Laboratory work 1
Jupyter Notebook Basics

Learning the specifics of using Python language in Jupyter Notebook

Variant 5
Tokiya Hiruma
Group kh221-ibe

Jupyter Notebook Basics

Objective: Learning the specifics of using Python language in Jupyter Notebook.

1. Creating a title and calculating a variant.

```
# Laboratory work 1
### Tokiya Hiruma KH-221i6.e
<legend>Jupyter Notebook Basics</legend>
```

入力 [11]:
```
print(f'Variant: {ord("T") % 10 + 1}')
```

```
Variant: 5
```

2. Using the Markdown language and HTML tags for Ghana, output information about the country's area, its population, government, culture and food, and so on.

```
## Task 1
<img src="https://upload.wikimedia.org/wikipedia/commons/thumb/1/19/Flag_of_Ghana.svg/2560px-Flag_of_Ghana.svg.png" alt="flag" width="200px">
<legend><strong style= 'background:bisque'>Ghana</strong>, officially the <strong>Republic of Ghana</strong>, is a country in West Africa. It abuts the Gulf of Guinea and the Atlantic Ocean to the south, sharing borders with Ivory Coast in the west, Burkina Faso in the north, and Togo in the east.</legend>


Capital: Accra </span> <br>
Area: 238,535 km<sup>2</sup> <br>
Population: 32,103,042 <br>
Goverment: Unitary presidential republic <br>


<table style='border: 1px solid CornflowerBlue'>
<tr><th colspan="2">Ethnic groups</th></tr>
<tr><th>Percentage</th><th>Group</th></tr>
<tr><td>45.7%</td><td>Akans</td><tr>
<tr><td>18.5%</td><td>Mole-Dagbon</td><tr>
<tr><td>12.8%</td><td>Ewe</td><tr>
<tr><td>7.1%</td><td>Ga-Adangbe</td><tr>
<tr><td>6.4%</td><td>Gurma</td><tr>
<tr><td>3.2%</td><td>Guan</td><tr>
<tr><td>2.7%</td><td>Gurunsi</td><tr>
<tr><td>2.0%</td><td>Mande</td><tr>
<tr><td>1.6%</td><td>Other </td><tr>
</table>
```

```
### Culture
<ul style="background-color:powderblue">
    <li>
        <em>Food and drinks</em>
        <ol>
            <li>Banku</li>
            <li>Kenkey</li>
            <li>Fufu</li>
            <li>Jollof</li>
        </ol>
    </li>
    <li>
        <em>Literature</em>
        <ol>
            <li>J. E. Casely Hayford</li>
            <li>Ayi Kwei Armah</li>
            <li>Nii Ayikwei Parkes</li>
        </ol>
    </li>
    <li>
        <em>Clothes</em>
        <ol>
            <li>Adinkra symbols</li>
            <li>Kente cloth</li>
        </ol>
    </li>
</ul>


<em><a http="https://en.wikipedia.org/wiki/Ghana">More information about Ghana</a></em>
```

3. Create a function to implement the algorithm of counting k-th prime number. For the created function implement 2-3 test cases in the cells of the Jupyter notebook.

Task 2

入力 [2]:
```
def task_5():
    try:
        n = int(input())
    except ValueError:
        return 'Error. There is a non-numeric value in the input.'

    if n > 0:
        prime_list = [2]
        next_prime = 3

        while len(prime_list) < n:
            for p in prime_list:
                if next_prime % p == 0:
                    break
            else:
                prime_list.append(next_prime)
            next_prime += 2
        return f'{n}th prime is {prime_list[-1]}'
    else:
        return 'Error. Number should be a natural number'
```

入力 [3]:
```
task_5()
```

```
5
```

出力[3]:
```
'5th prime is 11'
```

4. Testing and checking function on different values.

入力 [3]:
```
task_5()
```

```
5
```

出力[3]:
```
'5th prime is 11'
```

入力 [4]:
```
task_5()
```

```
-3
```

出力[4]:
```
'Error. Number should be a natural number'
```

入力 [5]:
```
task_5()
```

```
qqq
```

出力[5]:
```
'Error. There is a non-numeric value in the input.'
```

入力 [6]:
```
task_5()
```

```
12
```

出力[6]:
```
'12th prime is 37'
```

入力 [7]:
```
task_5()
```

```
34
```

出力[7]:
```
'34th prime is 139'
```

5. Running the jupyter notebook and checking results.

Task 1

Ghana, officially the **Republic of Ghana**, is a country in West Africa. It abuts the Gulf of Guinea and the Atlantic Ocean to the south, sharing borders with Ivory Coast in the west, Burkina Faso in the north, and Togo in the east.

Capital: Accra
Area: 238,535 km^2
Population: 32,103,042
Goverment: Unitary presidential republic

Ethnic groups	
Percentage	**Group**
45.7%	Akans
18.5%	Mole-Dagbon
12.8%	Ewe
7.1%	Ga-Adangbe
6.4%	Gurma
3.2%	Guan
2.7%	Gurunsi
2.0%	Mande
1.6%	Other

Culture

- *Food and drinks*
    1. Banku
    2. Kenkey
    3. Fufu
    4. Jollof
- *Literature*
    1. J. E. Casely Hayford
    2. Ayi Kwei Armah
    3. Nii Ayikwei Parkes
- *Clothes*
    1. Adinkra symbols
    2. Kente cloth

More information about Ghana

Notebook, rendered by nbviewer
https://nbviewer.org/github/hiruma-ohiru/khpi-python3/blob/main/Hiruma%20Tokiya%20Lab1.ipynb

Conclusion:
I found the Jupyter notebook very convenient for calculations, but still have troubles with marking up. For me it's more convenient to use HTML/CSS as a standard markup. But, of course, marking up features can be useful for making a notebook easy to read.