Assignments – Day 2

1⃣ Swap Two Numbers Without Using a Third Variable

```
import java.util.Scanner;

public class SwapNumbers {
public static void main(String[] args) {
Scanner sc = new 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: a = " + a + ", b = " + b);
}
}
```

Output: After swapping: a = 10, b = 5

2⃣ Simple Calculator Using Command-Line Arguments

```
public class Calculator {
public static void main(String[] args) {
if (args.length != 3) {
System.out.println("Usage: java Calculator ");
return;
}

double num1 = Double.parseDouble(args[0]);
String operator = args[1];
double num2 = Double.parseDouble(args[2]);
double result = 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("Invalid operator!"); return;
}

System.out.println("Result: " + result);
```

```
}
}
```

Example: java Calculator 10 + 5 → Result: 15.0

3️⃣ Calculate Age from Birth Year

```
import java.util.Scanner;

public class AgeCalculator {
public static void main(String[] args) {
Scanner sc = new Scanner(System.in);
System.out.print("Enter your birth year: ");
int birthYear = sc.nextInt();
int currentYear = 2024;

int age = currentYear - birthYear;
System.out.println("You are " + age + " years old.");
}
}
```

Example: Input: 1990 → You are 34 years old.

4️⃣ Calculate Body Mass Index (BMI)

```
import java.util.Scanner;

public class BMICalculator {
public static void main(String[] args) {
Scanner sc = new Scanner(System.in);
System.out.print("Enter weight (kg): ");
double weight = sc.nextDouble();
System.out.print("Enter height (meters): ");
double height = sc.nextDouble();

double bmi = weight / (height * height);
System.out.printf("Your BMI is %.2f", bmi);
}
}
```

Example: Weight = 70, Height = 1.75 → Your BMI is 22.86

5️⃣ Check Whether Number is Odd or Even

```
import java.util.Scanner;
```

```
public class OddEven {
public static void main(String[] args) {
Scanner sc = new 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.");
}
}
```

Example: Input: 7 → 7 is Odd.

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6. Check Whether 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();

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.");
}
}
}
```

Example: Input: Bangalore → Bangalore is an IT City.