INLS 672
Web Development 2

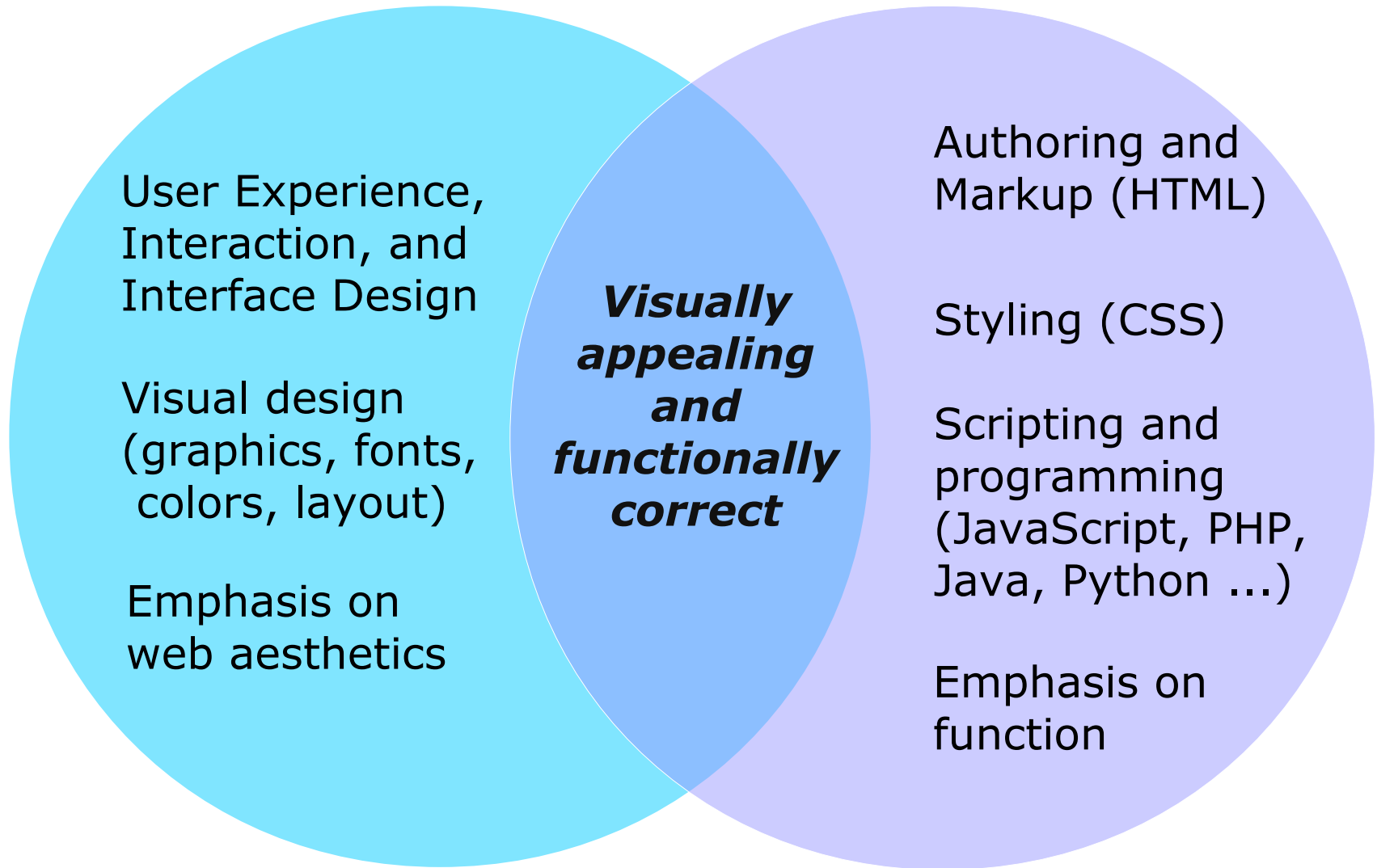# Introduction

UNC
SCHOOL OF INFORMATION
AND LIBRARY SCIENCE
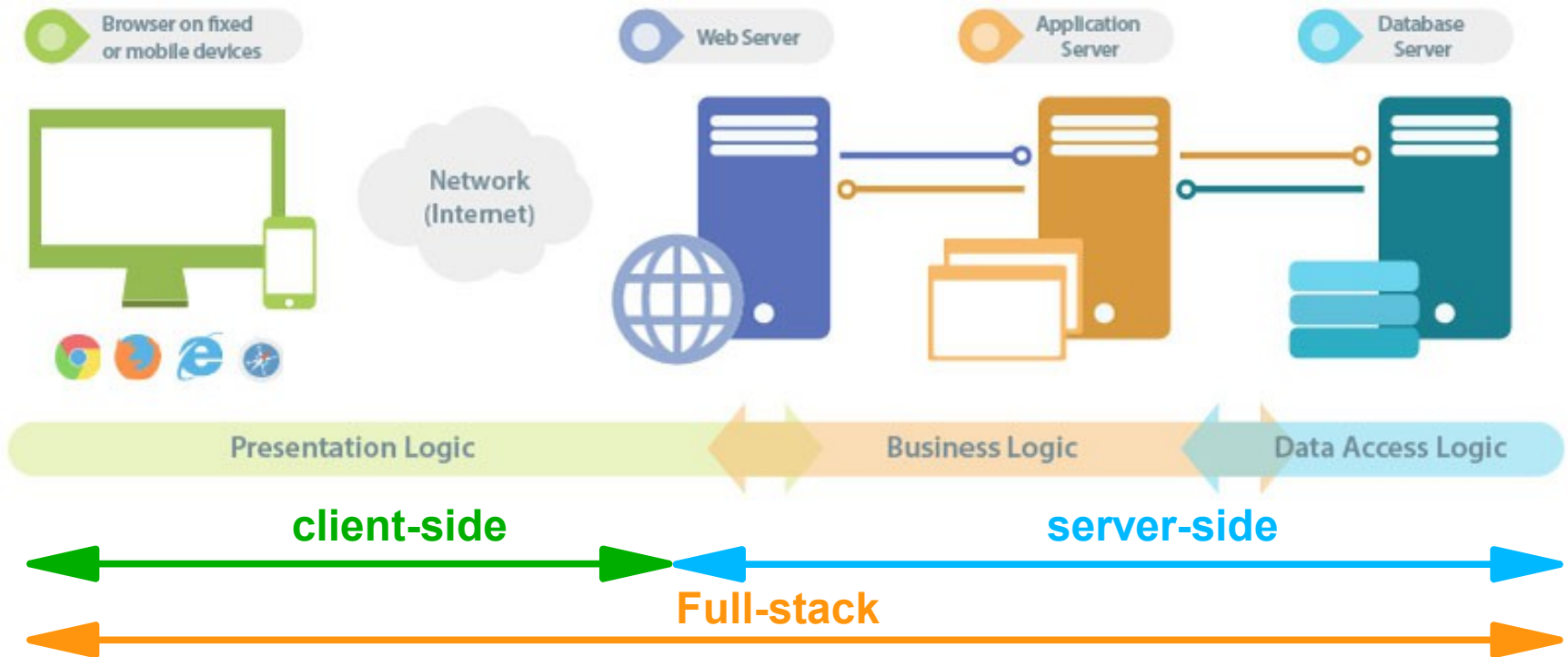
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Web Design

User Experience, Interaction, and Interface Design

Visual design (graphics, fonts, colors, layout)

Emphasis on web aesthetics

Visually appealing and functionally correct

Authoring and Markup (HTML)

Styling (CSS)

Scripting and programming (JavaScript, PHP, Java, Python ...)

Emphasis on function

Web Development

Web Development

Front-end/client-side development

- Browser-related
- Graphic design, image production
- Interface and information design
- HTML, CSS, and JavaScript

Back-end/server-side development

- Web applications
- Programs and scripts
- Forms processing
- Database development

