VIT - Vellore

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BCSE102P_Structured and Object Oriented Programming Lab_VL2024250502365

VIT V_Structured and OOP_Lab 5_COD_Easy_Call by reference

Attempt : 1
Total Mark : 20
Marks Obtained : 20

Section 1 : Coding

1. Problem statement

Mandy wants to calculate the factorial of a number and the sum of its digits. Help her with a program for the same using a call-by-reference function.

Write a program that takes an integer as input and computes both the factorial and the sum of its digits.

Answer

```
// You are using GCC
#include<iostream>
using namespace std;
```

```cpp
void factorial_sum(int x, int &fact, int &sum){
    for(int i = 1; i <= x; i++){
        fact *= i;
    }
    int y = fact;
    while (y > 0){
        int dig = y%10;
        y /= 10;
        sum += dig;
    }
}
int main(){
    int N;
    cin >> N;
    int sum = 0;
    int fact = 1;
    factorial_sum(N, fact, sum);
    cout << "Factorial: " << fact << endl;
    cout << "Sum of digits of the Factorial: "<< sum;
    return 0;
}
```

Status : Correct   **Marks : 10/10**

2. Problem Statement

Taylor wants a program to calculate the sum of all divisors of a given integer. The program should take an integer N as input and, using call by reference, compute and display the sum of divisors.

Assist Taylor in implementing the program using a call-by-reference function.

Answer

```cpp
// You are using GCC
#include<iostream>
using namespace std;

void sum_of_devisors(int N, int &sum){
    for(int i = 1; i <= N; i++){
```

```cpp
        if(N%i==0){
            sum += i;
        }
    }
}
int main(){
    int N;
    cin >> N;
    int sum = 0;
    sum_of_devisors(N,sum);
    cout << sum;
    return 0;
}
```

Status : Correct   **Marks : 10/10**