

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 > J Unary.java > Unary
1 public class Unary {
2     Run | Debug
3     public static void main(String[] args) {
4         int x = 5;
5
6         ++x; //firstly increment then print
7         System.out.println(x); //6 Ans
8
9         int y=5;
10        System.out.println(y++); //print then increment Ans:5
11        System.out.println(y); // 6
12
13        int i = 5;
14        --i; //decrement then use
15        System.out.println(i); //Ans 4
16
17        int j = 5;
18        System.out.println(j--); //print then decrement Ans:5
19        System.out.println(j); // 4
20    }
21 }
```

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 > J assignOper.java > ...
1 public class assignOper {
2     Run | Debug
3     public static void main(String[] args) {
4
5         int x = 10;
6         x+=5; //15
7         System.out.println(x);
8
9         int y=10;
10        y-=3; //7
11        System.out.println(y);
12
13        int i=10;
14        i*=2; //20
15        System.out.println(i);
16
17        int j = 10;
18        j/=4; //8
19        System.out.println(j);
20    }
21 }
```

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

- i. a & b
- b. a | b
- c. a ^ b
- d. ~a

```
Day2Assign > J bitwiseOper.java > ↵ bitwiseOper > main(String[])
1 public class bitwiseOper {
    Run | Debug
2     public static void main(String[] args) {
3         int a = 2;
4         int b = 3;
5         System.out.println(a&b);
6         // 2 = 0010
7         // 3 = 0011
8         // a&b 0010 Ans: 2      if both true then ans will be true
9
10        System.out.println(a|b);
11        // 2 = 0010
12        // 3 = 0011
13        // a|b 0011 Ans: 3      if one true then ans will true
14
15        System.out.println(a^b);
16        // 2 = 0010
17        // 3 = 0011
18        // a^b 0001 Ans: 1      if both same then false
19
20        System.out.println(~a);
21        // 2 = 0010
22        // -3  1101
23    }
24 }
25
```

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

- a. a << 1 (left shift)
- b. a >> 1 (right shift)

```
J break_DivisibleBy11.java   J sumOfNUserinput.java   J skip3or5.java   J rightAnglePyramid.java   J shiftOper.java
Day2Assign > J shiftOper.java > ↵ shiftOper > main(String[])
1 public class shiftOper {
    Run | Debug
2     public static void main(String[] args) {
3         int a = 5;
4
5         // Right Shift
6         System.out.println(a>>1);
7         // 5 = 0101
8         // 2 = 0010      each bit moves one position to the right.
9
10        // Left Shift
11        System.out.println(a<<1);
12        //5 = 0101
13        //10  1010      each bit moves one position to the left.
14    }
15 }
16
```

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

```
Day2Assign > J evaluate.java > evaluate
1 public class evaluate {
2     Run | Debug
3     public static void main(String[] args) {
4         int i = 10, j=20, k=30;
5         i=j++ + ++k; // j:20, k:31
6         System.out.println(i); // Ans = 51
7
8         int x = 10, y=20, z=30;
9         var result = x+(y*(z-y))/y;
10        // 10+(20*(30-20))/20
11        // 10+(20*(10))/20
12        // 10+(200)/20
13        // 10+10
14        // Ans: 20
15         System.out.println(result);
16
17         int a = 10, b=20, c=30;
18         result = a + b * c - ++a / b \% c + (b - c) * a;
19         // 10 + 20*30 - ++10/20 \% 30 + (20-30)*10
20         // 10 + 600 - 11/20 \% 30 + (-10)*10
21         // 10 + 600 - 0 \% 30 - 100
22         // 10 + 600 - 0 - 100
23         //Ans: 510
24         System.out.println(result);
25     }
26 }
```

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.

```
Day2Assign > J swap2intUsing3rdVar.java > ...
1 public class swap2intUsing3rdVar {
2     Run | Debug
3     public static void main(String[] args) {
4         int a = 10;
5         int b = 20;
6         int temp;
7         System.out.println("Before Swaping \na: "+a+"\nb: "+b);
8
9         // swap
10        temp = a;
11        a = b;
12        b = temp;
13
14        System.out.println("After Swaping \na: "+a+"\nb: "+b);
15    }
16 }
```

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"

```
Day2Assign > ↵ UserInputNumberCheck.java > ↵ UserInputNumberCheck
1 import java.util.Scanner;
2
3 public class UserInputNumberCheck {
4     Run | Debug
5     public static void main(String[] args) {
6         Scanner sc = new Scanner(System.in);
7
8         System.out.print(s: "Enter a Number: ");
9         int num = sc.nextInt();
10
11        if (num>10) {
12            System.out.println(x: "Number is greater than 10");
13        } else if(num<10) {
14            System.out.println(x: "Number is smaller than 10 ");
15        }else{
16            System.out.println(x: "Number is equal to 10");
17        }
18    sc.close();
19 }
20 }
```

