Introduction to Web Science

Assignment 4

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Submission until: 08.12.2020, CEST 23:59

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1 XML 26 Points

Consider the following XML document:

```
1: ?xml version="1.1" encoding="UTF-8" ?>
2: <book>
3:     <author><publisher>Macmillan</author></publisher>
4:     <title>Alice Adventures in Wonderland</title>
5:     <year>1865</year>
6: </book>
```

1.1

Solution:

The above xml document is not valid for the below mentioned reasons:

1. In the declaration line, '<' is missing. The correct way is
   <?xml version="1.1" encoding="UTF-8" ?>
2. The element tags for author and publisher are not closed in order. The correct order should be
   <author><publisher>Macmillan</publisher></author>

1.2 Well formed XML

Consider the following information about the best-selling individual books[1]:

Name	Author(s)	Original language	First published	Approximate sales	Genre
The Communist Manifesto	Karl Marx and Friedrich Engels	German	1848	> 500 million	Political philosophy
A Tale of Two Cities	Charles Dickens	English	1859	200 million	Historical fiction
Harry Potter and the Philopher's Stone	J. K. Rowling	English	1997	120 million	Fantasy, mystery
The Lion, the Witch and the Wardrobe	C.S. Lewis	English	1950	85 million	Fantasy
The Adventures of Pinocchio	Carlo Collodi	Italian	1881	> 80 million	Fantasy

Your task is to encode the table above into a well formed XML document.

[1] Based on https://en.wikipedia.org/wiki/List_of_best-selling_books

```
<?xml version="1.0" encoding="UTF-8"?>
<books>
  <book>
    <Name>The Communist Manifesto</Name>
    <Authors>Karl Marx and Friedrich Engels</Authors>
    <OriginalLanguage>German</OriginalLanguage>
    <FirstPublished>1848</FirstPublished>
    <ApproximateSales>> 500 million</ApproximateSales>
    <Genre>Political philosophy</Genre>
  </book>
  <book>
    <Name>A Tale of Two Cities</Name>
    <Authors>Charles Dickens</Authors>
    <OriginalLanguage>English</OriginalLanguage>
    <FirstPublished>1859</FirstPublished>
    <ApproximateSales>200 million</ApproximateSales>
    <Genre>Historical fiction</Genre>
  </book>
  <book>
    <Name>Harry Potter and the Philopher's Stone</Name>
    <Authors>J. K. Rowling</Authors>
    <OriginalLanguage>English</OriginalLanguage>
    <FirstPublished>1997</FirstPublished>
    <ApproximateSales>120 million</ApproximateSales>
    <Genre>Fantasy, mystery</Genre>
  </book>
  <book>
    <Name>The Lion, the Witch and the Wardrobe</Name>
    <Authors>C.S. Lewis</Authors>
    <OriginalLanguage>English</OriginalLanguage>
    <FirstPublished>1950</FirstPublished>
    <ApproximateSales>85 million</ApproximateSales>
    <Genre>Fantasy</Genre>
  </book>
  <book>
    <Name>The Adventures of Pinocchio</Name>
    <Authors>Carlo Collodi</Authors>
    <OriginalLanguage>Italian</OriginalLanguage>
    <FirstPublished>1881</FirstPublished>
    <ApproximateSales>> 80 million</ApproximateSales>
    <Genre>Fantasy</Genre>
  </book>
</books>
```

Figure 1: Output : XML for Above table

2 HTML and CSS 27 points

The aim of this task to learn and practice the basics of HTML and CSS. You are required to implement a website that presents your resume. The layout of the website as seen Figure 2. The most left section is **Experiences**, the middle is the section for **Education** and the most right section is **Skills** followed by **References**.

Perform the following steps:

1. Create a HTML file called `index.html`, and a CSS file called `style_display`. In CSS, define the items referring the sections and header and use only `inline-block` for positioning the items.
2. Create a CSS file called `style_float.css`. In CSS, define the items referring the sections and header and use only `float` for positioning. Do not alter the contents in `index.html`.
3. Create a HTML file called `index_table.html`, and a CSS file called `style_table.css`. This time, you are supposed to implement the layout by using tables in HTML. However, for styling the cells and the properties of the table, you need to edit the `style_table.css`.

