University of M'sila, Algeria
Computer science department
2nd year undergraduate (2025/2026)

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Web Application Development

LAB 1 : Frontend Vs Backend (Prerequisites)

Main objectives

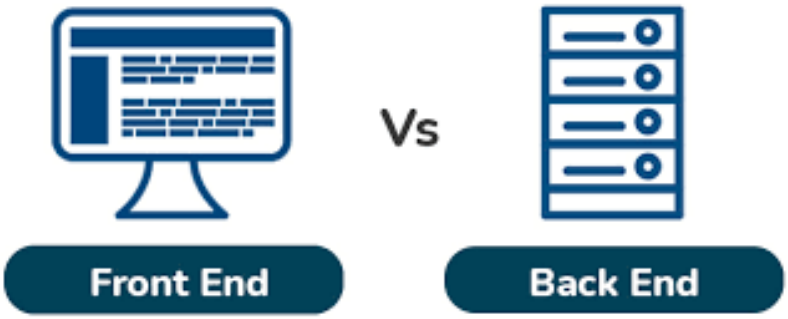
At the end of this activity, students should be able to:

- Distinguish clearly between Frontend and Backend components in a web application
- Classify web development tasks correctly as Frontend or Backend based on their functional characteristics.
- Recognize the difference between static (Frontend-only) and dynamic websites

Question:

In a web application, which part is responsible for the user interface, and which part handles data processing?

Discussion:



In a web application, the user interface (UI) is the responsibility of the ***Frontend***, which represents everything a user sees and interacts with directly in their browser. Built with HTML, CSS, and JavaScript (we can use frameworks like React or Vue) the frontend manages the layout, visual design, and immediate interactivity. It captures user inputs, provides instant feedback, and handles client-side state.

The ***Backend*** is the hidden engine that handles all the serious work and logic. It runs on a remote server, where it processes requests from the interface, performs calculations, enforces application policies and constraints, manages database operations like saving and retrieving data, etc.

Exercise 1:

1. Give 3 examples of Frontend-only sites.
2. Give 3 examples of Dynamic Websites that require a Backend to function.

Note

A frontend-only site is often called a static site. It runs entirely in the user's browser once the files are downloaded. In contrast, dynamic websites require a backend to function.

Exercise 2:

For each of the following statements, indicate whether it corresponds to Frontend development or Backend development by filling in the table below:

Statement	Frontend vs Backend
Designing the structure and visual presentation of a web page using HTML and CSS.	
Requires strong communication skills and the ability to get into the mind of the end-user	
Managing the storage, retrieval, and maintenance of user data on the server.	
Transmitting data from the server to the client in response to a client request.	
Developing animations	
Implementing responsive design techniques to ensure usability across different screen sizes and devices.	
Enforcing server-side input validation rules to maintain data integrity and application security.	
Uses HTML, CSS, and JavaScript along with frameworks like Angular, React, and Vue	

The next serie of laboratory session will focus on the design and development of a first frontend using HTML.