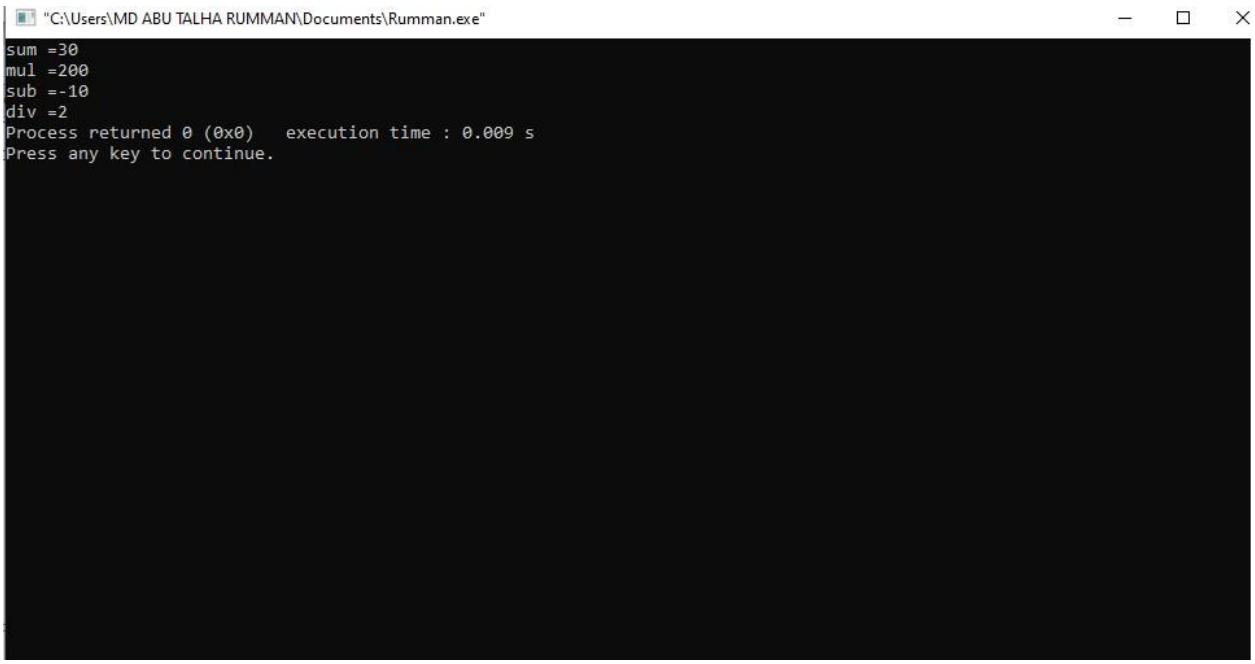
2. Write a program to calculate sum of first 50 natural numbers using recursive function.

