

→ Write a C/Java program to accept a number n from the user and print n rows of output as given below if $n = 4$.

1	2	3	
4	5	6	
7	8	9	10

→ import java.util.Scanner;
 public class Lab 2a {
 public static void main (String [] args)

2

int i, j, n, k = 1;

System.out.print("Input number of rows : ");

Scanner in = new Scanner (System.in);

n = in.nextInt();

for (i=1 ; i<=n ; i++)

3

for (j=1 ; j<=i ; j++)

4

System.out.print (k + " ");

k++;

5

System.out.print ("\\n");

6

7

8

Q. Write a C/ Java program to accept the CIE marks (out of 50) and SEE marks (out of 100) of a student and print his/her grade. Use if --- elseif ladder.

```
import java.util.Scanner;
```

```
public class Lab2b
```

2

```
public static void main (String args [])
```

3

```
int C-marks [] = new int [6];
```

```
int S-marks [] = new int [6];
```

Int i;

float total = 0, avg;

```
Scanner Scanner = new Scanner (System.in);
```

```
for (i=0; i<6; i++) {
```

System.out.print ("Enter CIE Marks of Subject" + (i+1) + ":");

```
C-marks [i] = Scanner.nextInt();
```

System.out.print ("Enter SEE Marks of Subject" + (i+1) + ":");

```
S-marks [i] = Scanner.nextInt();
```

```
total = total + C-marks [i] + ((S-marks [i] / 2));
```

4

```
Scanner.close();
```

avg = total / 6;

System.out.print ("The student Grade is: ");

if (avg >= 90)

5

System.out.print ("S");

6

Teacher's Signature : _____

else if (avg >= 80 && avg < 90)

{

 System.out.print ("A");

}

else if (avg >= 70 && avg < 80)

{

 System.out.print ("B");

}

else if (avg >= 60 && avg < 70)

{

 System.out.print ("C");

}

else if (avg >= 50 && avg < 60)

{

 System.out.print ("D");

}

else if (avg >= 40 && avg < 50)

{

 System.out.print ("E");

}

else { ~~avg~~ }

{

 System.out.print ("F");

}

}

}

y Write a C | Java program to print numbers b/w given two integers (inclusive). Accept these two integers from the user.

```

import java.util.Scanner;
public class Lab2C
{
    public static void main (String args[])
    {
        int s1, s2, count = 0, i, j;
        Scanner scanner = new Scanner (System.in);
        System.out.print ("Enter the lower limit : ");
        s1 = scanner.nextInt();
        System.out.print ("Enter the upper limit : ");
        s2 = scanner.nextInt();
        System.out.println ("Prime numbers in the given range are : ");
        for (i = s1; i <= s2; i++)
        {
            for (j = 2; j < i; j++)
            {
                if (i % j == 0)
                {
                    count = 0;
                    break;
                }
            }
            else
            {
                count = 1
            }
        }
    }
}

```

Teacher's Signature :

Date _____

Expt. No. _____

Page No. 12

$\text{if } (\text{count} == 1)$

{

`System.out.println(i);`

}

}

}

}

Teacher's Signature : _____

6. Write a C | Java program which prints the area and volume of any one of the given shapes given below. Accept the choice of the shape, appropriate inputs from the user, calculate and display the area and the volume of the same. Repeat this with different shapes till the user wishes to stop.

Cylinder , Cone → Sphere.

```
#include < stdio.h >
#include < stdlib.h >
#include < math.h >
#include < conio.h >

int main()
{
    float v, sa;
    int h, ch, r;
    while (1)
    {
        printf("1. Cylinder\n2. Cone\n3. Sphere\n");
        printf("4. Exit\n");
        printf("Enter your choice");
        scanf("%d", &ch);
        if (ch == 1)
            v = 3.14 * r * r * h;
        else if (ch == 2)
            v = 3.14 * r * r * h / 3;
        else if (ch == 3)
            v = 4.0 / 3 * 3.14 * r * r * r;
        else if (ch == 4)
            break;
        else
            printf("Wrong choice\n");
        printf("Volume = %f\n", v);
    }
}
```

```
Switch (ch) {
```

case 1:

```
    Print ("In Enter the value of Radius and Height for Cylinder.");
```

```
    Scanf ("%d %d", &r, &h);
```

```
    v = 3.14 * r * r * h;
```

```
    Sa = (2 * 3.14 * r * r) + (2 * 3.14 * r * h);
```

```
    Print ("Surface Area of Cylinder : %f", Sa);
```

```
    print ("In Volume of Cylinder : %f", v);
```

```
    break;
```

