49 - Making a Multiple table.

```c
#include <stdio.h>

int main()
{
	int i, num;
	printf("Enter any number = ");
	scanf("%d", &num);

	for (i = 1; i <= 10; i++)
	{
		printf("%d X %d = %d\n", num, i, num * i);
	}

	return 0;
}
```

```
Output:
Enter any number = 5
5 X 1 = 5
5 X 2 = 10
5 X 3 = 15
5 X 4 = 20
5 X 5 = 25
5 X 6 = 30
5 X 7 = 35
```

50 - Factorial Print.

```c
#include <stdio.h>

int main()
{
	int i, num, factorial = 1;
	printf("Enter any positive number = ");
	scanf("%d", &num);

	for (i = 1; i <= num; i++)
	{
		factorial = factorial * i;
	}
	printf("The Factorial of %d is = %d\n", num, factorial);

	return 0;
}
```

```
Output:
Enter any positive number = 4
The Factorial of 4 is = 24
```

51 - Prime number print.

```c
#include <stdio.h>

int main()
{
	int num, i, count = 0;
	printf("Enter a number = ");
	scanf("%d", &num);

	for (i = 2; i < num; i++)
	{
		if (num % 2 == 0)
		{
			count++;
			break;
		}
	}
	if (count == 0)
		printf("This is a prime number\n");
	else
		printf("This is not a prime number\n");
}
```

```
Output:
Enter a number = 5
This is a prime number
```

52 - GCD and LCM.

```c
#include <stdio.h>

int main()
{
	int num1, num2, n1, n2, rem, gcd, lcm;
	printf("Please enter two number = ");
	scanf("%d %d", &num1, &num2);

	n1 = num1;
	n2 = num2;

	while (n2 != 0)
	{
		rem = n1 % n2;
		n1 = n2;
		n2 = rem;
	}
	gcd = n1;
	lcm = (num1 * num2) / gcd;

	printf("The GCD is = %d\n", gcd);
	printf("The LCM is = %d\n", lcm);
}
```

```
Output:
Please enter two number = 12 20
The GCD is = 4
The LCM is = 60
```

53 - Display sum of a digit.

```c
#include <stdio.h>

int main()
{
	int num, temp, rem, sum = 0;
	printf("Enter any number = ");
	scanf("%d", &num);

	temp = num;

	while (temp != 0)
	{
		rem = temp % 10;
		temp = temp / 10;
		sum = sum + rem;
	}
	printf("The sum is = %d\n", sum);
}
```

```
Output:
Enter any number = 137
The sum is = 11
```

54 - Reverse an Integer.

```c
#include <stdio.h>

int main()
{
	int num, rem, temp, sum = 0;
	printf("Enter any number = ");
	scanf("%d", &num);

	temp = num;

	while (temp != 0)
	{
		rem = temp % 10;
		temp = temp / 10;
		sum = sum * 10 + rem;
	}
	printf("Reverse of the number is = %d\n", sum);
}
```

```
Output:
Enter any number = 123
Reverse of the number is = 321
```

55 - Palindrome number.

```c
#include <stdio.h>

int main()
{
	int num, rem, temp, sum = 0;
	printf("Enter any number = ");
	scanf("%d", &num);

	temp = num;

	while (temp != 0)
	{
		rem = temp % 10;
		temp = temp / 10;
		sum = sum * 10 + rem;
	}
	if (sum == num)
		printf("This is a palindrome number\n");
	else
		printf("This is not a palindrome number\n");
}
```

```
Output:
Enter any number = 123
This is not a palindrome number
Enter any number = 121
This is a palindrome number
```

56(1) - Armstrong number or not.

```c
#include <stdio.h>

int main()
{
	int num, i, temp, rem, sum = 0;
	printf("Enter the number = ");
	scanf("%d", &num);

	temp = num;

	while (temp != 0)
	{
		rem = temp % 10;
		temp = temp / 10;
		sum = sum + rem * rem * rem;
	}
	if (sum == num)
		printf("This is a armstrong number\n");
	else
		printf("This is not a armstrong number\n");
}
```

```
Output:
Enter the number = 128
This is not a armstrong number
Enter the number = 153
This is a armstrong number
```

56(2) - Armstrong number between 1 - 1000.

```c
#include <stdio.h>

int main()
{
	int initialvalue, finalvalue, rem, i, temp, sum = 0;
	printf("Initial value = ");
	scanf("%d", &initialvalue);
	printf("Final value = ");
	scanf("%d", &finalvalue);

	for (i = initialvalue; i < finalvalue; i++)
	{

		temp = i;
		while (temp != 0)
		{
			rem = temp % 10;
			temp = temp / 10;
			sum = sum + rem * rem * rem;
		}
		if (sum == i)
		{
			printf("%d\n", i);
		}
		sum = 0;
	}
}
```

```
Output:
Initial value = 1
Final value = 1000
1
153
370
371
407
```

