HyperionDev

Tech Talks Session Housekeeping

- The use of disrespectful language is prohibited in the questions, this is a supportive, learning environment for all - please engage accordingly.

- No question is daft or silly - **ask them!**

- There are **Q&A sessions** midway and at the end of the session, should you wish to ask any follow-up questions.

- If you have any questions outside of this session, or that are not answered during this session, please do submit these for upcoming Tech Talks Sessions. You can submit these questions here: **https://forms.gle/MomSYvUWiSfKgMaZ9**

Tech Talks Session Housekeeping cont.

- For all **non-academic questions**, please submit a query:

  www.hyperiondev.com/support

- You can find all Tech Talks resources in our GitHub repository:

  https://github.com/HyperionDevBootcamps/Tech-Talks

- We would love your **feedback** on lectures: **Feedback on Lectures**

- If you are hearing impaired, please kindly use your computer's function through Google chrome to enable captions.

CoGrammar

Safeguarding & Welfare

We are committed to all our students and staff feeling safe and happy; we want to make sure there is always someone you can turn to if you are worried about anything.

If you are feeling upset or unsafe, are worried about a friend, student or family member, or you feel like something isn't right, speak to our safeguarding team:

Ian Wyles
Designated Safeguarding Lead

Simone Botes

Rafiq Manan

Charlotte Witcher

Nurhaan Snyman

Ronald Munodawafa

Tevin Pitts

Scan to report a safeguarding concern

or email the Designated Safeguarding Lead:
Ian Wyles
safeguarding@hyperiondev.com

HyperionDev

End-to-End Application Design: Merging Software Engineering, Data Science, and the Web
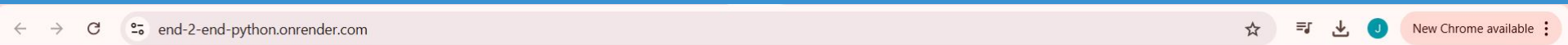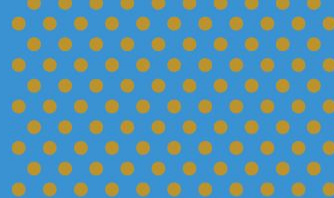
Part 1

17 December 2024

Agenda

End-to-End Application Design: Part 1 - Introduction and Workflow

1. Introduction and App Demo.

2. Breaking Down the App Workflow.

3. Integration & Deployment.

4. Frontend Development.
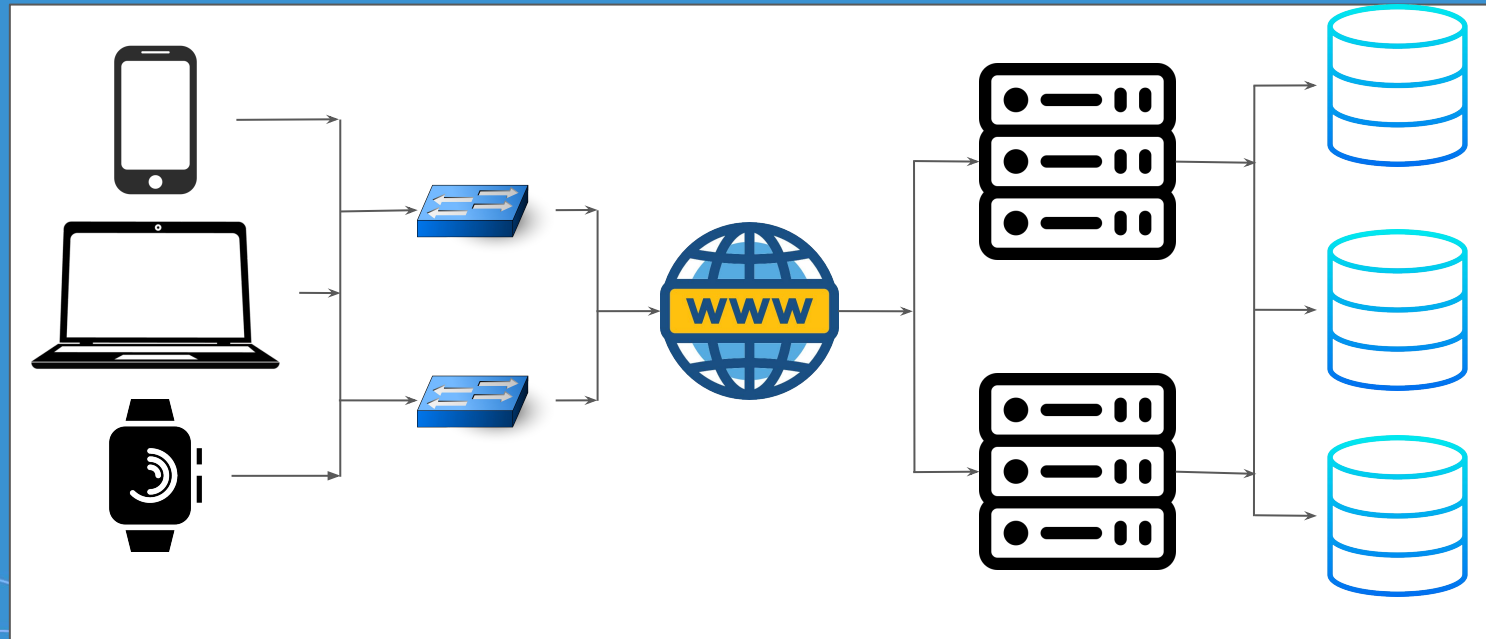
5. Backend Development.

Target Application Demo

What is End-to-End Application Design?

