FACULTY OF COMPUTING & INFORMATION TECHNOLOGY
KING ABDULAZIZ UNIVERSITY

كلية الحاسبات وتقنية المعلومات
جامعة الملك عبدالعزيز

King Abdulaziz University
Faculty of Computing and Information Technology
Computer Science Department

CPCS202, 1st Term 2019 (Fall 2018)
Program 4: Jeddah National Hospital Administration
Assigned: Sunday, November 11th, 2018
Due: Sunday, November 25th, 2018

Purpose:
The purpose of this assignment is to practice using methods as well as other previous concepts and basic features of Java in order to solve a real-world problem.

Course Learning Outcomes:
HVCLO#2-SO(c): Write a programing code that implements algorithms for solving simple problems.
CLO#5-SO(a): Write programs that use primitive data types and standard library functions/methods.
CLO#6-SO(a): Apply appropriate conditional and iteration constructs for a given programming task.
CLO#7-SO(a): Write and/or modify short programs that use standard conditional structures.
HVCLO#8-SO(a): Write programs that use standard iterative control structure.
HVCLO#9-SO(c): Write programs that use functions/methods.

Read Carefully:

This program is worth 6% of your final grade.

WARNING: This is an individual assignment; you must solve it by yourself. Any form of cheating will result in receiving **– 4%** (less than zero) in the program.

The deadline for this project is by **11:00 PM on Sunday, November 25th, 2018.**
Note: once the clock becomes 10:59PM, the submission will be closed! Therefore, in reality, you must submit by 10:58 and 59 seconds.
LATE SUBMISSION: you are allowed to make a late submission, but there is a penalty. If you submit **within 24 hours** of the due date (so on Monday by 10:59PM), you will receive a 25% deduction. You will NOT be able to submit after this date/time.

Blackboard Submission:
This assignment must be submitted online via blackboard
If your file is empty or you upload wrong the file, it will be solely your responsibility, and your grade will be **zero**.
Your program (**source file**) should be named as:
SectionNameStudentIdProgramNumber.java
Example: CA1110348 P4.*java*

Program-04 Description:

Jeddah National Hospital provides a wide range of health services. Some of these services include: Intensive Care Unit (ICU), Radiology, Surgery and Dentistry. Table 1 shows the information related to these services. In order to enhance the hospital's ability to deliver effective and quality health care, Jeddah National Hospital needs clinical management system, that allows patients to carry out the following actions:

- Book an appointment at any of the four existing clinics.
- Add detailed information about the patients.
- Exit the program.

Program Details:

You need to display the main menu in a loop. After completing the task of booking an appointment or adding information about the patient, the main menu should be displayed again. The user can then choose whether to perform another task or exit the program. This process continues until the user enters exit.

The first appointment for every clinic starts at the opening time, and the next appointment will be after one hour and so on till the closing time. If some patient does not confirm his appointment, then that time of appointment will be assigned to the next patient. ***For example***, the clinic ICU, the first appointment will be at 8:00am and next appointment will be at 9:00am and so on. So, if the first patient confirmed his appointment then his appointment will be at 8:00am. The second patient appoint will be at 9:00am, and the 3rd patient appointment will be at 10:00am. But if the 2nd patient does not confirm his appointment, then his appointment time will be assigned to the 3rd patient and now the 3rd patient appointment will be at 9:00am. Same process is followed for all four clinics.

Clinic Details:

You will need the following information for your program.

Table 1: Infrormation of Available Clinics

Clinic Name	Opening Time	Closing Time	Fee
ICU	8:00am	6:00pm	1000
Radiology	9:00am	5:00pm	200
Surgery	9:30am	8:30pm	3000
Dentistry	10:00pm	4:00pm	150

Required Methods:

Finally, the purpose of this program is to practice methods. Below is a Table 3 of the methods you are required to create along with the description of each method.

Table 2: Required Methods to be Implemented

Method name	Return type	Parameters	Function
displayMainMenu	void	No parameters	Displaying the main menu
readAndVerify	char	No parameters	Allows the user to enter (I**, i, R**, r**, S, s, D, or d**) and **returns** the correct character. If the user inputs a character that is not recognized, then the method should print the message "Wrong Selection of Clinic. . . try again!", and it enforces the user to enter the correct character.
printMsg	void	String: menu	Displays any required string or menu.
displayInfo	void	int id String name int time String clinic int fee	Prints detailed information entered by the user in order to book an appointment.
displayInfo	void	int id String name int age String phone String clinic double weight double height	Prints detailed information entered by the user in order to add patient to the ICU, Radiology and Surgery clinic. You need to calculate the MBI (Body Mass Index) and to display the corresponding BMI categorization based on equation 1 and Table 3.

Additional Methods (*not* required):

You are allowed to create and use other methods of your own choice. Of course, this is not a requirement. The only required methods are the five methods shown above. However, as you have already studied, the methods are very helpful for code re-use. In fact, additional methods will make your program easier for you!

$$\text{BMI} = \frac{\text{weight in KG}}{\text{height in Meters}^2} \qquad (1)$$

Table 3: BMI Categorization

BMI	BMI Category
<=18.5	Underweight
>18.5 and <=25	Normal
>25 and <=30	Overweight
>30	Obese

Grading Details:

Your program will be graded upon the following criteria:

1) Adhering to the implementation specifications listed on this write-up.
2) Correctness.
3) Your program should include a header comment with the following information: your name, **email**, course number, section number, assignment title, and date.
4) Your program should look EXACTLY like the sample run given.

5) You will be graded on the following criteria:

- 10 points for correct looping (outer and inner loops)
- 20 points for all related to **Book** choice
- 20 points for all related to **Add** choice
- 5 points for correct and correctly formatted output
- 45 points for the five required methods
- -3 points for not including header information (name, email, etc.)

Deliverables

You should submit one Java file containing the Java code.

***This file should be on the formatSectionName_StudentId_ProgramNumber. If they not in this format, you will lose points.

NOTE: your name, ID, section number AND EMAIL should be included as comments in all files!

Final suggestion: START EARLY!