57 - Counting number of a digit in an integer.

```c
#include <stdio.h>

int main()
{
	int num, count = 0;
	printf("Please enter the number = ");
	scanf("%d", &num);

	while (num != 0)
	{
		num = num / 10;
		++count;
	}
	printf("Total number of digit = %d\n", count);

}
```

```
Output:
Please enter the number = 134
Total number of digit = 3
```

58 - Strong number printf. (ফ্যাক্টরিয়াল গুলোর যোগফল ঐ সংখ্যাটির সমান)
strong number = 145 = 1! + 4! + 5! = 145.

```c
#include <stdio.h>

int main()
{
	int num, i, rem, temp, sum = 0, fact;
	printf("Enter the number = ");
	scanf("%d", &num);

	temp = num;

	while (temp != 0)
	{
		rem = temp % 10;
		temp = temp / 10;
		fact = 1;
		for (i = 1; i <= rem; i++)
		{
			fact = fact * i;
		}
		sum = sum + fact;
	}
	if (sum == num)
		printf("This is a strong number\n");
	else
		printf("This is not a strong number\n");
}
```

```
Output:
Enter the number = 145
This is a strong number
```

59(1). Basic Multiple Table(নামতা তৈরি করা)

```c
#include <stdio.h>

int main()
{
	int i, n = 5;

	for (i = 1; i <= 10; i++)
	{
		printf("%d X %d = %d\n", n, i, n * i);
	}
}
```

```
Output:
5 X 1 = 5
5 X 2 = 10
5 X 3 = 15
5 X 4 = 20
5 X 5 = 25
5 X 6 = 30
5 X 7 = 35
5 X 8 = 40
5 X 9 = 45
5 X 10 = 50
```

59(2). Basic Multiple Table(যোগের মাধ্যমে নামতা তৈরি করা)

```c
#include <stdio.h>

int main()
{
	int i, sum = 0, n = 5;

	for (i = 1; i <= 10; i++)
	{
		sum = sum + n;
		printf("%d X %d = %d\n", n, i, sum);
	}
}
```

```
Output:
5 X 1 = 5
5 X 2 = 10
5 X 3 = 15
5 X 4 = 20
5 X 5 = 25
5 X 6 = 30
5 X 7 = 35
5 X 8 = 40
5 X 9 = 45
5 X 10 = 50
```

60. ১-২০ পর্যন্ত সবগুলো সংখ্যার নামতা

```c
#include <stdio.h>

int main()
{
	int i, j;

	for (i = 1; i <= 20; i++)
	{
		for (j = 1; j <= 10; j++)
		{
			printf("%d X %d = %d\n", i, j, i * j);
		}
		printf("\n");
	}
}
```

```
Output:
1 X 1 = 1
1 X 2 = 2
1 X 3 = 3
1 X 4 = 4
1 X 5 = 5
1 X 6 = 6
1 X 7 = 7
1 X 8 = 8
1 X 9 = 9
1 X 10 = 10

------------
```

Pattern(প্যার্টান)

Patten type – 01

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

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

	return 0;
}
```

```
Output:
Enter n = 3
1
1  2
1  2  3
```

```c
2. printf("%d  ", row);
3. printf("%d  ", col % 2);
4. printf("%d  ", row % 2);
5. printf("%c  ", col + 64);
6. printf("%c  ", row + 64);
7. printf("%c  ", col + 96);
8. printf("%c  ", row + 96);
9. printf("*  ");
10.printf("#  ");
```

Patten type – 02.

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

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

	return 0;
}
```

```
Output:
Enter n = 3
1  2  3
1  2
1
```

```c
2. printf("%d  ", row);
3. printf("%d  ", col % 2);
4. printf("%d  ", row % 2);
5. printf("%c  ", col + 64);
6. printf("%c  ", row + 64);
7. printf("%c  ", col + 96);
8. printf("%c  ", row + 96);
9. printf("*  ");
10.printf("#  ");
```

Patten type – 03.

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = 1; row <= n; row++)
	{
		for (col = 1; col <= row; col++)
		{
			printf("%d  ", col);//2 space
		}
		printf("\n");
	}
	for (row = n - 1; row >= 1; row--)
	{
		for (col = 1; col <= row; col++)
		{
			printf("%d  ", col);//2 space
		}
		printf("\n");
	}
	return 0;
}
```

```
Output:
Enter n = 3
1
1  2
1  2  3
1  2
1
```

```c
2. printf("%d  ", row);//dui bar kory hoby.
3. printf("%d  ", col % 2);
4. printf("%d  ", row % 2);
5. printf("%c  ", col + 64);
6. printf("%c  ", row + 64);
7. printf("%c  ", col + 96);
8. printf("%c  ", row + 96);
9. printf("*  ");
10.printf("#  ");
```

Patten type – 04.

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = 1; row <= n; row++)
	{
		for (col = 1; col <= n - row; col++)
		{
			printf("  "); //2 space
		}
		for (col = 1; col <= row; col++)
		{
			printf("%d ", col); //1 space
		}
		printf("\n");
	}

	return 0;
}
```

```
Output:
Enter n = 3
1
1 2
1 2 3
```

```c
2. printf("%d ", row);// 1 space.
3. printf("%d ", col % 2);
4. printf("%d ", row % 2);
5. printf("%c ", col + 64);
6. printf("%c ", row + 64);
7. printf("%c ", col + 96);
8. printf("%c ", row + 96);
9. printf("* ");
10.printf("# ");
```

Patten type – 05.

