

Answer on Question#40009- Programming, C++

1. How to write a program that puts the integer from 1 to N into each circle separately, in such a way that the sum of the numbers in any two adjacent circle is a prime number??

input:

the input to the program is a positive, non-zero even integer N. Assume that $0 < N \leq 20$.

Output:

the out put of the program must be the sequence of numbers in a ring, starting from circle marked with the value 1, and proceeding in a clockwise direction.

>>>

sample input and output:

if the value for N is 6

the produce sequence can be: 1 4 3 2 5 6

if the value for N is 8

the produced sequence is: 1 2 3 8 5 6 7 4

Solution.

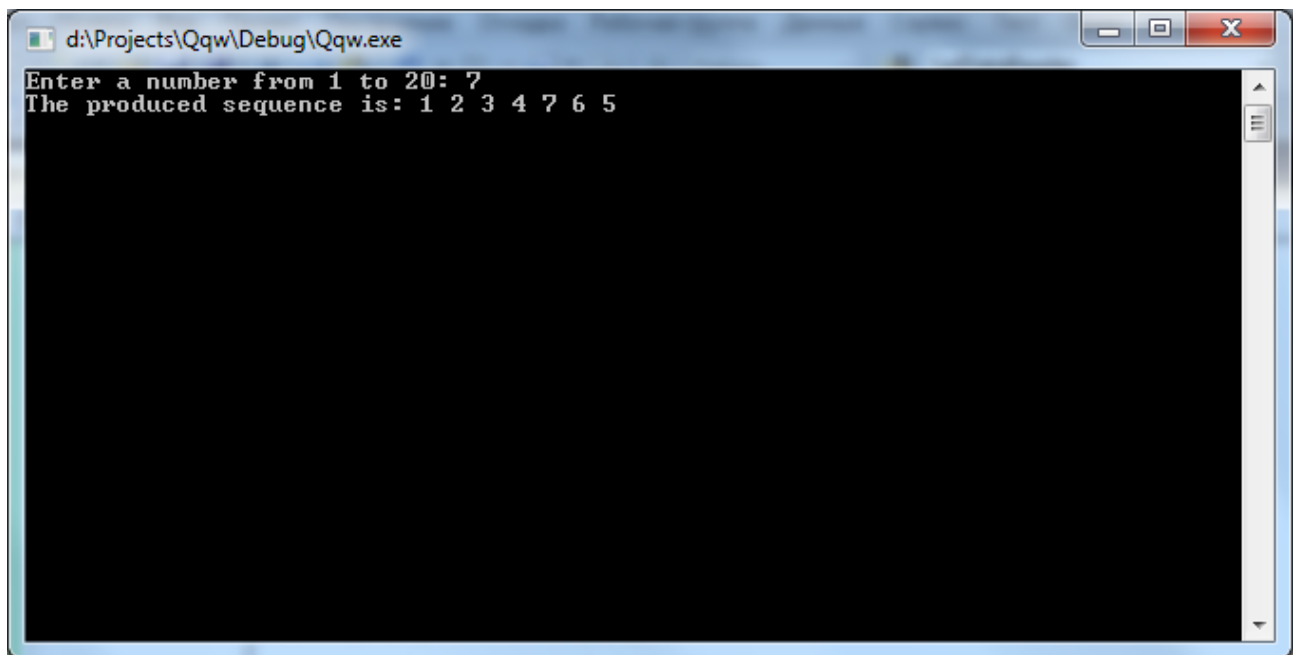
```
#include <iostream>
#include <vector>

using namespace std;
bool is_simple(int num);
int main(int argc, char* argv[])
{
    int num=0,buf=0;
    vector<int> stack;
    cout<<"Enter a number from 1 to 20: "; cin>>num;

    if(num>=1 && num<=20)
    {
        cout<<"The produced sequence is: ";
        for(int i=1; i<=num; i++)
        {
            stack.push_back(i);
        }

        for(int i=1; i<=stack.size(); i++)
        {
            if(is_simple(stack[i-1]+buf))
            {
                cout<<stack[i-1]<<" ";buf=stack[i-1];
                for(int j=i; j<stack.size(); j++)
                {
                    stack[j-1]=stack[j];
                }
                stack.pop_back();
                i=0;
            }
        }
    }
    else{cout<<endl<<"You have entered number does not match the range!";}
```

```
        cin.get(); cin.get();  
        return 0;  
    }  
  
    bool is_simple(int num)  
    {  
        if(num==1)  
        {  
            return true;  
        }  
  
        for(long int i = 2; i < num; i++)  
        {  
            if(num % i == 0)  
            {  
                return false;  
            }  
        }  
  
        return true;  
    }  
}
```



```
d:\Projects\Qqw\Debug\Qqw.exe  
Enter a number from 1 to 20: ?  
The produced sequence is: 1 2 3 4 7 6 5
```