

PATTERN TYPE OF PROGRAMS;

Compiled By GCC

1>. Program for Pascal triangle.

```
#include<stdio.h>

main()
{
    int n=1,s,q,r,x;
    printf("Enter the number of rows to input:");
    scanf(" %d",&r);
    printf("\n Pascal triangle is: \n");
    for(q=0;q<r;q++)
    {
        for(s=40-3*q;s>0;s--)
            printf(" ");
        for(x=0;x<=q;x++)
        {
            if(x==0 || q==0)
                n=1;
            else
                n=(n*(q-x+1))/x;
            printf("%6d",n);
        }
        printf("\n");
    }
}
```

```
Enter the number of rows to input:
10
10
```

Pascal triangle is:

```

          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
      1 8 28 56 70 56 28 8 1
        1 9 36 84 126 126 84 36 9 1
          1
```

2>. Program of Pattern-1.

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

```
main()
```

```
{
```

```
    int n,n1,n2,i;
```

```
    printf("Enter the two numbers:");
```

```
    scanf("%d %d",&n1,&n2);
```

```
    for(i=1;i<=10;i++)
```

```
    {
```

```
        for(n=n1;n<=n2;n++)
```

```
        {
```

```
            printf("%4d*%2d=%2d",n,i,n*i);
```

```
        }
```

```
    printf("\n");
```

```
}
```

```
}
```

/* output-

Enter the two numbers:2

4

2* 1= 2 3* 1= 3 4* 1= 4

2* 2= 4 3* 2= 6 4* 2= 8

2* 3= 6 3* 3= 9 4* 3=12

2* 4= 8 3* 4=12 4* 4=16

2* 5=10 3* 5=15 4* 5=20

2* 6=12 3* 6=18 4* 6=24

2* 7=14 3* 7=21 4* 7=28

2* 8=16 3* 8=24 4* 8=32

2* 9=18 3* 9=27 4* 9=36

2*10=20 3*10=30 4*10=40 */

Enter the two numbers:5

5

5* 1= 5

5* 2=10

5* 3=15

5* 4=20

5* 5=25

5* 6=30

5* 7=35

5* 8=40

5* 9=45

5*10=50

3>. Program of Pattern-2.

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

```
void main()
```

```
{
```

```
    int i,j,n;
```

```
    printf("Enter the pattern number:");
```

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

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

```

        {
            for(j=1;j<=i;j++)
                printf(" *");
            printf("\n");
        }
    }
}

```

/* output:-

Enter the pattern number:5

```

*
* *
* * *
* * * *
* * * * *
*/

```



```

Enter the pattern number:5
*
* *
* * *
* * * *
* * * * *

```

4>. Program of Pattern-3.

```

#include<stdio.h>

void main()
{
    int i,j,n;
    printf("Enter the pattern number:");
    scanf("%d",&n);
    for(i=n;i>=1;i--)
    {
        for(j=1;j<=i;j++)
            printf(" *");
        printf("\n");
    }
}

```

```
}  
}
```

/*output:-

Enter the pattern number:5

* * * * *

* * * *

* * *

* *

* */

```
Enter the pattern number:5  
* * * * *  
* * * *  
* * *  
* *  
*  
*/
```

5>. Program of Pattern-4.

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

```
void main()
```

```
{
```

```
    int i,j,k,n;
```

```
    printf("Enter the pattern number:");
```

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

```
    for(k=1;k<=n;k++)
```

```
    {
```

```
        for(i=n-1;i>=k;i--)
```

```
            printf(" ");
```

```
            for(j=1;j<=k;j++)
```

```
            {
```

```

        printf("*");
    }
    printf("\n");
}
}

```

/*

output:-

Enter the pattern number:5

```

*
**
***
****
***** */

```

```

Enter the pattern number:5
*
**
***
****
*****

```

6>. Program of Pattern-5.

