

```

    /*      Computer Progammig [CSE 131s]
    /*      Task_1
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    /*      Section: 7
    /*      Spring 2023
    /*-----*/

#include <bits/stdc++.h>
using namespace std;

//Declaring func. to caluclate R.equivalent.
float para(int x, int y, int z);
float ser(int x, int y, int z);

int main()
{
    string txt;
    cout << "Circuit description: ";
    getline(cin, txt); //Inputs the circuit description.
    int vol;
    double req;
    cout << "Voltage applied: ";
    cin >> vol; // Inputs the applied voltage
    char method = txt[0]; //checks the type of connection "S" for Series or "P" for
parallel

    float r1 = stof(txt.substr(2, 1)); //takes 1st number in txt as 1st resistance

    float r2 = stof(txt.substr(4, 1)); //takes 2nd number in txt as 2nd resistance

    float r3 = stof(txt.substr(6, 1)); //takes 3rd number in txt as 3rd resistance

    if (method == 'S')
        req = ser(r1, r2, r3);
    else if (method == 'P')
        req = para(r1, r2, r3);
    cout << "Total resistances: " << req << endl;
    cout << "Circuit current = " << vol / req << endl;
}

float para(int x, int y, int z) //Function to calculate parallel resistances
{
    return pow((pow(x, -1) + pow(y, -1) + pow(z, -1)), -1);
}
float ser(int x, int y, int z) //Function to calculate series resistances
{
    return x + y + z;
}

```

Test cases using Vscode Integrated terminal:

Microsoft Windows [Version 10.0.19045.2604]
(c) Microsoft Corporation. All rights reserved.

```
C:\Users\Ahmed\Documents\C\ASU\Task1>task1
Circuit description: S 1 2 3
Voltage applied: 3
Total resistances: 6
Circuit current = 0.5
```

```
C:\Users\Ahmed\Documents\C\ASU\Task1>task1
Circuit description: P 2 2 2
Voltage applied: 6
Total resistances: 0.666667
Circuit current = 9
```

```
C:\Users\Ahmed\Documents\C\ASU\Task1>task1
Circuit description: S 4 2 6
Voltage applied: 7
Total resistances: 12
Circuit current = 0.583333
```

```
C:\Users\Ahmed\Documents\C\ASU\Task1>task1
Circuit description: P 9 1 4
Voltage applied: 9
Total resistances: 0.734694
Circuit current = 12.25
```

```
C:\Users\Ahmed\Documents\C\ASU\Task1>task1
Circuit description: S 8 3 3
Voltage applied: 5
Total resistances: 14
Circuit current = 0.357143
```