Three steps that you will implement should output same layout and content. However, small margins between the results could be neglected. The background color of the sections is `#ccc`.

For this task, don't use frameworks such as bootstrap. You are only allowed to use standard HTML and CSS items.

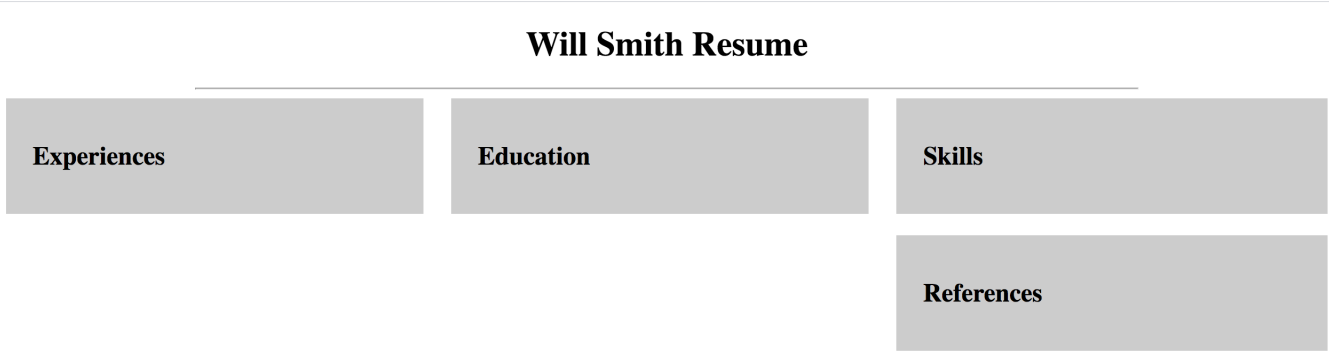

Figure 2: The website page you will implement

3 Dynamic Web Content 27 points

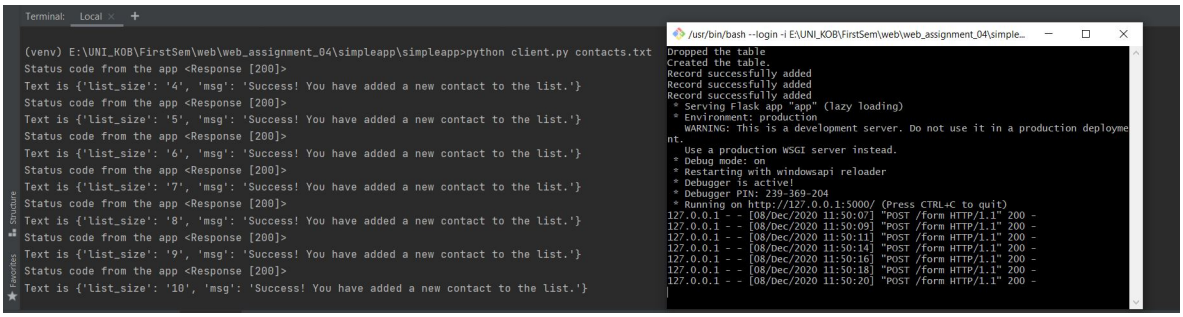

Figure 3: Output : Contacts.txt

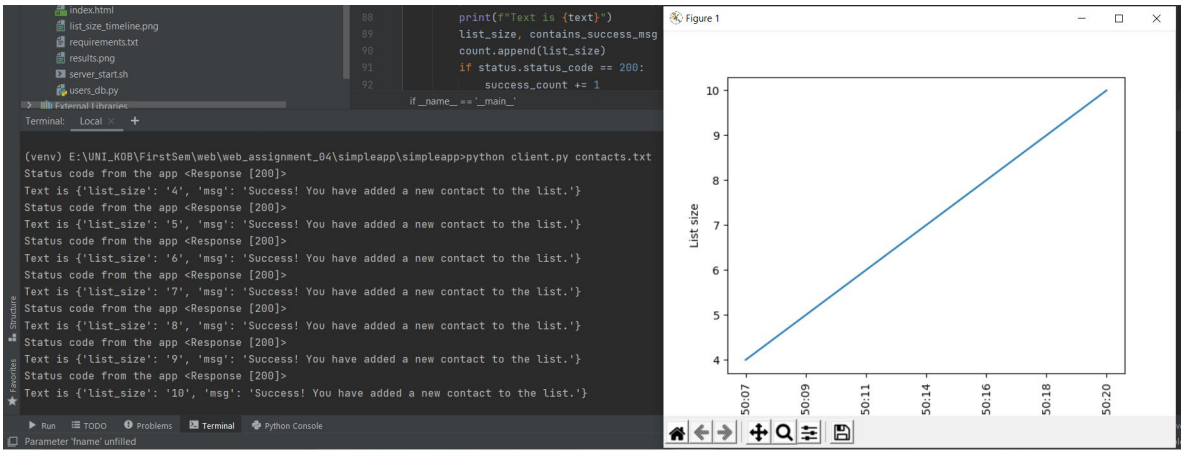

Figure 4: Output : Timeline Plot-Contacts.txt

1. The execute() for the query "SELECT * FROM clients WHERE (name='user[0]') AND (email='user[1]')" in user.db can execute only a single execute statement.
2. The input "Ipek, dummy@gmail.com'); DROP TABLE clients; –; INSERT INTO clients VALUES (Kenneth, dummy2@mail.com" has multiple lines which cannot be executed with excecute() for the above query. Thats why we get the warning as "You can execute only one statement at a time"

