Bootstrap

Bootstrap is a front end framework for developing responsive, mobile-first projects on the Web

It contains HTML and CSS design templates as well as optional JavaScript extensions

Originally developed as an internal toolkit for Twitter, the project was released as open-source code in 2010

It has since become one of the most popular front end Web frameworks and is used by many different kinds of sites

Front End

"Front end" Web development refers to the elements of a website that a person sees and interacts with

The languages most often employed in front end web development are HTML, CSS, and JavaScript

- HTML describes content
- CSS defines appearance
- JavaScript facilitates interaction

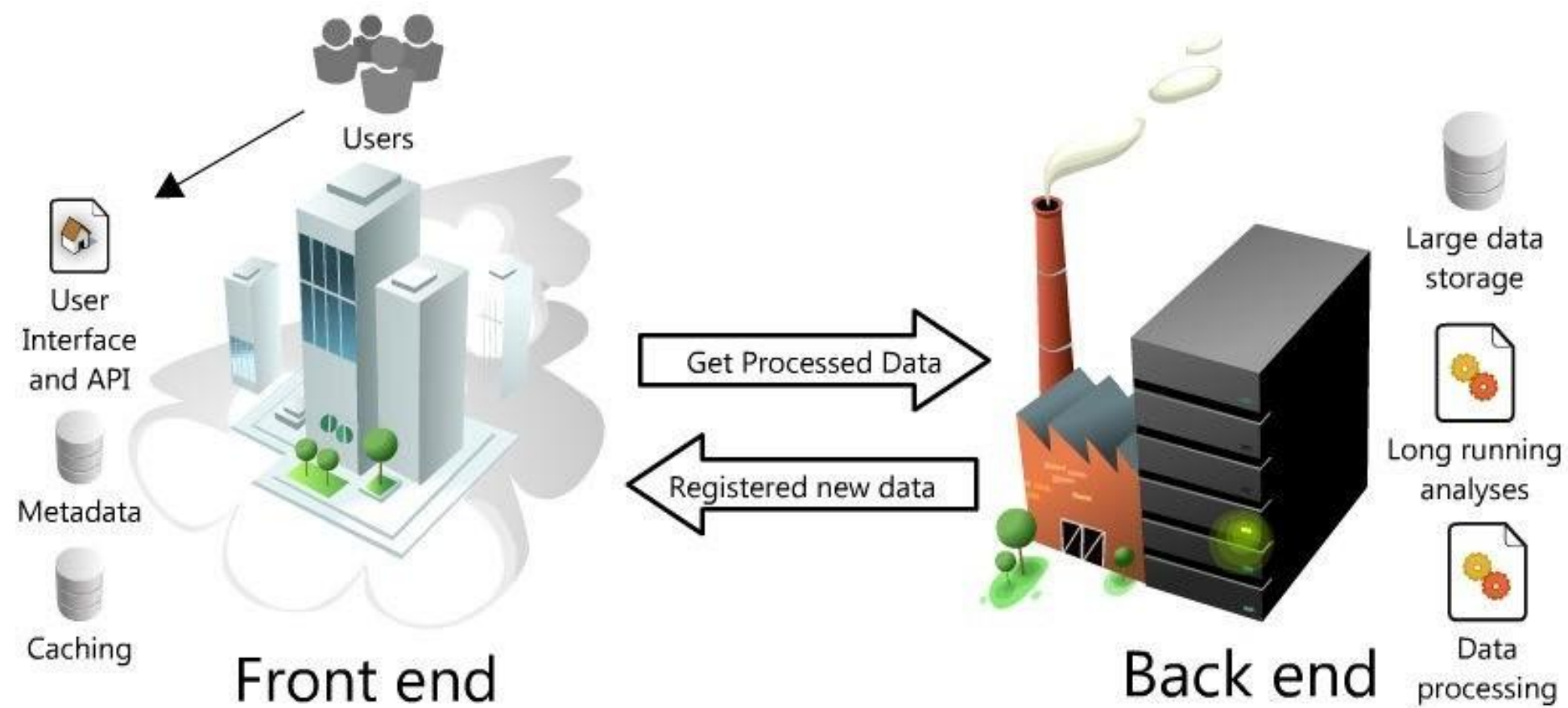All of the above happen directly in the Web browser

Back End

"Back end" Web development refers to the functionality of a website that is not visible to a person

If you buy something online, you interact with the front end of the store; the transaction takes place on the back end of a database on a Web server

The back end usually consists of a server, an application, and a database

The languages most often employed in back end web development are PHP, Ruby, and Python

Users

User Interface and API

Metadata

Caching

Front end

Get Processed Data

Registered new data

Large data storage

Long running analyses

Data processing

Back end

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Bootstrap
Layout and Design

The Bootstrap framework is responsive with a mobile-first approach

It starts with a baseline of shared styles and introduces more advanced layout rules when screen size permits

Media queries are used to determine screen size and apply different styles accordingly

Bootstrap also offers a grid layout system which organizes page content into a series of rows and columns

Bootstrap
Interactivity

Additional interactive components, or "widgets," can extend the behavioral aspect of Bootstrap Web pages

Such interactivity would normally require an understanding of JavaScript to add to a website

Bootstrap simplifies this process by providing several common widgets including tabs, carousels, and tooltips