Day 2: Assignment

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Code: https://github.com/officialsurajarya/CDAC-JAVA-2W/tree/main/Day2Assign

Q1. 1. Given: int x = 5;

a. Print the result of:

i. ++x (pre-increment)

ii. x++ (post-increment)

iii. --x (pre-decrement)

iv. x-- (post-decrement)

Ans:

Day2Assign > Unary.java > Unary

```java
public class Unary {
    Run | Debug
    public static void main(String[] args) {
        int x = 5;

        ++x; //firstly increment then print
        System.out.println(x); //6 Ans

        int y=5;
        System.out.println(y++); //print then increment Ans:5
        System.out.println(y); // 6

        int i = 5;
        --i; //decrement then use
        System.out.println(i); //Ans 4

        int j = 5;
        System.out.println(j--); //print then decrement Ans:5
        System.out.println(j); //4
    }
}

```

Q2. Given: int x = 10; Use assignment operators to perform and print:

a. x += 5

b. x -= 3

c. x *= 2

d. x /= 4

Day2Assign > assignOper.java > ...

```java
public class assignOper {
    Run | Debug
    public static void main(String[] args) {

        int x = 10;
        x+=5; //15
        System.out.println(x);

        int y=10;
        y-=3; //7
        System.out.println(y);

        int i=10;
        i*=2; //20
        System.out.println(i);

        int j = 10;
        j/=4; //8
        System.out.println(j);
    }
}

```

Q3. Take random value of variable x and Evaluate and print:

i. a & b

b. a | b

c. a ^ b

d. ~a

```java
public class bitwiseOper {
    Run | Debug
    public static void main(String[] args) {
        int a = 2;
        int b = 3;
        System.out.println(a&b);
        // 2 = 0010
        // 3 = 0011
        // a&b 0010 Ans: 2      if both true then ans will be true

        System.out.println(a|b);
        // 2 = 0010
        // 3 = 0011
        // a|b 0011 Ans: 3      if one true then ans will true

        System.out.println(a^b);
        // 2 = 0010
        // 3 = 0011
        // a^b 0001 Ans: 1      id both same then false

        System.out.println(~a);
        // 2 = 0010
        // -3  1101
    }
}
```

Q4. Take random value of variable x and evaluate and print:

a. a << 1 (left shift)

b. a >> 1 (right shift)

```java
public class shiftOper {
    Run | Debug
    public static void main(String[] args) {
        int a = 5;

        // Right Shift
        System.out.println(a>>1);
        // 5 = 0101
        // 2 = 0010     each bit moves one position to the right.

        // Left Shift
        System.out.println(a<<1);
        //5 = 0101
        //10  1010      each bit moves one position to the left.
    }
}
```

Q5. Try to evaluate output of below code and why:

c. If a = 10, b=20, c=30 then

i. a=b+++++c;

ii. result = a + (b * (c - b)) / b;

iii. result = a + b * c - ++a / b % c + (b - c) * a;

```java
public class evaluate {
    Run | Debug
    public static void main(String[] args) {
        int i = 10, j=20, k=30;
        i=j++ + ++k; // j:20,  k:31
        System.out.println(i); // Ans = 51

        int x = 10, y=20, z=30;
        var result = x+(y*(z-y))/y;
        //          10+(20*(30-20))/20
        //          10+(20*(10))/20
        //          10+(200)/20
        //          10+10
        //   Ans:   20
        System.out.println(result);

        int a = 10, b=20, c=30;
        result = a + b * c - ++a / b % c + (b - c) * a;
        //      10 + 20*30 - ++10/20 % 30 + (20-30)*10
        //      10 + 600 - 11/20 % 30 + (-10)*10
        //      10 + 600 - 0 % 30 - 100
        //      10 + 600 - 0 - 100
        //Ans:   510
        System.out.println(result);
    }
}
```