- Definition:
  - The complete process of designing, building, and deploying an application that integrates backend, frontend, and hosting solutions.
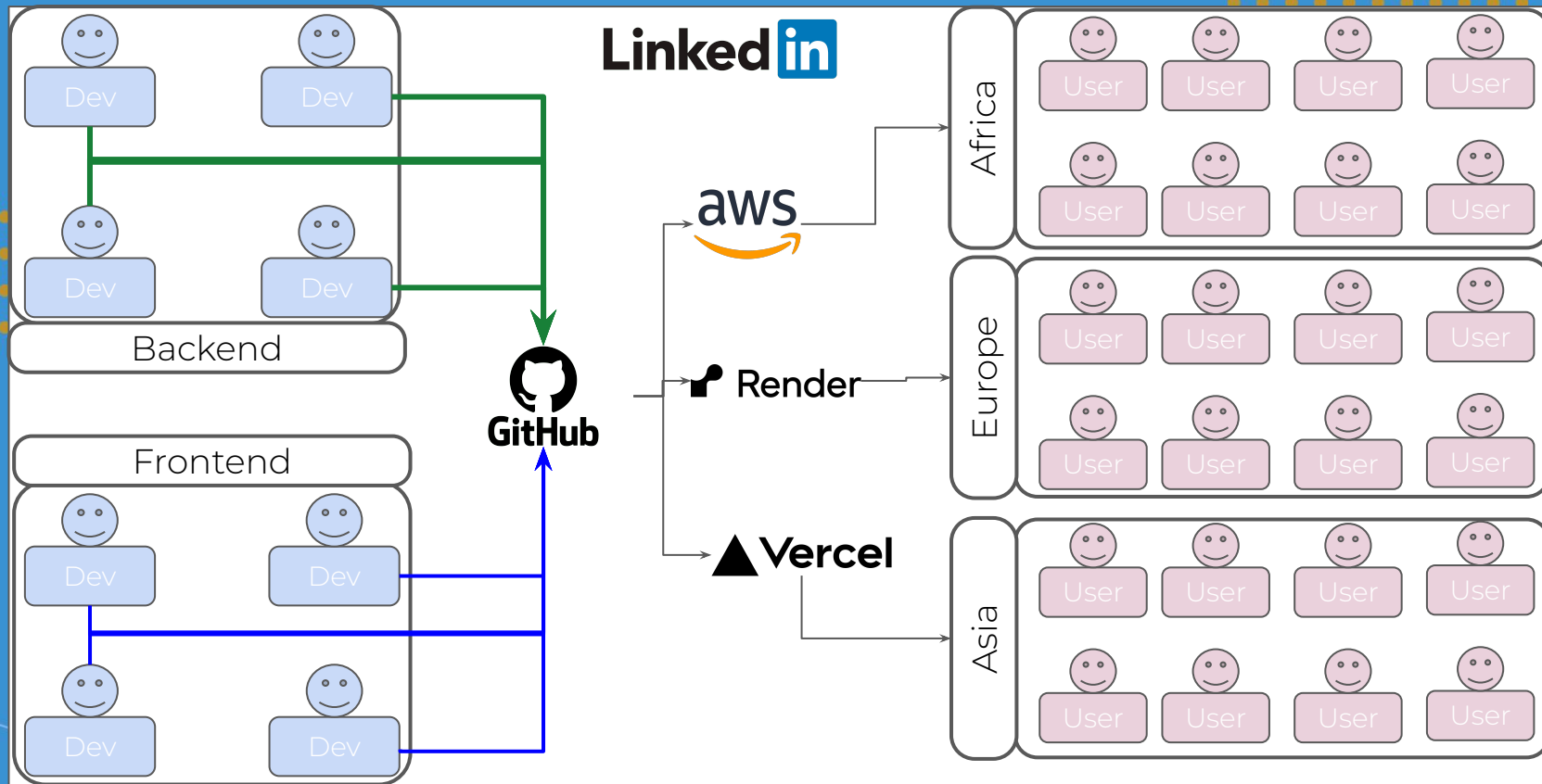

Breaking Down the Building Blocks of Modern Applications

End-to-End Development Workflow

- Workflow structure:
  - Integration and Deployment.

  - Frontend Development.

  - Backend Development.

- Key takeaway:
  - Each component plays a critical role in making the app functional, accessible, and scalable.

Integration and Deployment

- **What is Deployment?**
  - Making applications accessible to users
  - Problems solved: accessibility, scalability, reliability.

- **Local Deployment vs. Cloud Hosting:**
  - **Local**: Limited to personal use/testing.
  - Cloud: Platforms like Heroku, Netlify, AWS, Azure, GCP.

