LAB-7-EXTRA PROGRAMS

PROGRAM-1-PASCALS'S TRIANGLE

```c
//                                  PASCAL'S TRIANGLE
#include<stdio.h>
int main()
{
    int i,j,n;
    int a[20][20]={0};
    a[0][0]=a[1][0]=a[1][1]=1;
    printf("Enter the number of rows for Pascal's Triangle\n");
    scanf("%d",&n);
    for(i=2;i<n;i++)
    {
        a[i][0]=1;
        for(j=1;j<n;j++)
        {
            a[i][j]=a[i-1][j-1]+a[i-1][j];
        }
    }
    for(i=0;i<n;i++)
    {
        for(j=0;j<=i;j++)
        {
            printf("%d  ",a[i][j]);
        }
        printf("\n");
    }
    return 0;
}
```

OUTPUTS:

```
Enter the number of rows for Pascal's Triangle = 4
1
1  1
1  2  1
1  3  3  1

Process returned 0 (0x0)   execution time : 3.735 s
Press any key to continue.
```

```
Enter the number of rows for Pascal's Triangle = 7
1
1  1
1  2  1
1  3  3  1
1  4  6  4  1
1  5  10  10  5  1
1  6  15  20  15  6  1

Process returned 0 (0x0)   execution time : 3.227 s
Press any key to continue.
```

```
Enter the number of rows for Pascal's Triangle = 8
1
1  1
1  2  1
1  3  3  1
1  4  6  4  1
1  5  10  10  5  1
1  6  15  20  15  6  1
1  7  21  35  35  21  7  1

Process returned 0 (0x0)   execution time : 1.715 s
Press any key to continue.
```

PROGRAM-2-TRANSPOSE OF A MATRIX

```c
//                          TRANSPOSE OF A MATRIX
#include<stdio.h>
int main()
{
    int i,j,a[20][20],m,n;
    printf("Enter number of rows in matrix = ");
    scanf("%d",&n);
    printf("Enter number of columns in matrix = ");
    scanf("%d",&m);
    printf("Enter the Elements of the matrix to be transposed = ");
    for(i=0;i<n;i++)
    {
        for(j=0;j<m;j++)
        {
            scanf("%d",&a[i][j]);
        }
    }
    printf("Original matrix\n");
    for(i=0;i<n;i++)
    {
        for(j=0;j<m;j++)
        {
            printf("%d\t",a[i][j]);
        }
        printf("\n");
    }
    printf("Transposed matrix\n");
    for(i=0;i<m;i++)
    {
        for(j=0;j<n;j++)
        {
            printf("%d\t",a[j][i]);
        }
        printf("\n");
    }
    return 0;
}
```

OUTPUTS:

```
Enter number of rows in matrix = 3
Enter number of columns in matrix = 3
Enter the Elements of the matrix to be transposed = 1 2 3 4 5 6 7 8 9
Original matrix
1       2       3
4       5       6
7       8       9
Transposed matrix
1       4       7
2       5       8
3       6       9

Process returned 0 (0x0)   execution time : 17.238 s
Press any key to continue.
```

```
Enter number of rows in matrix = 2
Enter number of columns in matrix = 2
Enter the Elements of the matrix to be transposed = 1 1 2 2
Original matrix
1       1
2       2
Transposed matrix
1       2
1       2

Process returned 0 (0x0)   execution time : 16.030 s
Press any key to continue.
```

```
Enter number of rows in matrix = 4
Enter number of columns in matrix = 3
Enter the Elements of the matrix to be transposed = 1 3 5 7 9 11 13 15 17 19 21 23
Original matrix
1       3       5
7       9       11
13      15      17
19      21      23
Transposed matrix
1       7       13      19
3       9       15      21
5       11      17      23

Process returned 0 (0x0)   execution time : 52.558 s
Press any key to continue.
```