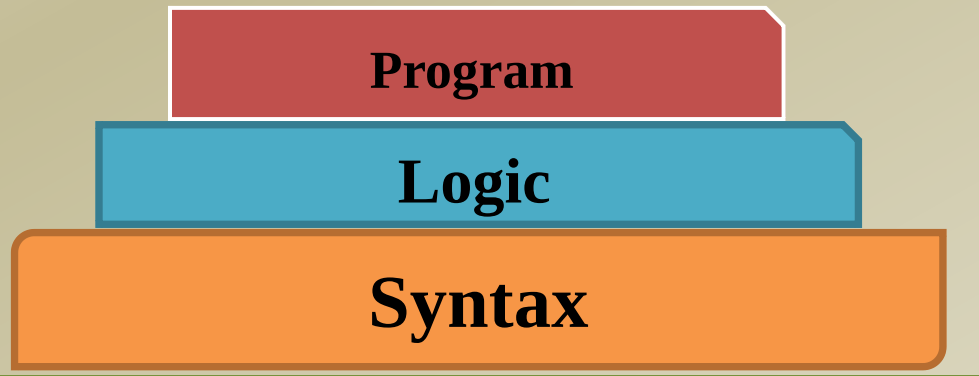
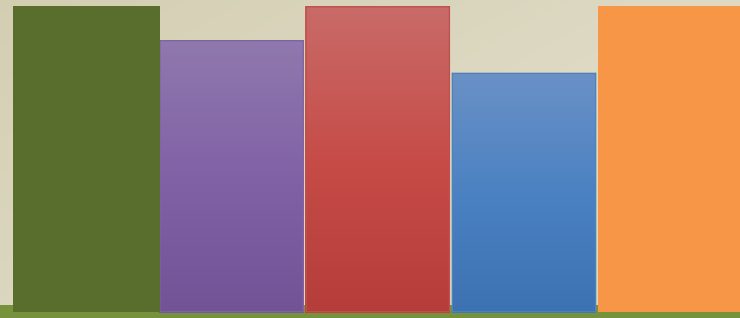
Code at Random (OPC) PVT. LTD.

Module 8: Board Questions- Arrays Based





MCQs- Multiple Choice Questions

- What are the subscripts for this array? int [ ] k = { 11, 12, 13, 14, 15};
  [a] 0, 1, 2, 3, 4
  [b] 1, 2, 3, 4, 5
  [c] 11, 12, 13, 14, 15
  [d] 10, 11, 12, 13, 14

- What is the output of the following code fragment?
  int [ ] evens = {2, 4, 6, 8, 10};
  evens[0] = 44;
  evens[4] = evens[2];
  System.out.println(evens[0] + " " + evens[4]);
  [a] 44 10
  [b] 2 10
  [c] 54
  [d] 44 6

- What number is in matrix[2][2]?
  int [ ] [ ] matrix = { {1, 2, 3, 4},
  {5, 6, 7, 8},
  {9, 10, 11, 12},
  {13, 14, 15, 16}
  };

  [a] 6
  [b] 7
  [c] 10
  [d] 11

- The annual examination results of 50 students in a class are tabulated as follows:

Roll No	Subject A	Subject B	Subject C
------	-------	-------	-------
------	-------	-------	-------

Write a program to read a data, calculate and display the following:

(a) Average mark obtained by each student.
(b) Print the roll number and average marks of the students whose average mark is above 80.
(c) Print the roll number and average marks of the students whose average mark is below 40.

