

1. What is Web 3.0, and how is it different from Web 1.0 and Web 2.0?
 - a. Web 1.0 Users can only retrieve and read the websites without any interactions.
 - b. Web 2.0 users can interact and edit with websites, this is the current web as we know it, user-generated content and participation like social media websites like Facebook or X (was previously known as twitter)
 - c. Web 3.0 is the possible next evolution of the world wide web. Web 3 will place strong emphasis on the decentralized applications and will most likely use blockchain technologies and make use of AI to empower a more intelligent and adaptive web.
 - d. <https://www.techtarget.com/whatis/definition/Web-30>
2. What are the functional differences between the front end of a web application and its back end?
 - a. The front-end of a web application is what the users directly interact which presents the functions of the webpage in a user-friendly way for the user to interact with.

b. Back-end of a web applications handles all the logic and data processing like user logins or data storage to sending emails. Stuff the user viewing the front-end won't see but can interact with via the front-end of the webpage.

c. <https://www.computerscience.org/bootcamps/resources/frontend-vs-backend/>

3. In your own words, explain the process that takes place from when you type a URL into the address bar in your browser until you finally view the page you have requested. Include the HTTP request-response cycle in your answer and provide an example of the HTTP response and request messages. Watch the TED-Ed video entitled "What is the World Wide Web?" to help you understand this better.

a. Firstly, the user provides the client with the URL (<https://www.test.com>) into the address bar.

b. Next an HTTP Request is built to request the particular resource or to perform a specific action.

Example:

GET /text.html HTTP/1.1

Host: www.test.com

Connection: close

User-Agent: Chrome/128.0.6558.0

Accept-language: en

- c. Next the server receives this request and uses it to build a HTTP Response that contains the requested information.

HTTP/1.1 200 OK

Connection close

Server Apache/2.2.3

Last-Modified: Tue, 7 July 2024 12:00 GMT+2

Content-Length: 10

Content-Type: text/html

- d. If the response was successful the HTTP Response is sent to the user's client to be rendered for display on the browser.