Ahram Canadian University

Fundamental of programming 1

Dr. Marian Wagdy

Lecture 8

Revision

Print minimum number

```
#include <iostream>
using namespace std;
void printMin(int arr[5]);
int main()
{
   int ar[5] = { 30, 10, 20, 40, 50 };
    printMin(ar);         // passing array to function
}
void printMin(int arr[5])
{
    int min = arr[0];
    for (int i = 0; i < 5; i++) {
        if (min > arr[i]) {
            min = arr[i];
        }   }
    cout << "Minimum element is: " << min << "\n";
}
```

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Test01.cpp - Visual Studio Code

Test01.cpp 1 | #include <iostream> Untitled-1

C: > Users > Admin > Test01.cpp > main()

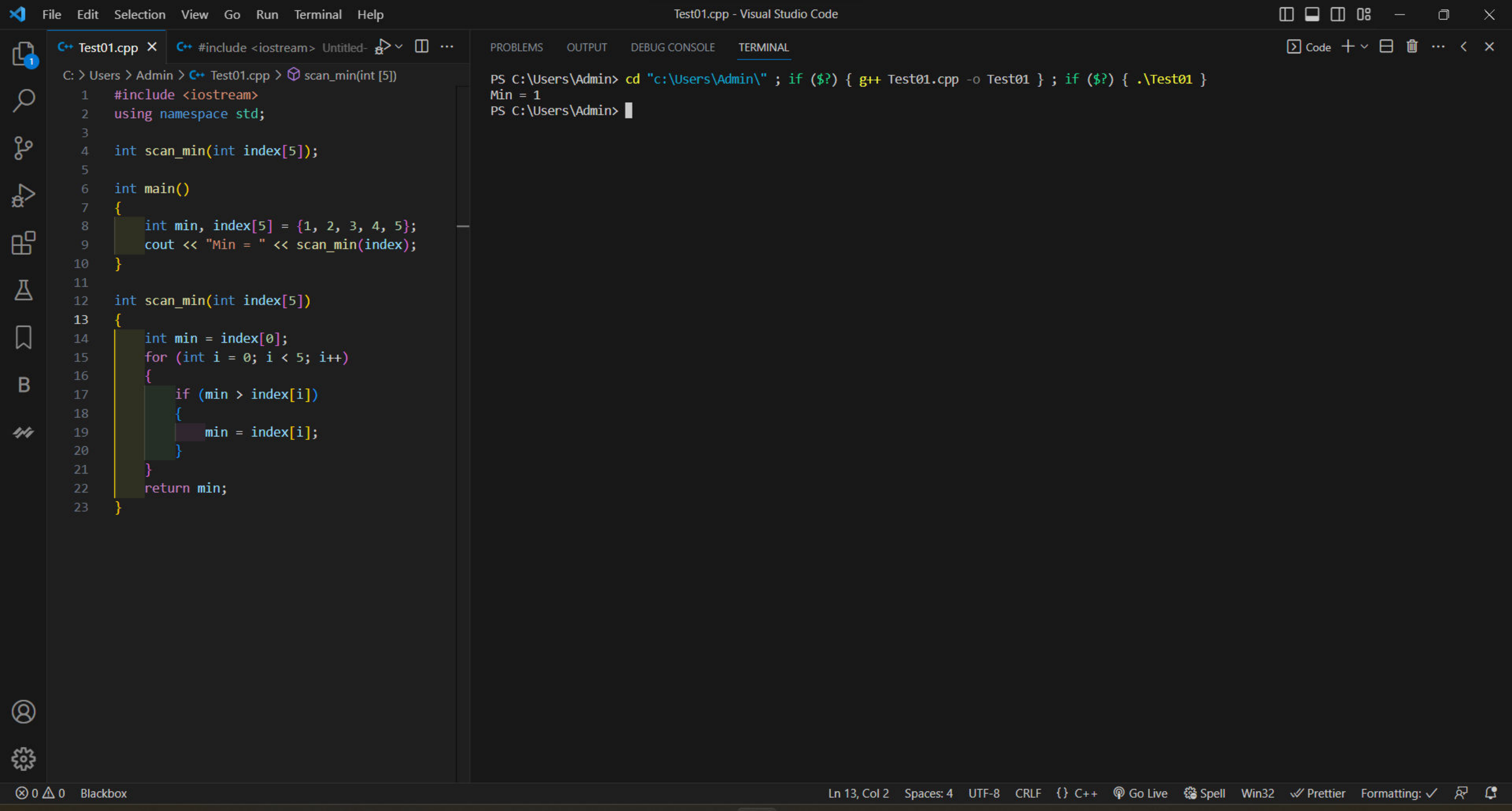
```cpp
#include <iostream>
using namespace std;

int scan_min(int min, int size, int index[])
{
    min = index[0];
    for (int i = 0; i < size; i++)
    {
        if (index[i] < min)
        {
            min = index[i];
        }
    }
    return min;
}

int main()
{
    int size, min;
    cin >> size;
    int index[size] = {};    expression must have a constant value
    for (int i = 0; i < size; i++)
    {
        cin >> index[i];
    }

    scan_min(min, size, index);
    cout << scan_min(min, size, index);

    return 0;
}
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL

Code

