IMEI Validator

Instructions:-

1. Enter a 15 digit IMEI number.
2. Validator will return the number if it is valid.
3. If the IMEI number is invalid, the validator will return a digit with which you can replace the existing IMEI number's last digit to get a valid IMEI number.

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Hiring Assignment

Prepared for: Springfield Olympiads
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PROJECT SETUP

1. To run this web app we need Python installed in our system.
2. If not already installed. Use this link to download and install latest version of python https://www.python.org/downloads/.
3. Open the project folder in the terminal and run this command "source env/bin/activate" to activate environment that have all the necessary dependencies already installed.
4. From the project/backend folder run the following command in terminal "python3 manage.py runserver" to run the local server at "localhost:8000/"
5. Open "localhost:8000" in any browser.

PROJECT SYNOPSIS

Overview

International Mobile Equipment Identity or IMEI is a unique 15 digit number that precisely identifies the device with the SIM card input. The first 14 digits are defined by GSM Association organization. The last digit is generated by an algorithm named Luhn formula and it has a control character. This number is an individual number assigned to each and every phone all over the world.

My implementation of this project is based upon Django.

Rules of IMEI validity:-

1. IMEI number should contain exactly 15 digits.
2. Starting from the rightmost digit, double the value of every second digit (e.g., 7 becomes 14).
3. If doubling of a number results in a two digits number i.e greater than 9(e.g., 7 × 2 = 14), then add the digits of the product (e.g., 14: 1 + 4 = 5), to get a single digit number.
4. Now take the sum of all the digits.
5. Check if the sum is divisible by 10 i.e.(total modulo 10 is equal to 0) then the IMEI number is valid; else it is not valid.

Implementation Logic

In "views.py" file there are two functions IMEICheck() and IMEIBad() that handles all the logic for this application.

- IMEICheck() takes one argument the IMEI number and returns the sum of all the digits after doubling the alternate digits.

- If IMEICheck() modulo 10 is not zero then IMEIBad() is called to handle the case when IMEI is not valid and it returns a digit with which we can replace the last digit of the number to get a valid IMEI number.

- IMEICheckView() takes a get request and return a Json response for all of the above cases.

- When a "number" is entered in the input and submit is clicked. A get request is sent using JavaScript fetch() to localhost:8000/api/<int:number>/

- IMEICheckView() handles the get request and returns a Json response for all the cases.