Introduction to Web Science

Assignment 4

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Tutorial on: December 9, 2021, 16:00 CET

This assignment focuses on the concepts of 1) **Web Content**, 2) **Dynamic Web Content** and 3) **Programming in Python**. Some of the tasks may require you to do additional research extending the lecture. Please keep the citation rules in mind.

For all the assignment questions that require you to write a code, make sure to include the code in the answer sheet, along with a separate python file. Where screen shots are required, please add them in the answers directly and not as separate files.

Date: 30/11/2021

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1 HTML and CSS (20 points)

Your task is to create two web pages: an introduction page to Web Science and Schedule.

The layout of the web pages can be seen in Figures 1 and 2. Please reproduce the given layouts with the following requirements:

- the most left section "Content" of the introduction page (Figure 1) should represent links to the respected chapters of the article;
- the top section element "Schedule" should contain a link that opens the web page Schedule (Figure 2).

The steps are as following:

- create two HTML files: one for the introduction page (index.html) and one for the schedule (index_schedule.html),
- create one CSS file for positioning and styling of content of both, introduction page and schedule. Tip: use `display: flex` for positioning the content.

Only use CSS file for content positioning and styling. Do not define any properties or alter style and position of the content in HTML files.

You are not allowed to use any frameworks such as bootstrap. You are only allowed to use standard HTML and CSS items.

You can use the same Wikipedia article https://en.wikipedia.org/wiki/Web_science or you are free to choose your own information source. Depending on the article you choose, modify the text of the "Content" block accordingly. The font style and colours can be of your choice.

Make sure that your documents are well formed and your code is clean.