Multiple Web Programming Models
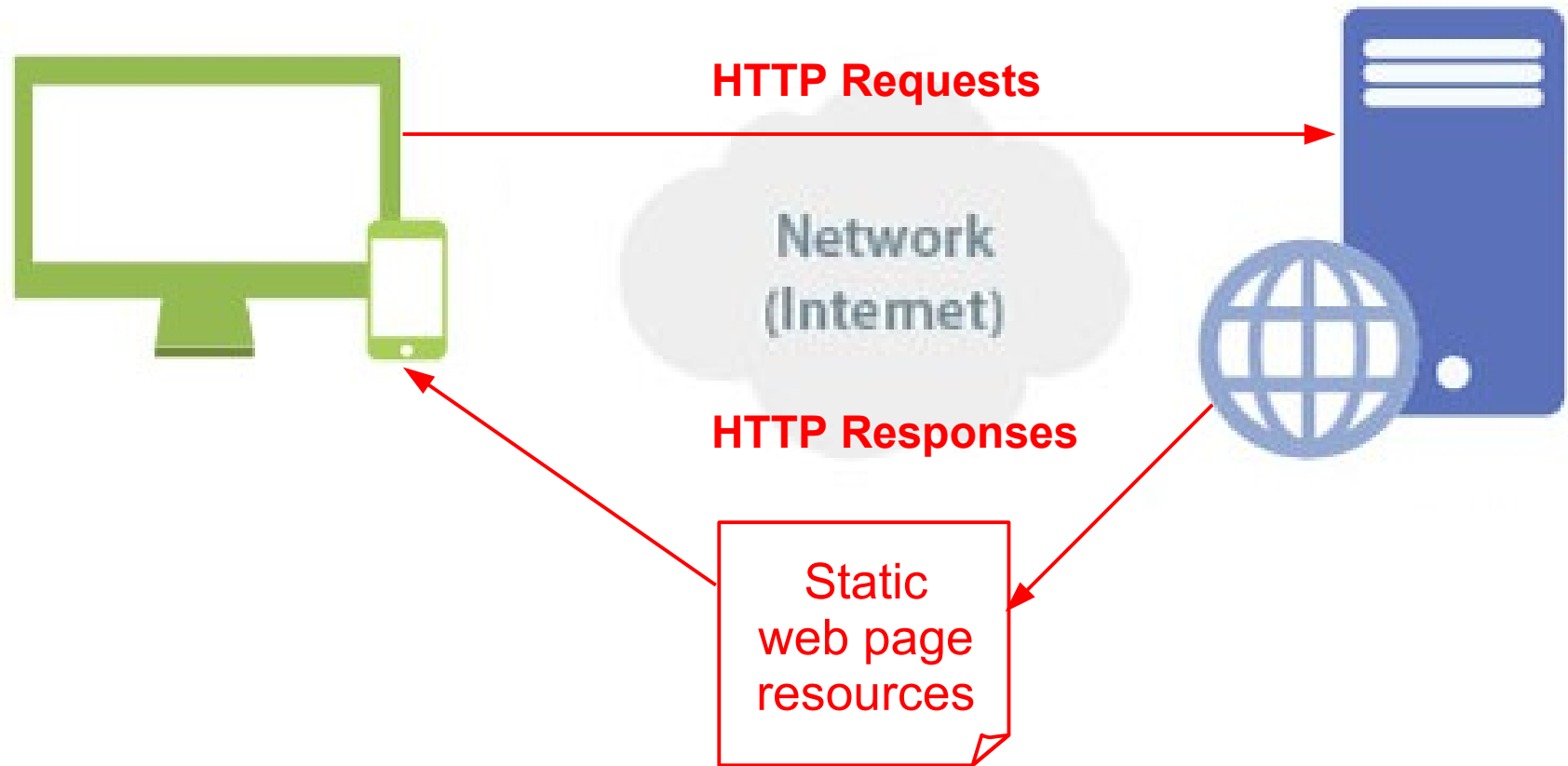## *Where does the work get done?*

"Big Categories of Rendering Websites"

- Static: pre-render the HTML (request HTML from web server)

- Server: a server processes the requests and generates the HTML response (dynamic, server-side scripting)

