[CSE 131s]

Computer Programming

TASK 2

Capstone Project

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Preview

```cpp
#include <iostream>
using namespace std;
int main()
{
    // Getting Circuit Description From User
    float R, P = 0, S = 0;

    string D;
    cout << " Circuit Description : ";
    getline(cin, D);

    // Getting Voltage Applied From User
    float V;
    cout << " Voltage Applied = ";
    cin >> V;

    int digit = 0;
    for (int i = 2; D[i] != 'E' ; i++)
    {
        if (D[i] == ' ')
        {
            R = stof(D.substr(i - digit, digit));
            S += R;
            P += 1 / (R);
            digit = -1;
        }
        digit++;
    }
    // Giving The Results to the user
    switch (D[0])
    {
    case 'S':
    case 's':
        cout << " Req = " << S << " ohm" << endl
             << " I = " << V / S << " Amp";
        break;
    case 'P':
    case 'p':
        cout << " Req = " << 1 / P << " ohm" << endl
             << " I = " << V * P << " Amp";
        break;
    default:
        cout << "Wrong Circuit Description";
    }
}
```

Source Code

1

```
#include <iostream>
using namespace std;
int main()
{
    // Getting Circuit Description From User
    float R, P = 0, S = 0;

    string D;
    cout << " Circuit Description : ";
    getline(cin, D);

    // Getting Voltage Applied From User
    float V;
    cout << " Voltage Applied = ";
    cin >> V;

    int digit = 0;
    for (int i = 2; D[i] != 'E'; i++)
    {
        if (D[i] == ' ')
        {
            R = stof(D.substr(i - digit, digit));
            S += R;
            P += 1 / (R);
            digit = -1;
        }
        digit++;
    }
```

```
    // Giving The Results to the user
    switch (D[0])
    {
    case 'S':
    case 's':
        cout << " Req = " << S << " ohm" << endl
            << " I = " << V / S << " Amp";
        break;
    case 'P':
    case 'p':
        cout << " Req = " << 1 / P << " ohm" << endl
            << " I = " << V * P << " Amp";
        break;
    default:
        cout << "Wrong Circuit Description";
    }
}
```

Test Cases

1

```
Circuit Description : S 1.5 12.85 3.6 5 6.6 7 E
Voltage Applied = 3.8
Req = 36.55 ohm
I = 0.103967 Amp
```

2

```
Circuit Description : L 2.5 5.2 E
Voltage Applied = 9
Wrong Circuit Description
```

3

```
Circuit Description : P 1.4 2.26 3 E
Voltage Applied = 7
Req = 0.671097 ohm
I = 10.4307 Amp
```

4

```
Circuit Description : S 9 E
Voltage Applied = 9
Req = 9 ohm
I = 1 Amp
```

5

```
Circuit Description : Z 8.2 3.1 1.3 7.8 E
Voltage Applied = 5
Wrong Circuit Description
```

6

```
Circuit Description : P 8.2 3.1 1.3 7.8 E
Voltage Applied = 5
Req = 0.745174 ohm
I = 6.70984 Amp
```