Q6. Write a Java program to swap the values of two integer variables and display the values before and after the swap. Using a Temporary (Third) Variable.

```java
public class swap2intUsing3rdVar {
    Run | Debug
    public static void main(String[] args) {
        int a = 10;
        int b = 20;
        int temp;
        System.out.println("Before Swaping \na: "+a+"\nb: "+b);

        // swap
        temp = a;
        a = b;
        b = temp;

        System.out.println("After Swaping \na: "+a+"\nb: "+b);
    }
}
```

Day 2: Assignment 2

Name: Suraj Arya | PRN No.: STT-25128071920

Q. WAP program that:

- Takes a number from the user.
- If the number is greater than 10, print "Number greater than 10".
- If the number is smaller, print "Number is less than 10". C-DAC Patna
- If the number is equal to 10, print "Number is equal to 10"

```java
import java.util.Scanner;

public class UserInputNumberCheck {
    Run | Debug
    public static void main(String[] args) {
    Scanner sc = new Scanner(System.in);

    System.out.print(s: "Enter a Number: ");
    int num = sc.nextInt();

    if (num>10) {
        System.out.println(x: "Number is greater that 10");
    } else if(num<10) {
        System.out.println(x: "Number is smaller than 10 ");
    }else{
        System.out.println(x: "Number is equal to 10");
    }
    sc.close();
    }
}
```

Q2. WAP program that:

- Takes a number from the user.
- Check if the number is positive, negative, or zero.
- "Positive number" if it is greater than 0.
- "Negative number" if it is less than 0.
- "Zero" if it is exactly 0.

```java
import java.util.Scanner;

public class PosNegZero {
    Run | Debug
    public static void main(String[] args) {

    Scanner sc = new Scanner(System.in);

    System.out.print(s: "Enter a Number: ");
    int num = sc.nextInt();

    if (num>0) {
        System.out.println(x: "Number is Positive");
    } else if(num<0) {
        System.out.println(x: "Number is Negative");
    }else{
        System.out.println(x: "Number is 0");
    }
    sc.close();
    }
}
```

Q3. WAP program that:

- Takes marks (0–100) from the user.
- Print the grade based on the marks:
- 90 and above → Grade A
- 75 to 89 → Grade B
- 50 to 74 → Grade C
- Below 50 → Fail

```java
import java.util.Scanner;

public class GradeFinder {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

    System.out.print(s: "Enter a Number 1-100: ");
    int num = sc.nextInt();

    if (num>=90 && num<=100) {
        System.out.println(x: "Grade A");
    } else if(num>=75 && num<=89) {
        System.out.println(x: "Grade B");
    }else if(num>=50 && num<=74){
        System.out.println(x: "Grade C");
    }else if(num>=0 && num<=49){
        System.out.println(x: "Fail");
    }else{
        System.out.println(x: "Invalid Choice");
    }
    sc.close();
    }
}
```

Q 4 WAP program that:

Create variable int age and char citizenshipStatus(contain Y / N).

store age = 18 and citizenshipStatus = ‘N’

- Check if the person is eligible to vote: C-DAC Patna
- If age is 18 or above:
- Check if they are a citizen (yes).
- If yes, print "Eligible to vote”.
- If no, print "Not eligible (not a citizen)".
- If age is below 18, print "Not eligible (too young)"

CheckVote.java

Day2Assign > CheckVote.java > CheckVote

```java
import java.util.Scanner;

public class CheckVote {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print(s: "Enter Age: ");
        int age = sc.nextInt();

        System.out.print(s: "Enter CitizenShip (Y/N): ");
        char citizenshipStatus = sc.next().charAt(index: 0);

        if(age>=18) {
            if (citizenshipStatus == 'y' || citizenshipStatus =='Y') {
                System.out.println(x: "Your Are Eligible to vote");
            }else {
                System.out.println(x: "Not Eligible (not a citizen)");
            }
        }else {
            System.out.println(x: "Not eligible (too young)");
        }
        sc.close();
    }
}