- Client: provide a `<div id="root">...</div>` shell and let a JavaScript template render the contents. (dynamic, client-side scripting)
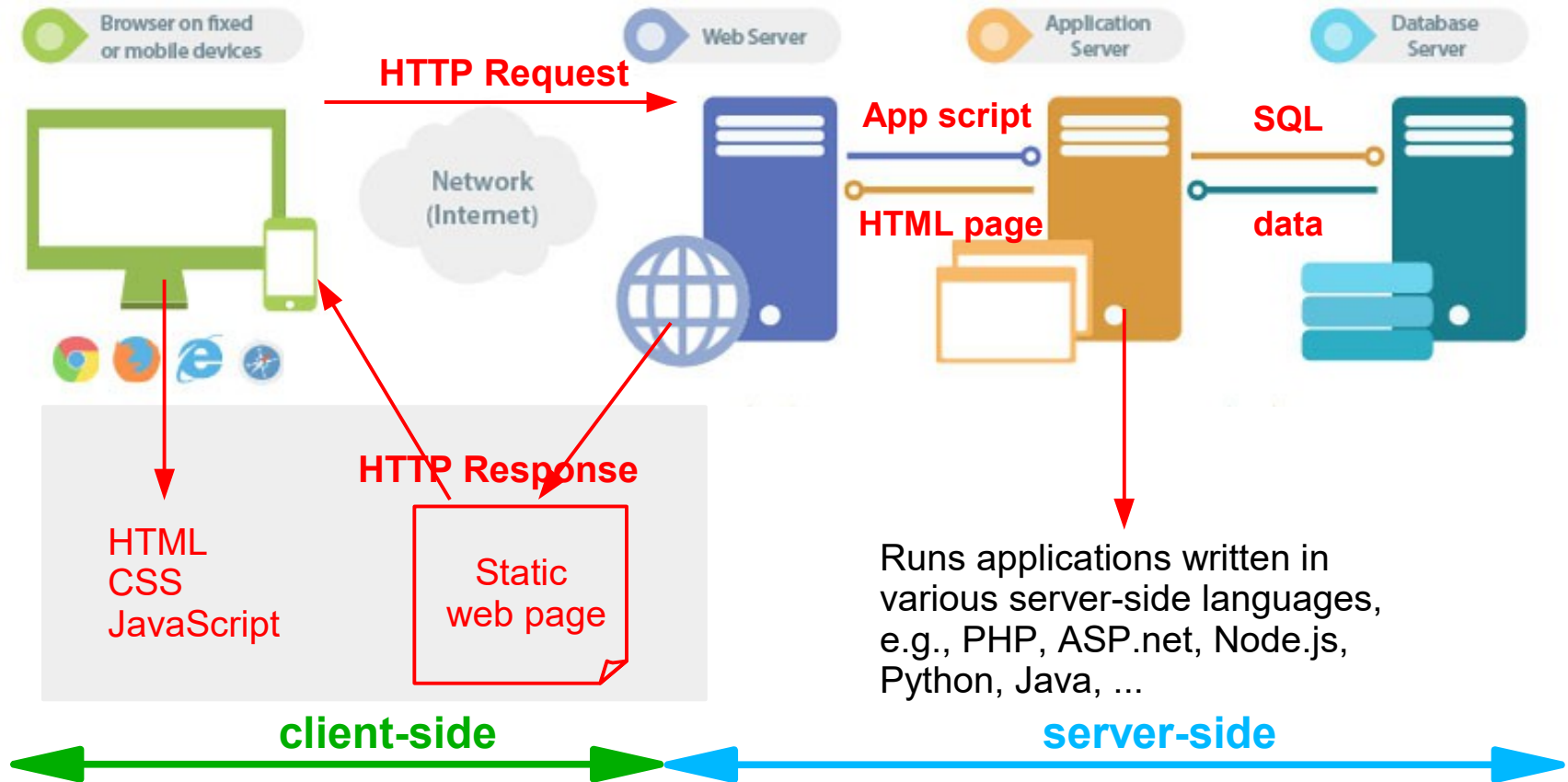
These categories are not mutually exclusive.

Web Development: Static Model

HTTP Requests

Network (Internet)

