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Aim :- Create debug and run Java program on decision making and looping.

Theory :-

Loping in programming languages is a feature which facilitates the execution of set of instruction / function Reapetally while some condition exalutes to true.

While loop :- A while loop is a control flow statement that allow code to be executed repeatelly based on a given Boolean condition The while loop can be throught of as a repeating if statement

Syntax :-

```
While (boolean condition)
{
    loop statements....
}
```

While loop start with the checking of condition if it evaluated to true then the loop body statement are executed otherwise first statement flowing they are is executed

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For Loop :- For loop provides a concise way writing the loop structure unlike a while loop a For statement consen the initialize, condition and incresment. depenment in one line thereby provide a shorter easy to bebug structure of looping

Syntax :-

```
For [initialization condition; testing condition increment/ decrement]
{
  statement (s)
}
```

Entran sed For Loop :- Java also includes another version of For loop introduced in Java 5. enhanced For loop provide a simples way to increate through the elements in sequential collection of array

Syntax :-

```
For [I elements : collection obj/ array]
{
  statement (s)
}
```

Program :-

① program :-

```
Public class Practical3 {
    public static void main (String [] args ) {
        for (int i = 1 ; i <= 3 ; i++ ) {
            for (int j=1 ; j <= i ; j++) {
                System. out. println (j + " ");
            }
            System. out. println ( ) ;
        }
    }
}
```

② program :-

```
Class practical3_2 {
    public static void main (String [] args ) {
        int temp ;
        int [] arr = {1, 3, 7, 6, 45, 21, 9, 10, 102} ;
        for (int i = 0 ; i < (arr. length - 1) ; i++ ) {
            for (int j = i+1 ; j < arr. length ; j++ ) {
                if (arr [i] > arr [j] {
                    temp = arr [i] ;
                    arr [i] = arr [j] ;
                    arr [j] = temp ;
}
}
}
```

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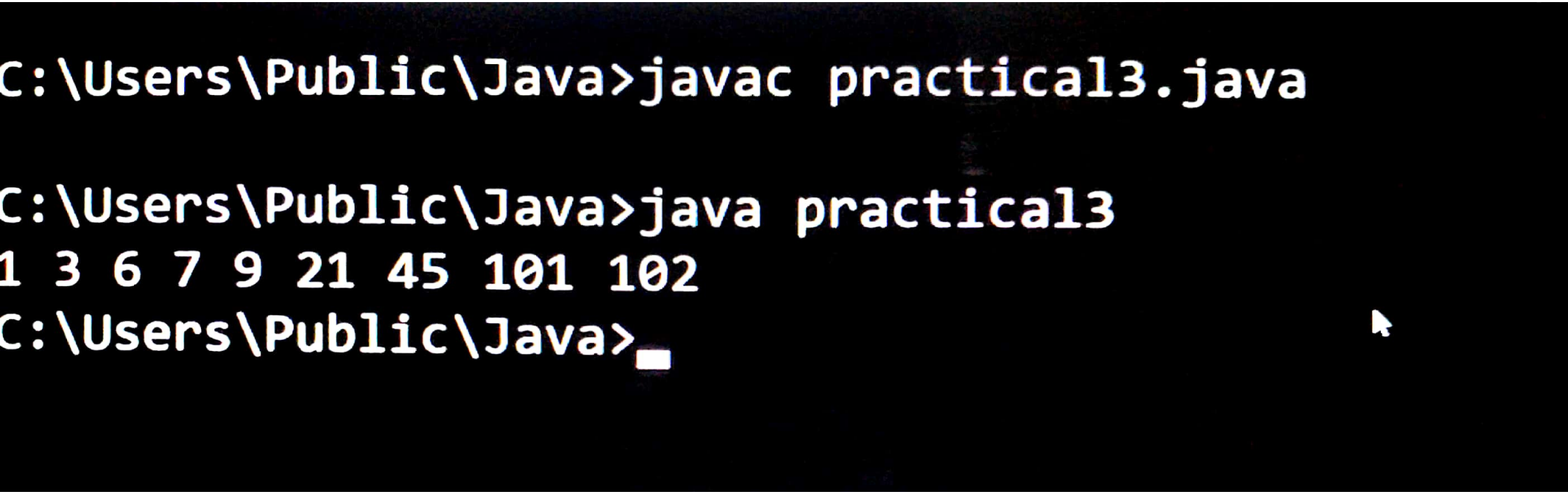
```
for (int m = ars) {
        System.out.println (m + " ");{
    }
}
}
```

Conclusion :- Hence, we successfully create debug and run program on looping.



```
C:\Users\Public\java>java practical3
0

0
1

0
1
2

0
1
2
3
```