```

Q13. Write a program using switch that takes a grade (A, B, C, D, F) and prints:
A: Excellent
B: Good
C: Average
D: Poor
F: Fail
Any other character → Invalid Grade

Q5. WAP program that:

- Take three numbers from the user.
- Find and print the highest number among them

Day2Assign > gretestof3.java > gretestof3 > main(String[])

```java
import java.util.Scanner;

public class gretestof3 {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.println(x: "Enter First Number: ");
        int a = sc.nextInt();

        System.out.println(x: "Enter Second Number: ");
        int b = sc.nextInt();

        System.out.println(x: "Enter Third Number: ");
        int c = sc.nextInt();

        if (a>b && a>c) {
            System.out.println(x: "A is Gratest");
        }
        else if(b>c) {
            System.out.println(x: "B is Gratest");
        }
        else {
            System.out.println(x: "c is gratest");
        }
        sc.close();
    }
}
```

Q6. Traffic Light Signal

- Create color Variable and put value "red" , "yellow", green" or other one by one and check. • If "red" → Print Stop.
- If "yellow" → Print Get Ready.
- If "green" → Print Go.
- Otherwise → Print Invalid color.

Q7. Simple Calculator

- Take two numbers and an operator (+, -, *, /).
- If operator is +, do addition
- If -, do subtraction
- If *, do multiplication
- If /, do division

simpleCalc.java

Day2Assign > simpleCalc.java > simpleCalc > main(String[])

```java
import java.util.Scanner;

public class simpleCalc {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print(s: "Enter First Number: ");
        int a = sc.nextInt();

        System.out.print(s: "Enter Operator (+, -, *, /): ");
        char oper = sc.next().charAt(index: 0);

        System.out.print(s: "Enter Scond Number: ");
        int b = sc.nextInt();

        if(oper == '+') {
            System.out.println(a + " + " + b + " = "+ (a + b));
        }
        else if(oper == '-') {
            System.out.println(a + " - " + b + " = "+ (a - b));
        }
        else if(oper == '*') {
            System.out.println(a + " * " + b + " = "+ (a * b));
        }
        else if(oper == '/') {
            if(b !=0){
                System.out.println(a + " / " + b + " = "+ (a / b));
            }else {
                System.out.println(x: "Division by 0 is not allowed");
            }
        }else {
            System.out.println(x: "Invalid Operator");
        }
        sc.close();
    }
}
```