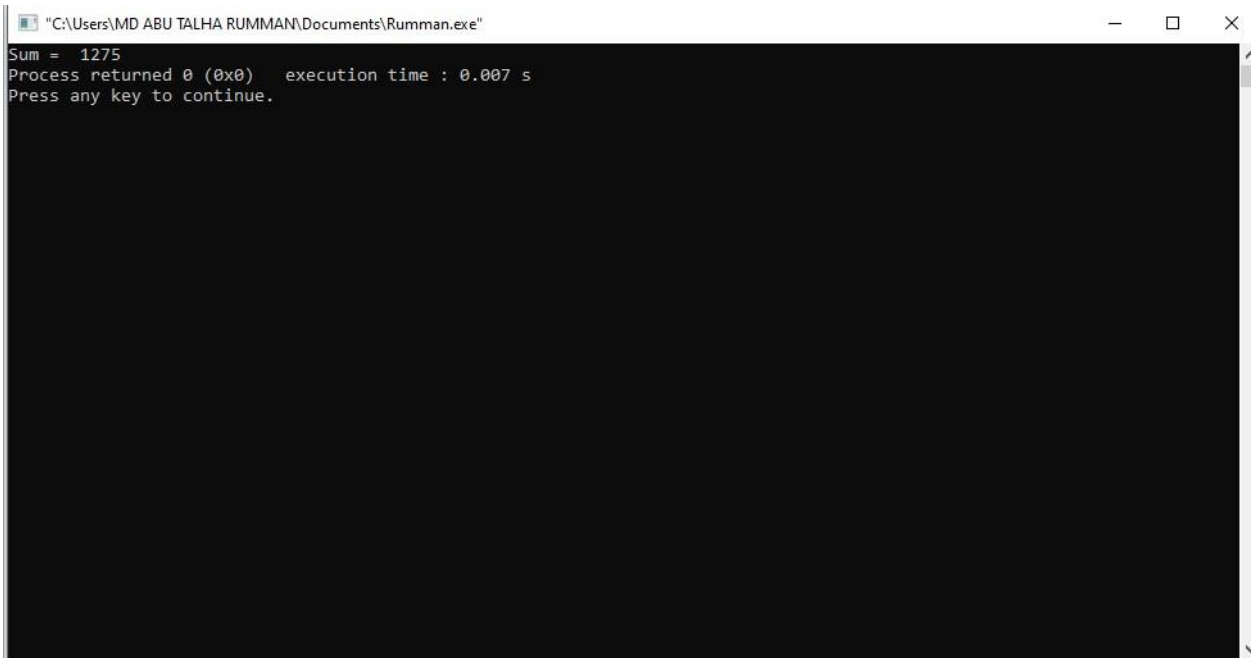
```
#include<iostream>
using namespace std;

void add(int a,int b){
int sum=a+b;
   cout<<"sum ="<<sum<<endl;
}
void sub(int a,int b){
int sub=a-b;
   cout<<"sub ="<<sub<<endl;
}
void mul(int a,int b){
int mul=a*b;
   cout<<"mul ="<<mul<<endl;
}
void division(int a,int b){
float div=(float)a/b;
cout<<"div ="<<div;
}
int main()

{
```

```
   add(10,20);
mul(10,20);
sub(10,20);
division(20,10);   return
0;
}
```



3. Write a program to calculate sum of first 50 natural numbers using recursive function.

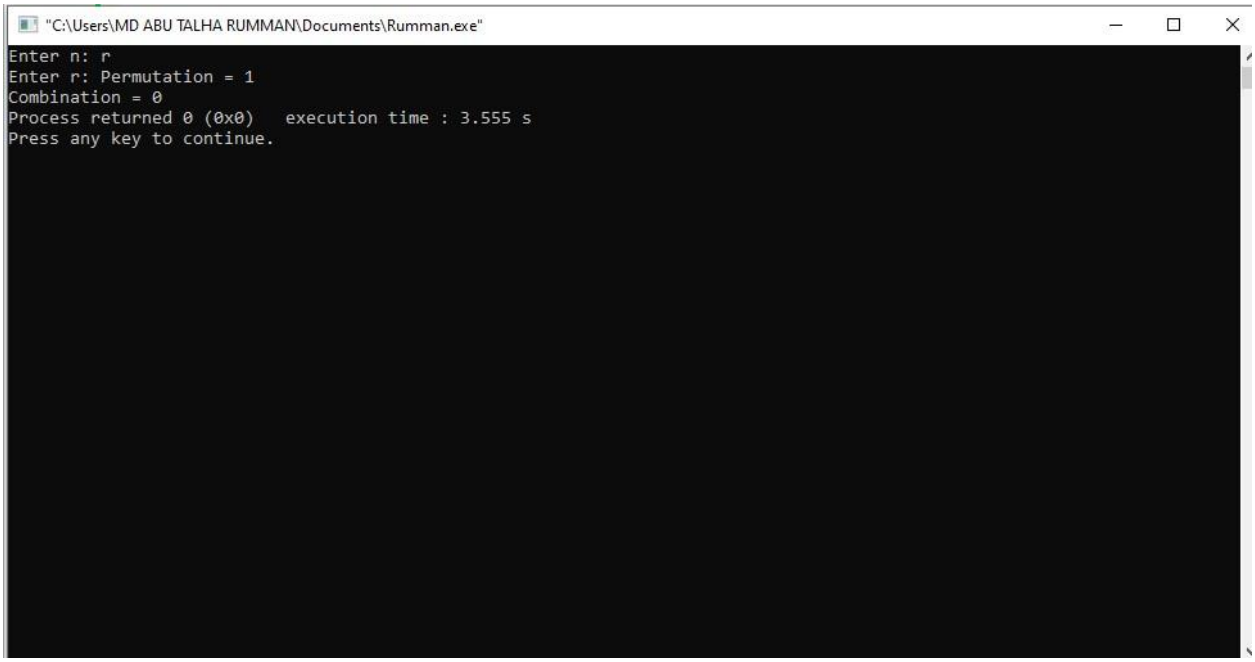
```
#include<iostream>

using namespace std;

int add(int n); int main(){     int

number=50;     cout << "Sum =  " <<

add(number); return 0;

}

 int add(int n){

   if(n != 0)

   return n + add(n - 1);

return 0;

}
```



