Mallika Prasad Sec-B 1BM19CS081

3) Write a C/Java program to accept a number n from the user and print n rows of output as given below:

```
1
2 3
4 5 6
7 8 9 10
```

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

4) 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 ... else if ladder.

```
#include <stdio.h>
int main()
{
int cie[100][100], see[100][100], tm[100][100], i, j;
for (i=0; i<=6; i++)
 {
  for (j=0; j<i; j++)
  {
  printf ("enter CIE marks for subject %d: ", i+1);
  scanf ("%d", &cie[i][j]);
  printf ("enter SEE marks for subject %d: ", i+1);
  scanf ("%d", &see[i][j]);
  tm[i][j] = cie[i][j] + see[i][j];
  if (tm[i][j] >=1 && tm[i][j]<=25)
  {
  printf ("Grade : F \n"); }
  else if (tm[i][j] >= 26 && tm[i][j] <=50)
{ printf ("Grade : D \n"); }
else if (tm[i][j] >= 51 && tm[i][j] <=75)
{ printf ("Grade : C \n"); }
```

```
else if (tm[i][j] >= 76 && tm[i][j] <= 100)
 { printf("Grade : B\n"); }
else if (tm[i][j] >= 101 && tm[i][j] <= 125)
 { printf("Grade : A \n"); }
else if (tm[i][j] >= 126 && tm[i][j] <= 150)
 {
  printf ("Grade: S \n");
  }
  }
 }
 return 0;
 }
```

5) Write a C / Java program to print the prime numbers between given 2 integers (inclusive). Accept these 2 integers from the user.

```
#include <stdio.h>
int main()
{
int n1, n2, i, j, isprime;
printf ("enter first number:");
scanf ("%d", &n1);
printf ("enter second number:");
scanf ("%d", &n2);
```

```
for ( i=n1 ; i<=n2 ; i++)
 {
for (j = 2; j <= i/2 ; j++)
  {
  isprime = 1;
 if (i%j == 0)
  {
   isprime = 0 ;
   break;
  }
 }
 if (isprime == 1 )
  {
   printf ("%d \n ", i); }
  }
 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 : $2\pi rh + 2\pi r^2$ Volume : $\pi r^2 h$

CONE: Area : $\pi r(r + \sqrt{h^2+r^2})$ Volume : $\pi r^2 h/3$

SPHERE : Area : $4\pi r^2$ Volume : $(4/3)\pi r^3$

```
#include <stdio.h>
#include <math.h>
int main()
{
float r, h, area, vol;
int opt;
char ch;
do
{
printf("\n area and volume\n");
printf("1. Cylinder \t 2. Cone \t 3. Sphere \n");
printf("select shape option:");
scanf("%d", &opt);
switch(opt)
{
case 1: printf("\n CYLINDER \n");
        printf("enter radius and height:");
        scanf("%f %f", &r, &h);
        area = ((2*3.14*r*h)+(2*3.14*r*r));
        vol = (3.14*r*r*h);
        printf("area = %f \n volume = %f \n", area, vol);
        break;
```

```
case 2: printf("\n CONE \n");
        printf("enter radius and height :");
        scanf("%f %f", &r, &h);
        area = ((3.14 * r) * (r + sqrt(h*h + r*r)));
        vol = ((3.14 * r * r * h) / 3);
        printf("area = %f \n volume = %f \n", area, vol);
        break;

case 3: printf("\n SPHERE \n");
        printf("enter radius :");
        scanf("%f", &r);
        area = (4 * 3.14 * r * r);
        vol = ((4 * 3.14 * r * r * r) / 3);
        printf("area = %f \n volume %f \n", area, vol);
        break;

default : printf("invalid option");
  }
printf("do you want to find area and volume for another
    shape ? (y/n) ? \n");
scanf("%s", &ch);
  }
while (ch == 'y');
return 0;
}
```