Day 2: Assignment 2

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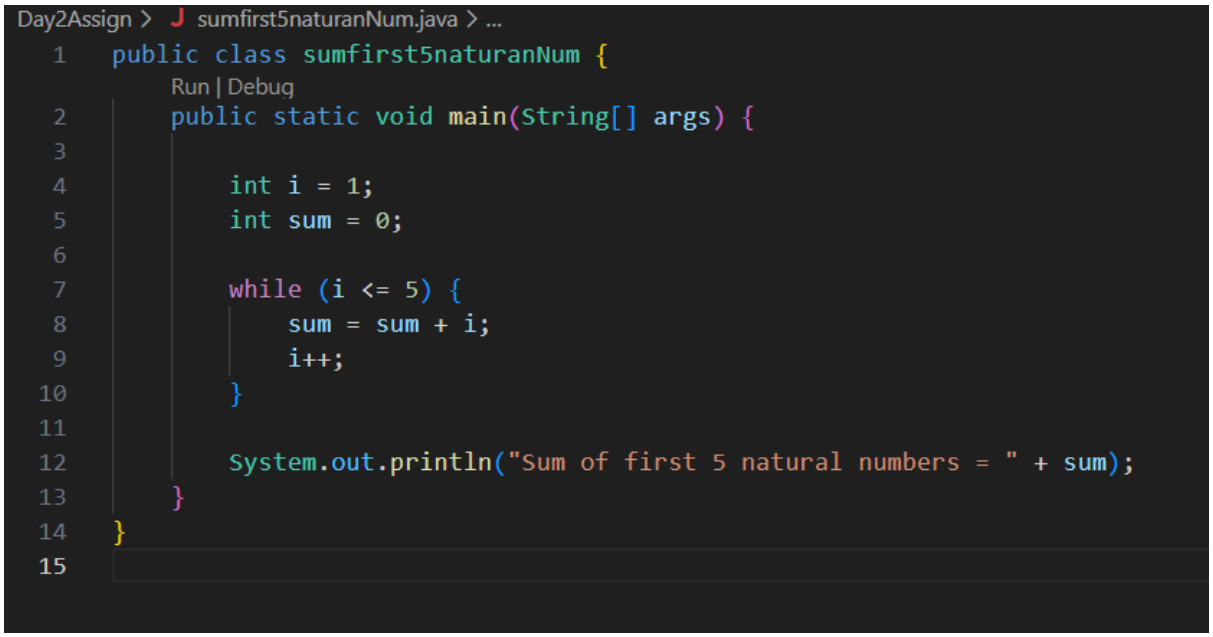
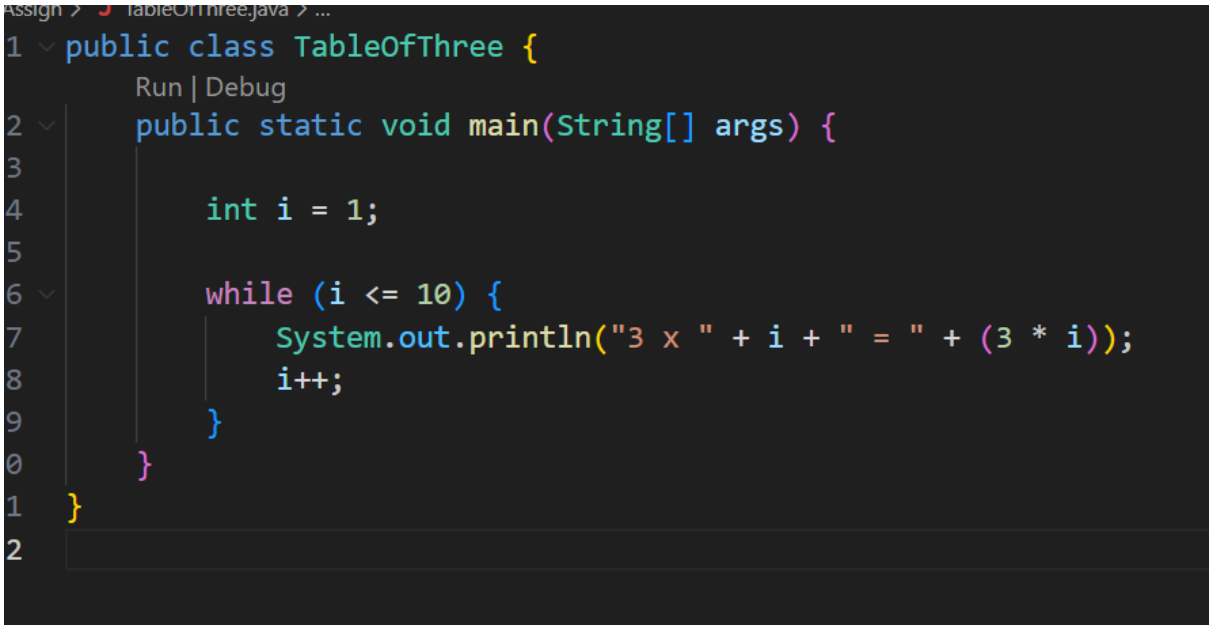
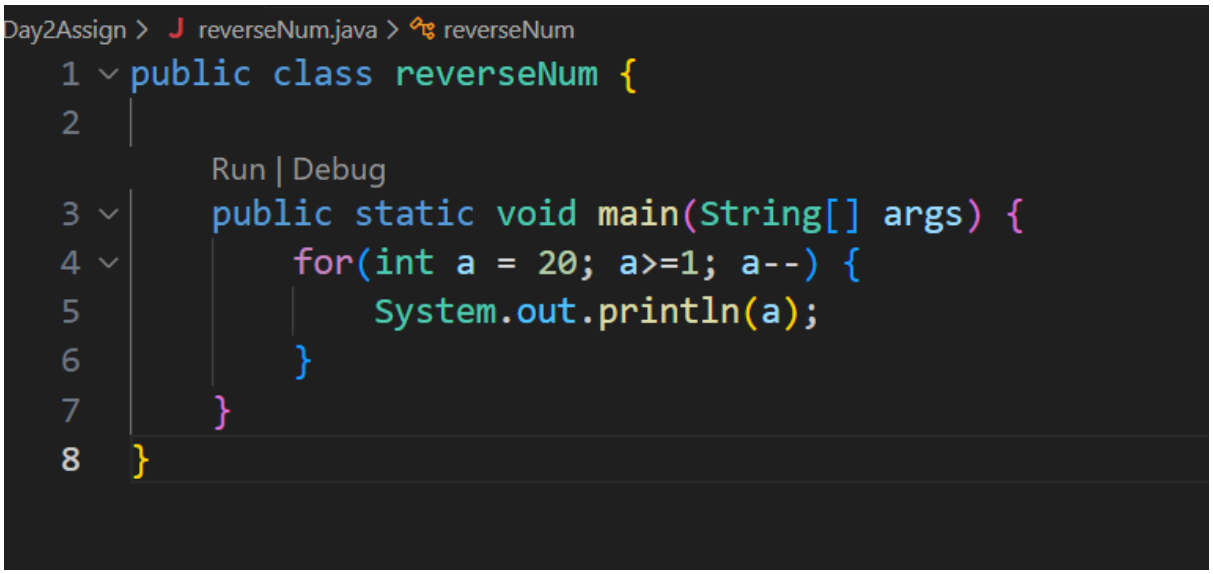
Q Write a program to find the sum of the first 5 natural numbers using a while loop.



