```c
C > Assignment4" > C Q11.c > ...
  1   /*Program to demonstrate the use of local variables*/
  2
  3   #include<stdio.h>
  4   void add(int a,int b)
  5   {
  6       int c;
  7       c=a+b;
  8       printf("\nResult=%d",c);
  9   }
 10
 11   void main()
 12   {
 13       int a=10, b=20;
 14
 15       add(a,b);
 16   }
 17
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

Result=30

```c
C > Assignment4" > C Q12.c > ...
   1    /*Program to demonstrate static variables*/
   2
   3    #include<stdio.h>
   4    void display()
   5    {
   6        static int i=0;
   7        i++;
   8        printf("\ni=%d",i);
   9    }
  10
  11    void main()
  12    {
  13        display();
  14        display();
  15        display();
  16        display();
  17        display();
  18    }
  19
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**

PS G:\C\Assignment4''> cd "g:\C\Assignment4''\" ; if ($?)

i=1
i=2
i=3
i=4
i=5

```c
1    /*Program to check whether the character is digit or not*/
2
3    #include<stdio.h>
4    int  is_digit(int c)
5    {
6        if(c>='0' && c<='9')
7            return 1;
8        else
9            return 0;
10   }
11
12   void main()
13   {
14       char c;
15       int flag;
16
17       printf("\nEnter a character");
18       scanf("%c",&c);
19       flag=is_digit(c);
20       if(flag==1)
21           printf("\nThe character %c is digit",c);
22       else
23           printf("\nThe character %c is not a digit",c);
24   }
25
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

PS G:\C\Assignment4''>
                    > cd "g:\C\Assignment4''\" ; if ($?) { gcc Q13.c -o (

Enter a character mgh

The character   is not a digit

```c
//Program to add two numbers using the function
#include<stdio.h>
void add();
void main()
{
    add();
}

void add()
{
    int a,b,sum;
    printf("Enter the values for a and b\n");
    scanf("%d %d",&a,&b);

    sum=a+b;

    printf("sum=%d",sum);
}
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS G:\C> cd "g:\C\Assignment4''\" ; if ($?) { gcc Q1add_two.c -o Q1add_two } ; if ($?) {
Enter the values for a and b
1
2
sum=3

```c
//Program to add two numbers using the function
#include<stdio.h>
int add(int, int);
void main()
{
    int sum;
    add(2,4);
    printf("%d ",add(5,10));
    sum=add(8,14)+10;
    printf("\tSum=%d ",sum);
}

int add(int a, int b)
{
    printf("-%d-",a+b);
}
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

PS G:\C\Assignment4''> cd "g:\C\Assignment4''\" ; if ($?) { gcc Q2add_twoFUN.c -o Q2a
-6--15-4 -22-   Sum=14
PS G:\C\Assignment4''>

```c
1   //Program to show the concept of pass by values
2   #include<stdio.h>
3   void swap(int, int);
4   void main()
5   {
6       int a,b;
7       a=10, b=20;
8       printf("\nBefore Swapping a=%d b=%d",a,b);
9       swap(&a,&b);
10      printf("\nAfter Swapping a=%d b=%d",a,b);
11  }
12
13  void swap(int m, int n)
14  {
15      int temp;
16      temp=m;
17      m=n;
18      n=temp;
19      printf("\nValues at swapping a=%d, b=%d",m,n);
20  }
21
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**

```
Values at swapping a=6422296, b=6422300
After Swapping a=10 b=20
```

```c
1    //Program to right rotate x value by n-bit positions
2    #include<stdio.h>
3    int rotate(int, int);
4    void main()
5    {
6        int n,x,result;
7        printf("\nEnter a number");
8        scanf("%d",&x);
9        printf("\nEnter number of right rotations");
10       scanf("%d",&n);
11       result=rotate(x,n);
12       printf("\nNumber after rotation=%d",result);
13   }
14
15   int rotate(int x, int n)
16   {
17
18           x=x>>n;
19
20           return x;
21   }
22
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

After Swapping a=10 b=20
PS G:\C\Assignment4''> cd "g:\C\Assignment4''\" ; if ($?) { gcc Q4Position.c -o Q4Position } ; if

Enter a number5

Enter number of right rotations4

Number after rotation=0

```c
/*Program to check whether a given number is prime or not*/
#include<stdio.h>
int isprime(int);
void main()
{
    int n;
    printf("\nEnter a number");
    scanf("%d",&n);
    if(isprime(n))
        printf("\n%d is prime number",n);
    else
        printf("\n%d is not prime number",n);
}

int isprime(int x)
{

    int i;
    for(i=2;i<=x/2;i++)
    {
        if(x%i==0)
        {
            return 0;
        }
    }
        return 1;
}

```