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = n; row >= 1; row--)
	{
		for (col = 1; col <= n - row; col++)
		{
			printf("  "); //2 space
		}
		for (col = 1; col <= row; col++)
		{
			printf("%d ", col); //1 space
		}
		printf("\n");
	}

	return 0;
}
```

```
Output:
Enter n = 3
1 2 3
1 2
1
```

```c
2. printf("%d ", row);//1 space.
3. printf("%d ", col % 2);
4. printf("%d ", row % 2);
5. printf("%c ", col + 64);
6. printf("%c ", row + 64);
7. printf("%c ", col + 96);
8. printf("%c ", row + 96);
9. printf("* ");
10.printf("# ");
```

Patten type – 06.

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = 1; row <= n; row++)
	{
		for (col = 1; col <= n - row; col++)
			printf("  "); //2 space
		for (col = 1; col <= row; col++)
			printf("%d ", col); //1 space
		printf("\n");
	}
	for (row = n - 1; row >= 1; row--)
	{
		for (col = 1; col <= n - row; col++)
			printf("  "); //2 space
		for (col = 1; col <= row; col++)
			printf("%d ", col); //1 space
		printf("\n");
	}
}
```

```
Output:
Enter n = 3
1
1 2
1 2 3
1 2
1
```

```c
2. printf("%d ", row);//1 space. dui bar kory hoby.
3. printf("%d ", col % 2);
4. printf("%d ", row % 2);
5. printf("%c ", col + 64);
6. printf("%c ", row + 64);
7. printf("%c ", col + 96);
8. printf("%c ", row + 96);
9. printf("* ");
10.printf("# ");
```

Pattern type- 07

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = 1; row <= n; row++)
	{
		for (col = 1; col <= n; col++)
		{
			printf("%d  ", col); //2 space
		}
		printf("\n");
	}

	return 0;
}
```

```
Output:
Enter n = 3
1  2  3
1  2  3
1  2  3
```

Pattern type- 08

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = 1; row <= n; row++)
	{
		for (col = 1; col <= n - row; col++)
		{
			printf("  "); //2 space
		}
		for (col = 1; col <= 2 * row - 1; col++)
		{
			printf("%d ", col);//1 space
		}
		printf("\n");
	}

	return 0;
}
```

```
Output:
Enter n = 3
    1
  1 2 3
1 2 3 4 5
```

Pattern type- 09

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = n; row >= 1; row--)
	{
		for (col = 1; col <= n - row; col++)
		{
			printf("  "); //2 space
		}
		for (col = 1; col <= 2 * row - 1; col++)
		{
			printf("%d ", col);//1 space
		}
		printf("\n");
	}

	return 0;
}
```

```
Output:
Enter n = 3
1 2 3 4 5
  1 2 3
    1
```

Pattern type- 10

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = 1; row <= n; row++)
	{
		for (col = 1; col <= n - row; col++)
		{
			printf("  "); //2 space
		}
		for (col = 1; col <= 2 * row - 1; col++)
		{
			printf("%d ", col);//1 space
		}
		printf("\n");
	}
	for (row = n - 1; row >= 1; row--)
	{
		for (col = 1; col <= n - row; col++)
		{
			printf("  "); //2 space
		}
		for (col = 1; col <= 2 * row - 1; col++)
		{
			printf("%d ", col);//1 space
		}
		printf("\n");
	}

	return 0;
}
```

```
Enter n = 3
    1
  1 2 3
1 2 3 4 5
  1 2 3
    1
```

Pattern type- 11

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = 1; row <= n; row++)
	{
		for (col = 1; col <= n - row; col++)
		{
			printf(" "); //1 space
		}
		for (col = 1; col <= row; col++)
		{
			printf("%d ", col);//1 space
		}
		printf("\n");
	}

	return 0;
}
```

```
Output:
Enter n = 3
  1
 1 2
1 2 3
```

Pattern type- 12

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = n; row >= 1; row--)
	{
		for (col = 1; col <= n - row; col++)
		{
			printf(" "); //1 space
		}
		for (col = 1; col <= row; col++)
		{
			printf("%d ", col);//1 space
		}
		printf("\n");
	}

	return 0;
}
```

```
Output:
Enter n = 3
1 2 3
 1 2
  1
```

