CodeCoach: Your Developer Onboarding Chatbot

Streamlining New Developer Integration for your Application

Code Cortex Team

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The Onboarding Bottleneck

- Onboarding new developers to a large-scale application is a complex and time-consuming process.

- New hires face a steep learning curve, requiring significant support from senior team members.

- Repetitive, foundational questions consume valuable engineering time, impacting project velocity.

- There is a need for a consistent, scalable, and efficient onboarding experience.

Daily Scrum

Call 📞

Introducing CodeCoach

Meet CodeCoach: Your AI-Powered Onboarding Assistant

- CodeCoach is an intelligent chatbot designed to automate and enhance the developer onboarding experience.

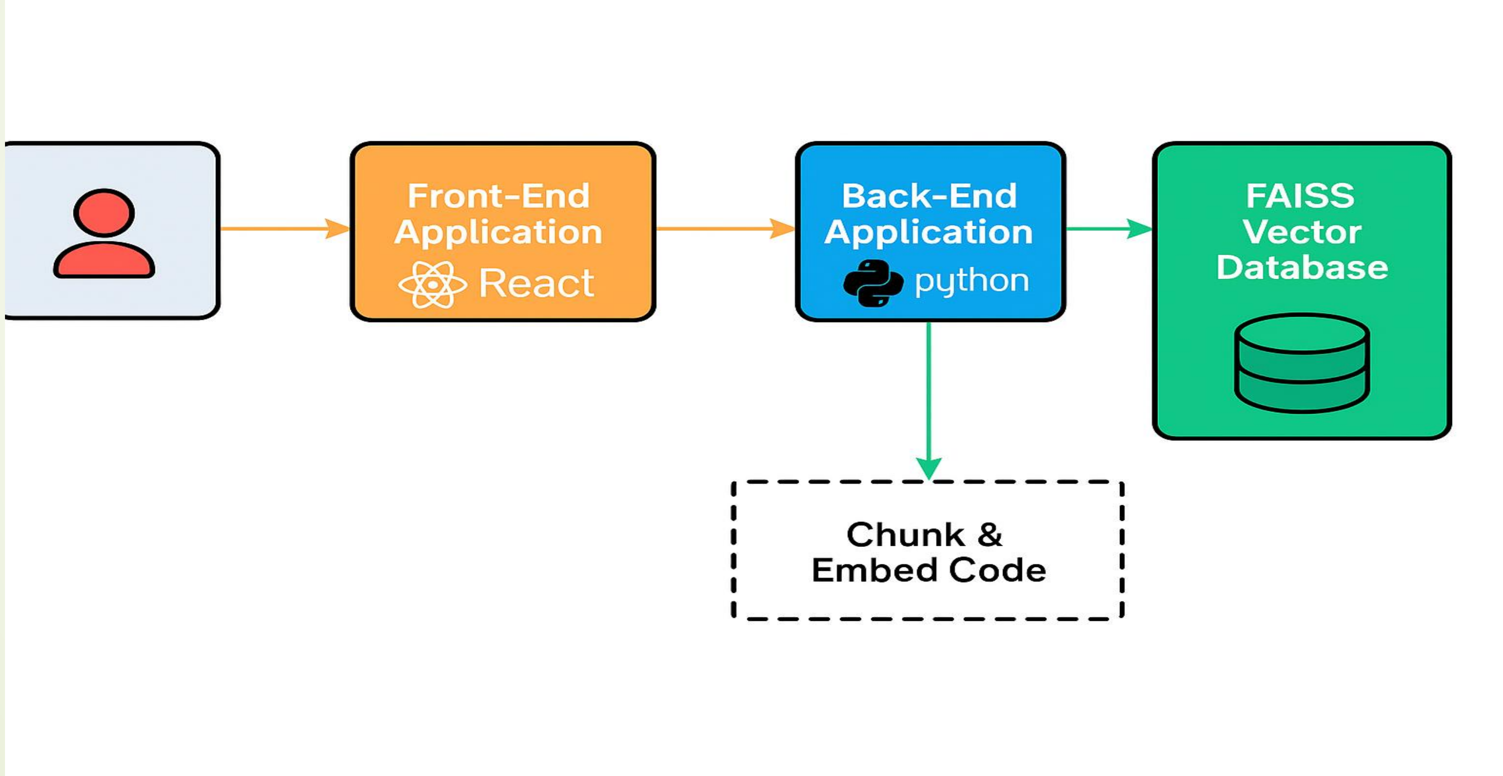
- It provides instant access to key information about the codebase, architecture, and development workflows.

