1]

```
import java.util.Scanner;

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

        System.out.println("Enter the grade: ");
        int grade = scanner.nextInt();

        if(grade >= 90) {
            System.out.println("Grade: A");
        }
        else if(grade >= 75) {
            System.out.println("Grade: B");
        }
        else if(grade >= 60) {
            System.out.println("Grade: C");
        }
        else if(grade >= 45) {
            System.out.println("Grade: D");
        }
        else if(grade >= 35) {
            System.out.println("Grade: F");
        }
        else {
            System.out.println("You are fail");
        }

        scanner.close();


    }
}
```

Output: Enter the grade:
58
Grade: D

2] By using if-else:

```
import java.util.Scanner;

public class Pros {

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

        System.out.print("Enter the year: ");
        int year = scanner.nextInt();

        if (isLeapYear(year)) {
            System.out.println(year + " is a leap year.");
        } else {
            System.out.println(year + " is not a leap year.");
        }
```

```
        scanner.close();
    }

    public static boolean isLeapYear(int year) {
        if ((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0)) {
            return true;
        } else {
            return false;
        }
    }
}
```

Output: Enter the year: 5000
5000 is not a leap year.
Enter the year: 2000
2000 is a leap year.

By using switch cases:

```
import java.util.Scanner;

public class Pros {

    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 = calculate(num1, num2, operator);
        System.out.println("Result: " + result);

        scanner.close();
    }

    public static double calculate(double num1, double num2, char operator) {
        double result = 0.0;

        switch (operator) {
            case '+':
                result = num1 + num2;
                break;
            case '-':
                result = num1 - num2;
                break;
            case '*':
                result = num1 * num2;
```

```
            break;
        case '/':
            result = num1 / num2;
            break;
        default:
            System.out.println("Error: Invalid operator.");
    }

    return result;
  }
}
```

Output: Enter the first number: 5
Enter the second number: 5
Enter the operator (+, -, *, /): /
Result: 1.0

4]

```
import java.util.Scanner;

public class Pros {

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

    System.out.print("Enter the day: ");
    int inputDay = scanner.nextInt();

    String dayname = getday(inputDay);
    System.out.println("The weekday is: " + dayname);

    scanner.close();
  }

  public static String getday(int day ) {
    String dayname;

    switch (day) {
      case 1:
      dayname = "monday";
      break;
      case 2:
      dayname = "tuesday";
      break;
      case 3:
      dayname = "wedday";
      break;
      case 4:
      dayname = "thursday";
      break;
      case 5:
      dayname = "friday";
      break;
      case 6:
      dayname = "saturday";
      break;
```

```
            case 7:
            dayname = "sunday";
            break;
            default:
            dayname = "Invalid day";
        }
        return dayname;
    }

  }
```

Output: Enter the day: 5
The weekday is: friday

5]
```
import java.util.Scanner;

public class Extra {
 private static Scanner sc;
 public static void main(String[] args) {
  char ch;
  sc= new Scanner(System.in);

  System.out.print("Please Enter any Character =  ");
  ch = sc.next().charAt(0);

  if(ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u' ||
    ch == 'A' || ch == 'E' || ch == 'I' || ch <= 'O' || ch == 'U')
  {
   System.out.println(ch + " is Vowel");
  }
  else
  {
   System.out.println(ch + " is Consonant");
  }
 }
}
```

Output: Please Enter any Character = k
k is Consonant
Please Enter any Character = a
a is Vowel

6]
```
import java.util.Scanner;

public class Extra {

    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();
```

```
        double bmi = calculateBMI(weight, height);
        System.out.println("Your BMI is: " + bmi);

        String category = classifyBMI(bmi);
        System.out.println("You are classified as: " + category);

        scanner.close();
    }

    public static double calculateBMI(double weight, double height) {
        return weight / (height * height);
    }

    public static String classifyBMI(double bmi) {
        if (bmi < 18.5) {
            return "Underweight";
        } else if (bmi >= 18.5 && bmi < 25) {
            return "Normal weight";
        } else {
            return "Overweight";
        }
    }
}
```

Output: Enter your weight in kilograms: 40
Enter your height in meters: 1.55448
Your BMI is: 16.553495450533983