📝 DAY 4 – Looping Using Brute Force (Number Programs)

Programs in Class → 4

Assignment Programs → 4

⭐ CONCEPT INTRODUCTION

What is a Loop?

A loop is used when we want to repeat some statements multiple times.

Types of loops (but Day 4 focuses on brute-force using simple loops):

for loop

while loop

do-while loop

But in Day 4, we mainly use simple for-loop to print numbers or patterns (brute force).

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⭐⭐ CLASS PROGRAM – 1

Program: Print numbers from 1 to 10

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Pseudo Code

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

Program Flow

1. Start loop at 1

2. Go until 10

3. Print each number

Variables Used

i → loop counter to repeat printing numbers

Program

```
class Numbers1to10 {
    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 even numbers from 1 to 20

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Pseudo Code

```
Start
Repeat i from 1 to 20
   If i % 2 == 0
      Print i
End Repeat
End
```

Program Flow

1. Loop from 1 to 20

2. Check if number is even

3. Print only even values

Variables Used

i → holds numbers from 1 to 20

Program

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

      for (int i = 1; i <= 20; i++) {
         if (i % 2 == 0)
            System.out.println(i);
      }
   }
}
```

Output

```
2
4
6
8
10
12
14
16
18
20
```

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⭐ ⭐ CLASS PROGRAM – 3

Program: Print sum of first 10 natural numbers

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Pseudo Code

```
Start
sum = 0
Repeat i from 1 to 10
   sum = sum + i
End Repeat
Print sum
```

End

Program Flow

1. Start sum at 0

2. Add numbers from 1 to 10

3. After loop ends, print total

Variables Used

i → loop counter

sum → stores running total

Program

```
class SumOf10 {
    public static void main(String args[]) {

        int sum = 0;

        for (int i = 1; i <= 10; i++) {
            sum = sum + i;
        }

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

Output

Sum = 55

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⭐ ⭐ CLASS PROGRAM – 4

Program: Print multiplication table of 5

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Pseudo Code

```
Start
Repeat i from 1 to 10
   Print i * 5
End Repeat
End
```

Program Flow

1. Loop from 1 to 10

2. Multiply each value by 5

3. Print result

Variables Used

i → counter used to generate table values

Program

```
class TableOf5 {
   public static void main(String args[]) {

      for (int i = 1; i <= 10; i++) {
         System.out.println("5 x " + i + " = " + (5 * i));
      }
   }
```

```
}
```

Output

```
5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
...
5 x 10 = 50
```

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⭐ ⭐ ⭐ ASSIGNMENT PROGRAMS (4)

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⭐ Assignment – 1

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

```
class Reverse10 {
    public static void main(String args[]) {

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

Output

```
10
9
8
...
1
```

⭐ Assignment – 2

Program: Print odd numbers from 1 to 20

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

      for (int i = 1; i <= 20; i++) {
         if (i % 2 != 0)
            System.out.println(i);
      }
   }
}
```

Output

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

⭐ Assignment – 3

Program: Print squares of numbers from 1 to 10

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

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

Output

1
4
9
16
...
100

⭐ Assignment – 4

Program: Print table of any number (example: 7)

```
class TableOf7 {
    public static void main(String args[]) {

        for (int i = 1; i <= 10; i++) {
            System.out.println("7 x " + i + " = " + (7 * i));
        }
    }
}
```

Output

7 x 1 = 7
7 x 2 = 14
...
7 x 10 = 70
