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//Answer on Question#38124 - Porgramming - C++
#include <iostream>
#include <stack>

using namespace std;

bool isPrime(int n);

int main()
{
    int last =2, num, tmp;
    cout<<"Enter number : ";
    cin>>num;
    stack<int> pFactors;
    if (isPrime(num))
    {
        cout<<"Number is prime"<<endl;
    }
    else
    {
        tmp = num;
        while(tmp >1)
        {
            for (int i = last; i <= tmp; i++)
            {
                if ( isPrime(i) && (tmp % i == 0))
                {
                    last = i;
                    tmp /= i;
                    pFactors.push(i);
                    break;
                }
            }
        }
        cout << num<< " = ";
        while(!pFactors.empty())
        {
            cout<<pFactors.top();
            pFactors.pop();
            if(!pFactors.empty())
                cout<<"*";
        }
        cout<<endl;
    }
    cin.ignore();
    cin.get();//wait fo "Enter"
    return 0;
}

bool isPrime(int n)
{
    if( n == 2)
        return true;
    else if( n % 2 == 0)
        return false;
    for (int i = 3; i < n; i++)
    {
        if(n % i ==0)
            return false;
    }
}

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    return true;  
}
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