- The goal is to accelerate the time-to-first-contribution for new developers and free up senior engineers.

- CodeCoach acts as a personalized guide, available 24/7.

High-Level Architecture

How CodeCoach Works: A High-Level View



This diagram illustrates the flow from a new developer's query to the chatbot's response. The user interacts with the Front-End Application, which sends the query to the Back-End Application. The core of the system is the connection between the Back-End and a FAISS Vector Database, which contains a vectorized representation of the codebase.

Key Features of CodeCoach

- Codebase Navigation: Ask questions like, "Where is the function for processing a new order?“

- Architectural Insights: Understand which services handle which parts of the e-commerce flow.

- Workflow Guidance: Get step-by-step instructions for tasks like setting up the local environment or submitting a pull request.

- Technology Stack: Get quick facts and context on the different technologies and libraries used in the project.

- FAQ and Troubleshooting: Find solutions to common setup and build issues.

Benefits of CodeCoach

The Impact: Why This Matters

- **Accelerated Onboarding:** Reduce the time new developers take to become productive.

- **Increased Senior Dev Efficiency:** Free up experienced engineers to focus on complex tasks, not repeated questions.

- **Consistent Information:** Ensure all new hires receive the same high-quality, up-to-date guidance.

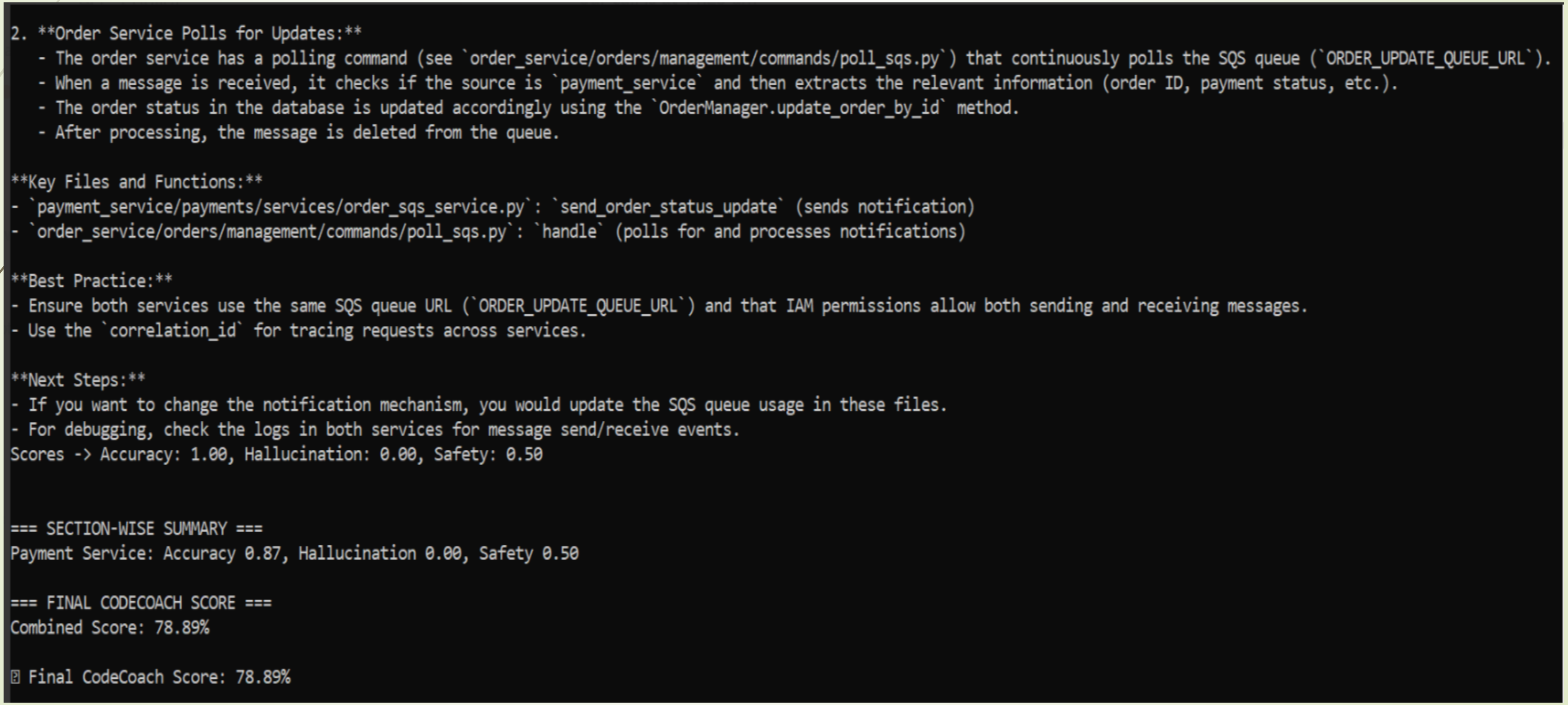
- **Improved Developer Satisfaction:** A smoother onboarding process leads to higher morale and retention.

