Computing Basic

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Please sign your name below.

`Student Name: _____ Date: _____`

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1 The file

There is a file in Campus Virtual (`dialCodes.json`) containing dial and phone codes in JSON format for almost any country in the world.

The format of the file is very simple:

1. Starts with `[` ends with `]` and contains one line per country enclosed in `{ }`
2. Each line consists of pairs of field name and field value. Each pair is separated from the next by `,` and field name and field value are separated by `:`
3. The field names are: `name`, `dial_code` and `code`
4. Country names may contain alphabetic characters, blanks and some other printable characters as `(`, `)`, accent marks, `-` and `‘`. Dial code values consist of `+` plus some digit characters. Code values are just two uppercase letters.
5. At the end of each line, there is a newline character. There are no blanks, tab or any other character except the ones described above.

Example of a valid file would be `example.json`:

```
[{name:Israel,dial_code:+972,code:IL}
{name:Afghanistan,dial_code:+93,code:AF}
{name:Albania,dial_code:+355,code:AL}]
```

2 getContent(filename) (1p)

Write a function `getContent(filename)` that receives, as a string, the filename of file; returns a list containing one string per line in the file, as it is, except that you must get rid of begin of file and end of file characters (`[` and `]`) and newline characters.

Example: `getContent(‘example.json’)` would return (items are in different line because of space limitations).

```
['{name:Israel,dial_code:+972,code:IL}',
'{name:Afghanistan,dial_code:+93,code:AF}',
'{name:Albania,dial_code:+355,code:AL}']
```

3 getDialCode(value) (1p)

Write a function `getDialCode` that receives a line from the list returned by `getContent` as a string and returns the dial_code value, as a string.

Example: `print getDialCode('name:Albania,dial_code:+355,code:AL')` would print: `+355`

4 getCountry(value) (1p)

Write a function `getCountry` that receives a line from the list returned by `getContent` as a string and returns the name value, as a string.

Example: `print getCountry('name:Albania,dial_code:+355,code:AL')` would print: `Albania`

5 getCountries(codemin, codemax, content) (3p)

Write a function `getCountries` that receives three parameters:

`codemin`, `codemax` Two integers representing two dial_codes

`content` A list containing lines in the file as strings (as the ones returned by `getContent`).

This function returns a list of strings containing those lines in `content` whose country has a dial code in range [`codemin`, `codemax`].

Example: `getCountries(0, 100, getContent('example.json'))` would return
`['name:Afghanistan,dial_code:+93,code:AF']`

6 createFile(filename, dialmin, dialmax) (3p)

Finally, using all the previous functions (and any other you may need to implement), write a function `createFile(filename, dialmin, dialmax)` that receives three parameters. The first, `filename` is the name of a file (string); `dialmin` and `dialmax` are two dial codes (integers).

This function must get the content of the file and generate a new file containing the names and dial codes for all the countries with a dial code in the range [`dialmin`, `dialmax`].

Country name and dial_code must be separated by `:`. Each country with its dial_code must be written in a different line.

The name of the output file is the original one but the extension is `.dial_code`.

Example: `createFile('example.json', 0, 100)` would create a file named `example.dial_code` containing:

```
Afghanistan:+93
```

7 When finish...(1p)

- Write docstrings in all the functions.
- Identify the author in the first lines.
- Save your python file with name `test1A.py`.
- Upload this only file to the corresponding task in Campus Virtual.
- Return all the pages of this exam.