- The marks obtained by 50 students in a subject are tabulated as follows:

Roll no	**Marks**
…..	**…..**
….	**…..**

Write a program to input the roll no and marks of the students in the subject. Calculate and display: -

(i) The subject average marks (subject average marks = subject total/50)

(ii) The highest mark in the subject and roll no of the student (Maximum marks in a subject are 100).

```
import java.util.*;
public class exam{
    public static void main(String[] args) {
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter the number of students");
        int n = sc.nextInt();
        int roll_no[] = new int[n];
        System.out.println("Enter the roll numbers");
         for (int i = 0; i < n; i++)
            roll_no[i] = sc.nextInt();
        System.out.println("Enter the marks of Subject A ");
        int A[] = new int[n];
         for (int i = 0; i < n; i++)
            A[i] = sc.nextInt();
         System.out.println("Enter the marks of Subject B ");
        int B[] = new int[n];
         for (int i = 0; i < n; i++)
            B[i] = sc.nextInt();

        System.out.println("Enter the marks of Subject C ");
        int C[] = new int[n];
         for (int i = 0; i < n; i++)
            C[i] = sc.nextInt();
double[] avg = new double[n];
        for(int i=0;i<n;i++){
            avg[i]= (A[i]+B[i]+C[i])/3.0;
            System.out.println("Average Marks of
Student "+(i+1)+" is "+avg[i]);
            }
        System.out.println("Students with more than 80
avergae marks");
        for(int i=0;i<n;i++){
            if(avg[i]>80)
             System.out.println("Roll No "+roll_no[i]+"
Average "+avg[i]);
        }
        System.out.println("Students with less than 40
avergae marks");
        for(int i=0;i<n;i++){
            if(avg[i]<40)
             System.out.println("Roll No "+roll_no[i]+"
Average "+avg[i]);
        }
    }
}
```

- According to the census of India 2020 following is the rounded off percentage of the urban population in 10 states of India.

S.No	States	Percentage
1	Jammu Kashmir	25
2	Himachal Pradesh	10
3	Punjab	34
4	Haryana	29
5	Delhi	65
6	Uttar Pradesh	60
7	Bihar	42
8	Tamil Nadu	44

Write a program to sort the above list in ascending order according to the percentage of urban population using selection sort technique.

The program should also print the serial no of those states and their urban population, whose percentage of urban population is more than 40.

- Given a binary array- containing zeroes and ones only, print the **maximum number of consecutive 1's** in the array.

  Input: [1,1,0,1,1,1]
  Output: 3
  Explanation: The first two digits or the last three digits are consecutive 1s. The maximum number of consecutive 1s is 3.

- Given an array of integers, print how many of them contain an even number of digits.

  Example:

  Input: [12,345,2,6,7896]

  Output: 2

  Explanation:

  12 contains 2 digits (even number of digits).

  345 contains 3 digits (odd number of digits).

  2 contains 1 digit (odd number of digits).

  6 contains 1 digit (odd number of digits).

  7896 contains 4 digits (even number of digits).

  Therefore only 12 and 7896 contain an even number of digits.

```
import java.util.*;
class maxOnes{
    public static int findMaxConsecutiveOnes(int[] nums) {
        int n = nums.length;
        int count =0;
        int max=0;
        for(int i=0;i<n;i++){
            if(nums[i]==1)
                count++;
            else
                count=0;
            max=Math.max(max,count);
        }
        return max; }
    public static void main(String Args[]){
        Scanner sc= new Scanner(System.in);
        int n= sc.nextInt();
        int[] A= new int[n];
         for (int i = 0; i < n; i++)
            A[i] = sc.nextInt();
        int max= findMaxConsecutiveOnes(A);
        System.out.println(max);
    }
}
```

```
import java.util.*;
class findNumbers {
    public static int findNumbers(int[] nums) {
        int count=0;
        for(int num : nums){
            int c=0;
            while(num>0){
                c++;
                num/=10;
            }
            if(c%2==0)
                count++;
        }
        return count; }
     public static void main(String Args[]){
        Scanner sc= new Scanner(System.in);
        int n= sc.nextInt();
        int[] A= new int[n];
         for (int i = 0; i < n; i++)
            A[i] = sc.nextInt();
        int ans= findNumbers(A);
        System.out.println(ans);
    }
}
```