GITHUB EXTERNSHIP

PROJECT PROPOSAL

Submitted By
NITHIN SHANMUGAM V

INTRODUCTION

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Symbl.Ai is API platform is used as tool in video conferencing, customer support, telemedicine, enterprise support and many more which can understand and process natural human conversations. Files in the format of video, voice, message, email are captured and processed to build transcript, insight, topics, and timeline.

This project proposal is a task given by Symbl.Ai for applying as Open-Source Contributor.

PROBLEM STATEMENT:

Given a String equation containing an equation of the form A * B + C = D, where A, B, C and D are positive integers that don't have leading zeros. One digit in the equation is missing and string equation has following constraints:

- Equation will have the form A * B + C = D.
- Each of A, B, C, D will be a nonempty string of 1 to 4 characters, i.e., 1 <= length of A, B, C, D <= 4.
- Each character in each of A, B, C, D will be either a digit ('0'-'9') or a question mark ('?').
- There will be exactly one question mark in equation.
- The numbers represented by A, B, C, D will not have leading zeros

OBJECTIVE:

Determine and return the correct digit. If the missing digit cannot be determined (i.e., there is no solution or there is more than one solution), return -1 instead.

ALGORITHM:

- Create a class named FixEquation
- Create method findMissingDigit() inside class FixEquation which gets string as an argument.
- Split the string using regular expression /[+,*,=,]/ and store it in an array.
- Declare two variables one for storing position in which '?' is present and another for returning result.
- Trim unwanted white spaces in all strings present in array.
- Find the position of '?'. Leave the string that has '?' and convert every string to integer.
- Find the integer value of the string that has '?' using other integers. We know that equation is of the form A * B + C = D.
- Store the value as result that we created earlier.
- Convert result to string.
- If length of result is greater than string return -1 else return the correct digit by comparing place of question mark with result string.

SOLUTION:

View in GitHub: NithinShanmugamV/Github-Externship-Assignment at Solution

```
// Write your code here

class FixEquation {
  findMissingDigit(equation) {
    let equation1 = equation.split(/[+,*,=,]/);
    let pos, result;
    for (let i in equation1) {
      equation1[i] = equation1[i].trim();
      if (equation1[i].indexOf("?") == -1) {
        equation1[i] = parseInt(equation1[i]);
      } else pos = i;
    }
    if (pos == 0) {
      result = (equation1[3] - equation1[2]) / equation1[1];
      result = result.toString();
    } else if (pos == 1) {
      result = (equation1[3] - equation1[2]) / equation1[0];
      result = result.toString();
    } else if (pos == 2) {
      result = equation1[3] - equation1[0] * equation1[1];
      result = result.toString();
    } else if (pos == 3) {
      result = equation1[2] + equation1[0] * equation1[1];
      result = result.toString();
    }
    //console.log(equation1);
    if (result.length != equation1[pos].length) return -1;
    else return result[equation1[pos].indexOf("?")];
  }
}

//code written by Nithin Shanmugam V
```

SOLUTION:

Through this proposal I like to inform you that above code will be solution for the given problem.