```
import java.util.Scanner;

public class program {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Prompt the user to enter numerical grade
        System.out.print("Enter numerical grade: ");
        double grade = scanner.nextDouble();

        // Convert numerical grade to letter grade using if-else statements
        char letterGrade;
        if (grade >= 90) {
            letterGrade = 'A';
        } else if (grade >= 80) {
            letterGrade = 'B';
        } else if (grade >= 70) {
            letterGrade = 'C';
        } else if (grade >= 60) {
            letterGrade = 'D';
        } else {
            letterGrade = 'F';
        }

        // Output the corresponding letter grade
        System.out.println("The corresponding letter grade is: " + letterGrade);

        scanner.close();
    }
}
```

```
package assignment_1_1;
import java.util.Scanner;

public class leap_year{
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Prompt the user to enter the year
        System.out.print("Enter a year: ");
        int year = scanner.nextInt();

        // Check if the year is a leap year using if-else statements
        if ((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0)) {
            System.out.println(year + " is a leap year (using if-else).");
        } else {
            System.out.println(year + " is not a leap year (using if-else).");
        }

        // Check if the year is a leap year using switch-case statements
        switch (year % 4) {
            case 0:
                if (year % 100 != 0 || year % 400 == 0) {
                    System.out.println(year + " is a leap year (using
switch-case).");
                } else {
                    System.out.println(year + " is not a leap year (using
switch-case).");
                }
                break;
            default:
                System.out.println(year + " is not a leap year (using
switch-case).");
        }

        scanner.close();
    }
}
```

```
package assignment_1_1;

        import java.util.Scanner;

        public class Calculator {
            public static void main(String[] args) {
                Scanner scanner = new Scanner(System.in);

                System.out.print("Enter the first number: ");
                double num1 = scanner.nextDouble();

                System.out.print("Enter the second number: ");
                double num2 = scanner.nextDouble();

                System.out.print("Enter the operator (+, -, *, /): ");
                char operator = scanner.next().charAt(0);

                double result;

                switch (operator) {
                    case '+':
                        result = num1 + num2;
                        System.out.println("Result: " + result);
                        break;
                    case '-':
                        result = num1 - num2;
                        System.out.println("Result: " + result);
                        break;
                    case '*':
                        result = num1 * num2;
                        System.out.println("Result: " + result);
                        break;
                    case '/':
                        if (num2 != 0) {
                            result = num1 / num2;
                            System.out.println("Result: " + result);
                        } else {
                            System.out.println("Cannot divide by zero!");
                        }
                        break;
                    default:
                        System.out.println("Invalid operator!");
                }

                scanner.close();
            }
        }
```

```
package assignment_1_1;
import java.util.Scanner;

public class WeekdayName {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter a number representing a weekday (1-7): ");
        int weekdayNumber = scanner.nextInt();

        String weekdayName;

        switch (weekdayNumber) {
            case 1:
                weekdayName = "Sunday";
                break;
            case 2:
                weekdayName = "Monday";
                break;
            case 3:
                weekdayName = "Tuesday";
                break;
            case 4:
                weekdayName = "Wednesday";
                break;
            case 5:
                weekdayName = "Thursday";
                break;
            case 6:
                weekdayName = "Friday";
                break;
            case 7:
                weekdayName = "Saturday";
                break;
            default:
                weekdayName = "Invalid weekday number";
        }

        System.out.println("Weekday: " + weekdayName);

        scanner.close();
    }
}
```

```
package assignment_1_5;
import java.util.Scanner;

public class Vowel_Consonant {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter a character: ");
        char ch = scanner.next().charAt(0);

        // Convert character to lowercase to handle both uppercase and lowercase
inputs
        ch = Character.toLowerCase(ch);

        if (ch >= 'a' && ch <= 'z') {
            if (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u') {
                System.out.println(ch + " is a vowel.");
            } else {
                System.out.println(ch + " is a consonant.");
            }
        } else {
            System.out.println("Invalid input. Please enter an alphabetic
character.");
        }

        scanner.close();
    }
}
```

```java
package assignment_1_5;
import java.util.Scanner;

public class BMI_Calculator {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter your weight in kilograms: ");
        double weight = scanner.nextDouble();

        System.out.print("Enter your height in meters: ");
        double height = scanner.nextDouble();

        // Calculate BMI
        double bmi = weight / (height * height);

        // Classify BMI into categories
        String category;
        if (bmi < 18.5) {
            category = "Underweight";
        } else if (bmi < 25) {
            category = "Normal weight";
        } else if (bmi < 30) {
            category = "Overweight";
        } else {
            category = "Obese";
        }

        // Print BMI and category
        System.out.printf("Your BMI is %.2f\n", bmi);
        System.out.println("BMI Category: " + category);

        scanner.close();
    }
}
```