CSE 1001: Introduction to Computer Programming

Programming Assignment-III

(Conditional Statements)

Question-1:

Write a program to input the age of a person and check if the age of the person is greater than or equal to 18 then print the message:

```
"You are eligible to cast your vote".
```

Question-2:

Alice visited SUM hospital to get treatment for her fever and illness. Doctor advised her to drink at least 5000 ml of water each day. Alice drank x ml of water today. Write a program that print the following message depending on the value of x.

```
"Yes, Alice is following doctor's advice"
                OR
"No, Alice is not following doctor's advice"
```

Question-3:

Write a program that reads three integers from the user and prints "Increasing" if the numbers are in increasing order, "Decreasing" if the numbers are in decreasing order, and "Neither increasing nor decreasing order" otherwise.

Here is sample run:

```
Input first number: 241
Input second number:345
Input third number: 4563
"Increasing"

Input first number: 345
Input second number:145
Input third number: 563
"Neither Increasing nor decreasing"

Input first number: 45
Input second number:14
Input third number: 3
"Decreasing"
```

Question-4:

Make a simple game involving a computer and a user. The computer first guesses a number between 1 and 9 inclusive, then ask the user to enter a number between 1 and 9 inclusive. If the user guess is correct then display “You got it right”, if the guess is close (+1, -1) “Almost got it “, Otherwise “You got it wrong”.

Here are some sample runs.

```
Enter user number: 2
Computer guesses: 3
“Almost got it”

Enter user number: 4
Computer guesses: 4
“You got it right”

Enter user number: 1
Computer guesses: 5
“You got it wrong”
```

Question-5:

Write a Java program that takes a year from user and print true if that year is a leap year otherwise print false.
Here is a sample run:

```
Input the year: 2016
2016 is a leap year: true

Input the year: 2008
2008 is a leap0 year: false

Input the year: 1900
1900 is a leap year: false
```

Question-6:

Write a java program to calculate the monthly electricity bill. The tariff is given as follows:

Price per unit	Unit range
Rs. 3/-	First 50 units
Rs. 4.80/-	50-200 units
Rs. 5.80/-	200-400 units
Rs. 6.20/-	Above 400 units

Question-7:

From the above *question no. (6)* write a java program with a choice if the consumer wants to pay bill online. Consumer who pays their electricity bill online will get a discount of 3%.

Here is the sample output:

```
No. of units consumed: 867

Do you want to pay online(y/n): y

Total amount: 4925.4

Discount: 147.762

Amount payable: 4777.638
```

Question-8:

Write a java program that takes the x – y coordinates of a point in the Cartesian plane and prints a message telling either an axis on which the point lies or the quadrant in which it is found.

Here is the sample output:

```
(-1.0, -2.5) is in quadrant III

(0.0, 4.8) is on the y-axis
```

Question-9:

Write a program to input 3 integer number a, b, c. Find the largest number among 3. Also find the 2nd largest number among 3. Here is the sample output:

```
Enter the value of a, b, c:10 30 50

Largest number: 50

2nd largest number: 30
```

Question-10:

A University conducts a 100-mark exam for its student and grades them as follows. Assigns a grade based on the value of the marks. Write a java program to print the grade according to the mark secured by the student. [Use switch-case].

Mark Range	Letter Grade
>=90	O
>=80 AND <90	A

>=70 AND <80	B
>=60 AND <70	C
>=50 AND <60	D
>=50 AND <40	E
<40	F

HOME ASSIGMENT

Question-1:

Write a java program that plays the popular scissor-rock-paper game. (A scissor can cut a paper, a rock can knock a scissor, and a paper can wrap a rock.) The program randomly generates a number 0, 1, or 2 representing scissor, rock, and paper. The program prompts the user to enter a number 0, 1, or 2 and displays a message indicating whether the user or the computer wins, loses, or draws.

Here are sample runs:

```
scissor (0), rock (1), paper (2): 1

The computer is scissor. You are rock. You won

scissor (0), rock (1), paper (2): 2

The computer is paper. You are paper too. It is a
```

draw

Question-2:

Write a java program that prompts the user to enter an integer for today's day of the week (Sunday is 0, Monday is 1… and Saturday is 6). Also prompt the user to enter the number of days after today for a future day and display the future day of the week.

Here is a sample run:

```
Enter today's day: 1

Enter the number of days elapsed since today: 3

Today is Monday and the future day is Thursday

Enter today's day: 0 Enter the number of days elapsed
since today: 31

Today is Sunday and the future day is Wednesday
```

Question-3:

Write a java program that randomly generates an integer between 1 and 12 and

displays the English month name January, February… December for the number 1, 2… 12, accordingly.

Question-4:

Write a java program that prompts the user to enter an integer and determines whether it is divisible by 5 and 6, whether it is divisible by 5 or 6, and whether it is divisible by 5 or 6, but not both.

Here is a sample run of this program:

```
Enter an integer: 10

Is 10 divisible by 5 and 6? false

Is 10 divisible by 5 or 6? true

Is 10 divisible by 5 or 6, but not both? True
```

Question-5:

Write a java program which displays an appropriate name for a person, using a combination of nested ifs and compound conditions. Ask the user for a gender, first name, last name and age. If the person is female and 20 or over, ask if she is married. If so, display "Mrs." in front of her name. If not, display "Ms." in front of her name. If the female is under 20, display her first and last name. If the person is male and 20 or over, display "Mr." in front of his name. Otherwise, display his first and last name. Note that asking a person if they are married should only be done if they are female and 20 or older, which means you will have a single if and else nested inside one of your if statements. Also, did you know that with an if statements (or else), the curly braces are optional when there is only one statement inside?

```
What is your gender (M or F): F

First name: Gita

Last name: Pattanayak

Age: 32

Are you married, Gita (y or n)? y

Then I shall call you Mrs. Gita Pattanayak.

What is your gender (M or F): F

First name: Anjali

Last name: Mishra

Age: 48

Are you married, Anjali (y or n)? n

Then I shall call you Ms. Anjali.

What is your gender (M or F): M
```

First name: Ashok

Last name: Mohanty
Age: 23

Then I shall call you Mr. Ashok.

What is your gender (M or F): M

First name: Rahul

Last name: Pati

Age: 15

Then I shall call you Rahul Pati

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