Practical No. 5: Develop programs to demonstrate use of looping statement 'for'.

I. Practical Significance:

A for loop is used to execute a block of code several times. Students will be able to use for loop to replace the repetition of statements.

II. Relevant Program Outcomes (POs)

- **Basic knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problems.
- **Discipline knowledge:** Apply Computer Programming knowledge to solve the computer group related problems.
- **Experiments and practice:** Plan to perform experiments and practices to use the results to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Team work:** Function effectively as a leader and team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

III. Competency and Practical skills

"Develop Applications using Java".

The practical is expected to develop the following skills:

1. Develop a program to using for loop

IV. Relevant Course Outcome(s)

Develop programs using Object Oriented methodology in Java.

V. Practical Outcome (PrOs)

Develop programs to demonstrate use of looping statement 'for'

VI. Relevant Affective domain related Outcome(s)

1. Follow safety practices.
2. Practice good housekeeping
3. Demonstrate working as a leader/ a team member.
4. Follow ethical practices.

VII. Minimum Theoretical Background

Syntax:

```
for (initialization condition; testing condition;  increment/decrement)
{
statement(s);
}
```

VIII. Resources required (Additional)

Nil

Scanned with Fast Scan

IX. Resources used (Additional)

Sr. No.	Name of Resource	Broad Specification	Quantity	Remarks (If any)
1	Computer system.	i3 4/256 SSD	1	
2				

X. Program Code: Teacher must assign a separate program statement to group of 3-4 students.

Develop a program to print command line argument using for loop.

```
class Commandargs {
public static void main (String[] args) {
for (int a = 0 ; a < args.length ; a++)
System.out.println(args[a]);
}
}
```

XI. Result (Output of Code):

Government
Polytechnic
Solapur.
DTE

Scanned with Fast Scan

XII. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. When for loop will be terminated?
2. Can we write a for loop without initialization? If yes, give example.
3. Write a for loop to increment index variable by 2 in each iteration.
4. When for loop will be executed infinitely?

(Space for answer)

1) When control gets at break statement inside the loop then for loop gets terminated.

2) for loop can be written without initialization because the first block of for loop contains the initialization.

```
for(i=0; i<10; i++){
    System.out.println(i);
```

3) for (i=0; i<=20; i=i+2)
    System.out.println(i);

4) When the condition in for loop gets infinitely true then for loop will get executed infinitely

Scanned with Fast Scan

program to print pyramids of *

```
class Starpatterns {
    public static void main (String[] args) {
        for (int i=1; i<=5; i++) {
            for (int j=1; j<=i; j++){
                System.out.println("*");
            }
            System.out.println("");
        }
    }
}
```

Q/-

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

XIII. Exercise:

1. Write any program using if condition with for loop.
2. Write any program to display pyramids of stars/patterns using increment/decrement

(Space for Answer)

Q printing ~~Composite~~ prime numbers from 1 to 100

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


Scanned with Fast Scan

```
int i=0;
Int num=0;
String primNumbers = " ";
for (i=1; i<=100; i++){
Int counter=0;
for (num=i; num>=1; num--){
if (i%num==0){
counter = counter+1;
}
}
if(counter==2){
primNumbers = primNumbers + i + " ";
}
}
System.out.println("prime numbers 1 to 100 are");
System.out.println(primNumbers);
}
}
```


Scanned with Fast Scan

XIV. References/ Suggestions for Further Reading

1. https://www.sitesbay.com/java/java-looping-statement
2. https://docs.oracle.com/javase/tutorial/java/nutsandbolts/for.html
3. https://www.youtube.com/watch?v=0ll7vm1GQYE

XV. Assessment Scheme

Performance Indicators		Weightage
Process related(35 Marks)		**70%**
1	Logic formation	30%
2	Debugging ability	30%
3	Follow ethical practices	10%
Product related (15 Marks)		**30%**
4	Expected output	10%
5	Timely Submission	10%
6	Answer to sample questions	10%
Total (50 Marks)		**100%**

List of Students /Team Members

1. .....
2. .....
3. .....
4. .....

Marks Obtained			Dated signature of Teacher
Process Related(35)	**Product Related(15)**	**Total(50)**	

Scanned with Fast Scan