- **Cloud Engineer Role:**
  - Brief overview of responsibilities.

Integration and Deployment

Breaking Down the Building Blocks of Modern Applications

Frontend Development (UI/UX)

- **What is Frontend Development?**
  - Focuses on user interaction and visuals.

- **Tools and Technologies:**
  - Basic: HTML, CSS, JavaScript.
  - Advanced: React, Angular, Vue.

- **Roles:**
  - Frontend Developer, Designer, UX/UI Specialist.

Bank   Invest   Borrow   Insure   eBucks   Connect   Security Centre   Switch to FNB

You pay 99c for bread, we cover the rest*

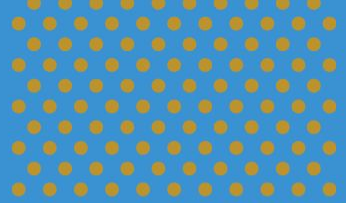Help Changes Everything
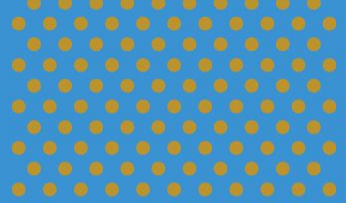
Personal

Private

Business

Backend Development

- **What is Backend Development?**

  - **Definition:** The server-side logic that handles data processing, APIs, and integration with databases.

  - **Purpose:** Ensures smooth communication between the frontend and data storage or external services.
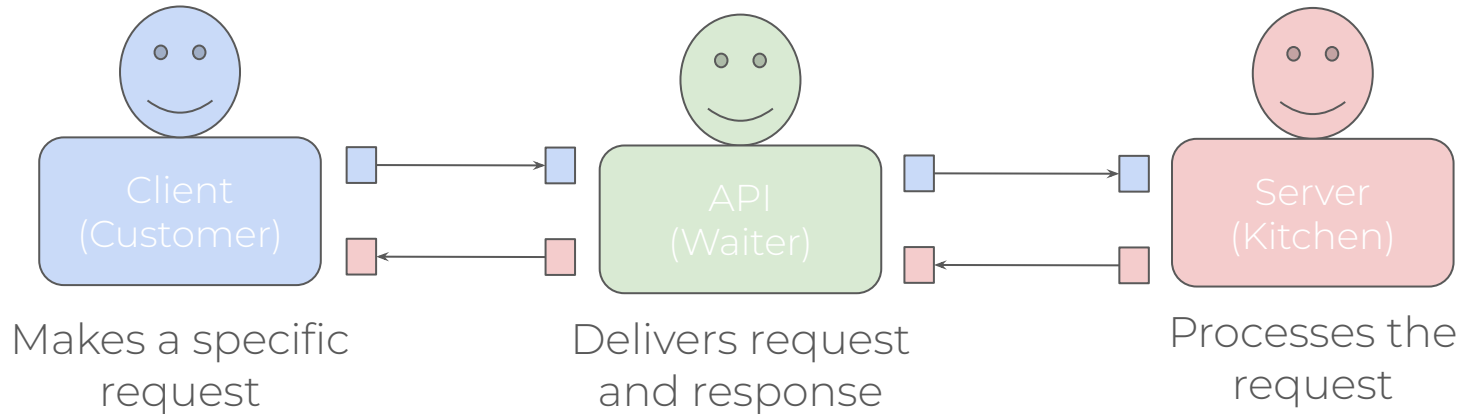
Backend Development

- Databases:

  - SQL (PostgreSQL, MySQL) vs. NoSQL (MongoDB).

- What is an API?

  - Definition: Enables communication between systems.

  - Problem solved: Streamlining data exchange.

- Roles:

  - Backend Developer, DevOps Engineer.

Backend Development

Just like a waiter takes your order to the kitchen and brings back your food, an **API** takes your **request** to the **server** and **returns** the **response`**

Client (Customer)

Makes a specific request

API (Waiter)

Delivers request and response

Server (Kitchen)

Processes the request

How can we help you?

Get real insurance

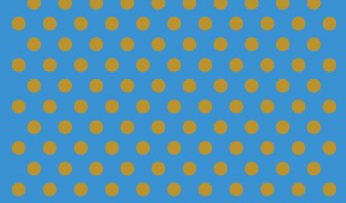| Life	Funeral	Debt protection
Business	Car	Home	Legal
Health	Takaful	Wills and legacy planning	

Not with us?

Switch now!

Recap of End-to-End Workflow

- **Summary of the three components:**

  - **Integration and Deployment:** Cloud hosting for accessibility and scalability.

  - **Frontend Development:**: Designing interfaces for user interaction.

  - **Backend Development:**: Managing data, logic, and API integration.

- **Key takeaway:** These elements work together to make the app functional, scalable, and user-friendly.

Questions & Wrap-Up

Resources

- [Rapid API](#)

- [Flask](#)

- [Heroku](#)

- [Netlify](#)

- [Step 4: Deploy your Hello World application - AWS CodeDeploy](#)

- [Deploy your application | Google Cloud](#)

- https://github.com/JulienNyambal-hyperiondev/end_2_end_python/tree/main