

2. Write a Java Program to left rotate the elements of an array

Problem Description

In this program, we need to rotate the elements of an array towards the left by the specified number of times. In the left rotation, each element of the array will be shifted to its left by one position and the first element of the array will be added to end of the list. This process will be followed for a specified number of times.

Suppose if n is 1 then, all elements of the array will be moved to its left by one position such that second element of the array will take the first position, the third element will be moved to the second position and so on. The first element of the array will be added to the last of the array.

Algorithm

```
STEP 1: START
STEP 2: INITIALIZE arr[] = {1, 2, 3, 4, 5 }.
STEP 3: SET n = 3
STEP 4: PRINT "Original Array"
STEP 5: REPEAT STEP 6 for(i=0; i<arr.length; i++)
STEP 6: PRINT arr[i]
STEP 7: REPEAT STEP 8 to STEP 12 for(i=0; i<n; i++ )
STEP 8: DEFINE j, first.
STEP 9: first = arr[0]
STEP 10: REPEAT STEP 11 for(j= 0; j<arr.length-1; j++)
STEP 11: arr[j]= arr[j+1]
STEP 12: arr[j]= first
STEP 13: PRINT "Array after left rotation"
STEP 14: REPEAT STEP 15 for(i=0; i<arr.length; i++)
STEP 15: PRINT arr[i]
STEP 16: END
```

```
package prog10;

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

        int [] arr = new int [] {1, 2, 3, 4, 5};

        int n = 3;

        System.out.println("Original array: ");
        for (int i = 0; i < arr.length; i++) {
            System.out.print(arr[i] + " ");
        }

        for(int i = 0; i < n; i++){
            int j, first;

            first = arr[0];
            for(j = 0; j < arr.length-1; j++){
                arr[j] = arr[j+1];
            }
        }
    }
}
```

```

        arr[j] = first;
    }
    System.out.println();

    System.out.println("Array after left rotation: ");
    for(int i = 0; i < arr.length; i++){
        System.out.print(arr[i] + " ");
    }
}
}

```

Output:

