Assignment Day 2 - Java Programs

1. Swap Two Numbers Without Using Third Variable

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

        a = a + b;
        b = a - b;
        a = a - b;

        System.out.println("After swapping:");
        System.out.println("First number: " + a);
        System.out.println("Second number: " + b);
    }
}
```

2. Simple Calculator Using Command-Line Arguments

```
public class SimpleCalculator {
    public static void main(String[] args) {
        if (args.length < 3) {
            System.out.println("Usage: java SimpleCalculator <num1> <operator> <num2>"
            return;
        }
        double num1 = Double.parseDouble(args[0]);
        String op = args[1];
        double num2 = Double.parseDouble(args[2]);
        double result = 0;

        switch (op) {
            case "+": result = num1 + num2; break;
            case "-": result = num1 - num2; break;
            case "*": result = num1 * num2; break;
            case "/": result = num1 / num2; break;
            default: System.out.println("Invalid operator."); return;
        }
        System.out.println("Result: " + result);
    }
}
```

3. Calculate Age from Birth Year

```
public class AgeCalculator {
    public static void main(String[] args) {
        java.util.Scanner sc = new java.util.Scanner(System.in);
        System.out.print("Enter your birth year: ");
        int birthYear = sc.nextInt();
        int age = 2024 - birthYear;
        System.out.println("You are " + age + " years old.");
    }
}
```

4. Body Mass Index (BMI) Calculator

```
public class BMICalculator {
    public static void main(String[] args) {
        java.util.Scanner sc = new java.util.Scanner(System.in);
        System.out.print("Enter your weight in kg: ");
        double weight = sc.nextDouble();
        System.out.print("Enter your height in meters: ");
        double height = sc.nextDouble();
        double bmi = weight / (height * height);
        System.out.printf("Your BMI is %.2f\n", bmi);
    }
}
```

5. Check Whether Number is Odd or Even

```
public class OddEvenCheck {
    public static void main(String[] args) {
        java.util.Scanner sc = new java.util.Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sc.nextInt();
        if (num % 2 == 0)
            System.out.println(num + " is Even.");
        else
            System.out.println(num + " is Odd.");
    }
}
```

6. Check Whether Entered City is an IT City

```
package assignments;

import java.util.Scanner;

public class ITCityCheck {
```

```
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter city name: ");
        String city = sc.nextLine().trim();

        switch (city.toLowerCase()) {
            case "delhi":
            case "mumbai":
            case "kolkatta":
            case "bangalore":
            case "chennai":
            case "hyderabad":
                System.out.println(city + " is an IT City.");
                break;
            default:
                System.out.println(city + " is not an IT City.");
        }
    }
}
```