global Hotels. The application must show the cost of staying at the hotels run by Global Hotels. Each hotel has a different nightly rate. Each hotel is also given a star rating. If a customer wishes to stay 5 nights the nightly rate is multiplied by 5 and a reduction is then made to the bill. The reduction applied varies for each hotel.

The application stores the hotel name, star rating, cost of a one night stay and the reduction applied for a five night stay. The information is stored in the following arrays: hotelNames, starRatings, oneNightRoomRates and reductionForFiveNights. The cost is stored in Euros. The variable numberOfHotelsListed stores the number of valid entries contained in each of these arrays. The constant MAX stores the maximum number of entries that may be stored in each of these arrays.

The file HotelsExam.java is available on blackboard. If you compile and run this code the following menu is displayed.

Global Hotels Prices

---------------------------------

1. Display Hotels with Desired Star Rating

2. Display All Hotels showing Star Ratings

3. Show the Cheapest hotel for 1 Night

4. Add New Hotel Information from a File

5. Create Flyers

6. Exit

**You must implement each of the menu items above by completing each of the questions below.**

### Question 1 - Display Hotel Prices (20 marks)

Complete the method displayHotelPrices. This option asks the user to specify the minimum star rating required. It then prints the names of the hotels that have at least this star rating and shows the prices for a one night stay. The user should be informed if no hotels satisfied the criteria.

You should validate the user input.

The sample output is shown here:

Global Hotels Prices

---------------------------------

Enter the minimum number of stars required:

1

Global Hotels Prices

---------------------------------

Hotel Name One Night

---------- ---------

Avon Rose 100

Cherry Tree 120

River Lodge 200

Gold Coast 80

White Tops 80

## Press Return to continue

## Question 2 - Display All with Star Rating (20 marks)

Complete the method displayStars.

Display a list of all hotels with the nightly rate and a visual representation of the number of stars awarded to each hotel.

You should include a method to generate a string of \*s to represent the star rating:

String generateStars(int n)

The sample output is shown here:

Global Hotels

-------------

Hotel Name Grade

---------- -----

Avon Rose \*\*\*

Cherry Tree \*\*\*

River Lodge \*\*\*\*

Gold Coast \*\*\*\*

White Tops \*\*

## Press Return to continue

### Question 3 - Find the **Cheapest One Night Stay** (20 marks)

Write the method displayCheapestForOneNight. This method finds the hotel with the cheapest night rate. It prints out the cheapest hotel rate and the name of the hotel offering this rate. If two or more hotels qualify they are all listed.

Hotel Booking Prices

---------------------------------

The cheapest hotel(s) for one night at 80 are:

Gold Coast

White Tops

## Press Return to continue

### Question 4 - **Add New Hotel Details From a File** (20 marks)

Write the method updateFromFile which adds the details of a new hotel to the arrays.

The program should load the details of a new hotel from the file **HotelInfo.txt**. The file is available in Blackboard and should be placed in the project directory.

The file contains 4 lines with the following information

line 1: the name of the hotel

line 2: the cost of a 1 night stay

line 3: the reduction applied for a 5 night stay

line 4: the star rating.

If you open the file you will see the following information

Golden Mile

80

40

1

## Question 5 - Create Flyers (20 marks)

Write the method createFlyers. This creates one file for each hotel in the list. The name of the hotel will be used in the filename.

Each file contains the details specific to one hotel :

* the hotel name
* the star rating for that hotel
* the cost of a single night
* the cost of a five night stay

Remember the cost of a five night stay is calculated by multiplying the single night rate by 5 and applying the reduction for that hotel. The File “Avon Rose.txt” will contain the following information:

Stay at the Avon Rose

----------------------

A 3 Star Hotel

One Night for 100 Euros

Five Nights for 450.0 Euros