```
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
5
1
2
3
0
40
0
PS C:\Users\Admin>
```

⊗ 1 ⚠ 0 Blackbox | Ln 20, Col 17 | Spaces: 4 | UTF-8 | CRLF | {} C++ | Go Live | Spell | Win32 | Prettier | Formatting: ✓


File Edit Selection View Go Run Terminal Help
Test01.cpp - Visual Studio Code
Test01.cpp
#include <iostream> Untitled-
C: > Users > Admin > Test01.cpp > scan_min(int [5])
#include <iostream>
using namespace std;
int scan_min(int index[5]);
int main()
{
int min, index[5] = {1, 2, 3, 4, 5};
cout << "Min = " << scan_min(index);
}
int scan_min(int index[5])
{
int min = index[0];
for (int i = 0; i < 5; i++)
{
if (min > index[i])
{
min = index[i];
}
}
return min;
}
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
Code
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
Min = 1
PS C:\Users\Admin>
0 0 Blackbox
Ln 13, Col 2 Spaces: 4 UTF-8 CRLF C++ Go Live Spell Win32 Prettier Formatting:

calculates the area of the circle

```
#include<iostream>
using namespace std;
float circleArea(float radius)
{
   return 3.14*radius*radius;
}
int main()
{
float r;
cout << "Please, insert the value of the center:";
cin>>r;
cout<<"The area of the circle is "<< circleArea(r)<<endl;
return 0;
}
```

cube of number

```
#include <iostream>
using namespace std;
int main() {
 int x, r;
cout<<"please enter number:  ";
 cin>>x;  //  store input from user to array
 for (int i = 1; i <= x; ++i) {
    r=i*i*i;
 cout<<r<<"-";
 }
 return 0;}
```

File Edit Selection View Go Run Terminal Help

Test01.cpp - Visual Studio Code

Test01.cpp | #include <iostream> Untitled-1

C: > Users > Admin > Test01.cpp > cub(int)

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

int cub(int num)
{
    int cal = num * num * num;
    return cal;
}

int main()
{
    int num;
    cin >> num;
    cout << "Cube of number = " << cub(num);

    return 0;
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Code

```
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
3
Cube of number = 27
PS C:\Users\Admin>
```

⊗ 0 ⚠ 0 Blackbox

Ln 7, Col 16 Spaces: 4 UTF-8 CRLF {} C++ Go Live Spell Win32 Prettier Formatting: ✓

File Edit Selection View Go Run Terminal Help

Test01.cpp - Visual Studio Code

Test01.cpp

#include <iostream> Untitled-1

C: > Users > Admin > Test01.cpp > cub(int)

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

void cub(int num)
{
    int cub = 0;
    // !! i = 1
    for (int i = 1; i <= num; i++)
    {
        cub = i * i * i;
        cout << cub << " ";
    }
}

int main()
{
    int num;
    cin >> num;
    cub(num);
    return 0;
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Code

```
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
3
1 8 27
PS C:\Users\Admin>
```

⊗ 0 ⚠ 0 Blackbox

Ln 7, Col 16 Spaces: 4 UTF-8 CRLF {} C++ Go Live Spell Win32 Prettier Formatting: ✓

Sum and product of array

```
#include<iostream>
using namespace std;
int main (){
   int arr[10], n, i, sum = 0, pro = 1;
   cout << "Enter the size of the array : ";
   cin >> n;
   cout << "\nEnter the elements of the array : ";
   for (i = 0; i < n; i++)
   cin >> arr[i];
   for (i = 0; i < n; i++)  {
      sum += arr[i];
      pro *= arr[i];  }
   cout << "\nSum of array elements : " << sum;
   cout << "\nProduct of array elements : " << pro;
   return 0;}
```

