JAVA PRACTICAL_3

3. 1 *The objective of this practical is to enable student to work with control structures.*

1. Write a program to calculate the grade of a student given the average. Use if-else statement
   Hints:
   Marks < 0 or Marks > 100 give Error Message
   0 <= Marks < 40 – Grade = C
   40 <= Marks < 70 – Grade = B
   70 <= Marks <= 100 – Grade = A

2. Write a program to output the following. Use switch
   Grade = A – 'Very Good'
   Grade = B – 'Good'
   Grade = C – 'Bad'

3. Write a method to calculate the factorial of a given integer
   - Using For loop
   - Using a While Loop
   - Using a Do-While Loop

4. A program is required to read a customer's name, a purchase amount, and a tax code. The tax code has been validated and will be one of the following:
   a. 0 tax exempt(0%)
   b. 1 state sales tax only (3%)
   c. 2 federal and state sales tax (5%)
   d. 3 special sales tax (7%)

   The program must then compute the sales tax and the total amount due, and print the customer's name, purchase amount, sales tax, and total amount due.

5. Every day, a weather station receives 15 temperatures expressed in degrees Fahrenheit. A program is to be written that will accept each Fahrenheit temperature, convert it to Celsius and display the converted temperatures to the screen. After 15 temperatures have been processed, the words 'All temperatures processed' are to be displayed on the screen.

6. A program is required to read and print a series of names and exam scores for students enrolled in a mathematics course. The class average is to be computed and printed at the end of the report. Scores can range from 0 to 100. The last record contains a blank name and a score of 999 and is not to be included in the calculations.

7. Create a single dimensional array to store 20 integer elements supplied by user, then display them using.
   a) Normal For loop
   b) Enhanced For loop

8. Create a 3 x 4, two dimensional array to store elements supplied by the user and display the values stored.

9. Using single dimensional array and two dimensional do the following tasks:
   Create and array of 100 integer elements
   Perform summation of all elements
   Perform average
   Perform sorting of elements in ascending order
   Perform sorting of elements in descending order