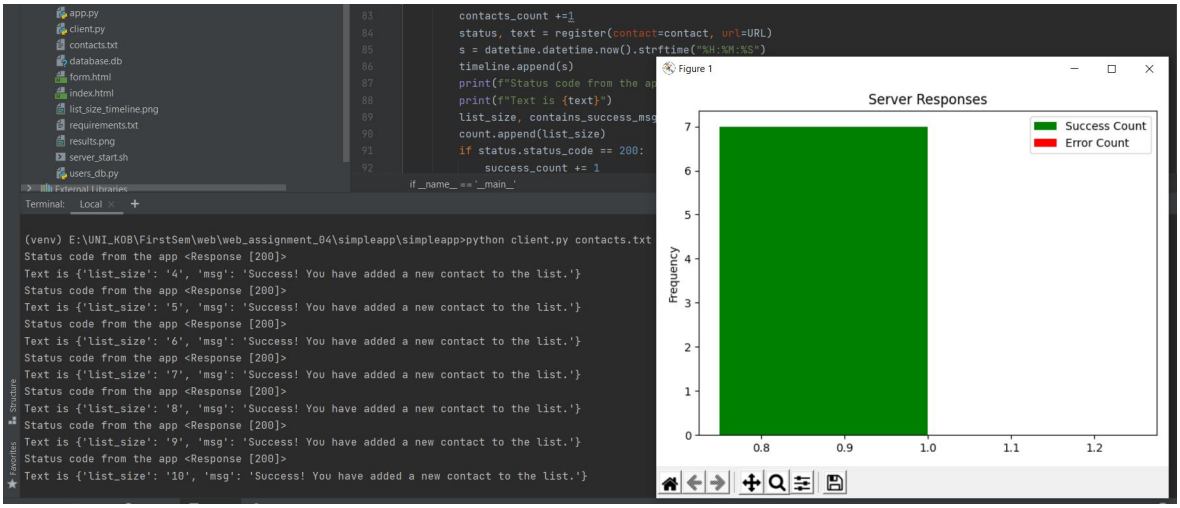

Figure 5: Output : Bar Plot-Contact.txt

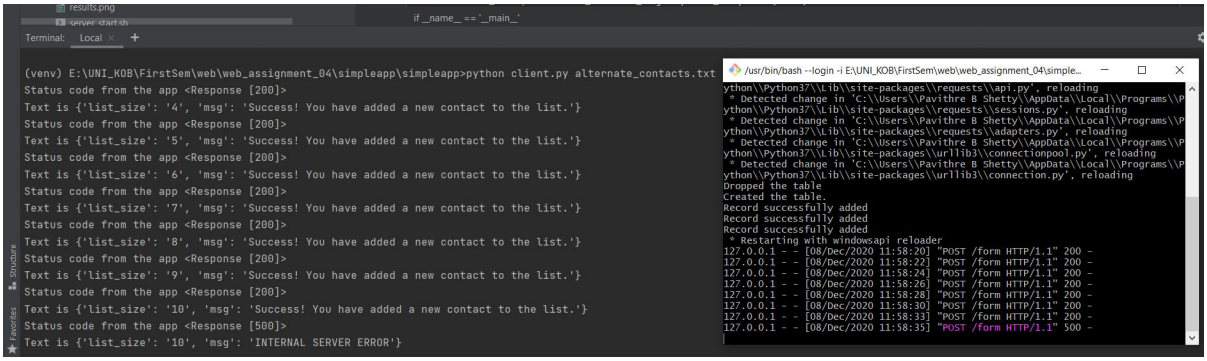

Figure 6: Output : AlternateContacts.txt

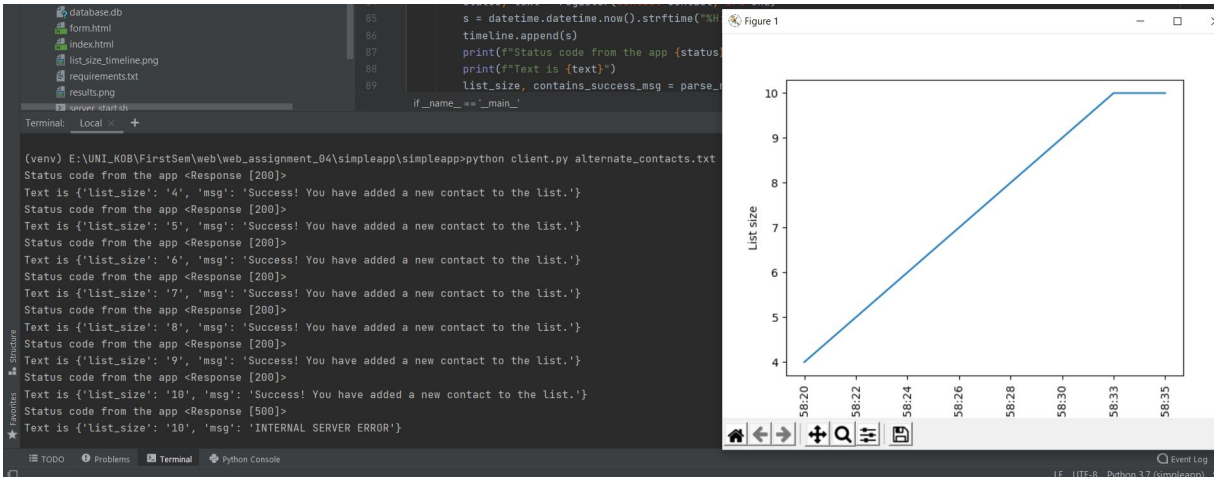

Figure 7: Output : Timeline Plot AlternateContacts.txt

Figure 8: Output : Bar Plot - AlternateContacts.txt

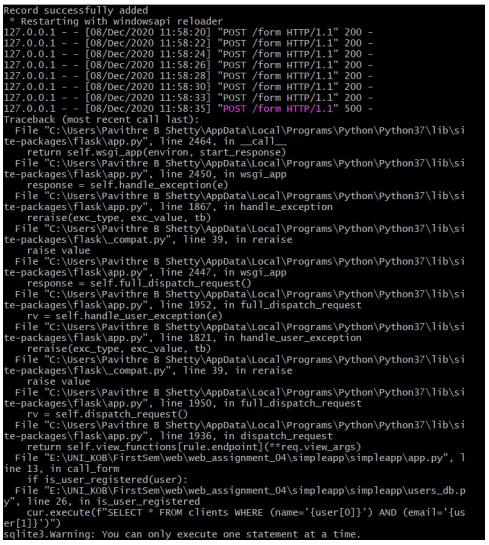

Figure 9: Output : Server Error AlternateContacts.txt