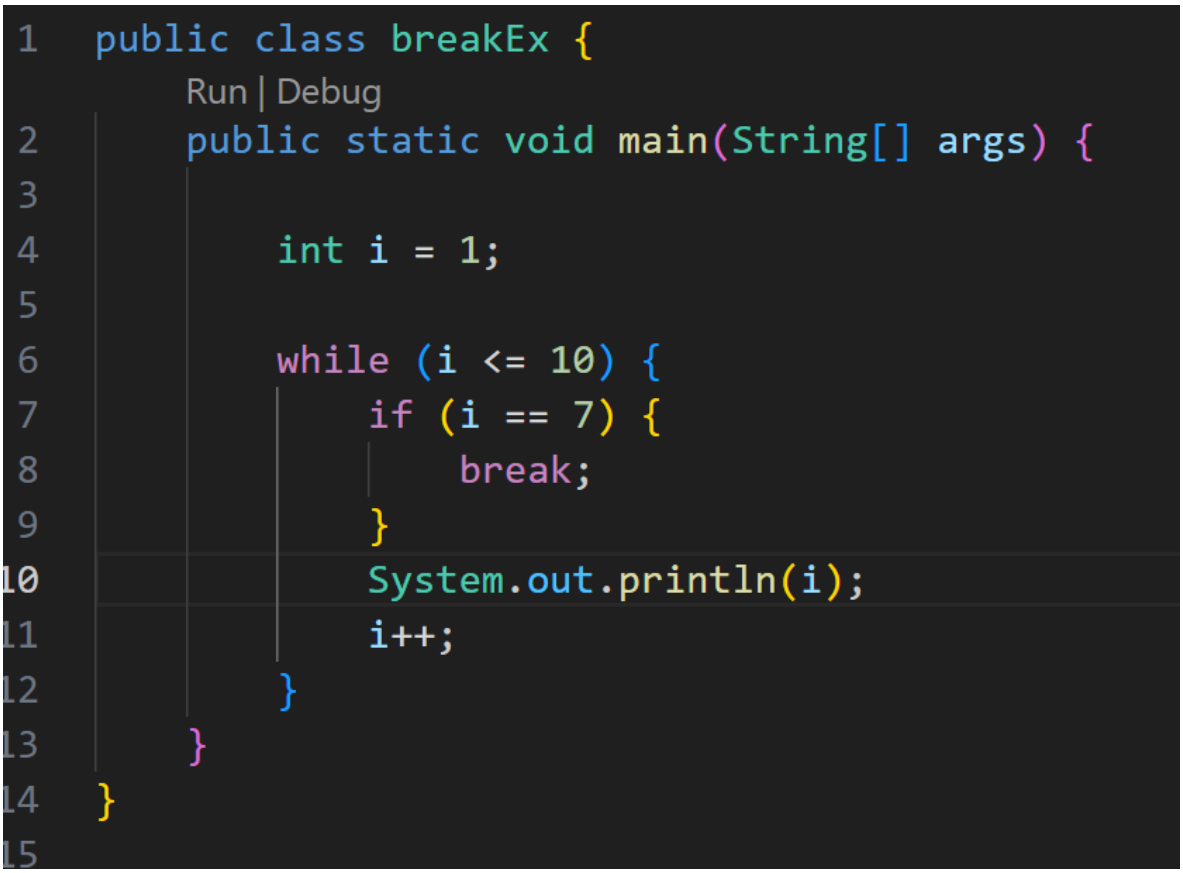
Q. Print the multiplication table of 3 (from 3×1 to 3×10) using a while loop.