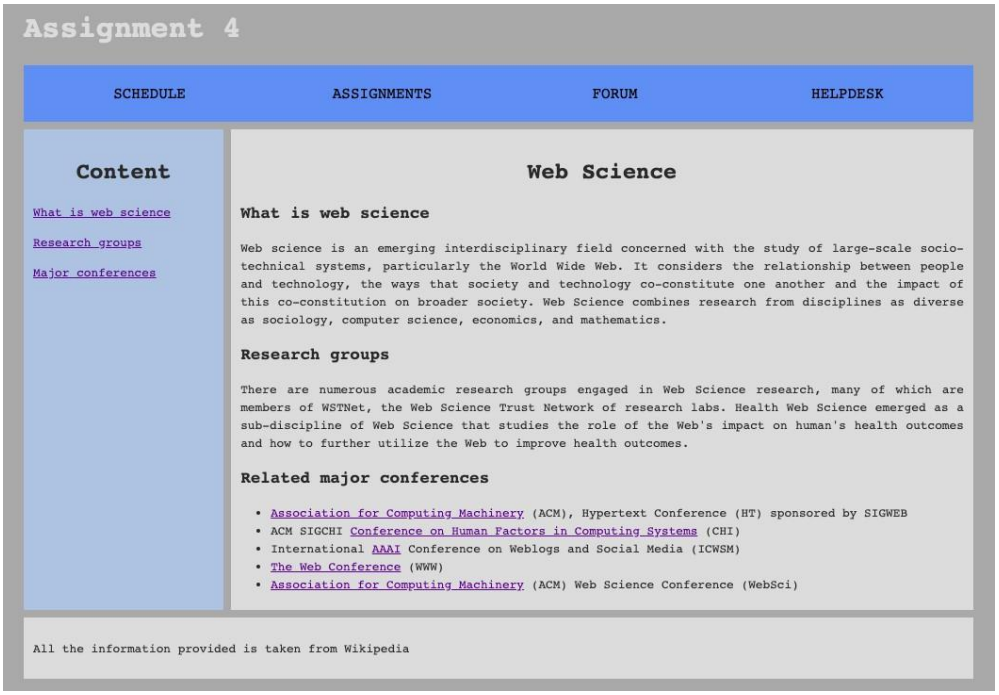


Figure 1: Introduction page

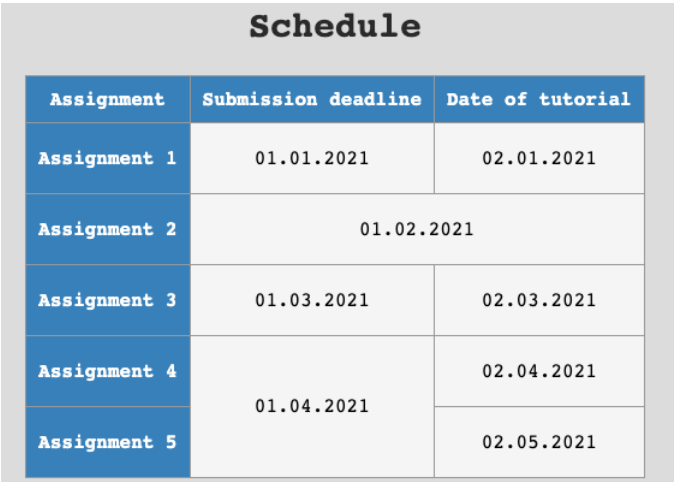
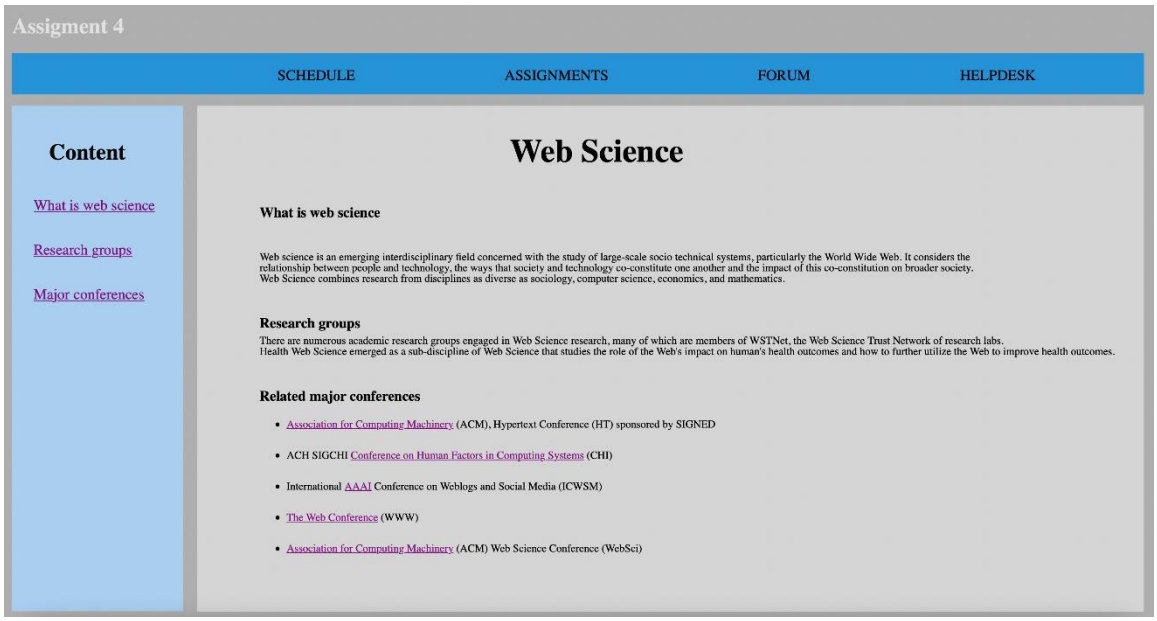
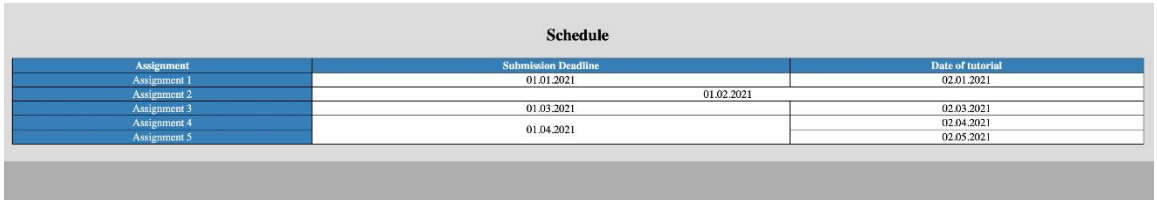


Figure 2: Schedule

Solution:
Please find HTML code in Q1_ submission/index.html.
Please find CSS code in Q1 _submission/Stylesheet.css
Screenshots below for reference:





Schedule

Assignment	Submission Deadline	Date of tutorial
Assignment 1	01.01.2021	02.01.2021
Assignment 2	01.02.2021	
Assignment 3	01.03.2021	02.03.2021
Assignment 4	01.04.2021	02.04.2021
Assignment 5		02.05.2021

2 Python Programming (32 points)

Your task is to extend the functionality of the introduction page created in task 1.