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

```
void main()
```

```
{
```

```
    int i,j,k,n;
```

```
    printf("Enter the pattern number:");
```

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

```
    for(k=1;k<=n;k++)
```

```
    {
```

```

        for(i=1;i<=k-1;i++)
            printf(" ");
        for(j=n;j>=k;j--)
        {
            printf("*");
        }
        printf("\n");
    }
}

```

/*

output:-

Enter the pattern number:5

**

*

*/

Enter the pattern number:5

**

*

7>. Program of Pattern-6.

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

```
void main()
```

```
{
```

```

int i,j,k,l,n;

printf("Enter the pattern number:");

scanf("%d",&n);

for(i=1;i<=n;i++)
{
    for(j=1;j<=i;j++)
    {
        printf(" %d",j);
    }

    for(k=1;k<=(n-i)*2;k++)
    {
        printf(" *");
    }

    for(l=i;l>=1;l--)
    {
        printf(" %d",l);
    }

    printf("\n");
}
}

```

/*

output:-

Enter the pattern number:6

1 * * * * * 1

1 2 * * * * * 2 1

1 2 3 * * * * * 3 2 1

1 2 3 4 * * * * 4 3 2 1

1 2 3 4 5 * * 5 4 3 2 1

1 2 3 4 5 6 6 5 4 3 2 1 */


```
Enter the pattern number:5
```

```
1 * * * * * * * 1
1 2 * * * * * 2 1
1 2 3 * * * * 3 2 1
1 2 3 4 * * * 4 3 2 1
1 2 3 4 5 4 3 2 1
```

8>. Program of Pattern-7.

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

```
void main()
```

```
{
```

```
    int i,j,k=1,n;
```

```
    printf("Enter the pattern number:");
```

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

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

```
    {
```

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

```
        {
```

```
            printf("\t%d",k);
```

```
            k=k+1;
```

```
        }
```

```
    printf("\n");
```

```
}
```

```
}
```

```
/*
```

output:-

```
Enter the pattern number:6
```

```

1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
16 17 18 19 20 21
*/

```

```

Enter the pattern number:5
1
2   3
4   5   6
7   8   9   10
11  12  13  14  15

```

9>. Program of Pattern-8.

```

#include<stdio.h>
void main()
{
    int i,j,n;
    printf("Enter the pattern number:");
    scanf("%d",&n);
    for(i=1;i<=n;i++)
    {
        for(j=1;j<=i;j++)
            printf(" %d",j);
        printf("\n");
    }
}

```

```
/*
```

output:-

Enter the pattern number:5

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5 */

```
Enter the pattern number:5
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

10>. Program of Pattern-9.

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

```
void main()
```

```
{
```

```
    int i,j,k,n;
```

```
    printf("Enter the pattern number:");
```

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

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

```
    {
```

```
        for(j=1,k=i;j<=i;j++,k++)
```

```
        printf(" %d",k);
```

```
        printf("\n");
```

```
    }
```

```
}
```

```
/*
```

output:-

Enter the pattern number:5

1

2 3

3 4 5

4 5 6 7

5 6 7 8 9 */

```
Enter the pattern number:5
```

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

11>. Program of Pattern-10.

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

```
void main()
```

```
{
```

```
    int i,j,n;
```

```
    printf("Enter the pattern number:");
```

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

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

```
    {
```

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

```
        {
```

```
            if(j%2==0)
```

```
                printf(" *");
```

```
            else
```

```
                printf(" %d",j);
```

```

        }
        printf("\n");
    }
}

```

/*

output:-

Enter the pattern number:5

```

1
1 *
1 * 3
1 * 3 *
1 * 3 * 5

```

*/

```

Enter the pattern number:5
1
1 *
1 * 3
1 * 3 *
1 * 3 * 5

```

12>. Program of Pattern-11.

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

```
void main()
```

```
{
```

```
    int i,j,n;
```

```
    printf("Enter the pattern number:");
```

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

```

        for(i=1;i<=n;i++)
        {
            for(j=1;j<=i;j++)
                printf(" %d",i);
            printf("\n");
        }
    }

```

/*

output:-

Enter the pattern number:5

```

1
2 2
3 3 3
4 4 4 4
5 5 5 5 5

```

*/

```

Enter the pattern number:5
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5

```

13>. Program of Pattern-12.