```
Enter the size of the array : 5
Enter the elements of the array : 1 2 3 4 5
Sum of array elements : 15
Product of array elements : 120
```

File Edit Selection View Go Run Terminal Help

Test01.cpp - Visual Studio Code

Test01.cpp 1 | #include <iostream> Untitled-1

C: > Users > Admin > Test01.cpp > indexfun(int, int [])

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

void indexfun(int size, int index[])
{
    int sum = 0, product = 1;

    for (int i = 0; i < size; i++)
    {
        sum += index[i];
        product *= index[i];
    }
    cout << "Sum = " << sum << endl;
    cout << "Product = " << product << endl;
}

int main()
{
    int size;
    cin >> size;
    int index[size] = {};    expression must have a constant value
    for (int i = 0; i < size; i++)
    {
        cin >> index[i];
    }
    indexfun(size, index);
    return 0;
}
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL

Code

```
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
5
1
2
3
4
6
Sum = 16
Product = 144
PS C:\Users\Admin>
```

⊗ 1 ⚠ 0 Blackbox Ln 13, Col 24 Spaces: 4 UTF-8 CRLF {} C++ Go Live Spell Win32 Prettier Formatting: ✓

Digit summation

```
#include <iostream>
using namespace std;
int main()  {
int n,sum=0,m;
cout<<"Enter a number: ";
cin>>n;
while(n>0)    {
m=n%10;    //get first number      Ex.123 % 10 = 3
sum=sum+m;
n=n/10;    }
cout<<"Sum is= "<<sum<<endl;
return 0;  }
```

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Test01.cpp - Visual Studio Code

Test01.cpp

#include <iostream> Untitled-1

C: > Users > Admin > Test01.cpp > main()

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

int main()
{
    int num;
    cout << "Enter a number: ";
    cin >> num;
    int sum = 0;
    while (num > 0)
    {
        sum += num % 10;
        num = num / 10;
    }
    cout << "Sum = " << sum;
    return 0;
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Code

```
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
Enter a number: 123
Sum = 6
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
Enter a number: 12345
Sum = 15
PS C:\Users\Admin>
```

⊗ 0 ⚠ 0 Blackbox

Ln 9, Col 17 Spaces: 4 UTF-8 CRLF {} C++ Go Live Spell Win32 Prettier Formatting: ✓

Digit summation function

```
#include <iostream>
using namespace std;
int sumDigit(int n){
int sum=0, m;
while(n>0)    {
m=n%10;    //get first number      Ex.123 % 10 = 3
sum=sum+m;
n=n/10;    }
return sum;}
int main()  {
int n;
cout<<"Enter a number: ";
cin>>n;
int sum=sumDigit(n);
cout<<"Sum is= "<<sum<<endl;
return 0;  }
```

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Test01.cpp - Visual Studio Code

Test01.cpp

#include <iostream> Untitled-1

C: > Users > Admin > Test01.cpp > sum(int)

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

int sum(int num)
{
    int sum = 0;
    while (num > 0)
    {
        sum += num % 10;
        num = num / 10;
    }
    return sum;
}

int main()
{
    int num;
    cout << "Enter a number: ";
    cin >> num;
    cout << "Sum = " << sum(num);
    return 0;
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Code

```
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
Enter a number: 10
Sum = 9
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
Enter a number: 10
Sum = 1
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
Enter a number: 123
Sum = 6
PS C:\Users\Admin>
```

⊗ 0 ⚠ 0 Blackbox

Ln 13, Col 2 Spaces: 4 UTF-8 CRLF {} C++ Go Live Spell Win32 Prettier Formatting: ✓

Prim number

```
#include <iostream>
using namespace std;
int main()
{
  int n, i,  flag=0;
  cout << "Enter the Number to check Prime: ";
  cin >> n;
  for(i = 2; i < n; i++)   {
     if(n % i == 0)      {
        cout<<"Number is not Prime."<<endl;
        flag=1;
        break;     }   }
  if (flag==0) {
     cout << "Number is Prime."<<endl;  }
  return 0;  }
```

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Test01.cpp - Visual Studio Code

Test01.cpp

#include <iostream> Untitled-1

C: > Users > Admin > Test01.cpp > main()

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

int main()
{
    int num, flag = 0;
    cin >> num;
    if (num == 0 || num == 1)
    {
        cout << "not P";
    }
    else
    {
        for (int i = 2; i < num; i++)
        {
            if (num % i == 0)
            {
                flag++;
                break;
            }
        }
        if (flag == 0)
        {
            cout << "P";
        }
        else
        {
            cout << "not P";
        }
    }

    return 0;
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Code

```
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
5
P
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
3
P
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
1
not P
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
2
P
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
0
not P
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
10
not P
PS C:\Users\Admin>
```

⊗ 0 ⚠ 0 Blackbox Ln 19, Col 23 Spaces: 4 UTF-8 CRLF {} C++ Go Live Spell Win32 Prettier Formatting: ✓

Prim number function