Pattern type- 13

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = 1; row <= n; row++)
	{
		for (col = 1; col <= n - row; col++)
		{
			printf(" "); //1 space
		}
		for (col = 1; col <= row; col++)
		{
			printf("%d ", col);//1 space
		}
		printf("\n");
	}
	for (row = n - 1; row >= 1; row--)
	{
		for (col = 1; col <= n - row; col++)
		{
			printf(" "); //1 space
		}
		for (col = 1; col <= row; col++)
		{
			printf("%d ", col);//1 space
		}
		printf("\n");
	}
	return 0;
}
```

```
Output:
Enter n = 3
  1
 1 2
1 2 3
 1 2
  1
```

Pattern type- 14

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = 1; row <= n; row++)
	{
		for (col = 1; col <= row; col++)
		{
			printf("%d ", row * col); //1 space
		}
		printf("\n");
	}

	return 0;
}
```

```
Output:
Enter n = 3
1
2 4
3 6 9
```

Pattern type- 15

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = 1; row <= n; row++)
	{
		for (col = 1; col <= n; col++)
		{
			if (row == 1 || row == n || col == 1 || col == n)
				printf("* "); //1 space

			else
				printf("  "); //2 space
		}
		printf("\n");
	}

	return 0;
}
```

```
Output:
Enter n = 5
* * * * *
*       *
*       *
*       *
* * * * *
```

Pattern type- 16

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = 1; row <= n; row++)
	{
		for (col = 1; col <= n; col++)
		{
			if (row == n || col == 1 || row == col)
				printf("* "); //1 space

			else
				printf("  "); //2 space

		}
		printf("\n");
	}

	return 0;
}
```

```
Output:
Enter n = 5
*
* *
*   *
*     *
* * * * *
```

Pattern type- 17

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = 1; row <= n; row++)
	{
		for (col = 1; col <= n; col++)
		{
			if (row == col || row + col == n+1)
			{
				printf("* "); //1 space
			}
			else
			{
				printf("  "); //2 space
			}
		}
		printf("\n");
	}

	return 0;
}
```

Output:

```
Enter n = 5
*       *
  *   *
    *
  *   *
*       *
```

Pattern type- 18

```c
#include <stdio.h>

int main()
{
	int n, row, col, count = 0;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = 1; row <= n; row++)
	{
		for (col = 1; col <= row; col++)
		{
			printf("%d ", ++count);
		}
		printf("\n");
	}

	return 0;
}
```

```
Output:
Enter n = 3
1
2 3
4 5 6
```

Pattern type- 19

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = 1; row <= n; row++)
	{
		for (col = 1; col <= n - row; col++)
		{
			printf("  "); //2 space
		}
		for (col = 1; col <= row; col++)
		{
			printf("%d ", col); //1 space
		}
		for (col = row - 1; col >= 1; col--)
		{
			printf("%d ", col); //1 space
		}
		printf("\n");
	}

	return 0;
}
```

```
Output:
Enter n = 3
    1
  1 2 1
1 2 3 2 1
```

Pattern type- 20

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = n; row >= 1; row--)
	{
		for (col = 1; col <= n - row; col++)
		{
			printf("  "); //2 space
		}
		for (col = 1; col <= row; col++)
		{
			printf("%d ", col); //1 space
		}
		for (col = row - 1; col >= 1; col--)
		{
			printf("%d ", col); //1 space
		}
		printf("\n");
	}

	return 0;
}
```

```
Output:
Enter n = 3
1 2 3 2 1
  1 2 1
    1
```

Pattern type- 21

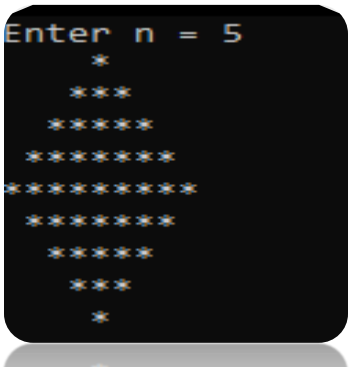
```
Output:
Enter n = 3
    1
  1 2 1
1 2 3 2 1
  1 2 1
    1
```

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = 1; row <= n; row++)
	{
		for (col = 1; col <= n - row; col++)
		{
			printf("  "); //2 space
		}
		for (col = 1; col <= row; col++)
		{
			printf("%d ", col); //1 space
		}
		for (col = row - 1; col >= 1; col--)
		{
			printf("%d ", col); //1 space
		}
		printf("\n");
	}
	for (row = n -1; row >= 1; row--)
	{
		for (col = 1; col <= n - row; col++)
		{
			printf("  "); //2 space
		}
		for (col = 1; col <= row; col++)
		{
			printf("%d ", col); //1 space
		}
		for (col = row - 1; col >= 1; col--)
		{
			printf("%d ", col); //1 space
		}
		printf("\n");
	}

	return 0;
}
```