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.

```
pay2Assign > PosNegZero.java > ...
1 import java.util.Scanner;
2
3 public class PosNegZero {
4     Run | Debug
5     public static void main(String[] args) {
6
7         Scanner sc = new Scanner(System.in);
8
9         System.out.print(s: "Enter a Number: ");
10        int num = sc.nextInt();
11
12        if (num>0) {
13            System.out.println(x: "Number is Positive");
14        } else if(num<0) {
15            System.out.println(x: "Number is Negative");
16        }else{
17            System.out.println(x: "Number is 0");
18        }
19    }
20}
21
```

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

```
1  import java.util.Scanner;
2
3  public class GradeFinder {
4      Run | Debug
5      public static void main(String[] args) {
6          Scanner sc = new Scanner(System.in);
7
8          System.out.print(s: "Enter a Number 1-100: ");
9          int num = sc.nextInt();
10
11         if (num>=90 && num<=100) {
12             System.out.println(x: "Grade A");
13         } else if(num>=75 && num<=89) {
14             System.out.println(x: "Grade B");
15         }else if(num>=50 && num<=74){
16             System.out.println(x: "Grade C");
17         }else if(num>=0 && num<=49){
18             System.out.println(x: "Fail");
19         }else{
20             System.out.println(x: "Invalid Choice");
21         }
22         sc.close();
23     }
24 }
```

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 X
Day2Assign > CheckVote.java > CheckVote
1 import java.util.Scanner;
2
3 public class CheckVote {
4     Run | Debug
5     public static void main(String[] args) {
6         Scanner sc = new Scanner(System.in);
7
8         System.out.print("Enter Age: ");
9         int age = sc.nextInt();
10
11         System.out.print("Enter Citizenship (Y/N): ");
12         char citizenshipStatus = sc.next().charAt(index: 0);
13
14         if(age>=18) {
15             if (citizenshipStatus == 'y' || citizenshipStatus =='Y') {
16                 System.out.println("Your Are Eligible to vote");
17             }else {
18                 System.out.println("Not Eligible (not a citizen)");
19             }
20         }else {
21             System.out.println("Not eligible (too young)");
22         }
23         sc.close();
24     }
25 }
```

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

```
Day2Assign > 3 GradeFindUsingSwitch.java > 4 GradeFindUsingSwitch
1 public class GradeFindUsingSwitch {
2     Run | Debug
3     public static void main(String[] args) {
4         char inp = 'B';
5         switch (inp) {
6             case 'A':
7                 System.out.println(x: "Excellent");
8                 break;
9             case 'B':
10                System.out.println(x: "Good");
11                break;
12            case 'C':
13                System.out.println(x: "Average");
14                break;
15            case 'D':
16                System.out.println(x: "Poor");
17                break;
18            case 'E':
19                System.out.println(x: "Fail");
20                break;
21            default:
22                System.out.println(x: "Invalid Grade");
23                break;
24        }
25    }
26 }
```

Q5. WAP program that:

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

```
gretestof3.java
```

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

```
1 import java.util.Scanner;
2
3 public class gretestof3 {
4     Run | Debug
5     public static void main(String[] args) {
6         Scanner sc = new Scanner(System.in);
7
8         System.out.println("Enter First Number: ");
9         int a = sc.nextInt();
10
11        System.out.println("Enter Second Number: ");
12        int b = sc.nextInt();
13
14        System.out.println("Enter Third Number: ");
15        int c = sc.nextInt();
16
17        if (a>b && a>c) {
18            System.out.println("A is Gratest");
19        }
20        else if(b>c) {
21            System.out.println("B is Gratest");
22        }
23        else {
24            System.out.println("c is gratest");
25        }
26    }
27 }
28 }
```

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.