```
#include <iostream>  using namespace std;
int primChek(int num){
    int flag=0;    int i;
    for(i = 2; i < num; i++)   {
      if(num % i == 0)      {
          flag=1;
          break;     }  }
      return flag;}
int main()  {
  int n;
  cout << "Enter the Number to check Prime: ";
  cin >> n;
 int flag= primChek(n);
 if (flag==1)   { cout<<"Number is not Prime."<<endl;  }
 else  {cout << "Number is Prime."<<endl; };
    return 0;  }
```

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Test01.cpp - Visual Studio Code

Test01.cpp

#include <iostream> Untitled-1

C: > Users > Admin > Test01.cpp > main()

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

int main()
{
    int num, flag = 0;
    cin >> num;
    if (num == 0 || num == 1)
    {
        cout << "not P";
    }
    else
    {
        for (int i = 2; i < num; i++)
        {
            if (num % i == 0)
            {
                flag++;
                break;
            }
        }
        if (flag == 0)
        {
            cout << "P";
        }
        else
        {
            cout << "not P";
        }
    }

    return 0;
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Code

```
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
5
P
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
3
P
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
1
not P
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
2
P
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
0
not P
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
10
not P
PS C:\Users\Admin>
```

⊗ 0 ⚠ 0 Blackbox Ln 19, Col 23 Spaces: 4 UTF-8 CRLF {} C++ Go Live Spell Win32 Prettier Formatting: ✓

File Edit Selection View Go Run Terminal Help

Test01.cpp - Visual Studio Code

Test01.cpp | #include <iostream> Untitled-2 | #include

C: > Users > Admin > Test01.cpp > main()

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

int main()
{
    int x, y, flag = 0;
    cin >> x >> y;

    if (x == 0 || x == 1)
    {
        return 0;
    }
    else
    {
        for (x; x < y; x++)
        {
            for (int j = 2; x > j; j++)
            {
                if (x % j == 0)
                {
                    flag++;
                    break;
                }
            }
            if (flag == 0)
            {
                cout << x << " ";
            }
            flag = 0;
        }
    }
    return 0;
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Code

```
PS C:\Users\Admin> cd "c:\Users\Admin\" ; if ($?) { g++ Test01.cpp -o Test01 } ; if ($?) { .\Test01 }
2 10
2 3 5 7
PS C:\Users\Admin>
```

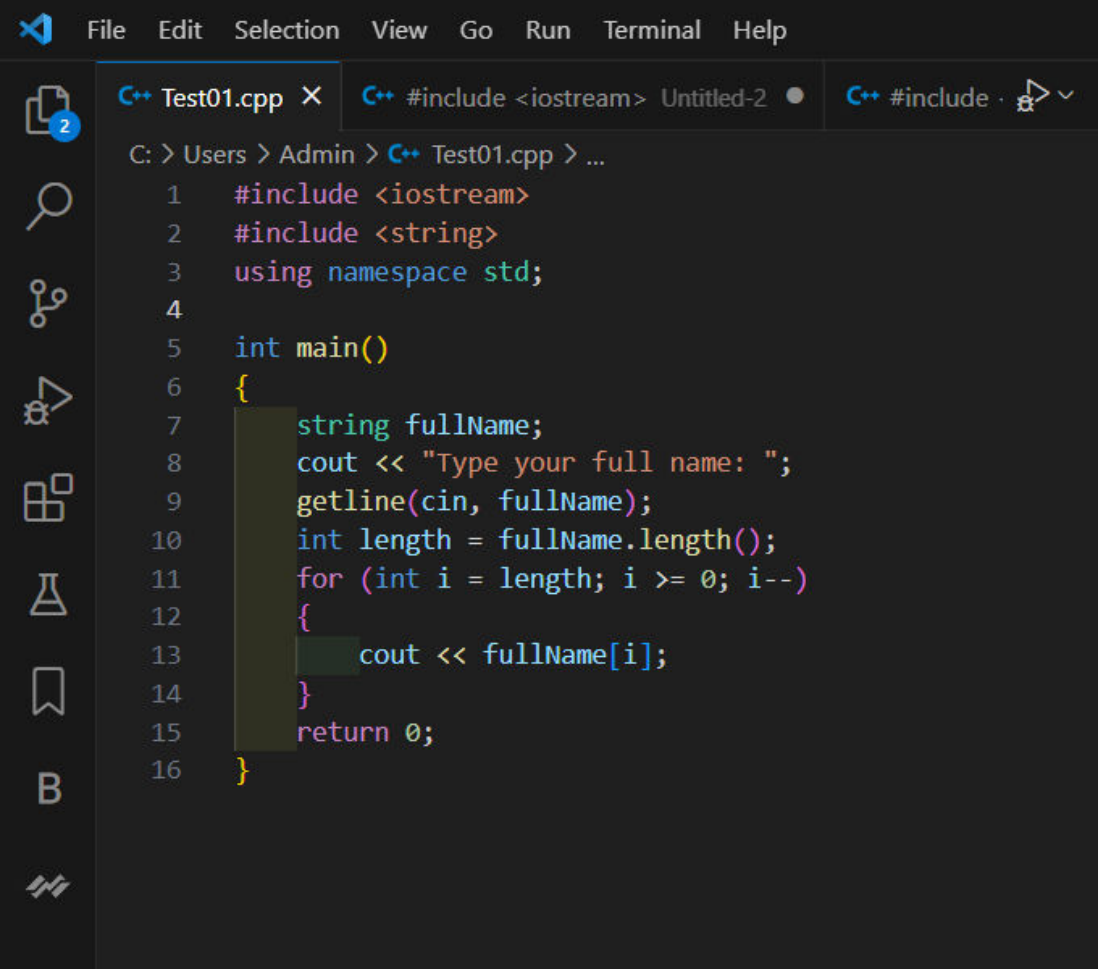
⊗ 0 ⚠ 0 Blackbox

Ln 9, Col 26 Spaces: 4 UTF-8 CRLF {} C++ Go Live Spell Win32 Formatting: ✓

Write a program which ask user to enter his full name then print it inversely.

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

int main() {
  string fullName;
  cout << "Type your full name: ";
  getline (cin, fullName);
  int length=fullName.length();
  for(int i = length; i >= 0; i--) {
  cout << fullName [i];
}
  return 0;
}
```


