

Resistor Network

Problem statement

Someone has come up with a compact way of representing complex networks of resistors, each having a measurable quantity called its resistance. (Don't worry, you do not have to understand what resistance is!)

You are given such a representation of a network of resistors & are required to calculate the equivalent resistance of the network.

The calculation of resistance is based on the following simple rules.

The simplest network consists of a single resistor.

For example, a single resistor of 3 Ohms is represented by the array ["3"]

Series : n resistors of value r1,r2 to ... rn in series are represented as ["S", "r1", "r2",..., 'rn']. The resistance of this is given by $(r1 + r2 + \dots + rn)$

Parallel: 2 resistors of value r1 to rn in parallel are represented as ["P", "r1", "r2",..., 'rn']

$1/r_t = 1/r1 + 1/r2 + 1/r3 + \dots + 1/rn$

Write a spark code to compute net resistance of the network. By reading a folder path Which have multiple json file in it.

Sample json file

<https://jsonblob.com/dc68fc3f-ca21-11e9-8c31-5d4117c2f2ef>

EXPECTED SOLUTION

Your solution should be to calculate resistance from all json file in a given folder:

Sample json

<https://jsonblob.com/dc68fc3f-ca21-11e9-8c31-5d4117c2f2ef>

Output:

```
{
  "Network1":2
  "Network2":8,
  "Network3":1,
  "Network6":9,
  "Network7":1.592,
}
```

POINTS TO REMEMBER

You must -

- Create a private repo in gitlab
- Before starting the code commit a read me, to capture start time
- make use of git(version-control) in developing the solution. We are also interested in seeing how your solution evolved.
- include some tests -- to guarantee that your code works as expected.
- include a README file, giving a high-level intro to your code, how to set-up, run tests, dependencies (if any), etc.
- Use only spark RDD
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- Share the gitlab project to gitlab user: febinsathar