PATTERN BASED C QUERIES

Pattern 1 **Right Half Pyramid**

main.c — Share — Run — Output

```c
#include <stdio.h>
int main() {
    int i, j, n;
    printf("Enter number of rows: ");
    scanf("%d", &n);

    for(i = 1; i <= n; i++) {
        for(j = 1; j <= i; j++) {
            printf("* ");
        }
        printf("\n");
    }
    return 0;
}
```

```
Enter number of rows: 5
*
* *
* * *
* * * *
* * * * *


=== Code Execution Successful ===
```

Pattern 2 **Left Half Pyramid**

```c
#include <stdio.h>
int main() {
    int i, j, n;
    printf("Enter number of rows: ");
    scanf("%d", &n);

    for(i = 1; i <= n; i++) {
        for(j = 1; j <= n - i; j++) {
            printf("  ");
        }
        for(j = 1; j <= i; j++) {
            printf("* ");
        }
        printf("\n");
    }
    return 0;
}
```

```
Enter number of rows: 5
        *
      * *
    * * *
  * * * *
* * * * *


=== Code Execution Successful ===
```

Pattern3 **Full Pyramid**

```c
#include <stdio.h>
int main() {
    int i, j, n;
    printf("Enter number of rows: ");
    scanf("%d", &n);

    for(i = 1; i <= n; i++) {
        for(j = 1; j <= n - i; j++) {
            printf(" ");
        }
        for(j = 1; j <= (2 * i - 1); j++) {
            printf("*");
        }
        printf("\n");
    }
    return 0;
}
```

```
Enter number of rows: 5
    *
   ***
  *****
 *******
*********


=== Code Execution Successful ===
```

Pattern4 **Inverted Right Half Pyramid**

main.c

```c
#include <stdio.h>
int main() {
    int i, j, n;
    printf("Enter number of rows: ");
    scanf("%d", &n);

    for(i = n; i >= 1; i--) {
        for(j = 1; j <= i; j++) {
            printf("* ");
        }
        printf("\n");
    }
    return 0;
}
```

Output

```
Enter number of rows: 5
* * * * *
* * * *
* * *
* *
*


=== Code Execution Successful ===
```

Pattern 5 **Inverted Left Half Pyramid**

main.c

```c
#include <stdio.h>
int main() {
    int n;
    printf("Enter number of rows: ");
    scanf("%d", &n);

    for(int i=n; i>=1; i--) {

        for(int j=1; j<=n-i; j++) {
            printf("  ");
        }

        for(int j=1; j<=i; j++) {
            printf("* ");
        }
        printf("\n");
    }
    return 0;
}
```

Output

```
Enter number of rows: 5
* * * * *
  * * * *
    * * *
      * *
        *


=== Code Execution Successful ===
```

Pattern 6 **Inverted full**

```c
include <stdio.h>
nt main() {
   int n=5;
   for(int i=n;i>=1;i--){
      for(int j=1;j<=n-i;j++)
         printf(" ");
      for(int j=1;j<=2*i-1;j++)
         printf("*");
      printf("\n");
   }
   return 0;
```

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


=== Code Execution Successful ===
```

Pattern 7 **RHOMBUS Pattern**

main.c

Share Run

Output

```c
#include <stdio.h>
int main() {
    int n;
    printf("Enter number of rows: ");
    scanf("%d", &n);

    for(int i=1; i<=n; i++) {

        for(int j=1; j<=n-i; j++) {
            printf(" ");
        }

        for(int j=1; j<=n; j++) {
            printf("*");
        }
        printf("\n");
    }
    return 0;
}
```

```
Enter number of rows: 5
    *****
   *****
  *****
 *****
*****


=== Code Execution Successful ===
```

Pattern 8 **Diamond pattern**

```c
#include <stdio.h>
int main(){
    int n;
    printf("Enter number of rows: ");
    scanf("%d",&n);
    for(int i=1;i<=n;i++){
        for(int j=1;j<=n-i;j++)
        printf(" ");
        for(int j=1;j<=2*i-1;j++)
        printf("*");
        printf("\n");
    }
    for(int i=n-1;i>=1;i--){
        for(int j=1;j<=n-i;j++)
        printf(" ");
        for(int j=1;j<=2*i-1;j++)
        printf("*");

        printf("\n");
    }
    return 0;
}
```

```
Enter number of rows: 5
    *
   ***
  *****
 *******
*********
 *******
  *****
   ***
    *


=== Code Execution Successful ===
```

PATTERN 9 Hour Glass Pattern

```c
#include <stdio.h>
int main(){
    int n;
    printf("Enter number of rows: ");
    scanf("%d",&n);
    for(int i=n;i>=1;i--)
    {
        for(int j=1;j<=n-i;j++)
        printf(" ");
        for(int j=1;j<=2*i-1;j++)
        printf("*");
        printf("\n");
    }
    for(int i=2;i<=n;i++)
    {
        for(int j=1;j<=n-i;j++)
        printf(" ");
        for(int j=1;j<=2*i-1;j++)
        printf("*");
        printf("\n");
    }
    return 0;
}
```

```
Enter number of rows: 5
*********
 *******
  *****
   ***
    *
   ***
  *****
 *******
*********


=== Code Execution Successful ===
```

Pattern 10 Hollow square

```c
#include <stdio.h>
int main(){
    int n;
    printf("Enter size of square: ");
    scanf("%d",&n);
    for(int i=1;i<=n;i++)
    {
        for(int j=1;j<=n;j++)
        {
            if
            (i==1 || i==n || j==1 || j==n)
            printf("* ");
            else
                printf("  ");
        }
        printf("\n");
    }
    return 0;
}
```

