Shri Vile Parle Kelavani Mandal's

INSTITUTE OF TECHNOLOGY

DHULE (M.S.)

DEPARMENT OF COMPUTER ENGINEERING

Subject : Competitive Programming Lab

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Class : TY. Comp. Engg. **Batch : T2** **Division: T**

Expt. No. :11 **Date : 24/03/2025**

Title : Reverse and Add Problem

Remark

Signature

Language: C++

```
//  Reverse and Add Problem by Meraj 32 T2
#include <iostream>
using namespace std;

// Helper function to reverse the digits of n
unsigned long long reverseNumber(unsigned long long n) {
    unsigned long long rev = 0;
    while (n > 0) {
        rev = rev * 10 + (n % 10);
        n /= 10;
    }
    return rev;
}

// Helper function to check if n is a palindrome
bool isPalindrome(unsigned long long n) {
    return n == reverseNumber(n);
}

int main() {
    unsigned int N;
    cout << "Input:\n";
    cin >> N;
```

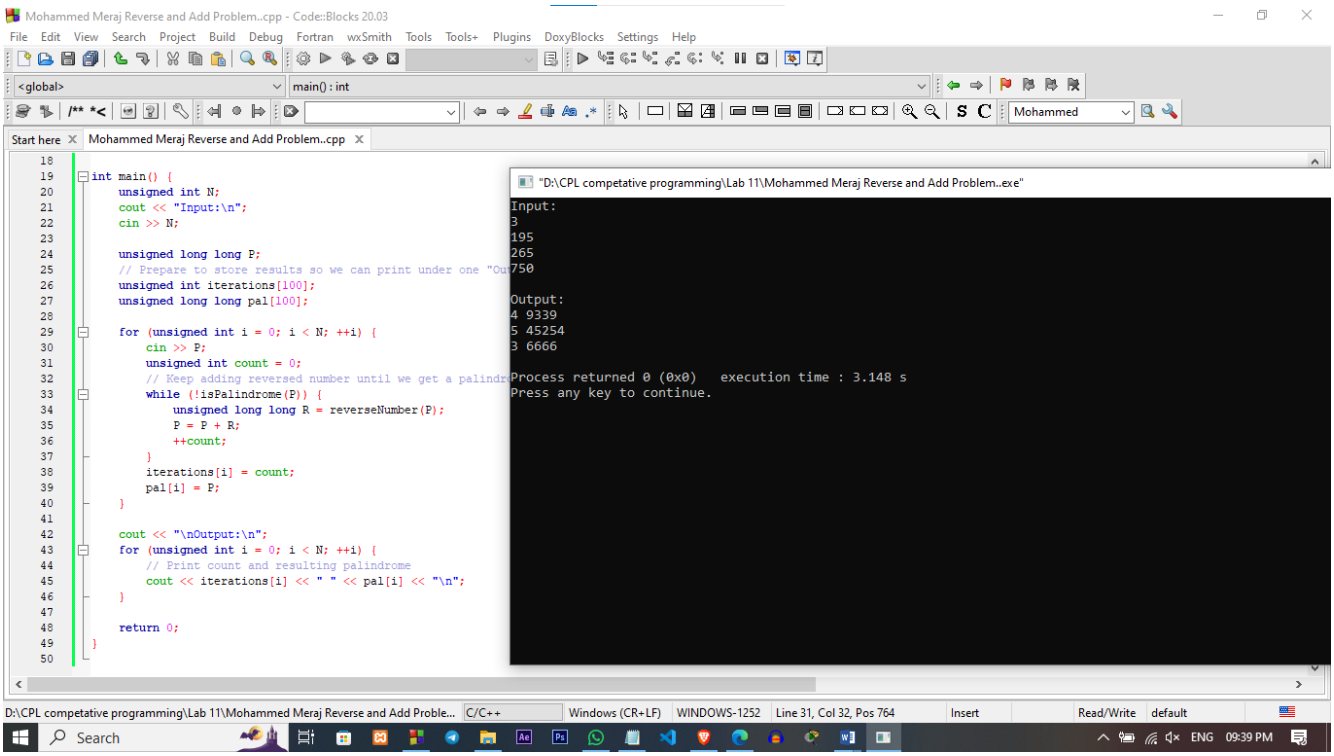
```
    unsigned long long P;
    // Prepare to store results so we can print under one "Output:" label
    unsigned int iterations[100];
    unsigned long long pal[100];

    for (unsigned int i = 0; i < N; ++i) {
        cin >> P;
        unsigned int count = 0;
        // Keep adding reversed number until we get a palindrome
        while (!isPalindrome(P)) {
            unsigned long long R = reverseNumber(P);
            P = P + R;
            ++count;
        }
        iterations[i] = count;
        pal[i] = P;
    }

    cout << "\nOutput:\n";
    for (unsigned int i = 0; i < N; ++i) {
        // Print count and resulting palindrome
        cout << iterations[i] << " " << pal[i] << "\n";
    }

    return 0;
}
```

Output :


Mohammed Meraj Reverse and Add Problem..cpp - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Start here
Mohammed Meraj Reverse and Add Problem..cpp
int main() {
unsigned int N;
cout << "Input:\n";
cin >> N;
unsigned long long P;
unsigned int iterations[100];
unsigned long long pal[100];
for (unsigned int i = 0; i < N; ++i) {
cin >> P;
unsigned int count = 0;
while (!isPalindrome(P)) {
unsigned long long R = reverseNumber(P);
P = P + R;
++count;
}
iterations[i] = count;
pal[i] = P;
}
cout << "\nOutput:\n";
for (unsigned int i = 0; i < N; ++i) {
cout << iterations[i] << " " << pal[i] << "\n";
}
return 0;
}
"D:\CPL competative programming\Lab 11\Mohammed Meraj Reverse and Add Problem..exe"
Input:
3
195
265
750
Output:
4 9339
5 45254
3 6666
Process returned 0 (0x0) execution time : 3.148 s
Press any key to continue.
D:\CPL competative programming\Lab 11\Mohammed Meraj Reverse and Add Proble...
C/C++
Windows (CR+LF)
WINDOWS-1252
Line 31, Col 32, Pos 764
Insert
Read/Write
default
Search
ENG
09:39 PM