```

#include<stdio.h>

```

```

void main()

```

```

{

```

```

    int i,j,n;

```

```

printf("Enter the pattern number:");
scanf("%d",&n);
for(i=n;i>=1;i--)
{
    for(j=1;j<=i;j++)
        printf(" %d",j);
    printf("\n");
}
}

```

/*

output:-

Enter the pattern number:5

1 2 3 4 5

1 2 3 4

1 2 3

1 2

1

*/

```

Enter the pattern number:5
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1

```

14>. Program of Pattern-13.

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

```

void main()
{
    int i,j,n;
    printf("Enter the pattern number:");
    scanf("%d",&n);
    for(i=1;i<=n;i++)
    {
        for(j=n;j>=i;j--)
            printf(" %d",j);
        printf("\n");
    }
}

```

/*

output:-

Enter the pattern number:5

5 4 3 2 1

5 4 3 2

5 4 3

5 4

5

*/

```

Enter the pattern number:5
5 4 3 2 1
5 4 3 2
5 4 3
5 4
5

```


15>. Program of Pattern-14.

```
#include<stdio.h>

void main()
{
    int i,j,k,n;
    printf("Enter the pattern number:");
    scanf("%d",&n);
    for(i=1;i<=n;i++)
    {
        for(j=1;j<=n-i;j++)
            printf(" ");
        for(k=1;k<=i;k++)
            printf(" %d",k);
        printf("\n");
    }
}
```

/*

output:-

Enter the pattern number:5

* * * * 1

* * * 1 2

* * 1 2 3

* 1 2 3 4

1 2 3 4 5

*/

```
Enter the pattern number:5
```

```
* * * * 1
* * * 1 2
* * 1 2 3
* 1 2 3 4
1 2 3 4 5
```

16>. Program of Pattern-15.

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

```
void main()
```

```
{
```

```
    int i,j,k,n;
```

```
    printf("Enter the pattern number:");
```

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

```
    for(i=n;i>=1;i--)
```

```
    {
```

```
        for(j=i;j>=1;j--)
```

```
            printf(" %d",j);
```

```
        for(k=1;k<=n-i;k++)
```

```
            printf(" *");
```

```
        printf("\n");
```

```
    }
```

```
}
```

```
/*
```

output:-

Enter the pattern number:5

```
5 4 3 2 1
```

```
4 3 2 1 *
```

```
3 2 1 * *
```

```
2 1 * * *
```

```
1 * * * *
```

```
*/
```

```
Enter the pattern number:5
5 4 3 2 1
4 3 2 1 *
3 2 1 * *
2 1 * * *
1 * * * *
```

17>. Program of Pattern-16.

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

```
void main()
```

```
{
```

```
    int i,j,k,n;
```

```
    printf("Enter the pattern number:");
```

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

```
    for(i=n;i>=1;i--)
```

```
    {
```

```
        for(k=n-i;k>=1;k--)
```

```
            printf(" ");
```

```

        for(j=i;j>=1;j--)
            printf(" %d",j);

        printf("\n");
    }
}

```

/*

output:-

Enter the pattern number:5

5 4 3 2 1

* 4 3 2 1

** 3 2 1

*** 2 1

**** 1

*/

```

Enter the pattern number:5
5 4 3 2 1
* 4 3 2 1
* * 3 2 1
* * * 2 1
* * * * 1

```

18>. Program of Pattern-17.

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

```
void main()
```

```

{
    int i,j,k,n;

    printf("Enter the pattern number:");

    scanf("%d",&n);

    for(k=1;k<=n;k++)
    {
        for(i=n-1;i>=k;i--)
            printf(" ");

        for(j=1;j<=k;j++)
        {
            printf("%d",j);
        }

        printf("\n");
    }
}

```

/*

output:-

Enter the pattern number:5

```

1
12
123
1234
12345

```

*/

```

Enter the pattern number:5
1
12
123
1234
12345

```

19>. Program of Pattern-18.

