Week 1: Full Stack Web Apps - Basics and How Things Work

Objective: Understand the fundamentals of full-stack web development and get a sneak peek behind an existing Bubble app.

Live Lecture Contents:

- Introduction to Full-Stack Web Development: Frontend, backend, and database overview.
- How a Bubble App Works: Deep dive into the components and sections in the Bubble Editor.
- Case Study: Detailed walkthrough of an existing Bubble app, highlighting its structure and functionalities.

Assignment:

- **Task**: Analyze the given web app and document its main components and their functions.

Week 2: Introduction to Bubble Development & Working with Responsive UI, Styles, UI Variables

Objective: Learn the basics of Bubble development, focusing on creating responsive UIs, applying styles, and using UI variables.

Live Lecture Contents:

- Getting Started with Bubble: Setting up your first Bubble project.
- Building Responsive UIs: Techniques and best practices.
- Styling in Bubble: Using styles and UI variables to create consistent and flexible designs.

Assignment:

- **Task**: Create a responsive landing page for your app idea using Bubble.
- **Submission**: Bubble project link and a brief description of the design choices made.

Week 3: Databases & Workflows on Bubble -> Building a Functional Form

Objective: Understand how to create and manage databases and workflows in Bubble by building a functional form.

Live Lecture Contents:

- Database Basics: Creating and managing data types and fields in Bubble.
- Introduction to Workflows: Setting up workflows to handle user interactions.
- Building Forms: Creating a form that interacts with the database through workflows.

Assignment:

- **Task**: Build a form in Bubble that captures waitlist user data and stores it in the database.

- **Submission**: Bubble project link with the functional form and workflows.

Week 4: Building a To-Do List App (Autobinding, Privacy Rules)

Objective: Build a functional to-do list app while implementing autobinding and privacy rules.

Live Lecture Contents:

- Building a To-Do List: Structuring the app and setting up the database.
- Autobinding: Implementing autobinding to simplify data management.
- Privacy Rules: Setting up privacy rules to control data access.

Assignment:

- **Task**: Develop a to-do list app with autobinding and privacy rules.
- **Submission**: Bubble project link and a brief description of privacy rules implemented.

Week 5: Introduction to APIs, Integrating APIs into Bubble. JSON and How Bubble Handles APIs with New Data Types

Objective: Learn how to integrate external APIs into Bubble and handle JSON data.

Live Lecture Contents:

- API Basics: Understanding APIs and how they work. (https://github.com/public-apis/public-apis)

- Integrating APIs: Connecting Bubble to external APIs.
- JSON Handling: Working with JSON data and Bubble's new data types.

Assignment:

- **Task**: Integrate a public API into your Bubble app and display the data.
- **Submission**: Bubble project link demonstrating the API integration and data display.

Week 6: Your First AI Feature -> Integrate with ChatGPT API (Simple Use Case)

Objective: Integrate a simple AI feature into your Bubble app using the ChatGPT (or free equivalent) API.

Live Lecture Contents:

- Introduction to AI Integration: Overview of AI capabilities and use cases.
- Integrating ChatGPT API: Step-by-step guide to connecting Bubble with the ChatGPT API.
- Simple Use Case: Building a feature that utilizes ChatGPT for a specific task.

Assignment:

- **Task**: Implement a simple AI feature in your app using the ChatGPT API.

- **Submission**: Bubble project link showcasing the AI feature and its functionality.

Week 7: Advanced LLM Functionalities (Theoretical with Practical Examples, Understanding the Terms and Capabilities)

Objective: Explore advanced functionalities of LLMs, understanding their terms and capabilities through practical examples.

Live Lecture Contents:

- Advanced LLM Concepts: Deep dive into advanced LLM capabilities and terminology.
- Practical Examples: Real-world examples demonstrating advanced LLM functionalities.
- Implementing Advanced Features: How to incorporate these features into your app.

Assignment:

- **Task**: Create an advanced feature using LLM capabilities in your Bubble app.
- **Submission**: Bubble project link and a video demonstration of the feature.

Week 8: Deploying and Managing LLMs

Objective: Learn best practices for deploying and managing LLMs in your applications.

Live Lecture Contents:

- Deployment Strategies: Best practices for deploying LLMs.
- Managing LLMs: Monitoring, scaling, and maintaining LLM applications.
- Security Considerations: Ensuring the security and integrity of your deployed LLMs.

Assignment:

- **Task**: Deploy an LLM-based feature from your app to a live environment.
- **Submission**: Live URL of the deployed feature and a deployment report.

Week 9:
Advanced GPT integrations and deep into the API and capabilities

Objective : Understand GPT API and capabilities

Live Lecture Contents:

- Understand function calling/embedding/fine tuning and its capabilities
- Understand Assistants api - vector store and custom GPTs
- Create ai agent using bubble and GPT

Assignment:

- **Task :** Entity extraction using function calling and automate APIs
- **Submission :** Integrate assistant api in bubble

Week 10: Advanced Customization of LLMs (Finetuning, RAGs, etc)

Objective: Customize LLMs to suit specific needs and integrate them into your applications.

Live Lecture Contents:

- Customizing LLMs: Techniques for fine-tuning and customizing LLMs.
- Integration Strategies: Best practices for integrating customized LLMs.
- Case Studies: Examples of customized LLMs in real-world applications.

Assignment:

- **Task**: Customize an LLM for a specific use case and integrate it into your app.
- **Submission**: Bubble project link showcasing the customized LLM integration.

Week 11: Advanced Bubble Integrations with LLMs -> Niche Use Cases / Advanced Integrations (Using LLM Integrations in Workflows / Data, Bubble Plugins / Streaming Integration, etc)

Objective: Explore advanced Bubble integrations with LLMs, focusing on niche use cases and complex integrations.

Live Lecture Contents:

- Advanced Integration Techniques: Using LLMs in workflows, data handling, and more.
- Bubble Plugins: Utilizing plugins for enhanced functionality.
- Streaming Integration: Implementing real-time data processing and streaming.

Assignment:

- **Task**: Implement a complex LLM integration in your Bubble app, focusing on a niche use case.
- **Submission**: Bubble project link and a brief description of the advanced integration.

Week 12: Final Project Presentation and Review

Objective: Present and review the final project, demonstrating the fully integrated solution with all features developed throughout the course.

Live Lecture Contents:

- Final Project Presentations: Students present their completed projects.
- Feedback and Review: Instructor and peer feedback on each project.
- Course Wrap-Up: Summary of key learnings and next steps.