Week. 2.

3. Write a C Program to accept a number 'n' from 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>
void main()
{
    int n, x = 1;
    printf("Enter value of n \n");
    scanf("%d", &n);
    for(int i=1; i<=n; i++)
    {
        for(int j=1; j<=i; j++)
            printf("%d ", x++);
        printf("\n");
    }
}
```

4. Write a C Program to accept CIE marks - 50 SEE marks (100) of a student and print grade. Use if else if ladder.

```
#include<stdio.h>
void main()
{
    int cie, see, tot; char c;
    printf("Enter CIE marks out of 50 \n");
    scanf("%d", &cie);
    printf("Enter SEE marks out of 100 \n");
    scanf("%d", &see);
    see = see/2;
    tot = cie + see;
    if(tot >= 90)
        c = 'S';
    else if(tot >= 80)
        c = 'A';
    else if(tot >= 70)
        c = 'B';
    else if(tot >= 60)
        c = 'C';
    else if(tot >= 50)
        c = 'D';
    else
        c = 'F';
    printf("Grade = %c", c);
}
```

5. Write a C program to print prime number between given two integers (inclusive)

```
#include <stdio.h>
void main()
{
    int m, n;
    printf(" enter two integers as \n");
    scanf(" %d %d ", &m, &n);
    int fact
    for( int i=m; i<= n; i++)
    {
        fact = 0;
        for( int j=1 ; j<= i; j++)
        {
            if ( i % j == 0)
                fact++;
        }
        if ( fact == 2 )
        printf(" %d \n", i);
    }
}
```

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

Cylinder area :- $A = 2\pi rh + 2\pi r^2$ $V = \pi r^2 h$

Cone $A = \pi r (r + \sqrt{h^2 + r^2})$ $V = \pi r^2 h / 3$

Sphere $A = 4\pi r^2$ $V = \frac{4}{3} \pi r^3$

```
#include<stdio.h>
#include<math.h>
void cylinder();
void cone();
void sphere();
void main()
{ int n; temp=0;
  printf("Enter 1. cylinder \n 2. cone \n
          3. sphere \n 4. exit \n");
  while(true)
  { printf("Enter your choice \n");
    scanf("%d", &n);
    switch(n)
    {
      case 1: cylinder();
              break;
      case 2: cone();
              break;
      case 3: sphere();
              break;
      case 4: temp=1;
              break;
      default: printf("Invalid choice\n");
```

```
    if (temp == 1)
        break;
}

void cylinder ()
{   float r, h, area, vol;
    printf (" Enter radius and height \n");
    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 ", area);
    printf (" Volume = %f \n ", vol);
}

void cone()
{   float r, h, area, vol;
    printf (" Enter radius & height \n");
    scanf (" %f %f ", &r, &h);
    float f = (float) sqrt (h*h + r*r);
    area = 3.14 * r * (r + f);
    vol = (3.14 * r * r * h) / 3.0;
    printf (" Area = %f \n", area);
    printf (" Volume = %f \n", vol);
}

void sphere()
{   float r, area, vol;
    printf (" Enter radius of sphere \n");
    scanf (" %f ", &r);
    area = 4 * 3.14 * r * r;
    vol = (4 * 3.14 * r * r * r) / 3.0;
    printf (" Area = %f \n ", area);
    printf (" Volume = %f \n ", vol);
}
```