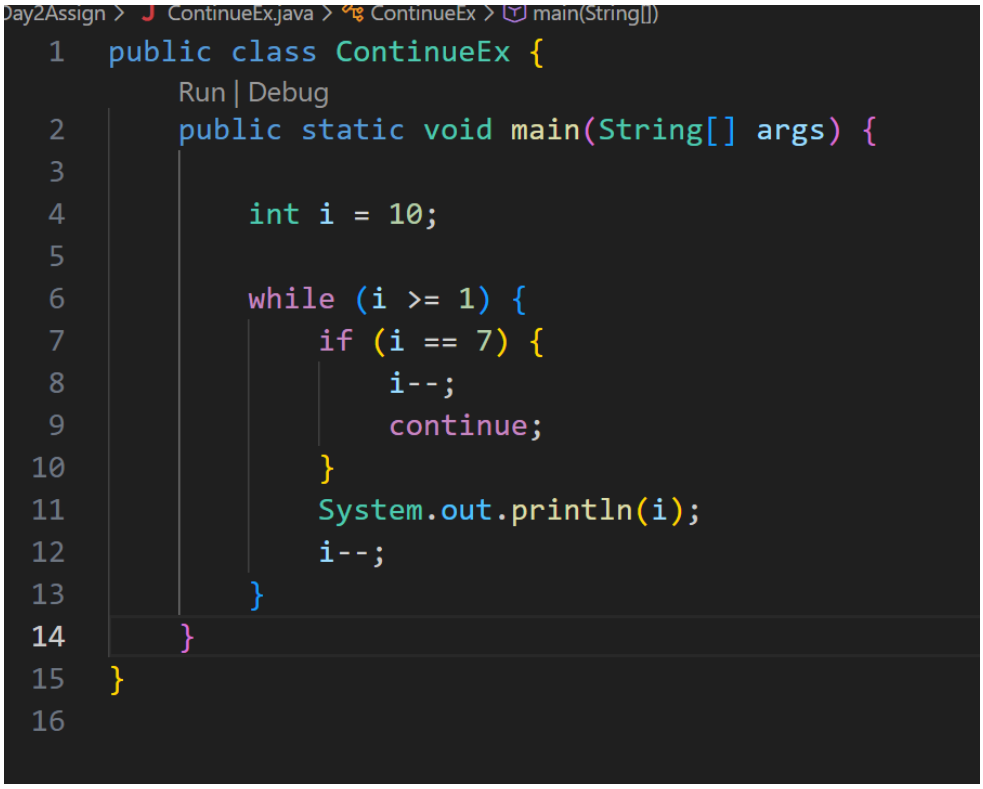
Q 3. Print numbers in reverse order from 20 down to 1 using a for loop.