First, add an HTML form in the footer where a user can provide an email address to sign up for newsletters (Figure 3). In case you have not succeeded with task 1, improvise the required form in a separate HTML file. (5 points)

Figure 3: Form for signing up for newsletters (the footer of the introduction page)

Second, write a simple web server in Python. Flask (a web framework) or the http.server library are possible choices for this.
This web server shall process the POST request initiated by the HTML form and append the provided email address into a file emails.txt (subscribers list), but only if this address does not already exist in the file. (27 points)

The user shall be informed about the result of their form submission: whether they signed up successfully or if their e-mail address is already in the subscribers list (e.g., Figure 4).

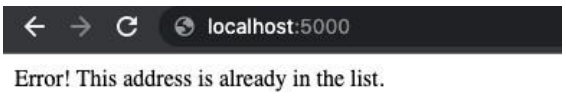
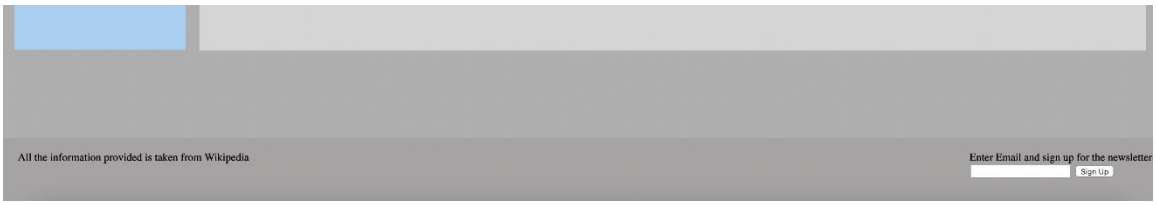


Figure 4: Message about successful/unsuccessful subscription

To keep things simple, there is no need to check if the provided email address has a valid format.
Remarks:
In a real-life setting, signing up to newsletters follows a double opt in procedure, where the potential new subscriber has to confirm their sign up by following a confirmation link in an email sent to them.
Also, the server should never reveal whether some e-mail address is already signed up. This would otherwise compromise personal information about who is subscribed.

Solution: Please find Python code in Q2_submission/app.py Screenshot below for reference


All the information provided is taken from Wikipedia
Enter Email and sign up for the newsletter
Sign Up

3 Short Questions (5 points)

3.1. Explain why Meta Data is important for HTML? (2,5 points)

Solution: Meta data is basically the data or information about the data itself. Metadata is not displayed on the page. It is important because it is parse able by the machines. Metadata enables the browsers, web services, or search engines to know how to load and display the data. One tag in meta data also allows the web designers to take control of the viewport of the users, which is an extremely useful tool in web designing. Viewport is basically the users' view area, so having control of that can be beneficial in web designing.

3.2. What are the reasons for separating content from layout in HTML documents? (2,5 points)

Solution: The reason for separating content for layout is pretty straightforward; to avoid any complexities in the future changes in design, or for the simplification of the future changes and even a redesign. Complete separation of content from layout makes sure that there are no dependencies and hence no overhead complexities while making changes or enhancing our design. The separation of content and layout also falls in line with the DRY (Don't repeat yourself) principle which is a very important principle in any kind of development or designing. It further also simplifies maintenance of your site or web service.

Important Notes

SUBMISSION

- Solutions have to be submitted to the SVN repository. Use the directory name groupname/assignment4/ in your group's repository.
- The name of the group and the names of all participating students must be listed on each submission.
- Solution format: all solutions as *one* PDF document. Programming code has to be submitted as Python code to the SVN repository. Upload *all* .py files of your program! Use UTF-8 as the file encoding. *Other encodings will not be taken into account!*
- Check that your code compiles without errors.
- Make sure your code is formatted to be easy to read.
  - Make sure you code has consistentindentation.
  - Make sure you comment and document your code adequately in English.
  - Choose consistent and intuitive names for your identifiers.
- Do *not* use any accents, spaces or special characters in your filenames.

Acknowledgment

This pdfLaTeX template was adapted by Jun Sun based on the LuaLaTeX version by Lukas Schmelzeisen.

LaTeX

Use pdflatex assignment_X.tex to build your PDF.