```
#include<stdio.h>

void main()
{
    int i,j,k,n;
    printf("Enter the pattern number:");
    scanf("%d",&n);
    for(k=1;k<=n;k++)
    {
        for(i=n-1;i>=k;i--)
            printf(" ");
        for(j=1;j<=k;j++)
        {
            printf(" *");
        }
        printf("\n");
    }
}
```

/*

output:-

Enter the pattern number:5

```
  *
 * *
* * *
* * * *
* * * * *
*/
```

Enter the pattern number:5

```
  *
 * *
* * *
* * * *
* * * * *
```

20>. Program of Pattern-19.

```
#include<stdio.h>

void main()
{
    int i,j,k,n;
    printf("Enter the pattern number:");
    scanf("%d",&n);
    for(k=1;k<=n;k++)
    {
        for(i=1;i<=k-1;i++)
            printf(" ");
        for(j=n;j>=k;j--)
        {
            printf(" *");
        }
        printf("\n");
    }
}
```

/*

output:-

Enter the pattern number:5

* * * * *

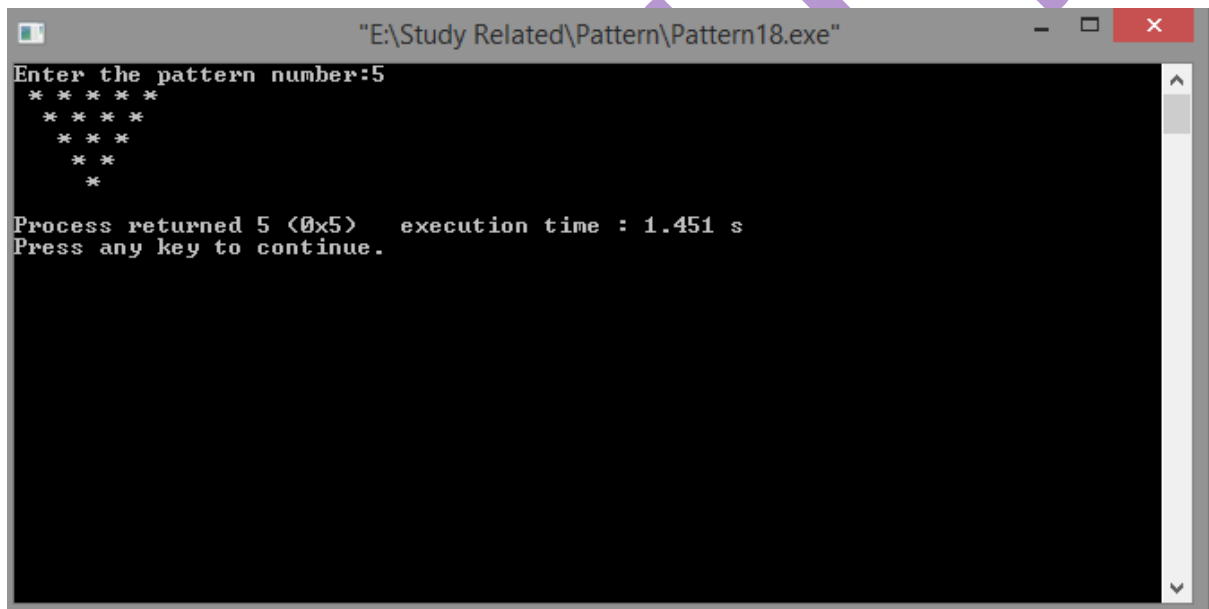
* * * *

* * *

* *

*

*/



```
"E:\Study Related\Pattern\Pattern18.exe"
Enter the pattern number:5
* * * * *
 * * * *
  * * *
   * *
    *

Process returned 5 (0x5)   execution time : 1.451 s
Press any key to continue.
```

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