#include <iostream>  
#include "vector"  
using namespace std;  
  
int main() {  
 int answer;  
 int factors[1000];  
 cout << "Enter a positive integer: " << endl;  
 cin >> answer;  
 if (answer < 1) {  
 cout << answer << " is a not positive integer";  
 } else {  
 if (answer == 1) {  
 cout << answer << " is neither prime nor composite.";  
 cout << "It has only one factor. The factor is itself";  
 } else {  
 if (answer == 2) {  
 cout << answer << " is the only even prime number.";  
 cout << "it has only two factors. One and it self.";  
 } else {  
 int half = answer / 2;  
 int i;  
 int count = 1;  
 count ++;  
 for (i = 1; i < half; i++) {  
 if (answer % i == 0) {  
 count++;  
 factors[count] = i;  
 }  
 }  
 factors[count] = i;  
 if (count > 2) {  
 cout << answer << " is an odd and composite number"<< endl;  
 cout << answer << " has " << count << " factors." << endl;  
  
 } else {  
 cout << answer << " is odd and prime number.";  
 }  
 }  
 }  
 }  
 return 0;  
}

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