📝 DAY 5 – Types of For Loops

Class Programs → 4

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⭐ 1. TYPES OF FOR LOOPS

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1. Normal for loop

for (initialization; condition; increment/decrement)

2. Reverse for loop

for (int i = 10; i >= 1; i--)

3. Increment by 2 (skip loop)

for (int i = 1; i <= 10; i = i + 2)

4. Nested for loop

One loop inside another:

```
for (i)
   for (j)
```

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⭐⭐ CLASS PROGRAM – 1

Program: Print numbers from 1 to 10 (normal for loop)

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Pseudo Code

```
Start
Repeat i from 1 to 10
    Print i
End
```

Flow

Start loop at 1

Continue until 10

Print each number

Variables

i → loop counter

Program

```
class NormalForLoop {
    public static void main(String args[]) {

        for (int i = 1; i <= 10; i++) {
            System.out.println(i);
        }
    }
}
```

Output

```
1
2
3
4
5
6
7
8
9
10
```

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⭐ ⭐ CLASS PROGRAM – 2

Program: Print numbers from 10 to 1 (reverse loop)

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Pseudo Code

Start
Repeat i from 10 down to 1
    Print i
End

Flow

Begin at 10

Decrease 1 each time

End at 1

Variables

i → counter decreasing

Program

```
class ReverseForLoop {
    public static main(String args[]) {

        for (int i = 10; i >= 1; i--) {
            System.out.println(i);
        }
    }
}
```

Output

10
9
8
...
1

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⭐ ⭐ CLASS PROGRAM – 3

Program: Print even numbers from 2 to 20 (i = i + 2)

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Pseudo Code

Start
Repeat i from 2 to 20 with step 2
    Print i
End

Flow

Start at 2

Increment by 2

Print only even numbers

Variables

i → used to skip by 2

Program

```
class EvenSkipLoop {
    public static void main(String args[]) {

        for (int i = 2; i <= 20; i = i + 2) {
```

```
            System.out.println(i);
        }
    }
}
```

Output

```
2
4
6
...
20
```

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⭐ ⭐ CLASS PROGRAM – 4

Program: Nested loop → Print 5 rows of stars

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Pseudo Code

```
Start
Outer loop i = 1 to 5
    Inner loop j = 1 to 5
        Print "*"
    Move to next line
End
```

Flow

Outer loop → number of rows

Inner loop → number of columns

Each row prints 5 stars

Variables

i → row control

j → column control

Program

```
class StarPattern {
    public static void main(String args[]) {

        for (int i = 1; i <= 5; i++) {

            for (int j = 1; j <= 5; j++) {
                System.out.print("* ");
            }

            System.out.println();
        }
    }
}
```

Output

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

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⭐ ⭐ ⭐ ASSIGNMENT PROGRAMS – 4

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⭐ Assignment – 1

Program: Print odd numbers from 1 to 20 (i = i + 2)

```
class OddSkipLoop {
   public static void main(String args[]) {

      for (int i = 1; i <= 20; i = i + 2) {
         System.out.println(i);
      }
   }
}
```

Output

```
1
3
5
...
19
```

⭐ Assignment – 2

Program: Print sum of numbers from 1 to 50

```
class Sum1to50 {
   public static void main(String args[]) {

      int sum = 0;

      for (int i = 1; i <= 50; i++) {
         sum += i;
      }

      System.out.println("Sum = " + sum);
   }
}
```

Output

Sum = 1275

⭐ Assignment – 3

Program: Print table of any number (example 9)

```
class Table9 {
    public static void main(String args[]) {

        for (int i = 1; i <= 10; i++) {
            System.out.println("9 x " + i + " = " + (9 * i));
        }
    }
}
```

Output

```
9 x 1 = 9
9 x 2 = 18
...
9 x 10 = 90
```

⭐ Assignment – 4

Program: Print 1 to 5 in same line using loop

```
class SameLine {
    public static void main(String args[]) {

        for (int i = 1; i <= 5; i++) {
            System.out.print(i + " ");
        }
    }
}
```

Output

```
1 2 3 4 5
```