- **Scalability:** The solution can easily scale with the growth of the team and the complexity of the codebase.

Langfuse Evaluation Workflow

- **Question Bank** – Test questions with expected keywords (in JSON format)
- **Evaluation Script** – Sends questions & scores answers
- **Metrics Calculated**
- - **Accuracy** – Correct keywords present
- - **Hallucination** – Avoids made-up answers
- - **Safety** – Appropriate and relevant answers

Langfuse AI Evaluation Overview



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2. **Order Service Polls for Updates:**
   - The order service has a polling command (see `order_service/orders/management/commands/poll_sqs.py`) that continuously polls the SQS queue (`ORDER_UPDATE_QUEUE_URL`).
   - When a message is received, it checks if the source is `payment_service` and then extracts the relevant information (order ID, payment status, etc.).
   - The order status in the database is updated accordingly using the `OrderManager.update_order_by_id` method.
   - After processing, the message is deleted from the queue.

**Key Files and Functions:**
- `payment_service/payments/services/order_sqs_service.py`: `send_order_status_update` (sends notification)
- `order_service/orders/management/commands/poll_sqs.py`: `handle` (polls for and processes notifications)

**Best Practice:**
- Ensure both services use the same SQS queue URL (`ORDER_UPDATE_QUEUE_URL`) and that IAM permissions allow both sending and receiving messages.
- Use the `correlation_id` for tracing requests across services.

**Next Steps:**
- If you want to change the notification mechanism, you would update the SQS queue usage in these files.
- For debugging, check the logs in both services for message send/receive events.
Scores -> Accuracy: 1.00, Hallucination: 0.00, Safety: 0.50


=== SECTION-WISE SUMMARY ===
Payment Service: Accuracy 0.87, Hallucination 0.00, Safety 0.50

=== FINAL CODECOACH SCORE ===
Combined Score: 78.89%

□ Final CodeCoach Score: 78.89%
```

Next Steps

What's Next?

- Pilot the CodeCoach bot with a small group of new hires for a feedback period.

- Iterate on the knowledge base and conversational flows based on usage data.

- Plan integration with other tools (e.g., Slack, IDE extensions).

- Expand functionality to support more advanced queries and proactive assistance.

Additional Information + Q&A

Problem video act: Bhavesh Rathod: 🎥 Video | Code Cortex Team | Microsoft Teams

Demo url https://www.loom.com/share/2b4c1cfe2a294baea35607c21411a8b0?sid=e16fdc17-ab09-4b1f-8860-48151bf22203

Now floor is open for questions from the audience/judges

Thank you !!!!!!