File Edit Selection View Go Run Terminal Help
Test01.cpp
#include <iostream> Untitled-2
#include
C: > Users > Admin > Test01.cpp > ...
#include <iostream>
#include <string>
using namespace std;
int main()
{
string fullName;
cout << "Type your full name: ";
getline(cin, fullName);
int length = fullName.length();
for (int i = length; i >= 0; i--)
{
cout << fullName[i];
}
return 0;
}

```
#include <iostream>
#include <string>
using namespace std;
int main () {
  string x = "10";
   int y = 20;
  string z = x + y;
  cout << z;
  return 0; }
```

Output: error

```
#include <iostream>
using namespace std;
int main() {
for (int i = 10; i > 0; i = i - 2) {
cout << i << "-"; }
return 0; }
```

Output: 10-8-6-4-2

```
#include <iostream>
using namespace std;
int main() {
int x = 10;
int &y = x;
    cout << x ;
    cout << y ;
return 0; }
```

Output: 1010

```
#include <iostream>
using namespace std;
int main() {
for (int i = 2; i < 6; i++) {
if (i == 4)  {  continue;  }
cout << i ;  }
return 0;  }
```

Output: 235

```
#include <iostream>
#include <string>
using namespace std;
int main() {
int x = 3;
string txt="car"
cout << (txt.length() == x);
return 0; }
```

Output: 1

Write a program which ask user to ente

print it inversely.

```
#include <iostream>
#include <string>
using namespace std;
int main() {
  string fullName;
  cout << "Type your full name: ";
  getline (cin, fullName);
  int length=fullName.length();
  for(int i = length; i >= 0; i--) {
  cout << fullName [i];
}

return 0;
}
```

```
#include <string>
using namespace std;
string day = “Friday”;
switch (day) {
case “friday”:
   cout << "Today is Friday";
   break;
case "sunday":
   cout << "Today is Sunday";
   break;}
} return 0;}
```

Output: no output

```
#include <iostream>
using namespace std;
int main() {
    int i = 0;
    do { cout << i ; i++; }
    while (i > 5);
    return 0; }
```

Output: 0

```
#include <iostream>
using namespace std;
int main() {
    int x=0;
    do { x++; }
    while(x > 0);
    return 0; }
```

Output: infinite loop

```
#include <iostream>
#include <string>
using namespace std;
int main() {
    string myString = "Car";
    myString[2] = 't';
    cout << myString;
    return 0; }
```

Output: cat

```
#include <iostream>
using namespace std;
int main() {
int time = 22;
if (time < 10) {
cout << "Good morning.";
} else if (time < 20) {
cout << "Good day.";
} else {
cout << "Good evening."; }
return 0; }
```

Output: *Good evening*