```c
C > Assignment4" > C Q6.c > ⊘ fact(int)
  1    /*Program to print factorial of a given number*/
  2    #include<stdio.h>
  3    int fact(int);
  4    void main()
  5    {
  6        int n,res;
  7        printf("\nEnter a number");
  8        scanf("%d",&n);
  9        res=fact(n);
 10        printf("\nFactorial of %d is %d",n,res);
 11    }
 12
 13    int fact(int n)
 14    {
 15        int i, res=1;
 16          for(i=1;i<=n;i++)
 17          {
 18              res*=i;
 19          }
 20           return res;
 21    }
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**

4 is not prime number
PS G:\C\Assignment4''> cd "g:\C\Assignment4''\" ; if ($?) { gcc Q6.c

Enter a number5

Factorial of 5 is 120

```c
1
2    /*Program to compute x to the power n*/
3    #include<stdio.h>
4    int power(int,int);
5    void main()
6    {
7        int x,n,res;
8        printf("\nEnter base and exponent");
9        scanf("%d %d",&x,&n);
10       res=power(x,n);
11       printf("\nValue of %d to the power %d is %d",x,n,res);
12   }
13
14   int power(int x,int n)
15   {
16       int i, res=1;
17         for(i=1;i<=n;i++)
18         {
19             res*=x;
20         }
21           return res;
22   }
23
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**

PS G:\C\Assignment4''> cd "g:\C\Assignment4''\" ; if ($?) { gcc Q7.c -o Q7 } ; if ($?) { .\Q7 }

Enter base and exponent52
2

Value of 52 to the power 2 is 2704

```c
1    /*Program to add the series 1-2+3-4+5-6...*/
2    #include<stdio.h>
3    int add_numbers(int);
4    void main()
5    {
6        int n,sum;
7        printf("\nEnter the number of values in series");
8        scanf("%d ",&n);
9        sum=add_numbers(n);
10       printf("\nSum of series is %d",sum);
11   }
12
13   int add_numbers(int n)
14   {
15       int i, sum=0;
16         for(i=1;i<=n;i++)
17         {
18             if((i%2)==1)
19                 sum=sum+i;
20           else
21                 sum=sum-i;
22         }
23         return sum;
24   }
25
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

PS G:\C\Assignment4''> cd "g:\C\Assignment4''\" ; if ($?) { gcc Q8.c -o Q8 } ; if ($?) { .\Q8 }

Enter the number of values in series9
4

Sum of series is 5

```c
/*Program to show scope of variables*/

#include<stdio.h>
int add(int a,int b);
int sub(int a,int b);
int f=10,g=20;                  //global scope


void main()
{
    int sum,difference;   //local scope
    sum=add(10,20);
    difference=substract(20,10);
    printf("\nSum=%d",sum);
    printf("\nDifference= %d",difference);
}

int add(int a,int b)
{
    int d;              //local scope
    d=a+b;
        return d;
}
int substract(int a,int b)
{
    int c;                //local scope
    c=a-b;
        return c;
}
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

Q9.c:13:16: warning: implicit declaration of function 'substract' [-Wimpli
    difference=substract(20,10);
                ^~~~~~~~~

Sum=30
Difference= 10

```c
C > Assignment4" > C Q10.c > ...
  1    /*Program to demonstrate the use of global variables*/
  2
  3    #include<stdio.h>
  4    void add();
  5    void subtract();
  6    int a=10;
  7    int b=20;
  8    int c,d;                //global scope
  9
 10
 11    void main()
 12    {
 13        add();
 14
 15        printf("\na=%d b=%d",a,b);
 16        printf("\na+b= %d",c);
 17
 18        subtract();
 19        printf("\na-b=%d",d);
 20    }
 21
 22    void add()
 23    {
 24        int a=20;      //local scope
 25        c=a+b;
 26
 27
 28    }
 29    void subtract()
 30    {
 31        d=a-b;
 32    }
 33
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

Difference= 10
PS G:\C\Assignment4''> cd "g:\C\Assignment4''\" ; if ($?) { gcc Q10.c

a=10 b=20
a+b= 40
a-b=-10

```c
 1    /*Program to demonstrate Functions without arguments and with
 2    */
 3
 4    #include<stdio.h>
 5    void main (){
 6       int sum ();
 7       int c;
 8       c= sum ();
 9       printf("sum = %d",c);
10       getch ();
11    }
12    int sum (){
13       int a,b,c;
14       printf("enter 2 numbers");
15       scanf ("%d%d", &a, &b);
16       c = a+b;
17       return c;
18    }
19
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
                    > cd "g:\C\Assignment4''\" ; if ($?) { gcc Q15.c -o Q1
Q15.c: In function 'main':
Q15.c:10:4: warning: implicit declaration of function 'getch' [-Wimplicit-f
    getch ();
    ^~~~~
enter 2 numbers2
5
sum = 7
```

```c
/*Program to demonstrate Functions with arguments and withou
*/
#include<stdio.h>
void main (){
   void sum (int, int );
   int a,b;
   printf("enter 2 numbers");
   scanf("%d%d", &a,&b);
   sum (a,b);
 }
void sum ( int a, int b){
   int c;
   c= a+b;
   printf ("sum=%d", c);
}
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**