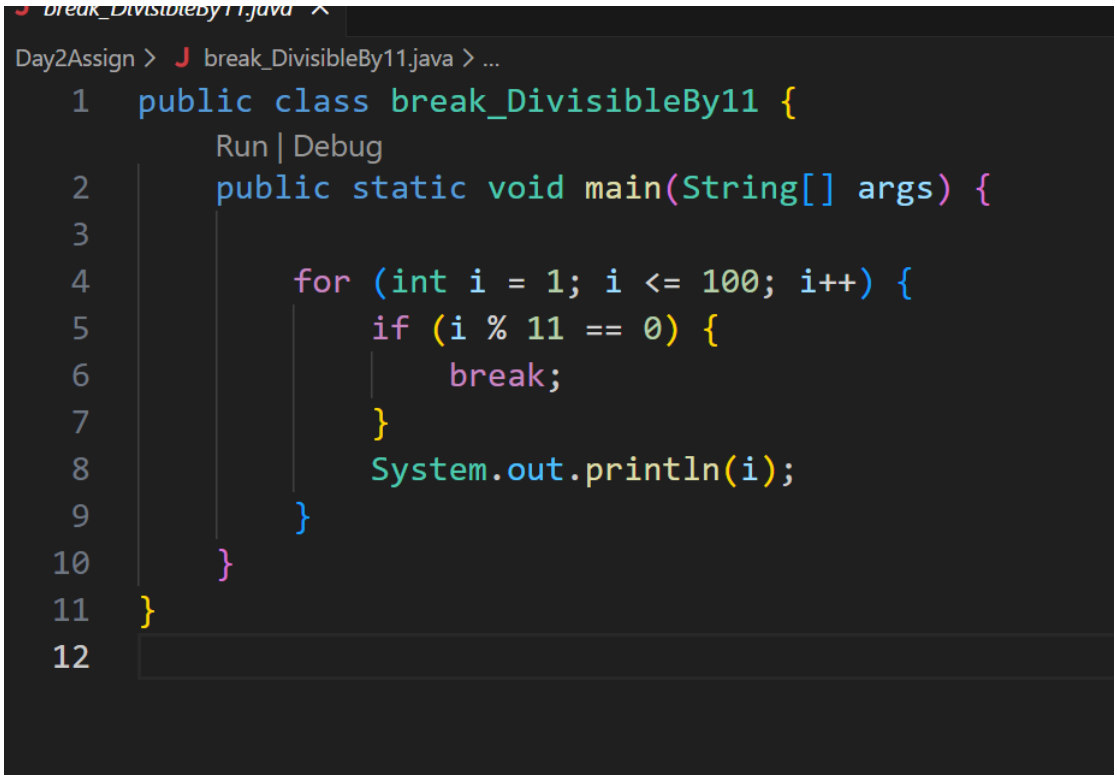
Q 4. Print natural numbers starting from 1 to 10. The loop should stop when the number reaches 7. Use a while loop and break statement.



5. Print numbers from 10 down to 1, but skip the number 7 using a while loop and continue.



Q6 . Print numbers from 1 to 100. Use a for loop and break it if any number divisible by 11 is encountered.



Q 7. Keep accepting numbers from the user until they enter 0. After that, print the total sum of all entered numbers.

Q8 Print numbers from 1 to 100. If a number is divisible by both 3 and 5, print "Skip" instead of the number using a for loop and continue.