**Assignment – Core Java**

**Topic            : Control Flow Statement (Branching)**

**1.**        Write a Java program to read an integer variable Code. If the Code value is 1,read double values for X and Y and calculate and print the sum

**Sample Input1**

Code          : 1

X           : 24.50

Y           : 67.00

**Sample Output1**

Sum      : 91.50

**Sample Input2**

Code       : 4

**Sample Output2**

Sum      : 0.00

**2.**        Kumar is purchasing certain items in a store. While purchasing certain items, a discount of 10% is offered to his if the quantity purchased is more than 1000.Help, Kumar to calculate the total expenses.

**Sample Input 1**

Quantity Purchased                         : 1200 Rate per item                  : 15.50

**Sample Output 1**

**T**otal Expenses    :  16740.000000

**Sample Input 2**

Quantity Purchased                         : 200 Rate per item                  : 15.50

**Sample Output 2**

Total Expenses     :  3100.000000

**3.**        Write a Java program, If integer variable currentNumber is odd, change its value so that it is now 3 times currentNumber plus 1, otherwise change its value so that it is now half of currentNumber.

**Sample Input 1**

currentNumber :  17

**Sample Output**

currentNumber :   52

**Sample Input 2**

currentNumber : 26

**Sample Output**

currentNumber : 13

**4.**        Given 2 integer values, **a** and **b** , return their sum. However, "teen" values in the range 13..19 inclusive, are extra lucky. So if either value is a teen, just return 19.

**Sample Input1**

a    :  3

b    :  4

**Sample Output1**

teenSum : 7

**Sample Input2**

a : 10

b : 13

**Sample Output2**

teenSum : 19

**Sample Input3**

a : 13

b : 12

**Sample Output3**

teenSum :   19

**5.**        Write a java program to find the mobile chosen is within the budget or not. To find the budget mobiles is based on the below-mentioned criteria,

a)   If the cost of the mobile chosen is less than or equal to 15000 then display it as "Mobile chosen is within the budget"

b) If the cost of the mobile chosen is greater than 15000 then display it as "Mobile chosen is beyond the budget“

**Sample Input 1:**

Enter the cost of the mobile 12000

**Sample Output 1:**

Mobile chosen is within the budget

**Sample Input 2:**

Enter the cost of the mobile 22000

**Sample Output 2:**

Mobile chosen is beyond the budget

**6.**        Ana planned to choose a four digit lucky number for his car. Her lucky numbers are 3,5 and 7. Help her to find the number, whose sum is divisible by 3 or 5 or 7. Provide a valid car number, Fails to provide a valid input then display that number is not a valid car number.

**Sample Input 1:**

Enter the car no:1234

**Sample Output 1:**

Lucky Number

**Sample Input 2:**

Enter the car no: 1214

**Sample Output 2:**

Sorry its not my lucky number

**Sample Input 3:**

Enter the car no:14

**Sample Output 3:**

14 is not a valid car number

**7.**        Write a java program to demonstrate the road signalling with default as 'prepare to go' operation.Assume red for 'stop', green for 'go', and yellow for 'proceed with caution'.

**Sample Input 1:**

Enter the color: green

**Sample Output 1:**

Go

**Sample Input 2:**

Enter the color red

**Sample Output 2:**

Stop

**Sample Input 3:**

Enter the color yellow

**Sample Output 3:**

proceed with caution

**Sample Input 4:**

Enter the color white

**Sample Output 4:**

prepare to go

**8.**        Riya's teacher has asked her to prepare well for the lesson on seasons. When her teacher tells a month, she needs to say the season corresponding to that month. Write a program to solve the above task.

Spring - March to May, Summer - June to August,

Autumn - September to November and, Winter - December to February.

Month should be in the range 1 to 12. If not the output should be "Invalid month".

**Sample Input 1:**

Enter the month:11

**Sample Output 1:**

Season:Autumn

**Sample Input 2:**

Enter the month:13

**Sample Output 2:**

Invalid month

**9.**          Create a JAVA program to display the "text" corresponding to a certain "numerical value", using the following equivalence:

9,10 = Excellent

7,8 = Notable

6 = Good

5 = Approved

0-4 = Fail

>=10= Invalid

**Sample Input1**

9

**Sample Output1**

Excellent

**Sample Input2**

3

**Sample Output2**

Fail

**Topic            : Control Flow Statements (Looping)**

**1.**        Ram and Sita were playing a game. Ram would give out number, and Sita has to reverse the given number. Help Sita by writing java program to reverse the number.

**Sample Input**Enter the number 61987

**Sample Output**

78916

**2.**        Write a program prompts user for an integer, reads as **int**, and prints its hexadecimal equivalent.

**Sample Input**

Enter a decimal number: 1234

**Sample Output**

The equivalent hexadecimal number is 4D2

**3.**        Write a Java program that prints the numbers from 1 to 50.But for multiples of three print "Fizz" instead of the number and for the multiples of

five print "Buzz". For numbers which are multiples of both three and five print "FizzBuzz".

**Sample Output:**

1, 2, Fizz, 4, Buzz, Fizz, 7, 8, Fizz, Buzz, 11, Fizz, 13, 14, Fizz Buzz,

16, 17, Fizz, 19, Buzz, Fizz, 22, 23, Fizz, Buzz, 26, Fizz, 28, 29, Fizz

Buzz, 31, 32, Fizz, 34, Buzz, Fizz, ...

**4.**        Danny teaches his student to find the factorial of a number. He wanted to test the understanding of the student. For that, he provides a number. He wants the students to tell him that number is a factorial of which number. Help the student by writing a program to do this.

Note that the input should be a number greater than zero. If the input is less than or equal to zero, the output should be “Invalid Input”. Also, if the input provided is not exactly the factorial of a number, say, the input provided is 122, which is not a perfect factorial of a number, it should return “Sorry. The given number is not a perfect factorial”.

**Sample Input 1 :**

5040

**Sample Output 1 :**

7

**Sample Input 2 :**

0

**Sample Output 2 :**

Invalid Input

**5.**        Nizam wants to know the palindrome numbers between the given range of numbers. Help him by writing a java program to find the palindrome numbers.

**Sample Input**

Enter the starting range 78

Enter the ending range 100

**Sample Output**

88 99

**6.**

**7.**        Maharaj wanted to check his son with names of month and days of the week. Maharaj will choose whether his son has to display the names of month or day, If the choice is 1, he has to display the names of the month and if the choice is 2, he has to display the days of the week. This has to continue until Maharaj chooses 3. Help him in displaying the names as per his father’s choice.

**Sample** **Input** **/** **Output**

1.Display the Months 2.Display the Days 3.Exit

Enter your Choice: 1 1.January 2.February

3.March

4.April

….

….

3.Exit

Enter your Choice: 3

**8.**          Arjun wanted to find the prime factors of the given number. Help him by writing a java program to find the prime factors of the given number.

**Sample Input**

315

**Sample Output**

3 3 5 7