Technology Stacks

Front-End:

HTML:

- HTML stands for Hyper Text Markup Language
- HTML is the standard markup language for creating Web pages
- HTML describes the structure of a Web page
- HTML consists of a series of elements
- HTML elements tell the browser how to display the content
- HTML elements label pieces of content such as "this is a heading", "this is a paragraph", "this is a link", etc.

Example:
```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>
<h1>My First Heading</h1>
<p>My first paragraph.</p>
</body>
</html>
```

CSS:

- CSS stands for Cascading Style Sheets
- CSS describes how HTML elements are to be displayed on screen, paper, or in other media
- CSS saves a lot of work. It can control the layout of multiple web pages all at once
- External stylesheets are stored in CSS files

Example:
```
body {
  background-color: lightblue;
}
h1 {
```

```
  color: white;
  text-align: center;
}
p {
  font-family: verdana;
  font-size: 20px;
}
```

Bootstrap:

- The most popular CSS framework for developing responsive and mobile-first websites is Bootstrap.
- The newest version is Bootstrap 5.
- Bootstrap makes responsive web design a reality.
- It makes it possible for a web page or app to detect the visitor's screen size and orientation and automatically adapt the display accordingly.

Example:
```
<div class="bg-primary text-white p-5 text-center">
  <h1>My First Bootstrap Page</h1>
  <p>Resize this page to see the responsive effect!</p>
</div>

<div class="container-fluid">
  <div class="row">
    <div class="col-sm-4">
      <h2>London</h2>
      <p>London is the capital city of England.</p>
      <p>It is the most populous city in the United Kingdom,
      with a metropolitan area of over 13 million inhabitants.</p>
    </div>
    <div class="col-sm-4">
      <h2>Paris</h2>
      <p>Paris is the capital of France.</p>
      <p>The Paris area is one of the largest population centers in
Europe,
      with more than 12 million inhabitants.</p>
    </div>
    <div class="col-sm-4">
      <h2>Tokyo</h2>
      <p>Tokyo is the capital of Japan.</p>
```

```html
    <p>It is the center of the Greater Tokyo Area,
      and the most populous metropolitan area in the world.</p>
    </div>
  </div>
</div>
```

Back-End:

Python-Flask:

- Flask is a web application framework written in Python.
- It was developed by Armin Ronacher, who led a team of international Python enthusiasts called Poocco.
- Flask is based on the Werkzeg WSGI toolkit and the Jinja2 template engine. Both are Pocco projects.
- Unlike the Django framework, Flask is very Pythonic.
- It's easy to get started with Flask, because it doesn't have a huge learning curve.
- On top of that it's very explicit, which increases readability.
- You only need a few lines of code to create the "Hello World" app.

This is a boilerplate code example:

```python
from flask import Flask
app = Flask(__name__)

@app.route('/')
def hello_world():
    return 'Hello World!'

if __name__ == '__main__':
    app.run()
```

- It's a microframework, but that doesn't mean your whole app should be inside one single Python file.
- To handle complexity, you can and should use many files for larger programs.
- Micro means that the Flask framework is simple but extensible.
- You may all the decisions: which database to use, do you

want an ORM etc, Flask doesn't decide for you.

- Flask is one of the most popular web frameworks, meaning it's up-to-date and modern.
- You can easily extend its functionality.
- You can scale it up for complex applications.