Pattern type - 22


```c
#include <stdio.h>

int main()
{
     int n, row, col;
     printf("Enter the value of n = ");
     scanf("%d", &n);

     for (row = 1; row <= n; row++)
     {
          for (col = 1; col <= row; col++)
          {
               printf("*");
          }
          printf("\n");
     }
     for (row = n; row >=1; row--)
     {
          for (col = 1; col <= (n-row)+1; col++)
          {
               printf(" ");
          }
          for (col = 1; col <= row; col++)
          {
               printf("*");
          }
          printf("\n");
     }

     return 0;
}
```

Pattern type - 23




```c
#include <stdio.h>

int main()
{
    int n, row, col;
    printf("Enter the value of n = ");
    scanf("%d", &n);

    for (row = 1; row <= n; row++)
    {
        for (col = 1; col <= n - row; col++)
        {
            printf(" ");
        }
        for (col = 1; col <= 2 * row - 1; col++)
        {
            printf("*");
        }
        printf("\n");
    }
    for (row = n-1; row >= 1; row--)
    {
        for (col = 1; col <= n - row; col++)
        {
            printf(" ");
        }
        for (col = 1; col <= 2 * row - 1; col++)
        {
            printf("*");
        }
        printf("\n");
    }

    return 0;
}
```

Pattern type - 24

```
Enter n = 5
*@@@@
#*@@@
##*@@
###*@
####*
```

```c
#include <stdio.h>

int main()
{
     int n, row, col;
     printf("Enter the value of n = ");
     scanf("%d", &n);

     for (row = 1; row <= n; row++)
     {
          for (col = 1; col <= n; col++)
          {
               if (row == col)
                    printf("*");
               else if (row > col)
                    printf("#");
               else if (row < col)
                    printf("@");
          }
          printf("\n");
     }

     return 0;
}
```

Pattern type - 25


```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter the value of n = ");
	scanf("%d", &n);

	for (row = n-1; row >= 1; row--)
	{
		for (col = 1; col <= row; col++)
		{
			printf("*");
		}
		for (col = 1; col <= (2 * n) - (2 * row); col++)
		{
			printf(" ");
		}
		for (col = 1; col <= row; col++)
		{
			printf("*");
		}
		printf("\n");
	}
	printf("\n");
	for (row = 1; row <= n-1; row++)
	{
		for (col = 1; col <= row; col++)
		{
			printf("*");
		}
		for (col = 1; col <= (2 * n) - (2 * row); col++)
		{
			printf(" ");
		}
		for (col = 1; col <= row; col++)
		{
			printf("*");
		}
		printf("\n");
	}

}
```

Pattern type – 26

```
Enter the value of n = 5
  *     *
 ***   ***
**********
 ***   ***
  *     *
```

```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter the value of n = ");
	scanf("%d", &n);

	for (row = 1; row <= n-2; row++)
	{
		for (col = 1; col <= (n-2) - row; col++)
		{
			printf(" ");
		}
		for (col = 1; col <= 2 * row - 1; col++)
		{
			printf("*");
		}
		for (col = 1; col <= ((2 * n-2) - (2 * row))-2; col++)
		{
			printf(" ");
		}
		for (col = 1; col <= 2 * row - 1; col++)
		{
			printf("*");
		}
		printf("\n");
	}
	for (row = (n-2)-1; row >= 1; row--)
	{
		for (col = 1; col <= (n - 2) - row; col++)
		{
			printf(" ");
		}
		for (col = 1; col <= 2 * row - 1; col++)
		{
			printf("*");
		}
		for (col = 1; col <= ((2 * n - 2) - (2 * row)) - 2; col++)
		{
			printf(" ");
		}
		for (col = 1; col <= 2 * row - 1; col++)
		{
			printf("*");
		}
		printf("\n");
	}

	return 0;
}
```

Pattern type – 27

```
Enter n = 5
&         #
##       &&
&&&     ###
####   &&&&
&&&&&#####
```

```c
#include <stdio.h>

int main()
{
    int n, row, col;
    printf("Enter n = ");
    scanf("%d", &n);

    for (row = 1; row <= n; row++)
    {
        for (col = 1; col <= row; col++)
        {
            if (row % 2 == 0)
                printf("#");
            else
                printf("&");
        }
        for (col = 1; col <= (2 * n) - (2 * row); col++)
        {
            printf(" ");
        }
        for (col = 1; col <= row; col++)
        {
            if (row % 2 == 0)
                printf("&");
            else
                printf("#");
        }
        printf("\n");
    }

    return 0;
}
```

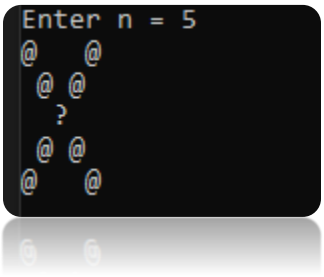
Pattern type - 28

```
Enter n = 5
@ @ @ @ @
@ @   @ @
@   @   @
@ @   @ @
@ @ @ @ @
```

