Practice programs for OOJ lab-Week-2(C programs)

3. 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.

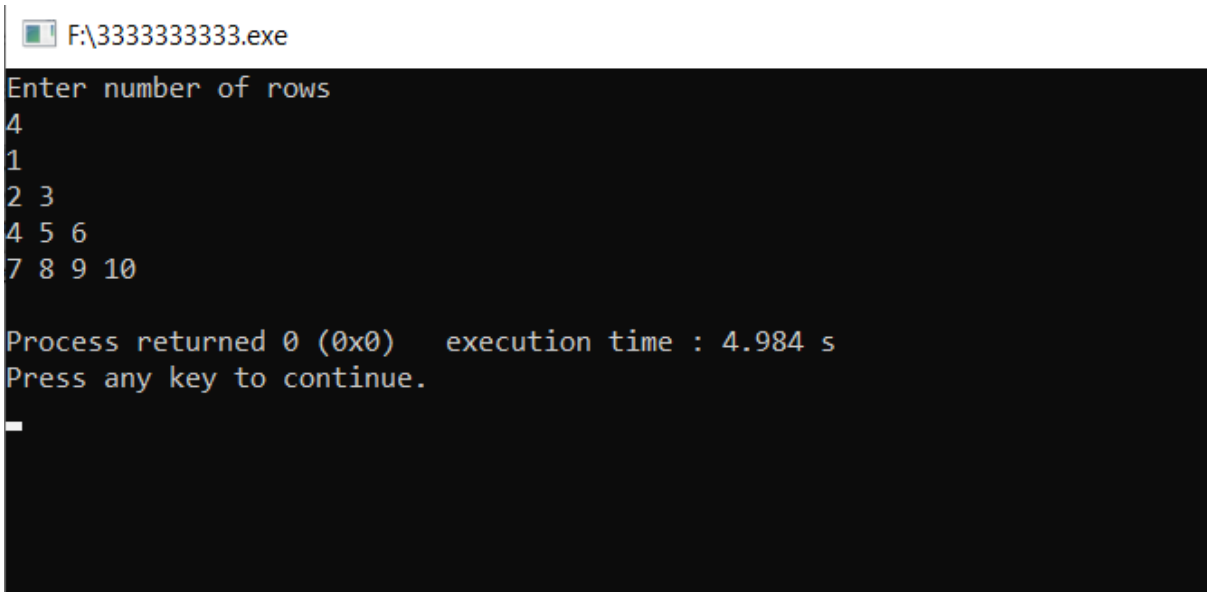
1

2 3

4 5 6

7 8 9 10

```
#include<stdio.h>
int main()
{
int i,j,n,k=1;
printf("Enter number of rows\n");
scanf("%d",&n);
for(i=1;i<=n;i++)
{
   for(j=1;j<=i;j++)
   {
      printf("%d ",k);
      k++;
   }
   printf("\n");
}
return 0;
}
```



4. Wriite 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

```
#include <stdio.h>
int main()
{
   int CIE,SEE;
   float tot;
   printf("Enter the CIE(50) and SEE(100) marks of the student respectively\n");
   scanf("%d%d",&CIE,&SEE);
   tot = (SEE/2.0) + CIE;
   if(CIE>=20 && SEE>=40)
   {
      if(tot>89 && tot<=100)
      printf("Grade: S");
      else if(tot>79 && tot<=89)
      printf("Grade: A");
```

```
        else if(tot>69 && tot<=79)
        printf("Grade: B");
        else if(tot>59 && tot<=69)
        printf("Grade: C");
        else if(tot>49 && tot<=59)
        printf("Grade: D");
        else
        printf("Grade: E");

    }
    else if(CIE>=20 && SEE<40)
    printf("Grade: F");
    else
    printf("Not eligible, grade not applicable");
return 0;
}
```

F:\44444444444444.exe

```
Enter the CIE(50) and SEE(100) marks of the student respectively
17
43
Not eligible, grade not applicable
Process returned 0 (0x0)   execution time : 10.204 s
Press any key to continue.
```

F:\44444444444444.exe

```
Enter the CIE(50) and SEE(100) marks of the student respectively
32
30
Grade: F
Process returned 0 (0x0)   execution time : 7.539 s
Press any key to continue.
```