```
Enter size of square: 5
* * * * *
*       *
*       *
*       *
* * * * *


=== Code Execution Successful ===
```

Pattern 11 Hollow Full Pyramid

```c
#include <stdio.h>
int main(){
    int n;
    printf("Enter number of rows: ");
    scanf("%d",&n);
    for(int i=1;i<=n;i++)
    {
        for
        (int j=1;j<=n-i;j++)
        printf(" ");
        for(int j=1;j<=2*i-1;j++){
            if
            (j==1 || j==2*i-1 || i==n)
            printf("*");
            else
            printf(" ");
        }
        printf("\n");
    }
    return 0;
}
```

```
Enter number of rows: 5
    *
   * *
  *   *
 *     *
*********


=== Code Execution Successful ===
```

Pattern 12 Hollow inverted full pyramid

```c
#include <stdio.h>
int main(){
    int n;
    printf("Enter number of rows: ");
    scanf("%d",&n);
    for(int i=n;i>=1;i--)
    {
        for(int j=1;j<=n-i;j++)
        printf(" ");
        for(int j=1;j<=2*i-1;j++)
        {
            if(j==1 || j==2*i-1 || i==n)
            printf("*");
            else
            printf(" ");
        }
        printf("\n");
    }
    return 0;
}
```

```
Enter number of rows: 5
*********
 *     *
  *   *
   * *
    *


=== Code Execution Successful ===
```

Pattern 13 Hollow Diamond

```c
#include <stdio.h>
int main(){
    int n;
    printf("Enter number of rows: ");
    scanf("%d",&n);
    for(int i=1;i<=n;i++){
        for(int j=1;j<=n-i;j++)
        printf(" ");
        for(int j=1;j<=2*i-1;j++){
            if(j==1 || j==2*i-1)
            printf("*");
            else
            printf(" ");
        }
        printf("\n");
    }
    for(int i=n-1;i>=1;i--){
        for(int j=1;j<=n-i;j++) printf(" ");
        for(int j=1;j<=2*i-1;j++){
            if(j==1 || j==2*i-1) printf("*");
            else printf(" ");
        }
        printf("\n");
    }
    return 0;
```

```
Enter number of rows: 5
    *
   * *
  *   *
 *     *
*       *
 *     *
  *   *
   * *
    *


=== Code Execution Successful ==
```

Pattern 14 Floyd's Triangle

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

```
Enter number of rows: 5
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15


=== Code Execution Successful ===
```

Pattern15 Hollow Hour glass pattern

```c
int main(){
    int n;
    printf("Enter number of rows: ");
    scanf("%d",&n);
    for(int i=n;i>=1;i--){
        for(int j=1;j<=n-i;j++) printf(" ");
        for(int j=1;j<=2*i-1;j++){
            if(j==1 || j==2*i-1 || i==n) printf("*");
            else printf(" ");
        }
        printf("\n");
    }
    for(int i=2;i<=n;i++){
        for(int j=1;j<=n-i;j++) printf(" ");
        for(int j=1;j<=2*i-1;j++){
            if(j==1 || j==2*i-1 || i==n) printf("*");
            else printf(" ");
        }
        printf("\n");
    }
    return 0;
}
```

```
Enter number of rows: 5
*********
 *     *
  *   *
   * *
    *
   * *
  *   *
 *     *
*********


=== Code Execution Successful ===
```

Pattern 16 Pascal's triangle

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

```
Enter number of rows: 5
     1
    1 1
   1 2 1
  1 3 3 1
 1 4 6 4 1


=== Code Execution Successful ===
```

PATTERN 17

```c
#include <stdio.h>

int main() {
    int i, j, n=10;
    for(i = 1; i<= n; i++)
    {
        for(j = 1; j <= i; j++)
        {
            printf("%d" , j);

        }
printf("\n");
}


    return 0;
}
```

```
1
12
123
1234
12345
123456
1234567
12345678
123456789
12345678910


=== Code Execution Successful ===
```

Pattern 18

```c
#include <stdio.h>
int main() {
    int i, j, n = 6, k;
    for(i = 1; i <= n; i++) {
        for(k = 1; k <= n - i; k++)
        {
            printf(" ");
        }
        for(j = 1; j <= i; j++)
        {
            printf("%d", j);
        }
        printf("\n");
    }
    return 0;
}
```

```
     1
    1 2
   1 2 3
  1 2 3 4
 1 2 3 4 5
1 2 3 4 5 6


=== Code Execution Successful ===
```

Pattern 19

```c
#include <stdio.h>
int main()
{
    int i, j, k, n = 6;
    for(i = 1; i <= n; i++)
    {
        for(k = 1; k <= n - i; k++)
        {
            printf(" ");
        }
        for(j = 1; j <= i * 2; j++) {
            printf("%d", j % 2);
        }
        printf("\n");
    }
    return 0;
}
```

```
     10
    1010
   101010
  10101010
 1010101010
101010101010


=== Code Execution Successful ===
```

Pattern 20

main.c

Share Run Output

```c
#include <stdio.h>
int main()
{
    int i, j, n = 5;
    for(i = n; i >= 1; i--)
    {
        for(j = 1; j <= i; j++)
        {
            printf("%d", i);
        }
        printf("\n");
    }
    return 0;
}
```

```
55555
4444
333
22
1


=== Code Execution Successful ===
```

Pattern 21

```c
#include <stdio.h>

int main() {
    int i, j, n = 6;
    for (i = 1; i <= n; i++) {
        for (j = 1; j <= i; j++) {
            printf("%d", j);
        }
        for (j = 1; j <= i; j++) {
            printf("%d", j);
        }
        printf("\n");
    }


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

    return 0;
}
```

```
11
1212
123123
12341234
1234512345
123456123456
1234512345
12341234
123123
1212
11


=== Code Execution Successful ===
```