# ***Java Assignment Questions***

- Write a program that accepts the marks of 5 subjects and finds the sum and percentage marks obtained by the student.
- Write a program that calculates the Simple Interest and Compound Interest. The Principal, Amount, Rate of Interest and Time are entered through the keyboard.
- Write a program to calculate the area and circumference of a circle.
- Write a program that accepts the temperature in Centigrade and converts into Fahrenheit using the formula C/5= (F- 32)/9.
- Write a program that swaps a programs value of two variables using a third variable.
- Write a program that checks whether the two numbers entered by the user are equal or not.
- Write a program to find the greatest of three numbers.
- Write a program that finds whether a given number is even or odd.
- Write a program that tells whether a given year is a leap year or not.
- Write a program that accepts marks of five subjects and finds percentage and prints grades according to the following criteria:
  - Between 90-100% ------ Print ‘A’
  - Shape80-90% ------ Print ‘B’
  - Shape60-80% ------ Print ‘C’
  - Below 60% ------ Print ‘D’

**Points to ponder:**

- **Make an intellij project and keep adding the files for each question.**
- **Try to solve the questions with optimized approach and please explain the approach in comments.**
- **Keep your code readable, modular and follow all the industry accepted naming conventions.**

**For reference please click on the link**

Code Conventions for the Java Programming Language: 9. Naming Conventions (oracle.com)

# Answers

1.

```java
package javaGemini;

import java.util.Scanner;

public class JavaAssignment {
    public static void main(String[] args) {
       //input
        Scanner scanner = new Scanner(System.in);
        int[] marks = new int[5];
        int sum = 0;

        System.out.println("Enter marks for 5 subjects:");
        for (int i = 0; i < 5; i++) {
            marks[i] = scanner.nextInt();
            sum += marks[i]; //sum of 5 sub
        }

        double percentage = (sum / 5.0); //percentage
        System.out.println("Total Marks: " + sum);
        System.out.println("Percentage: " + percentage + "%");

        scanner.close();
    }
}
```

2.

```java
package javaGemini;

import java.util.Scanner;

public class JavaAssignment {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter Principal: ");
        double principal = scanner.nextDouble();
        System.out.print("Enter Rate of Interest: ");
        double rate = scanner.nextDouble();
        System.out.print("Enter Time (in years): ");
        double time = scanner.nextDouble();

        // Simple Interest
        double simpleInterest = (principal * rate * time) / 100;
```

```
        // Compound Interest
        double compoundInterest = principal * Math.pow((1 + rate / 100), time) -
principal;

        System.out.println("Simple Interest: " + simpleInterest);
        System.out.println("Compound Interest: " + compoundInterest);

        scanner.close();
    }
}
```

3.

```
package javaGemini;

import java.util.Scanner;

public class JavaAssignment {
        public static void main(String[] args) {
                Scanner scanner = new Scanner(System.in);
                System.out.print("Enter the radius of the circle: ");
                double radius = scanner.nextDouble();

                double area = Math.PI * radius * radius;
                double circumference = 2 * Math.PI * radius;

                System.out.println("Area: " + area);
                System.out.println("Circumference: " + circumference);

                scanner.close();
            }
}
```

4.

```
package javaGemini;

import java.util.Scanner;

public class JavaAssignment {
        public static void main(String[] args) {
                Scanner scanner = new Scanner(System.in);
                System.out.print("Enter temperature in Celsius: ");
                double celsius = scanner.nextDouble();

                double fahrenheit = (celsius * 9 / 5) + 32;
                System.out.println("Temperature in Fahrenheit: " + fahrenheit);

                scanner.close();
            }
}
```

5.

```java
package javaGemini;

import java.util.Scanner;

public class JavaAssignment {
	public static void main(String[] args) {
		Scanner scanner = new Scanner(System.in);
		System.out.print("Enter first number: ");
		int a = scanner.nextInt();
		System.out.print("Enter second number: ");
		int b = scanner.nextInt();

		// Swap using XOR -optimal
		a = a^b;
		b = a^b;
		a = a^b;

		System.out.println("After swapping: a = " + a + ", b = " + b);

		scanner.close();
	}
}
```

6.

```java
package javaGemini;

import java.util.Scanner;

public class JavaAssignment {
	public static void main(String[] args) {
		Scanner scanner = new Scanner(System.in);
		System.out.print("Enter first number: ");
		int a = scanner.nextInt();
		System.out.print("Enter second number: ");
		int b = scanner.nextInt();

		if (a == b) {
		    System.out.println("The numbers are equal.");
		} else {
		    System.out.println("The numbers are not equal.");
		}

		scanner.close();
	}
}
```

7.

```java
package javaGemini;

import java.util.Scanner;

public class JavaAssignment {
	public static void main(String[] args) {
		Scanner scanner = new Scanner(System.in);
		System.out.print("Enter three numbers: ");
		int a = scanner.nextInt();
		int b = scanner.nextInt();
		int c = scanner.nextInt();

		int greatest = Math.max(a, Math.max(b, c));
		System.out.println("The greatest number is: " + greatest);

		scanner.close();
	}
}
```

8.

```java
package javaGemini;

import java.util.Scanner;

public class JavaAssignment {
	public static void main(String[] args) {
		Scanner scanner = new Scanner(System.in);
		System.out.print("Enter a number: ");
		int number = scanner.nextInt();

		if (number % 2 == 0) {
			System.out.println("The number is even.");
		} else {
			System.out.println("The number is odd.");
		}

		scanner.close();
	}
}
```

9.

```java
package javaGemini;

import java.util.Scanner;

public class JavaAssignment {
	public static void main(String[] args) {
		Scanner scanner = new Scanner(System.in);
		System.out.print("Enter a year: ");
		int year = scanner.nextInt();
```

```
        if ((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0)) {
            System.out.println("The year is a leap year.");
        } else {
            System.out.println("The year is not a leap year.");
        }

        scanner.close();
    }
}
```

10.

```
package javaGemini;

import java.util.Scanner;

public class JavaAssignment {
        public static void main(String[] args) {
                Scanner scanner = new Scanner(System.in);
                int[] marks = new int[5];
                int sum = 0;

                System.out.println("Enter marks for 5 subjects:");
                for (int i = 0; i < 5; i++) {
                    marks[i] = scanner.nextInt();
                    sum += marks[i];
                }

                double percentage = (sum / 5.0);
                char grade;
                if (percentage >= 90) {
                    grade = 'A';
                } else if (percentage >= 80) {
                    grade = 'B';
                } else if (percentage >= 60) {
                    grade = 'C';
                } else {
                    grade = 'D';
                }

                System.out.println("Percentage: " + percentage + "%");
                System.out.println("Grade: " + grade);

                scanner.close();
            }
}
```