

Snippet 1:

```
public class NestedLoopOutput {  
    public static void main(String[] args) {  
        for (int i = 1; i <= 3; i++) {  
            for (int j = 1; j <= 2; j++) {  
                System.out.print(i + " " + j + " ");  
            }  
            System.out.println();  
        }  
    }  
}
```

```
}  
}  
}  
// Guess the output of this nested loop.
```

Date: YOUVA

Assignment 03

Section 2: Guess the output.

- Snippet 01

```
public class NestedLoopOutput {  
    public static void main(String[] args) {  
        for (int i = 1; i <= 3; i++) {  
            for (int j = 1; i j <= 2; j++) {  
                System.out.print(i + " " + j + " ");  
            }  
            System.out.println();  
        }  
    }  
}
```

Outer loop	Inner loop	Guess output
i = 1	j = 1	1 1 2
i = 2	j = 2	2 1 2 2
i = 3	j = 1	3 1 3 2
	j = 2	
	j = 1	
	j = 2	

Snippet 2:

```
public class DecrementingLoop {  
    public static void main(String[] args) {  
        int total = 0;  
        for (int i = 5; i > 0; i--) {  
            total += i;  
            if (i == 3) continue;  
            total -= 1;  
        }  
        System.out.println(total);  
    }  
}  
// Guess the output of this loop.
```

Snippet 02
dry run:
i = 5 ; total = 0 + 5 = 5 ; i == 3 is false ; total = 5 - 1 = 4
i = 4 ; total = 4 + 4 = 8 ; i == 3 false ; total = 8 - 1 = 7
i = 3 ; total = 7 + 3 = 10 ; i == 3 true ; skip
i = 2 ; total = 10 + 2 = 12 ; - false ; total = 11
i = 1 ; total = 11 + 1 = 12 ; - false ; total = 11
Guessed output
11.

Snippet 3:

```
public class WhileLoopBreak {  
    public static void main(String[] args) {  
        int count = 0;  
        while (count < 5) {  
            System.out.print(count + " ");  
            count++;  
            if (count == 3) break;  
        }  
        System.out.println(count);  
    }  
}  
// Guess the output of this while loop.
```

- Snippet 3

Dry run:-

Count = 0; Prints "0"; Count = 1; C == 3 is false.
Count = 1; Prints "1"; Count = 2; C == 3 false
Count = 3; Prints "2"; Count = 3; C == 3 true; break

Guess output.

0 1 2 3

Snippet 4:

```
public class DoWhileLoop {  
    public static void main(String[] args) {  
        int i = 1;  
        do {  
            System.out.print(i + " ");  
            i++;  
        } while (i < 5);  
        System.out.println(i);  
    }  
}  
// Guess the output of this do-while loop.
```

- Snippet 4

Dry run:

i = 1 : Prints "1"; i = 2

i = 2 : Prints "2"; i = 3

i = 3 : Prints "3"; i = 4

i = 4 : Prints "4"; i = 5

i < 5 (5 < 5) is false, loop stop

Print i(5)

Output:

1 2 3 4 5

Snippet 5:

```
public class ConditionalLoopOutput {  
    public static void main(String[] args) {  
        int num = 1;  
        for (int i = 1; i <= 4; i++) {  
            if (i % 2 == 0) {  
                num += i;  
            } else {  
                num -= i;  
            }  
        }  
        System.out.println(num);  
    }  
}  
// Guess the output of this loop.
```

- Snippet 05

dry run:

i=1 : $1 \% 2 \neq 0$ false; num = $1 - 1 = 0$

i=2 : $2 \% 2 = 0$ true; num = $0 + 2 = 2$

i=3 : $3 \% 2 \neq 0$ false; num = $2 - 3 = -1$

i=4 : $4 \% 2 = 0$ true; num = $-1 + 4 = 3$

output:

3

Snippet 6:

```
public class IncrementDecrement {  
    public static void main(String[] args) {  
        int x = 5;  
        int y = ++x - x-- + --x + x++;  
        System.out.println(y);  
    }  
}  
// Guess the output of this code snippet.
```

Snippet 06:
Dry run
x = 5
y = ++x - x-- + --x + x++;
++x: x become 6, return 6
x--: return 6, then x become 5
--x: x become 4 then return 4
x++: return 4 then x becomes 5
y = 6 - 6 + 4 + 4 = 8
output: 8

Snippet 7:

```
public class NestedIncrement {  
    public static void main(String[] args) {  
        int a = 10;  
        int b = 5;  
        int result = ++a * b-- --a + b++;  
        System.out.println(result);  
    }  
}  
// Guess the output of this code snippet.
```

- Snippet 07:

Dry run:

$a = 10$, $b = 5$

$result = ++a * b-- --a + b++$

$++a$: a becomes 11, returns 11

$b--$: return 5, then b becomes 4

$--a$: a become 10, return 10

$b++$: return 4, then b become 5

$result$: $11 * 5 - 10 + 4 - 55 - 10 + 4 = 49$

output :

49

Snippet 8:

```
public class LoopIncrement {  
    public static void main(String[] args) {  
        int count = 0;  
        for (int i = 0; i < 4; i++) {  
            count += i++ - ++i;  
        }  
        System.out.println(count);  
    }  
}  
// Guess the output of this code snippet.
```

- Snippet 08 :-

dry run

- Count = 0

i = 0

i++ : return 0, then i become 1

++i : i become 2 : return 2

Count += 0 - 2 = -2 : Count = -2

i = 2

i++ : return 2; then i become 3

++i : i become 4; return 4

Count += 2 - 4 = -2 : Count = -4

Output :-

-4