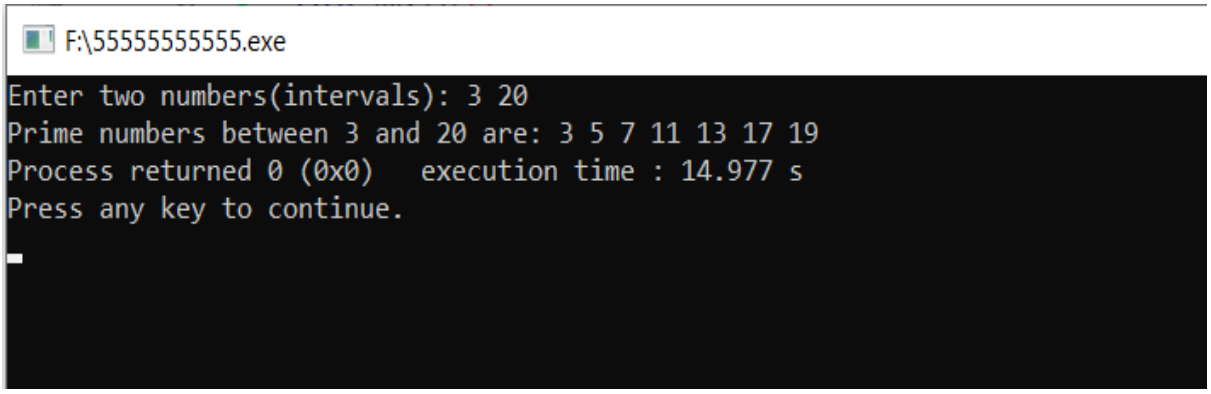
F:\44444444444444.exe

```
Enter the CIE(50) and SEE(100) marks of the student respectively
47
96
Grade: S
Process returned 0 (0x0)   execution time : 9.253 s
Press any key to continue.
```

5.Write a C/Java program to print the prime numbers between given two integers (inclusive). Accept these two integers from the user.

```
#include <stdio.h>
int main()
{
  int low, high, i, flag;
  printf("Enter two numbers(intervals): ");
  scanf("%d %d", &low, &high);
  printf("Prime numbers between %d and %d are: ", low, high);

    while (low<=high)
  {
    flag = 0;
    if (low <= 1)
  {
    low++;
    continue;
  }

      for (i = 2; i <= low / 2; i++)
      {
        if (low % i == 0) {
        flag = 1;
        break;
      }
    }
```

```
    if (flag == 0)
      printf("%d ", low);

    low++;
  }

  return 0;
}
```



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: Area : A=2πrh+2πr2 Volume: V=πr2h

Cone: Area: A=πr(r+ √(h2+r2)) Volume: V= πr2h/3

Sphere: Area: A= 4πr2 Volume: V= (4/3) πr3

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

```
#include <stdlib.h>
int main() {
   int c=4;
   float a,v,r,h;
   while(c)
   {
   printf("Enter the choice of shape:\n");
   printf("1.Cylinder\n2.Cone\n3.Sphere\n0.Exit\n");
   scanf("%d",&c);
   switch(c)
   {
      case 1:printf("Enter radius:\n");
            scanf("%f",&r);
            printf("Enter height:\n");
            scanf("%f",&h);
            a=(2*3.14*r*h)+(2*3.14*r*r);
            v=(3.14*r*r*h);
            printf("Area: %f\nVolume: %f\n",a,v);
            break;
      case 2:printf("Enter radius:\n");
            scanf("%f",&r);
            printf("Enter height:\n");
            scanf("%f",&h);
            a=(3.14*r)*(r+sqrt((h*h)+(r*r)));
            v=(3.14*r*r*h)/3.0;
            printf("Area: %f\nVolume: %f\n",a,v);
```

```
            break;
        case 3:printf("Enter radius:\n");
            scanf("%f",&r);
            a=4*3.14*r*r;
            v=(4*3.14*r*r*r)/3.0;
            printf("Area: %f\nVolume: %f\n",a,v);
            break;
        case 0:printf("Exit\n");
            exit(0);
        default:printf("Invalid choice\n");

    }
    }
    return 0;
}
```

F:\666666.exe

```
Enter the choice of shape:
1.Cylinder
2.Cone
3.Sphere
0.Exit
1
Enter radius:
3
Enter height:
5
Area: 150.720001
Volume: 141.300003
Enter the choice of shape:
1.Cylinder
2.Cone
3.Sphere
0.Exit
2
Enter radius:
6
Enter height:
9
Area: 316.825745
Volume: 339.119995
Enter the choice of shape:
1.Cylinder
2.Cone
3.Sphere
0.Exit
3
Enter radius:
4
Area: 200.960007
Volume: 267.946655
Enter the choice of shape:
1.Cylinder
2.Cone
3.Sphere
0.Exit
0
Exit

Process returned 0 (0x0)   execution time : 282.247 s
Press any key to continue.
```