4. Define a function named fact () to calculate factorial of a number n and the write a program that uses this function fact () to calculate combination and permutation. #include<stdio.h> long permutation(int n, int r); long combination(int n, int r); long factorial(int num);

```
int main(void){
   int n, r;

   printf("Enter n: ");
scanf("%d", &n);

   printf("Enter r: ");
scanf("%d", &r);

   printf("Permutation = %ld\n", permutation(n, r));
printf("Combination = %ld", combination(n, r));

   return 0;
}

long permutation(int n, int r)
{
   return
}
long combination(int n, int r)
{
return
}
```

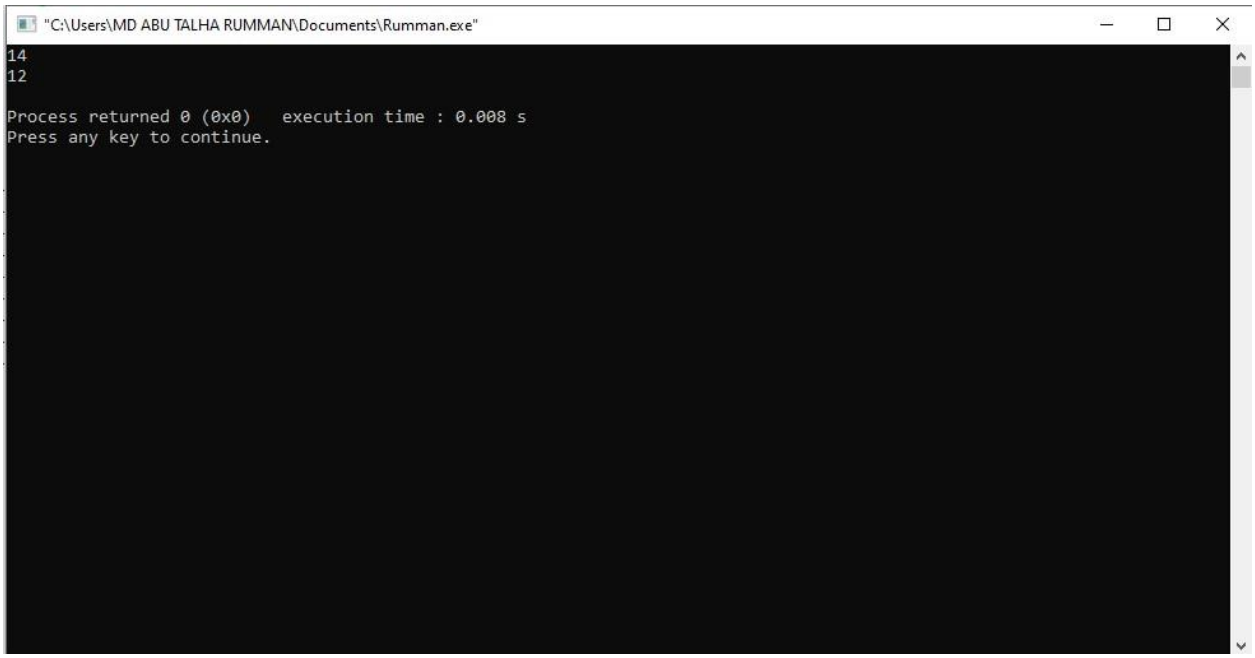
```
long factorial(int num)
{
   long long fact = 1;
while(num > 0)
   {
      fact *= num;
num--;
   }
   return fact;
}
```



