Computer Engineering Department Kuwait University

**CpE 201/01**

**Object Oriented Paradigm**

**HW#3**

**Due: Tuesday 10th October 2017 at 23:55**

**Important Notes:**

1. **NAME STRINGS, CLASSES AND VARIABLES AS MENTIONED**
2. **All files should be in one folder hw3YOURNAME (hw3Sara)**
3. **All files should be .java files (q1sara.java, q2sara.java, ...) with your Name & ID as comment in the top of the programs**
4. **Don't forget to change class name to match file name (q1sara.java --> class name should be q1sara)**
5. **Compress your folder and upload**
6. **Don't wait for the last minute, the upload my take some time and if the submission is closed it will not be reopened**
7. **The files should also contain the output as a comment at the end of the program between /\*\*/**
8. **You have two jokers to be used for the homework. Each joker will give you a 24 hours delay. Once the homework is discussed in class no joker is accepted**
9. Create a class called Memo that contains:

* Five private instance variables: Day (int), Month (int), Year (int), and subject (String) and memoBody (String).
* One constructor, which constructs all instances with the values given (you need to check for a valid day, month and year. Assume all months should be 30 days and assume the only years allowed are 2017 and later).
* Getters and setters for all the instance variables
* Print method that prints the memo in a neat format.

Write a test program called TestMemo to test the constructor and public methods in the class Memo.

**Sample Output 1:**

Enter day: 23

Enter Month: 3

Enter Year: 2018

Enter Subject: Meeting

Enter body: Please note there will be a meeting at 12

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Memo Date: 23-March-2018

Subject: Meeting

Body: Please note there will be a meeting at 12

**Sample Output 2:**

Enter day: 2

Enter Month: 13

Invalid Month!

**Sample Output 3:**

Enter day: 33

Invalid Day!

1. Write a class BMI that is used to keep track of a person’s [body mass index (BMI)](http://en.wikipedia.org/wiki/Body_mass_index). A person's BMI is calculated with the following formula:

BMI = weight x 703 / height ^ 2.

Where weight is measured in pounds and height is measured in inches.

You class should have two instance variables, weight (double) and height (double). You need to provide all the setter and getter need for each instance variable. You need to have a default constructor that sets all values to 0.

The class should have a method calculate that is used to find the person’s BMI when called. You also need to provide method status that is used to print the persons BMI status using method calculate and based on this chart:

|  |  |
| --- | --- |
| BMI | Status |
| <18.5 | Under weight |
| >=18.5 and <=25 | Optimal |
| >25 | Over weight |

**Sample Output:**

Enter your weight in pounds and height in inches: 220 68

Your body mass index (BMI) is 33.447

You are overweight.

1. Modify problem 3 to read values from the user using JOptionPan Input dialog and to output the results using JOptionPane message dialog. To show the BMI with the desired precision you can use the String.format().

**Sample Output:**



