

# Web fundamentals

1. What is the world wide web
  - It is a global information system that is made up from hyperlinks that allow web pages to be linked and accessed from other web pages. They also allow for the web pages to be accessed from anywhere in the world. The linking technology creates the effect of an infinite 'web' of information that is navigated daily.
  - The web pages are created by web developers
2. Explain the functional differences between a web applications front-end and back-end.
  - The front-end is where the user interacts and it will be where the users interact (the browser). This is also known as the presentation layer and is made using HTML CSS and JavaScript.
  - The back-end of a web application is the part that is not seen to the users. It refers to the server side, which is responsible for returning the page, and for storing and fetching the user data. It is also known as the data access layer. Examples of backend programming languages are (Python, Ruby and PHP)
  - Both the front end and backend are used together to make the webpage and communicate with the server and deal with user data.
3. Describe what occurs on the back-end during a web interaction (using the google query example).
  - After the user inputs the letter 'k' a series of events happen. The first thing to happen in the backend is a the browser will send an HTTP request to the router which then relays this across the internet. The server receives this request and sends a response back across the internet to the router. The router then forwards the HTTP response back to the browser. At this point the front-end takes over and displays the results in a certain format using HTML, CSS and JavaScript.
4. What is the MERN stack?
  - The MERN stack is a collection of technologies used in Full Stack development.

The Mern stack includes:

- MongoDB, this is a non-relational database that stores data as documents or objects and provides a JSON-based alternative to normal SQL based databases
- Express: This is a web-framework for server-side web development. It uses Node.js and streamlines the process of making server-side applications.
- React: This is a JavaScript library that is used for building reactive websites. React was made by Facebook for creating user views. It is a powerful tool for building dynamic and user interfaces on both the client and server side.
- Node.js: This is a runtime environment that enables server-side execution of JavaScript allowing it to be run on both browsers and web servers.