



[CSE 131s]

Computer Programming

TASK 1

Capstone Project

Name |

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Preview

```
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#include <iostream>  
#include <cmath>  
using namespace std;  
int main()  
{  
    // Getting Circuit Description From User  
    string str;  
    cout << " Circuit Description : ";  
    getline(cin, str);  
    // Getting Voltage Applied From User  
    float V;  
    cout << " Voltage Applied : ";  
    cin >> V;  
  
    float  
        R1 = stof(str.substr(2, 1)),  
        R2 = stof(str.substr(4, 1)),  
        R3 = stof(str.substr(6, 1)),  
        S = (R1 + R2 + R3),  
        P = pow(((1 / R1) + (1 / R2) + (1 / R3)), -1),  
        R = (str[0] == 'S') ? S : P,  
        I = (V) / (R);  
    // Giving Results to the User  
    cout << " The Total Resistance is " << R << " Ohm\n"  
        << "The Value of the Current is " << I << " Amp";  
  
    return 0;  
}
```

Source Code

```
#include <iostream>
#include <cmath>
using namespace std;
int main()
{
    // Getting Circuit Description From User
    string str;
    cout << " Circuit Description : ";
    getline(cin, str);
    // Getting Voltage Applied From User
    float V;
    cout << " Voltage Applied : ";
    cin >> V;

    float
        R1 = stof(str.substr(2, 1)),
        R2 = stof(str.substr(4, 1)),
        R3 = stof(str.substr(6, 1)),
        S = (R1 + R2 + R3),
        P = pow(((1 / R1) + (1 / R2) + (1 / R3)), -1),
        R = (str[0] == 'S') ? S : P,
        I = (V) / (R);
    // Giving Results to the User
    cout << " The Total Resistance is " << R << " Ohm\n"
        << "The Value of the Current is " << I << " Amp";

    return 0;
}
```

Test Cases

1

- Circuit Description : S 1 2 3
Voltage Applied : 3
The Total Resistance is 6 Ohm
The Value of the Current is 0.5 Amp

2

- Circuit Description : P 2 2 2
Voltage Applied : 6
The Total Resistance is 0.666667 Ohm
The Value of the Current is 9 Amp

3

- Circuit Description : S 4 2 6
Voltage Applied : 7
The Total Resistance is 12 Ohm
The Value of the Current is 0.583333 Amp

4

- Circuit Description : P 9 1 4
Voltage Applied : 9
The Total Resistance is 0.734694 Ohm
The Value of the Current is 12.25 Amp

5

- Circuit Description : S 8 3 3
Voltage Applied : 5
The Total Resistance is 14 Ohm
The Value of the Current is 0.357143 Amp