Case 2:

```
Printf ("In Enter the value of Radius and Height for Cone : ");
```

```
Scanf ("%d %d", &r, &h);
```

```
v = (1/3) * 3.14 * r * r * h;
```

```
Sa = 3.14 * r * (r + sqrt((h)^2 + (r)^2));
```

```
Printf ("Surface area of cone : %f", Sa);
```

```
Printf ("In Volume of cone : %f", v);
```

```
break;
```

Case 3:

```
Printf ("In Enter the value of Radius of Sphere : ");
```

```
Scanf ("%d", &r);
```

```
v = (4/3) * 3.14 * r * r * r;
```

```
Sa = 4 * 3.14 * r * r;
```

```
Printf ("Surface Area of Sphere : %f", Sa);
```

```
Printf ("Volume of sphere : %f", v);
```

```
break;
```

Case 4:

```
-exit (0);
```

Date _____

Expt. No. _____

Page No. 15

default :

```
printf ("Wrong Options Is Been Entered\n");  
break;
```

2

3

return 0;

4

Teacher's Signature : _____

Y Write a C program to count the number of students registered for three elective courses. Accept the names of n students, their choice of the elective (say, the elective courses are IOT, Advanced Java and J2EE and Advanced Data Structure).

Include the following operations:

1. Accept say x from the user. Display the names of the students who have opted for elective x
2. Count and display the total number of student present in elective.
3. if count is less than 30, inform that the course will not be floated and ask the student who have opted the course to reselect their elective from the other two. Count and display the counts again.
4. Display the name of the students in each elective.

Solution:-

```
#include<stdio.h>
#define MAX 100
int main()
{
    int n=0, i=0, c=0, c1=0, c2=0, c3=0;
    int f1=1, f2=1, f3=1;
    char iot[MAX][20], j2ee[MAX][20], aj[MAX][20];
    printf("Enter the no. of Students (Less than 100):");
    scanf("%d", &n);
    for(i=0; i<n; i++)
    {
```

Teacher's Signature: _____

```
if (f2)
```

```
    printf("Enter 1 for IOT\n");
```

```
if (f2) .
```

```
    printf("Enter 2 for Advanced Java\n");
```

```
if (f3)
```

```
    printf("Enter 3 for J2EE\n");
```

```
    printf("Enter -1 to exit\n");
```

```
    printf("Enter Your Choice:");
```

```
    scanf("%d", &C);
```

```
if (C == 1)
```

```
    break;
```

```
Switch (c)
```

```
{
```

case 1:

```
    printf("Enter Your Name:");
```

```
    scanf("%s", &IOT[C1++]);
```

```
    break;
```

Case 2:

```
    printf("Enter Your Name:");
```

```
    scanf("%s", &AJE[C2++]);
```

```
    break;
```

Case 3:

```
    printf("Enter Your Name:");
```

```
    scanf("%s", &J2EE[C3++]);
```

```
    break;
```

default:

```
    printf("\n\n In valid Input\n\n");
```

```
    break;
```

if ($i = n$)
 {
 }

$i = -1$

$m = 0;$

if ($c_1 < 30$)

{
 }

$f_1 = 0;$

$n = n + c_1;$

$c_1 = 0;$

{
 }

if ($c_2 < 30$)

{
 }
 $+ z = 0;$

$n = n + c_2;$

$c_2 = 0;$

{
 }

if ($c_3 < 30$)

{
 }

$f_3 = 0;$

$n = n + c_3;$

$c_3 = 0;$

{
 }

{
 }

`printf ("No. of students in each course; \n");`

`printf ("TOT = %d \n", c1);`

Teacher's Signature : _____

```
printf ("Advance d Java = %d \n", c2);
printf ("J2EE = %d \n", c3);
```

```
Printf (" Students enrolled in courses : \n\n");
```

```
if (f1) {
```

```
    Printf (" From IOT : \n\n");
```

```
    for (i=0; i < c1; i++)
```

```
{
```

```
    Printf (iot [i]);
```

```
    Printf ("\n");
```

```
3
```

```
}
```

```
if (f2) {
```

```
    Printf (" From Advanced Java : \n\n");
```

```
    for (i=0; i < c2; i++)
```

```
{
```

```
    Printf (aj [i]);
```

```
    Printf ("\n");
```

```
3
```

```
3
```

```
if (f3) {
```

```
    Printf (" From J2EE : \n\n ");
```

```
    for (i=0; i < c3; i++)
```

```
{
```

```
    Printf (j2ee [i]);
```

```
    Printf ("\n");
```

```
3
```

```
return 0;
```

Teacher's Signature : _____