```
Day2Assign > TraficLight.java > TraficLight > main(String[])
1 import java.util.Scanner;
2
3 public class TraficLight {
4
5     Run | Debug
6     public static void main(String[] args) {
7         Scanner sc = new Scanner(System.in);
8
9         System.out.print(s: "Enter Color Name (red, yellow, green): ");
10        String str = sc.nextLine().toLowerCase();
11
12        if (str.equals(anObject: "red")) {
13            System.out.println(x: "Stop");
14        }
15        else if(str.equals(anObject: "yellow")) {
16            System.out.println(x: "Get Ready");
17        }
18        else if(str.equals(anObject: "Green")) {
19            System.out.println(x: "Go");
20        }
21        else {
22            System.out.println(x: "Invalid Color");
23        }
24    }
25 }
26
```

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 > J simpleCalc.java > simpleCalc > main(String[])
1 import java.util.Scanner;
2
3 public class simpleCalc {
4     Run | Debug
5     public static void main(String[] args) {
6         Scanner sc = new Scanner(System.in);
7
8         System.out.print(s: "Enter First Number: ");
9         int a = sc.nextInt();
10
11        System.out.print(s: "Enter Operator (+, -, *, /): ");
12        char oper = sc.next().charAt(index: 0);
13
14        System.out.print(s: "Enter Second Number: ");
15        int b = sc.nextInt();
16
17        if(oper == '+') {
18            System.out.println(a + " + " + b + " = "+ (a + b));
19        }
20        else if(oper == '-') {
21            System.out.println(a + " - " + b + " = "+ (a - b));
22        }
23        else if(oper == '*') {
24            System.out.println(a + " * " + b + " = "+ (a * b));
25        }
26        else if(oper == '/') {
27            if(b !=0){
28                System.out.println(a + " / " + b + " = "+ (a / b));
29            }else {
30                System.out.println(x: "Division by 0 is not allowed");
31            }
32        }else {
33            System.out.println(x: "Invalid Operator");
34        }
35    }
36 }
37 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.

```
Day2Assign > J sumfirst5naturanNum.java > ...
1  public class sumfirst5naturanNum {
2      Run | Debug
3      public static void main(String[] args) {
4          int i = 1;
5          int sum = 0;
6
7          while (i <= 5) {
8              sum = sum + i;
9              i++;
10         }
11
12         System.out.println("Sum of first 5 natural numbers = " + sum);
13     }
14 }
15
```

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

```
Assign > J TableOfThree.java > ...
1  public class TableOfThree {
2      Run | Debug
3      public static void main(String[] args) {
4          int i = 1;
5
6          while (i <= 10) {
7              System.out.println("3 x " + i + " = " + (3 * i));
8              i++;
9          }
10     }
11 }
```

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

```
Day2Assign > J reverseNum.java > reverseNum
1 ~ public class reverseNum {
2
3   Run | Debug
4   ~ public static void main(String[] args) {
5     for(int a = 20; a>=1; a--) {
6       System.out.println(a);
7     }
8 }
```

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.

```
1 public class breakEx {
2   Run | Debug
3   public static void main(String[] args) {
4
5     int i = 1;
6
7     while (i <= 10) {
8       if (i == 7) {
9         break;
10      System.out.println(i);
11      i++;
12    }
13  }
14}
```

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

```
Day2Assign > J ContinueEx.java > ContinueEx > main(String[])
1  public class ContinueEx {
    Run | Debug
2      public static void main(String[] args) {
3
4          int i = 10;
5
6          while (i >= 1) {
7              if (i == 7) {
8                  i--;
9                  continue;
10             }
11             System.out.println(i);
12             i--;
13         }
14     }
15 }
16
```

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

```
break_DivisibleBy11.java > ...
Day2Assign > J break_DivisibleBy11.java > ...
1  public class break_DivisibleBy11 {
    Run | Debug
2      public static void main(String[] args) {
3
4          for (int i = 1; i <= 100; i++) {
5              if (i % 11 == 0) {
6                  break;
7              }
8              System.out.println(i);
9          }
10     }
11 }
12
```

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

```
J sumOfNUserinput.java X
Day2Assign > J sumOfNUserinput.java > sumOfNUserinput > main(String[])
1 import java.util.Scanner;
2
3 public class sumOfNUserinput {
4     Run | Debug
5     public static void main(String[] args) {
6
7         Scanner sc = new Scanner(System.in);
8         int sum = 0;
9         int num;
10
11         System.out.println("Enter numbers (0 to stop):");
12
13         while (true) {
14             num = sc.nextInt();
15             if (num == 0) {
16                 break;
17             }
18             sum = sum + num;
19         }
20
21         System.out.println("Total sum = " + sum);
22         sc.close();
23     }
24 }
25 }
```

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.

```
ay2Assign > J skip3or5.java > skip3or5 > main(String[])
1 public class skip3or5 {
2     Run | Debug
3     public static void main(String[] args) {
4
5         for (int i = 1; i <= 100; i++) {
6             if (i % 3 == 0 && i % 5 == 0) {
7                 System.out.println("Skip");
8                 continue;
9             }
10            System.out.println(i);
11        }
12    }
13 }
```