```cpp
1   /* Euler's totient function counts the positive integers up
2   to a given integer n that are relatively prime to n */
3
4   //Euler Totient Product Formula
5   #include<iostream>
6   #define max 1000001
7   #define ll long long int
8   using namespace std;
9
10  ll totient[max];
11  void phi(void);
12
13
14  int main()
15  {
16      ll x;
17      phi();
18      cin >> x;
19      cout << totient[x] <<"\n";
20      return 0;
21  }
22
23  void phi(void)
24  {
25      for(ll i=1; i < max; i++)
26          totient[i] = i;
27      for(ll i=2; i<max; i++)
28      {
29          if(totient[i]==i)
30              for(ll j=i; j<max; j+=i)
31              {
32                  totient[j] -= totient[j]/i;
33              }
34      }
35  }
```