

## 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 > 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      id 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)

```
Day2Assign > break_DivisibleBy11.java > sumOfNUserinput.java > skip3or5.java > rightAnglePyramid.java > shiftOper.java
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 > evaluate.java > evaluate
1 public class evaluate {
    Run | Debug
2     public static void main(String[] args) {
3         int i = 10, j=20, k=30;
4         i=j++ + ++k; // j:20, k:31
5         System.out.println(i); // Ans = 51
6
7         int x = 10, y=20, z=30;
8         var result = x+(y*(z-y))/y;
9         //      10+(20*(30-20))/20
10        //      10+(20*(10))/20
11        //      10+(200)/20
12        //      10+100
13        //      Ans: 20
14        System.out.println(result);
15
16        int a = 10, b=20, c=30;
17        result = a + b * c - ++a / b % c + (b - c) * a;
18        //      10 + 20*30 - ++10/20 % 30 + (20-30)*10
19        //      10 + 600 - 11/20 % 30 + (-10)*10
20        //      10 + 600 - 0 % 30 - 100
21        //      10 + 600 - 0 - 100
22        //Ans: 510
23        System.out.println(result);
24    }
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.

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

## Day 2: Assignment 2

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

```
day2Assign 7 PosNegZero.java 7 ...
1  import java.util.Scanner;
2
3  public class PosNegZero {
    Run | Debug
4      public static void main(String[] args) {
5
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>0) {
12             System.out.println(x: "Number is Positive");
13         } else if(num<0) {
14             System.out.println(x: "Number is Negative");
15         }else{
16             System.out.println(x: "Number is 0");
17         }
18         sc.close();
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 {
    Run | Debug
4  public static void main(String[] args) {
5      Scanner sc = new Scanner(System.in);
6
7      System.out.print(s: "Enter a Number 1-100: ");
8      int num = sc.nextInt();
9
10     if (num>=90 && num<=100) {
11         System.out.println(x: "Grade A");
12     } else if(num>=75 && num<=89) {
13         System.out.println(x: "Grade B");
14     }else if(num>=50 && num<=74){
15         System.out.println(x: "Grade C");
16     }else if(num>=0 && num<=49){
17         System.out.println(x: "Fail");
18     }else{
19         System.out.println(x: "Invalid Choice");
20     }
21     sc.close();
22 }
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 > J CheckVote.java > CheckVote
1  import java.util.Scanner;
2
3  public class CheckVote {
    Run | Debug
4      public static void main(String[] args) {
5          Scanner sc = new Scanner(System.in);
6
7          System.out.print(s: "Enter Age: ");
8          int age = sc.nextInt();
9
10         System.out.print(s: "Enter CitizenShip (Y/N): ");
11         char citizenshipStatus = sc.next().charAt(index: 0);
12
13         if(age>=18) {
14             if (citizenshipStatus == 'y' || citizenshipStatus == 'Y') {
15                 System.out.println(x: "Your Are Eligible to vote");
16             }else {
17                 System.out.println(x: "Not Eligible (not a citizen)");
18             }
19         }else {
20             System.out.println(x: "Not eligible (too young)");
21         }
22         sc.close();
23     }
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 > GradeFindUsingSwitch.java > GradeFindUsingSwitch
1 public class GradeFindUsingSwitch {
    Run | Debug
2     public static void main(String[] args) {
3         char inp = 'B';
4         switch (inp) {
5             case 'A':
6                 System.out.println(x: "Excelent");
7                 break;
8             case 'B':
9                 System.out.println(x: "Good");
10                break;
11             case 'C':
12                 System.out.println(x: "Average");
13                 break;
14             case 'D':
15                 System.out.println(x: "Poor");
16                 break;
17             case 'E':
18                 System.out.println(x: "Fail");
19                 break;
20             default:
21                 System.out.println(x: "Invalid Grade");
22                 break;
23         }
24     }
25 }
26
```



Q5. WAP program that:

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

```
Day2Assign > J gretestof3.java > gretestof3 > main(String[])
1  import java.util.Scanner;
2
3  public class gretestof3 {
    Run | Debug
4      public static void main(String[] args) {
5          Scanner sc = new Scanner(System.in);
6
7          System.out.println(x: "Enter First Number: ");
8          int a = sc.nextInt();
9
10         System.out.println(x: "Enter Second Number: ");
11         int b = sc.nextInt();
12
13         System.out.println(x: "Enter Third Number: ");
14         int c = sc.nextInt();
15
16         if (a>b && a>c) {
17             System.out.println(x: "A is Gratest");
18         }
19         else if(b>c) {
20             System.out.println(x: "B is Gratest");
21         }
22         else {
23             System.out.println(x: "c is gratest");
24         }
25         sc.close();
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 > TrafficLight.java > TrafficLight > main(String[])
1  import java.util.Scanner;
2
3  public class TrafficLight {
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         sc.close();
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 X
Day2Assign > J simpleCalc.java > simpleCalc > main(String[])
1  import java.util.Scanner;
2
3  public class simpleCalc {
4      public static void main(String[] args) {
5          Scanner sc = new Scanner(System.in);
6
7          System.out.print(s: "Enter First Number: ");
8          int a = sc.nextInt();
9
10         System.out.print(s: "Enter Operator (+, -, *, /): ");
11         char oper = sc.next().charAt(index: 0);
12
13         System.out.print(s: "Enter Sccond Number: ");
14         int b = sc.nextInt();
15
16         if(oper == '+') {
17             System.out.println(a + " + " + b + " = "+ (a + b));
18         }
19         else if(oper == '-') {
20             System.out.println(a + " - " + b + " = "+ (a - b));
21         }
22         else if(oper == '*') {
23             System.out.println(a + " * " + b + " = "+ (a * b));
24         }
25         else if(oper == '/') {
26             if(b !=0){
27                 System.out.println(a + " / " + b + " = "+ (a / b));
28             }else {
29                 System.out.println(x: "Division by 0 is not allowed");
30             }
31         }else {
32             System.out.println(x: "Invalid Operator");
33         }
34         sc.close();
35     }
36 }
```

## 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 {
  Run | Debug
2   public static void main(String[] args) {
3
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 {
  Run | Debug
2   public static void main(String[] args) {
3
4       int i = 1;
5
6       while (i <= 10) {
7           System.out.println("3 x " + i + " = " + (3 * i));
8           i++;
9       }
10  }
11 }
12
```

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             }
11             System.out.println(i);
12             i++;
13         }
14     }
15 }
```

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.

```
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(x: "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.

```
Day2Assign > 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(x: "Skip");
8                  continue;
9              }
10             System.out.println(i);
11         }
12     }
13 }
```