Daily Work Practice Date:- 8/09/2023

Program: Single Number

```
package com.ishwarchavan;
import java.util.Arrays;

public class SingleNumber {        //class created
      public static void main(String[] args) {     //main program  started

            int nums[]= {4,1,2,1,2};    //array  created
            System.out.println(singleNumber(nums));    //calling function and printing
value
      }
    public static int singleNumber(int[] nums) {       //singleNumber function created
        Arrays.sort(nums);      //sorting array

        if(nums.length==1){     //checking if condition
            return nums[0];     //if true then return 0 index value
        }
        for(int i=0;i<nums.length-1;i+=2){    //iterating loops
            if(nums[i]!=nums[i+1]){     //checking condition
                return nums[i];
            }
        }
       return nums[nums.length-1];    //return new array
    }
}
```

Program: Permutation Sequence

```
package com.ishwarchavan;
import java.util.*;

public class PermutationSequence{
    public static void main(String args[]) {    //main program started
        int n = 3, k = 3;    // initialized and declared
        String ans = getPermutation(n, k);    //calling the function  and stored the
value in ans
        System.out.println( ans);
    }
       //class created
    static void swap(char s[], int i, int j) {     //swap function created for swapping
value
        char ch = s[i];
        s[i] = s[j];       //s[j] is assigned  value
        s[j] = ch;
    }
    static void permutationHelper(char s[], int index, ArrayList < String > res) {
//function created
        if (index == s.length) {
            String str = new String(s);        //str object created

            res.add(str);
            return;
        }
        for (int i = index; i < s.length; i++) {    //loops iterating
            swap(s, i, index);      //call  swap function
            permutationHelper(s, index + 1, res);     //call permutationHelper function
            swap(s, i, index);
        }
    }

    static String getPermutation(int n, int k) {     //getPermutation function created
        String s = "";      //EMPATY string stored
        ArrayList < String > res = new ArrayList < > ();     //res object created
```

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        for (int i = 1; i <= n; i++) {     //loop iterating
            s += i;   //increment the value
        }
        permutationHelper(s.toCharArray(), 0, res);    //call the function
        Collections.sort(res);

        return res.get(k);   //return k

    }

}
```