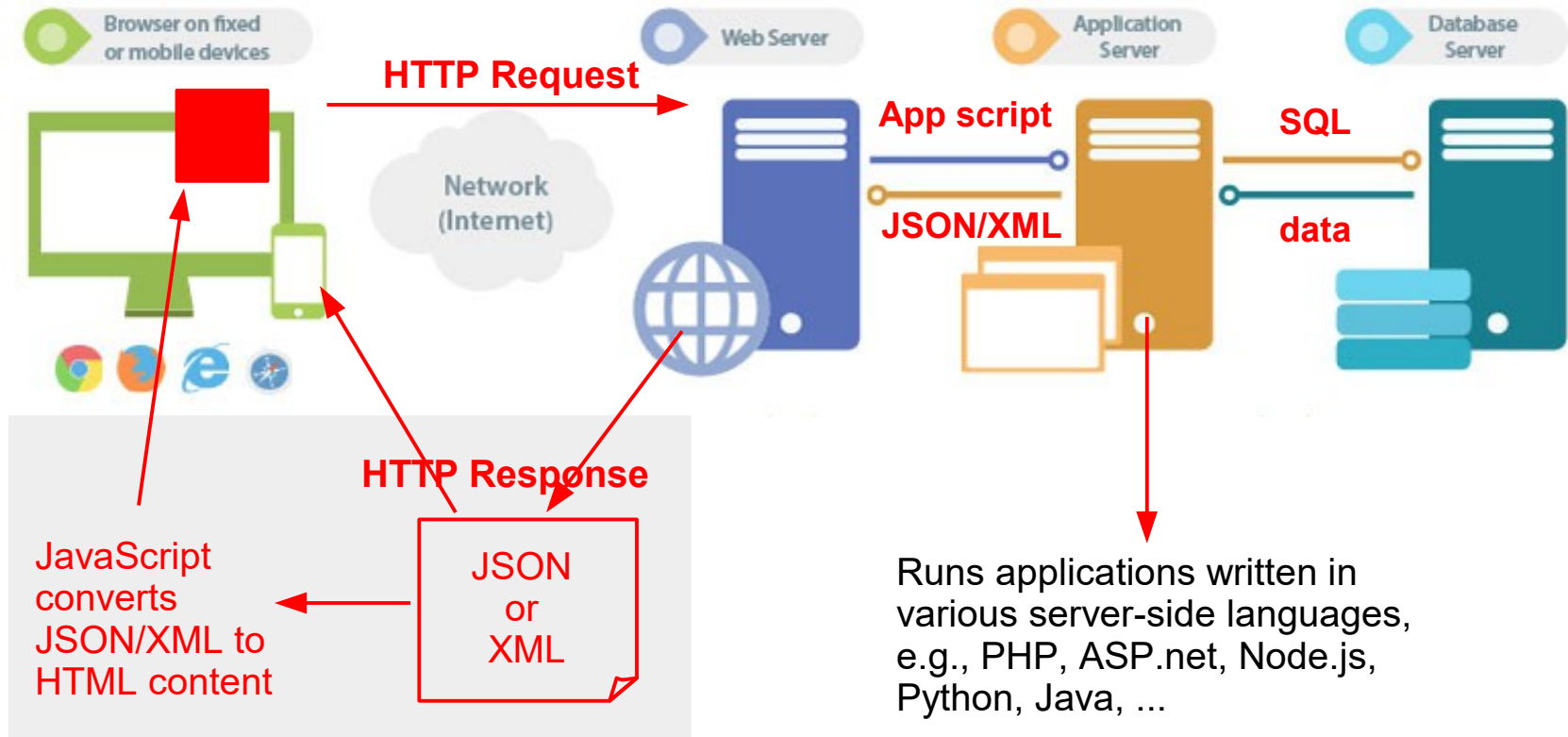**HTTP Responses**

Static web page resources

The contents of a static web page do not change across sessions unless the developer modifies the HTML, CSS, JavaScript, images, and other resources used by the page.

Web Development:
Dynamic, Server-side Scripting Model

Server-side processing does most of the work – programs/scripts interface with a data store to obtain data, build a web page, and then return it to the browser for rendering.

Web Development:
Dynamic, Client-side Scripting Model

- Use JavaScript API to request data from the server (Fetch API or XMLHttpRequest)

- Server responds with data, usually formatted as JSON or XML

- Use JavaScript to parse the data and convert to HTML

Many Programming Models and Technologies for Web Development

How to decide? It depends...

- Most web development environments adopt multiple programming models and technologies

- Which ones you choose depend primarily on what solution is being implemented. Some basic questions to ask:
    - Static or dynamic
    - Data requirements: files, database, ...
    - Business requirements: budget, skills, training

Some statistics...

Stackoverflow 2020 Developer Survey

- Most popular technologies
- Correlated techologies