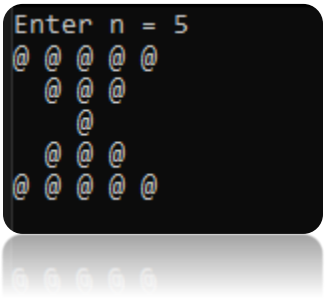
```c
#include <stdio.h>

int main()
{
     int n, row, col;
     printf("Enter n = ");
     scanf("%d", &n);

     for (row = 1; row <= n; row++)
     {
          for (col = 1; col <= n; col++)
          {
               if (row == 1 || row == n || col == 1 || col ==
n || row == col || row + col == n + 1)
                    printf("@ ");
               else
                    printf("  ");
          }
          printf("\n");
     }

     return 0;
}
```

Pattern type – 29

```c
#include <stdio.h>

int main()
{
     int n, row, col;
     printf("Enter n = ");
     scanf("%d", &n);

     for (row = 1; row <= n; row++)
     {
          for (col = 1; col <= n; col++)
          {
               if (row == col && row + col == n + 1)
                    printf("?");
               else if (row == col || row + col == n + 1)
                    printf("@");
               else
                    printf(" ");
          }
          printf("\n");
     }

     return 0;
}
```



Pattern type – 30




```c
#include <stdio.h>

int main()
{
	int n, row, col;
	printf("Enter n = ");
	scanf("%d", &n);

	for (row = 1; row <= n; row++)
	{
		for (col = 1; col <= n; col++)
		{
			if (row == 1 || row == n || row == col || row
+ col == n + 1 || col == n - 2)
				printf("@ ");
			else
				printf("  ");
		}
		printf("\n");
	}

	return 0;
}
```

Series(সিরিজ)

1. 1 + 2 + 3 + ---------- + n.(Using for loop)
2. 1 + 3 + 5 + ---------- + n.(Using for loop)
3. 2 + 4 + 6 + ---------- + n.(Using for loop)
4. 1 + 2 + 3 + ---------- + n.(Using while loop)
5. 1 + 3 + 5 + ---------- + n.(Using while loop)
6. 2 + 4 + 6 + ---------- + n.(Using while loop)
7. 1 * 2 + 2 * 3 + 3 * 4 + ---------- - +n1 * n2.
8. 1 * 3 + 2 * 5 + 3 * 7 + ---------- - +n1 * n2.
9. 1 * 3 * 4 + 2 * 5 * 6 + 3 * 7 * 8 + ---------- - +n1 * n2 * n3.
10. 1 2 3-------- - n.
11. 1 3 5-------- - n.
12. 2 4 6-------- - n.
13. 1.5 + 2.5 + 3.5 + ---------- - +n.
14. 12 + 22 + 32 + ---------- - +n2
15. 13 + 23 + 33 + ---------- - +n3
16. 12 + 32 + 52 + ---------- - +n2
17. 1 + ½ + 1 / 3 + ---------- - +1 / n.
18. 1 × 2 × 3 ×---------- - × n.
19. 12 x 22 x 32 x----------xn2
20. 13 x 23 x 33 x----------xn3
21. 13 x 33 x 53 x----------xn3
22. 22 x 42 x 62 x----------xn2
23. 12 x 32 x 52 x----------xn2
24. 1 - 2 + 3 - 4 + 5 - 6 + ---------- - +n.//(1+3+5+----)-(2+4+6+-----)
25. Fibonacci Series(0 1 1 2 3)

1. 1 + 2 + 3 + ---------- + n.(Using for loop)

```c
#include <stdio.h>

int main()
{
	int n, i, sum = 0;
	printf("Enter the last number of the series = ");
	scanf("%d", &n);
	printf("1+2+3+-----------+%d\n", n);

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

	return 0;
}
```

2. 1 + 3 + 5 + ---------- + n.(Using for loop)

```c
#include <stdio.h>

int main()
{
	int n, i, sum = 0;
	printf("Enter the last number of the series = ");
	scanf("%d", &n);
	printf("1+3+5+-----------+%d\n", n);

	for (i = 1; i <= n; i = i + 2)
	{
		sum = sum + i;
	}
	printf("%d\n", sum);

	return 0;
}
```

3. 2 + 4 + 6 + ---------- + n.(Using for loop)

```c
#include <stdio.h>

int main()
{
	int n, i, sum = 0;
	printf("Enter the last number of the series = ");
	scanf("%d", &n);
	printf("2+4+6+-----------+%d\n", n);

	for (i = 2; i <= n; i = i + 2)
	{
		sum = sum + i;
	}
	printf("%d\n", sum);

	return 0;
}
```

