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Code with AI (Unit-5)

Building Web Apps with AI

1. Choose Your Tech Stack:
- Frontend: HTML/CSS/JS or frameworks like React, Vue.js, Angular.
- Backend: Node.js, Python (Django, Flask), etc.
- AI Frameworks: TensorFlow, PyTorch, etc.

2. Integrate AI Models:
- Decide on AI functionality: NLP, CV, recommendation systems, etc.
- Train or use pre-trained models.
- Expose models through APIs or integrate them into the backend.

3. Implement UI:

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- Design UI using HTML, CSS, JS, or frameworks.
- Integrate components for AI interaction.

4. Backend Development:
- Set up server to handle requests.
- Implement endpoints for AI interaction.

5. API Integration (Optional):
- Integrate pre-built AI APIs.

6. Testing:
- Test frontend, backend, and AI functionalities.

7. Deployment:
- Deploy app and backend to server or cloud.

8. Monitoring and Maintenance:
- Monitor performance.
- Regularly update AI models.

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Simple Step:

1. Plan: Decide app features and AI use.
2. Design: Sketch app layout.
3. Tech: Choose HTML/CSS/JS for frontend, Python for backend.
4. Backend: Set up server, integrate AI.
5. Frontend: Code user interface.
6. Test: Ensure everything works.
7. Deploy: Put app online.
8. Monitor: Keep app updated.

Data Mastery with Excel and ChatGPT

1. Excel Basics:
- Understand cells, rows, columns.
- Learn basic functions: SUM, AVERAGE, etc.
- Format data and cells.

2. Data Analysis with Excel:

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- Sort and filter data.
- Use pivot tables for summarizing data.
- Create charts and graphs.

3. Advanced Excel Techniques:
- Use VLOOKUP and HLOOKUP for data retrieval.
- Master conditional formatting.
- Learn array formulas for complex calculations.

4. Excel Macros:
- Record and run macros to automate tasks.
- Write VBA code for custom macros.

5. Data Cleaning and Preparation:
- Remove duplicates and errors.
- Convert data types and formats.
- Handle missing values.

6. Excel and ChatGPT Integration:
- Use ChatGPT for data analysis insights.
- Generate reports and summaries with ChatGPT.

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7. Collaboration and Sharing:
- Share workbooks and collaborate in real-time.
- Protect sensitive data with permissions and passwords.

8. Continuous Learning:
- Stay updated with new Excel features.
- Explore advanced topics like Power Query and Power Pivot.

AI-driven Chatbots

1. Understanding Natural Language Processing (NLP):
- Learn about NLP fundamentals.
- Understand intents, entities, and context.

2. Choosing the Right AI Framework:
- Explore frameworks like TensorFlow, PyTorch, and Dialogflow.

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- Consider pre-built platforms for faster development.

3. Designing Conversational Flows:
- Define user journeys and conversation paths.
- Design engaging and intuitive user experiences.

4. Training Chatbot Models:
- Collect and annotate training data.
- Train models using machine learning algorithms.

5. Integration with Messaging Platforms:
- Integrate chatbots with popular messaging platforms like Facebook Messenger, Slack, etc.

6. Continuous Learning and Improvement:
- Implement feedback mechanisms for learning.
- Use analytics to improve chatbot performance.

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7. Multimodal Capabilities:
- Explore integrating voice and visual inputs.
- Enable chatbots to handle diverse media formats.

8. Ethical Considerations:
- Ensure privacy and security of user data.
- Prevent biases in chatbot responses.

Building a Chatbot with ChatGPT-4

1. Backend Setup:
- Use Flask or Express.js for the backend server.
- Set up routes to handle user messages and interact with the ChatGPT-4 API.

2. Frontend Interface:
- Design a chat interface using HTML,

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CSS, and JavaScript.
- Include an input box for users to type messages and a chat log to display the conversation.

3. User Interaction:
- Users interact with the chatbot by typing messages into the input box.
- Chatbot responds with relevant answers based on the user's input.

4. ChatGPT-4 Integration:
- Send user messages to the backend server.
- Backend server communicates with the ChatGPT-4 API to generate responses.
- Responses are sent back to the frontend and displayed in the chat log.

5. Continuous Learning:
- Collect user feedback to improve the chatbot's responses over time.
- Update the model and retrain it periodically to enhance its accuracy and effectiveness.

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6. Deployment:
- Deploy the chatbot on a web server or cloud platform.
- Make the chatbot accessible to users through a web browser or messaging platform.

Building a Movie App with GPT-3.5 and DALL·E

1. Design & Frontend:
- Design user-friendly interface.
- Include search bar, recommendations, etc.

2. Backend Setup:
- Use Flask or Express.js.
- Integrate GPT-3.5 and DALL·E APIs.

3. Movie Data:
- Collect movie titles, descriptions, and images.

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- Utilize TMDB or OMDB APIs.

4. GPT-3.5 Integration:
- Generate movie summaries.
- Provide recommendations based on user input.

5. DALL·E Integration:
- Generate movie posters from descriptions.
- Enhance visual experience.

6. User Interaction:
- Allow search by title or genre.
- Chatbot for recommendations.

7. Deployment:
- Deploy on Heroku or AWS.

Building a Chatbot with ChatGPT-4

1. Backend Setup:
- Use Flask or Express.js.

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- Integrate with ChatGPT-4 API.

2. Frontend Interface:
- Design chat interface using HTML/CSS/JS.
- Include input box and chat log.

3. User Interaction:
- Users type messages in the input box.
- Chatbot responds with relevant answers.

4. ChatGPT-4 Integration:
- Send user messages to ChatGPT-4.
- Receive responses and display them in the chat log.

5. Continuous Learning:
- Collect feedback to improve responses.
- Update and refine the model over time.

6. Deployment:

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- Deploy the chatbot on a server.
- Make it accessible to users.

Fine tune the chatbot with your own data

1. Collect Data:
- Gather a dataset of conversations or messages relevant to your domain. This could include customer support chats, forum discussions, or any other type of conversation.

2. Preprocess Data:
- Clean and preprocess the data. Remove irrelevant information, handle special characters, and tokenize the text.

3. Fine-Tuning:
- Fine-tune the ChatGPT-4 model using your dataset. You can use the Hugging Face Transformers library or OpenAI's fine-tuning API for this purpose.

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4. Training:
- Train the model on your dataset. Adjust hyperparameters such as learning rate, batch size, and number of training epochs as needed.

5. Evaluation:
- Evaluate the fine-tuned model on a separate validation set to ensure that it performs well and generalizes to new data.

6. Testing:
- Test the model with real user inputs to see how it performs in a real-world scenario. Collect feedback and iterate on the model as needed.

7. Deployment:
- Deploy the fine-tuned chatbot to production, making it accessible to users through a web interface or messaging platform.

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Explanation :
Fine-Tuning Chatbot with Your Own Data

1. Collect Data:
- Gather conversations or messages relevant to your domain.

2. Preprocess Data:
- Clean and tokenize the data.
- Remove irrelevant information.

3. Fine-Tuning:
- Use Hugging Face Transformers or OpenAI's fine-tuning API.
- Adjust hyperparameters.

4. Training:
- Train the model on your dataset.
- Optimize performance.

5. Evaluation:
- Validate the model's performance on a separate set.

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- Ensure generalization.

6. Testing:
- Test with real user inputs.
- Collect feedback for improvements.

7. Deployment:
- Deploy the chatbot to production.

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