```
    + CategoryInfo          : ObjectNotFound: (d:String) [], CommandNotF
    + FullyQualifiedErrorId : CommandNotFoundException

PS G:\C\Assignment4''> cd "g:\C\Assignment4''\" ; if ($?) { gcc Q16.c -o
enter 2 numbers5
4
sum=9
```

```c
/*Program to demonstrate Functions with arguments
*/
#include<stdio.h>
main (){
    int sum ( int,int);
    int a,b,c;
    printf("enter 2 numbers");
    scanf("%d%d", &a,&b);
    c= sum (a,b);
    printf ("sum=%d", c);

}
int sum ( int a, int b ){
    int c;
    c= a+b;
    return c;
}
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**

```
PS G:\C\Assignment4''> cd "g:\C\Assignment4''\" ; if ($?) { g
Q17.c:4:1: warning: return type defaults to 'int' [-Wimplicit-
 main (){
 ^~~~
enter 2 numbers8
4
sum=12
```

```c
C > Assignment4" > C Q18.c > ...
1     /*Program to demonstrate Pre-defined Functions */
2
3     #include<stdio.h>
4     #include<math.h>
5     void main ( ){
6        int x,y,z,n,k,p,r,q;
7        printf ("\nenter x and n values:");
8        scanf (" %d%d", &x,&n);
9        y=cbrt(x);
10       z=exp(x);  // e power x
11       k=log(x);
12       p=ceil(x);
13       q=pow(x,n);
14       printf("\ncuberoot = %d", y);
15       printf("\nexponent value = %d",z);
16       printf("\nlogarithmic value = %d", k);
17       printf("\nceil value = %d", p);
18       printf("\npower = %d", q);
19    }
20
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**

PS G:\C\Assignment4''> cd "g:\C\Assignment4''\" ; if ($?) { gcc

enter x and n values:4
5

cuberoot = 1
exponent value = 54
logarithmic value = 1
ceil value = 4
power = 1024
PS G:\C\Assignment4''>

```c
C > Assignment4" > C Q19.c > ...
  1    /*Program to demonstrate Increment and Decrement */
  2    #include <stdio.h>
  3    void main()
  4    {
  5    int a = 1;
  6    int b = ++a + a++ + a--;
  7    //int b = ++a + a++ + a--;
  8    printf("Value of b is %d", b);
  9    }
 10
```

```
> cd "g:\C\Assignment4''\" ; if ($?) { gcc Q19.
Value of b is 8
```

```c
C > Assignment4" > C Q20.c > ...
   1    /*Program to demonstrate Sizeof operator */
   2    #include <stdio.h>
   3    #include<conio.h>
   4    void main()
   5    {
   6        int i;
   7        float x;
   8        double lf;
   9        char c;
  10    printf("integer: %d\n", (int)sizeof(i)) ;
  11    printf(" float : %d\n", (int)sizeof(x)) ;
  12    printf("double: %d\n", (int)sizeof(lf)) ;
  13    printf("character: %d\n" , (int)sizeof(c)) ;
  14    }
  15
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**

> cd "g:\C\Assignment4''\" ; if ($?) { gc
integer: 4
 float : 4
double: 8
character: 1

```c
1    /*Program to demonstrate ternary operator */
2    #include <stdio.h>
3    void main()
4    {
5    int x=1, y ;
6    y = ( x ==1 ? 2 : 0 ) ;
7    printf("x value is %d\n", x);
8    printf("y value is %d", y);
9    }
10
```

```
PS G:\C\Assignment4''> cd "g:\C\Assignment4''\" ; if ($?) { gcc Q21
x value is 1
y value is 2
```

C > Assignment4" > C Q22.c > ...

```c
/*Program to demonstrate compound ternary operator */
#include<stdio.h>
void main()
{
int a,b,choice,result;
printf("Enter a,b");
scanf("%d %d",&a,&b);
printf("Enter Choice 1-Addition 2-Multiplication");
scanf("%d",&choice);
result=(choice==1)?a+b:(choice==2)?a*b:printf("Invalid input");
if(choice==1||choice==2)
printf("The result is %d",result);
}
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**

```
> cd "g:\C\Assignment4''\" ; if ($?) { gcc Q22.c -o Q22 } ; if ($?)
Enter a,b2
5
Enter Choice 1-Addition 2-Multiplication2
The result is 10
```