1. Write a program to find the sum of numbers from 1 to 100.

```c
#include<stdio.h>
int main()
{
    int count=0;
    for(int i=1;i<=100;i++){
        count+=i;
    }
    printf("The sum of 100 numbers is %d",count);
return 0;
}
```

```
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D:\Documents_D_Drive\NIT study\Programs>cd "d:\Documents_
e.c -o q_one && "d:\Documents_D_Drive\NIT study\Programs\
The sum of 100 numbers is 5050
d:\Documents_D_Drive\NIT study\Programs\Assignment_3>
```

2. Write a program to find the sum of all even numbers and sum of odd numbers in a given range .

```c
#include <stdio.h>
int main()
{
    int a, b, odd_sum = 0, even_sum = 0;
    scanf("%d %d", &a, &b);
    for (int i = a; i <= b; i++){
        if (i % 2 == 0) even_sum += i;
        else  odd_sum += i;
    }
    printf("In the given range %d - %d,\nOdd number's sum:%d\nEven number's sum:%d", a, b, odd_sum, even_sum);
    return 0;
}
```

```
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TERMINAL                                                    2: C

Even numbers sum:18
d:\Documents_D_Drive\NIT study\Programs\Assignment_3>cd "d:\Documents_D_Drive\NIT study\Programs\Assignment_3\" && gcc
 "d:\Documents_D_Drive\NIT study\Programs\Assignment_3\"q_one
7 15
In the given range 7 - 15,
Odd number's sum:55
Even number's sum:44
d:\Documents_D_Drive\NIT study\Programs\Assignment_3>
```

3. Check if a given number is prime or not.

```c
#include <stdio.h>
#include<math.h>
int main()
{
    int n;
    scanf("%d",&n);
    int is_prime=1;
    for(int i=2;i<=sqrt(n);i++){
        if(n%i==0) {
            is_prime=0;
            break;
        }
    }
    printf("%d is ",n);
    if(n==1) is_prime=0;
   is_prime==0 ? printf("not a"):printf("a");
   printf(" prime number\n");
    return 0;
}
```

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```
d:\Documents_D_Drive\NIT study\Programs\Assignment_3>cd "d:\Documer
 "d:\Documents_D_Drive\NIT study\Programs\Assignment_3\"q_one
101
101 is a prime number

d:\Documents_D_Drive\NIT study\Programs\Assignment_3>cd "d:\Documer
 "d:\Documents_D_Drive\NIT study\Programs\Assignment_3\"q_one
102
102 is not a prime number

d:\Documents_D_Drive\NIT study\Programs\Assignment_3>
```

4. Reverse a given number and check if the number is palindrome.

```c
#include<stdio.h>
int main()
{
    int n;
    scanf("%d",&n);
    int m=n;
    int temp=0;
    while(m>0){
        temp=temp*10+m%10;
        m/=10;
    }
    printf("Original number:%d\nReversed number:%d\n",n,temp);
    if(temp==n) printf("%d is a palindrome\n",n);
    else printf("%d is not a palindrome\n",n);
return 0;
}
```

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```
129921 is a palindrome
1299121
Original number:1299121
Reversed number:1219921
1299121 is not a palindrome
9009009
Original number:9009009
Reversed number:9009009
9009009 is a palindrome

d:\Documents_D_Drive\NIT study\Programs>
```

5. Calculate the power of a number

```c
#include<stdio.h>
int main()
{
    int n,p;
    printf("Enter the base number followed  by exponent number\n");
    scanf("%d %d",&n,&p);
    long long int ans=1;
    for(int i=0;i<p;i++) ans*=n;
    printf("%d to the power of %d is equal to %lld\n",n,p,ans);
return 0;
}
```

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```
Enter the base number followed  by exponent number
4 10
4 to the power of 10 is equal to 1048576

d:\Documents_D_Drive\NIT study\Programs>cd "d:\Documents_D_Drive\NIT study\
e && "d:\Documents_D_Drive\NIT study\Programs\"q_five
Enter the base number followed  by exponent number
10 10
10 to the power of 10 is equal to 10000000000

d:\Documents_D_Drive\NIT study\Programs>
```

6. Display factors of a given number.

```c
#include<stdio.h>
#include<math.h>
int main()
{
    int n;
    scanf("%d",&n);
    int root=sqrt(n);
    printf("The factors of %d are:-\n",n);
    for(int i=1;i<root;i++){
        if(n%i==0) printf("%d %d ",i,n/i);
    }
    if(n%root==0) printf("%d",root);
return 0;
}
```

PROBLEMS OUTPUT DEBUG CONSOLE

TERMINAL

```
10
The factors of 10 are:-
1 10 2 5
d:\Documents_D_Drive\NIT study\Programs\Assignment_3>cd "d
" && gcc q_six.c -o q_six && "d:\Documents_D_Drive\NIT stu
100
The factors of 100 are:-
1 100 2 50 4 25 5 20 10
d:\Documents_D_Drive\NIT study\Programs\Assignment_3>
```

7. Generate the multiplication table of any number

```c
#include<stdio.h>
int main()
{
    int n;
    scanf("%d",&n);
    for(int i=1;i<=10;i++) printf("%d * %d = %d\n",n,i,n*i);
return 0;
}
```

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```
12
12 * 1 = 12
12 * 2 = 24
12 * 3 = 36
12 * 4 = 48
12 * 5 = 60
12 * 6 = 72
12 * 7 = 84
12 * 8 = 96
12 * 9 = 108
12 * 10 = 120

d:\Documents_D_Drive\NIT study\Programs\Assignment_3>
```

8. Generate the following patterns.

a)
```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

b)
```
5 5 5 5 5
4 4 4 4
3 3 3
2 2
1
```

c)
```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

d)
```
        1
      2   2
    3   3   3
  4   4   4   4
5   5   5   5   5
```

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

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```
D:\Documents_D_Drive\NIT study\Programs>cd "d:\Documents
ght_a.c -o q_eight_a && "d:\Documents_D_Drive\NIT study\
5
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5

d:\Documents_D_Drive\NIT study\Programs\Assignment_3>
```

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

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```
D:\Documents_D_Drive\NIT study\Programs>cd "d:\Documents_D_
b.c -o q_8_b && "d:\Documents_D_Drive\NIT study\Programs\As
5
5 5 5 5 5
4 4 4 4
3 3 3
2 2
1

d:\Documents_D_Drive\NIT study\Programs\Assignment_3>
```

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

PROBLEMS OUTPUT DEBUG CONSOLE

TERMINAL

```
d:\Documents_D_Drive\NIT study\Programs\Assignment_3>cd "
" && gcc q_8_c.c -o q_8_c && "d:\Documents_D_Drive\NIT st
5
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

d:\Documents_D_Drive\NIT study\Programs\Assignment_3>
```

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

PROBLEMS OUTPUT DEBUG CONSOLE

TERMINAL

```
d:\Documents_D_Drive\NIT study\Programs\As
" && gcc q_8_d.c -o q_8_d && "d:\Document
5
    1
   2 2
  3 3 3
 4 4 4 4
5 5 5 5 5
```