

## VIT - Vellore

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### BCSE102P\_Structured and Object Oriented Programming Lab\_VL2024250502365

#### VIT V\_Structured and OOP\_Lab 5\_COD\_Hard\_Inline Functions

Attempt : 1

Total Mark : 10

Marks Obtained : 10

#### Section 1 : Coding

##### 1. Problem Statement

Suppose you are given a task to write a program that checks if a given number is an Armstrong number or not. Additionally, if the number is an Armstrong number, the program should print its factors. Write a code for the same using inline functions.

Function specifications:

inline bool isArmstrong(int number) - This calculates whether the given number is an Armstrong number or not.

inline void printFactors(int number) - This prints the factors of the given number.

Note: This is a sample question that can be asked in a TCS recruitment.

**Answer**

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

```
inline bool isArmstrong(int number){
    int sum = 0;
    int num = number;
    int x = num;
    int count = 0;
    while(x > 0){
        count++;
        x/=10;
    }
    while(num > 0){
        int dig = num %10;
        num /= 10;
        sum += pow(dig,count);
    }
    if(sum == number){
        return true;
    }
    else{
        return false;
    }
};
```

```
inline void printFactors(int number){
    for(int i = 1; i <= number; i++){
        if(number%i == 0){
            cout<<i<<" ";
        }
    }
}
```

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

```
if(isArmstrong(N)){  
    cout<<N<<" is an Armstrong number."<<endl;  
    printFactors(N);  
}  
else{  
    cout<<N<<" is not an Armstrong number."  
}  
return 0;  
}
```

**Status :** Correct

**Marks :** 10/10