4. 1 + 2 + 3 + ---------- + n.(Using while loop)

```c
#include <stdio.h>

int main()
{
	int n, i = 1, sum = 0;
	printf("Enter the last number of the series = ");
	scanf("%d", &n);

	printf("1 + 2 + 3 + --------------+%d\n", n);
	while (i <= n)
	{
		sum = sum + i;
		i = i + 1;
	}
	printf("%d\n", sum);

	return 0;
}
```

5. 1 + 3 + 5 + ---------- + n.(Using while loop)

```c
#include <stdio.h>

int main()
{
	int n, i = 1, sum = 0;
	printf("Enter the last number of the series = ");
	scanf("%d", &n);

	printf("1 + 3 + 5 + --------------+%d\n", n);
	while (i <= n)
	{
		sum = sum + i;
		i = i + 2;
	}
	printf("%d\n", sum);

	return 0;
}
```

6. 2 + 4 + 6 + ---------- + n.(Using while loop)

```c
#include <stdio.h>

int main()
{
	int n, i = 2, sum = 0;
	printf("Enter the last number of the series = ");
	scanf("%d", &n);

	printf("2 + 4 + 6 + --------------+%d\n", n);
	while (i <= n)
	{
		sum = sum + i;
		i = i + 2;
	}
	printf("%d\n", sum);

	return 0;
}
```

7. 1*2 + 2*3 + 3*4 +----------+n1*n2.

```c
#include <stdio.h>

int main()
{
	int n1, n2, i, j, sum = 0;
	printf("Enter n1 and n2 = ");
	scanf("%d %d", &n1, &n2);

	printf("1*2 + 2*3 + 3*4 + -------+%d*%d\n", n1, n2);
	for (i = 1, j = 2; i <= n1 && j <= n2; i = i + 1, j = j + 1)
	{
		sum = sum + i * j;
	}
	printf("%d\n", sum);

	return 0;
}
```

8. 1*3 + 2*5 + 3*7 +----------+n1*n2.

```c
#include <stdio.h>

int main()
{
	int n1, n2, i, j, sum = 0;
	printf("Enter n1 and n2 = ");
	scanf("%d %d", &n1, &n2);

	printf("1*3 + 2*5 + 3*7 + -------+%d*%d\n", n1, n2);
	for (i = 1, j = 3; i <= n1 && j <= n2; i = i + 1, j = j + 2)
	{
		sum = sum + i * j;
	}
	printf("%d\n", sum);

	return 0;
}
```

9. 1*3*4 + 2*5*6 + 3*7*8 +----------+n1*n2*n3.

```c
#include <stdio.h>

int main()
{
	int n1, n2, n3, i, j, k, sum = 0;
	printf("Enter n1 and n2 = ");
	scanf("%d %d %d", &n1, &n2, &n3);

	printf("1*3*4 + 2*5*6 + 3*7*8 + -------+%d*%d*%d\n", n1, n2, n3);
	for (i = 1, j = 3, k = 4; i <= n1 && j <= n2 && k<=n3; i = i + 1,
j = j + 2, k = k+2)
	{
		sum = sum + i * j * k;
	}
	printf("%d\n", sum);

	return 0;
}
```

10. 1 2 3---------n.

```c
#include <stdio.h>

int main()
{
	int n, i;
	printf("Enter n = ");
	scanf("%d", &n);

	printf("1  2  3----------%d\n", n);
	for (i = 1; i <= n; i = i + 1)
	{
		printf("%d  ", i);
	}

	return 0;
}
```

11. 1 3 5---------n.

```c
#include <stdio.h>

int main()
{
	int n, i;
	printf("Enter n = ");
	scanf("%d", &n);

	printf("1  3  5----------%d\n", n);
	for (i = 1; i <= n; i = i + 2)
	{
		printf("%d  ", i);
	}

	return 0;
}
```

12. 2 4 6---------n.

```c
#include <stdio.h>

int main()
{
	int n, i;
	printf("Enter n = ");
	scanf("%d", &n);

	printf("2  4  6----------%d\n", n);
	for (i = 2; i <= n; i = i + 2)
	{
		printf("%d  ", i);
	}

	return 0;
}
```

13. 1.5 + 2.5 + 3.5 +----------+n.

```c
#include <stdio.h>

int main()
{
	float n, i, sum = 0;
	printf("Enter n = ");
	scanf("%f", &n);

	printf("1.5 + 2.5 + 3.5 +-----------+%f\n", n);
	for (i = 1.5; i <= n; i = i+1)
	{
		sum = sum + i;
	}
	printf("%.2f\n", sum);

	return 0;
}
```

14. 12 + 22 + 32 +----------+n2

```c
#include <stdio.h>

int main()
{
	int n, i, sum = 0;
	printf("Enter n = ");
	scanf("%d", &n);

	printf("1^2 + 2^2 + 3^3 +-------+%d^%d\n", n, n);
	for (i = 1; i <= n; i = i + 1)
	{
		sum = sum + i * i;
	}
	printf("%d\n", sum);

	return 0;
}
```

