VIT - Vellore

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BCSE102P_Structured and Object Oriented Programming Lab_VL2024250502365

VIT V_Structured and OOP_Lab 5_COD_Medium_Functions with default Arguments

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1.   Problem Statement

Ram is fascinated with perfect numbers and wants to create a program to identify whether a given integer is perfect or not. A perfect number is a positive integer that is equal to the sum of its proper divisors (excluding itself).

For example, 6 is a perfect number because its proper divisors are 1, 2, and 3, and 1 + 2 + 3 = 6.

15 is not a perfect number because its proper divisors are 1, 3, 5, and 1 + 3 + 5 = 9.

Function Signature

bool isPerfect(int n, int default_value = 1)

Answer

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

int sum_div(int N){
    int sum = 0;

    for (int i = 1; i < N; i++){
        if (N%i == 0){
            sum += i;
        }
    }

    return sum;
}

bool isPerfect(int N, int default_value = 1){
    if (sum_div(N) == N){
        return true;
    } else {
        return false;
    }
}

int main(){
    int N;
    cin >> N;

    if (isPerfect(N)){
        cout << N << " is a perfect number";
    } else {
        cout << N << " is not a perfect number";
    }

    return 0;
}
```

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