5. Write a program that illustrates use of local, global and static variables.

Local:

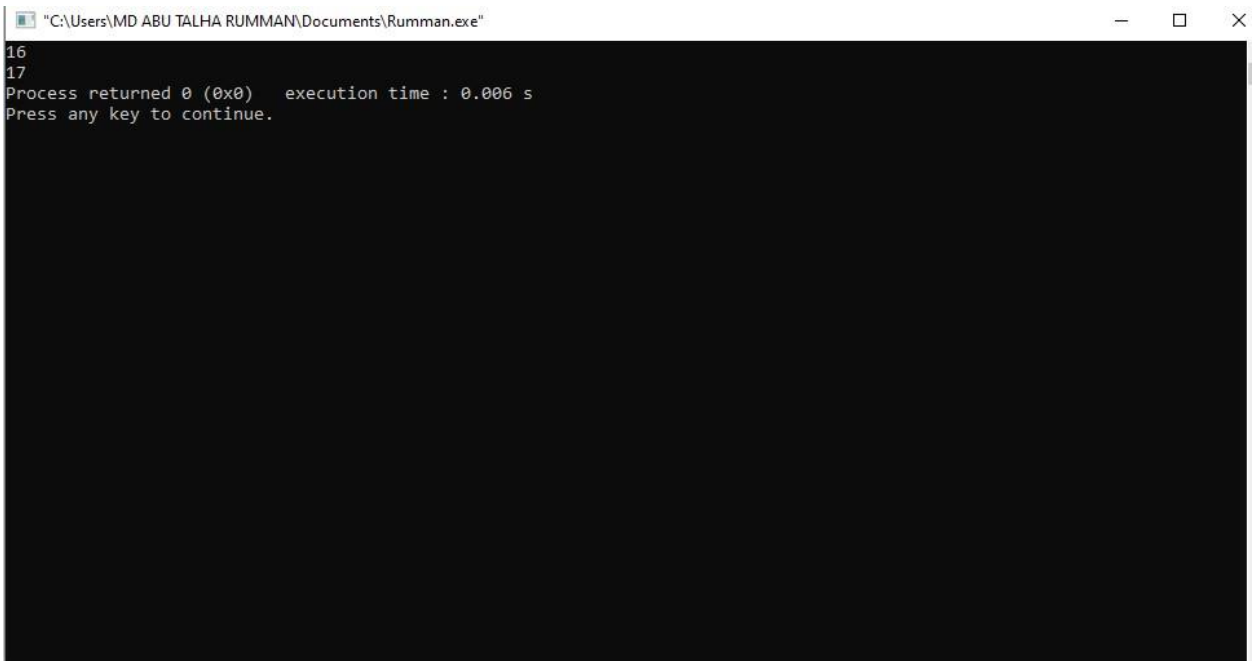
```
#include <iostream>
using namespace std;
void test1()
{
 int x = 14;
cout << x << endl;
}
void test2()
{
int x = 12;
cout << x << endl;
}
int main()
{    test1();
test2();
 return 0;
}
```



Global:

```
#include <iostream>
using namespace std;

int a = 15; void
test(); int main()
{
++a;
 cout << a <<endl;
test();
return 0;
}
void test()
{
 ++a;
```

```
cout << a;

}
```



Static:

```
#include <iostream>

using namespace std;

void test()

{

   static int variable = 0;

   ++variable;

   cout << variable << endl;
```

```
}
int main()
{
   test ();
 return 0;
}
```