15. 13 + 23 + 33 +----------+n3

```c
#include <stdio.h>

int main()
{
	int n, i, sum = 0;
	printf("Enter n = ");
	scanf("%d", &n);

	printf("1^3 + 2^3 + 3^3 +-------+%d^%d\n", n, n);
	for (i = 1; i <= n; i = i + 1)
	{
		sum = sum + i * i * i;
	}
	printf("%d\n", sum);

	return 0;
}
```

16. 12 + 32 + 52 +----------+n2

```c
#include <stdio.h>

int main()
{
	int n, i, sum = 0;
	printf("Enter n = ");
	scanf("%d", &n);

	printf("1^2 + 3^2 + 5^2 +-------+%d^2\n", n);
	for (i = 1; i <= n; i = i + 2)
	{
		sum = sum + i * i;
	}
	printf("%d\n", sum);

	return 0;
}
```

17 . 1 + ½ + 1/3 +----------+1/n.

```c
#include <stdio.h>

int main()
{
	double n, i, sum = 0;
	printf("Enter the value of n = ");
	scanf("%lf", &n);

	printf("1 + 1/2 + 1/3 +-----------+1/%lf\n", n);
	for (i = 1; i <= n; i = i+1)
	{
		sum = sum + (1 / i);
	}
	printf("%.2lf\n", sum);

	return 0;
}
```

18. 1 × 2 × 3 ×----------× n.

```c
#include <stdio.h>

int main()
{
	int n, i, result = 1;
	printf("Enter the value of n = ");
	scanf("%d", &n);

	printf("1 X 2 X 3 X------------X %d\n", n);
	for (i = 1; i <= n; i = i + 1)
	{
		result = result * i;
	}
	printf("%d\n", result);

	return 0;
}
```

19. 12 x 22 x 32 x----------xn2

```c
#include <stdio.h>

int main()
{
	int n, i, result = 1;
	printf("Enter the value of n = ");
	scanf("%d", &n);

	printf("1^2 X 2^2 X 3^2 X----------X%d^2\n", n);
	for (i = 1; i <= n; i = i + 1)
	{
		result = result * i * i;
	}
	printf("%d\n", result);

	return 0;
}
```

20. 13 x 23 x 33 x----------xn3

```c
#include <stdio.h>

int main()
{
	int n, i, result = 1;
	printf("Enter the value of n = ");
	scanf("%d", &n);

	printf("1^3 X 2^3 X 3^3 X----------X%d^3\n", n);
	for (i = 1; i <= n; i = i + 1)
	{
		result = result * i * i * i;
	}
	printf("%d\n", result);

	return 0;
}
```

21. 13 x 33 x 53 x----------xn3

```c
#include <stdio.h>

int main()
{
	int n, i, result = 1;
	printf("Enter the value of n = ");
	scanf("%d", &n);

	printf("1^3 X 3^3 X 5^3 X----------X%d^3\n", n);
	for (i = 1; i <= n; i = i + 2)
	{
		result = result * i * i * i;
	}
	printf("%d\n", result);

	return 0;
}
```

22. 22 x 42 x 62 x----------xn2

```c
#include <stdio.h>

int main()
{
	int n, i, result = 1;
	printf("Enter the value of n = ");
	scanf("%d", &n);

	printf("2^2 X 4^2 X 6^2 X----------X%d^2\n", n);
	for (i = 2; i <= n; i = i + 2)
	{
		result = result * i * i;
	}
	printf("%d\n", result);

	return 0;
}
```

23. 12 x 32 x 52 x----------xn2

```c
#include <stdio.h>

int main()
{
	int n, i, result = 1;
	printf("Enter the value of n = ");
	scanf("%d", &n);

	printf("1^2 X 3^2 X 5^2 X----------X%d^2\n", n);
	for (i = 1; i <= n; i = i + 2)
	{
		result = result * i * i;
	}
	printf("%d\n", result);

	return 0;
}
```

24. 1-2+3-4+5-6+----------+n.//(1+3+5+----)-(2+4+6+-----)

```c
#include <stdio.h>

int main()
{
	int n, i, even = 0, odd = 0;
	printf("Enter the value of n = ");
	scanf("%d", &n);

	for (i = 1; i <= n; i = i+1)
	{
		if (i % 2 == 0)
		{
			even = even + i;
		}
		else
		{
			odd = odd + i;
		}
	}
	printf("Sum is = %d\n", odd - even);

	return 0;
}
```

25. Fibonacci Series (0 1 1 2 3)

```c
#include <stdio.h>

int main()
{
     int first = 0, second = 1, fibo, count = 0, n;
     printf("Enter range = ");
     scanf("%d", &n);

     while (n > count)
     {
          if (count <= 1)
          {
               fibo = count;
          }
          else
          {
               fibo = first + second;
               first = second;
               second = fibo;
          }
          printf("%d ", fibo);
          count++;
     }

     return 0;
}
```