induō

Shop Your Closet!

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Powered by CatVTON
GitHub Repository

Nov 20th 2024

Project description

induō is an AI-powered iOS application revolutionizing wardrobe management and sustainable fashion!

Core Features

- Personalized wardrobe management
- Virtual try-on system
- AI-driven outfit recommendations

Technical Stack

- Built with Swift, Python, and Firebase
- Advanced AI integration powered by CatVTON
- Robust data security

Project goals

- **Streamlining Daily Decision Making:** Reducing the time and stress of outfit selection through AI-powered recommendations

- **Advancing Fashion Technology:** Implementing cutting-edge virtual try-on capabilities that allow users to visualize outfits before wearing them

- **Promoting Sustainable Fashion:** Encouraging better utilization of existing wardrobes and mindful consumption

- **Personalizing Fashion Technology:** Adapts to individual style preferences while maintaining robust data privacy standards

Project justification

- **Application of learning**
  - Integration of knowledge from LMU software development courses and prior internships
- **Skill Extension**
  - Practical application of our skills
  - Solves a relatable everyday problem
  - Extends our skills in AI/ML, Prompt Engineering, Data Science, Image Generation, etc.
- **Technical Difficulty**
  - Full Stack complexity
  - Will leverage open-source tools and APIs to keep the project scope manageable

Passion Project!

Scenarios

Morning Outfit Dilemma

A busy professional/student struggles to find a stylish and appropriate outfit each morning

Swipe through liked outfits to save time!

Wardrobe Building

Taylor wants to build a sustainable wardrobe but doesn't know where to start
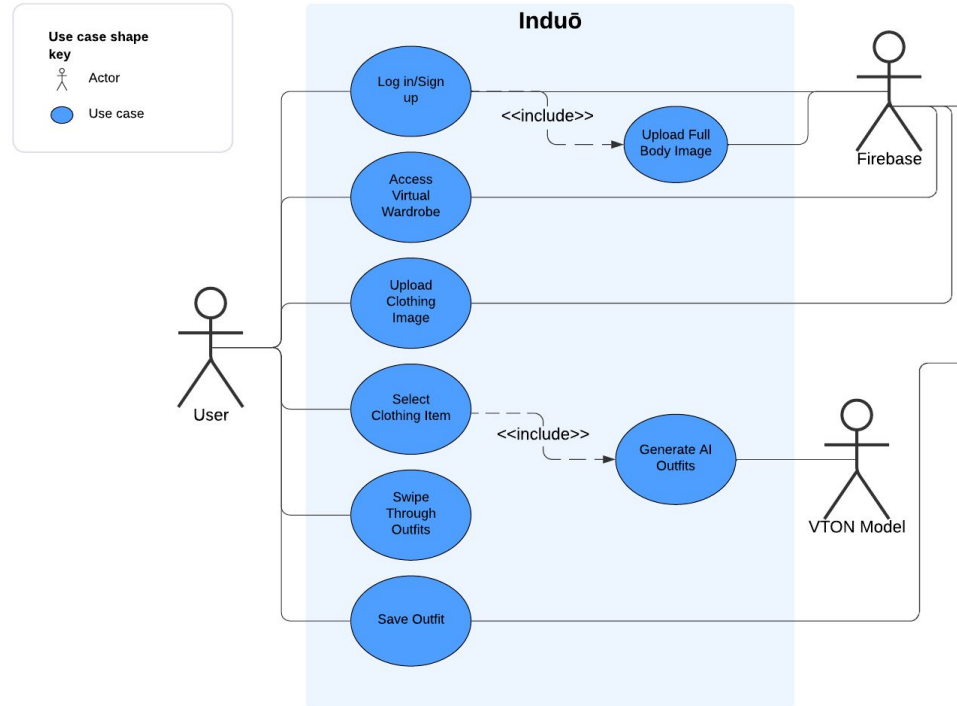
Upload clothing items into your virtual closet to see how it styles with existing pieces
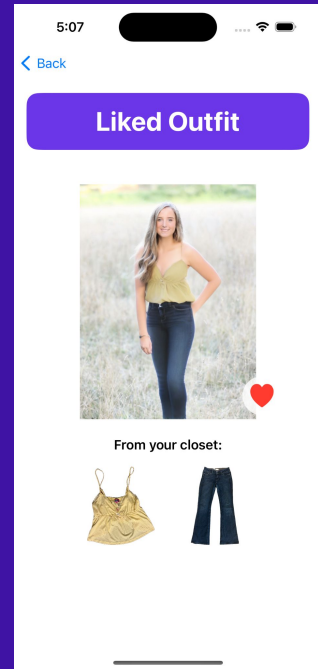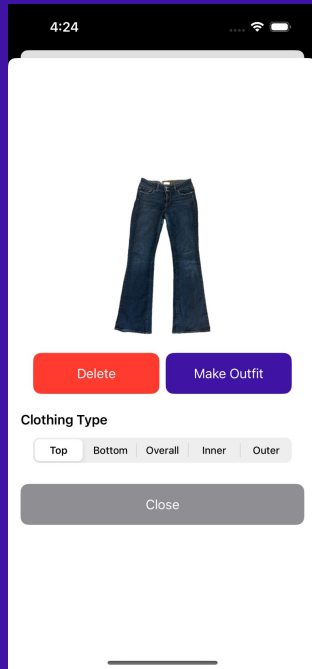
Closet Cleanup

Jordan doesn't know which clothes they no longer wear or need.
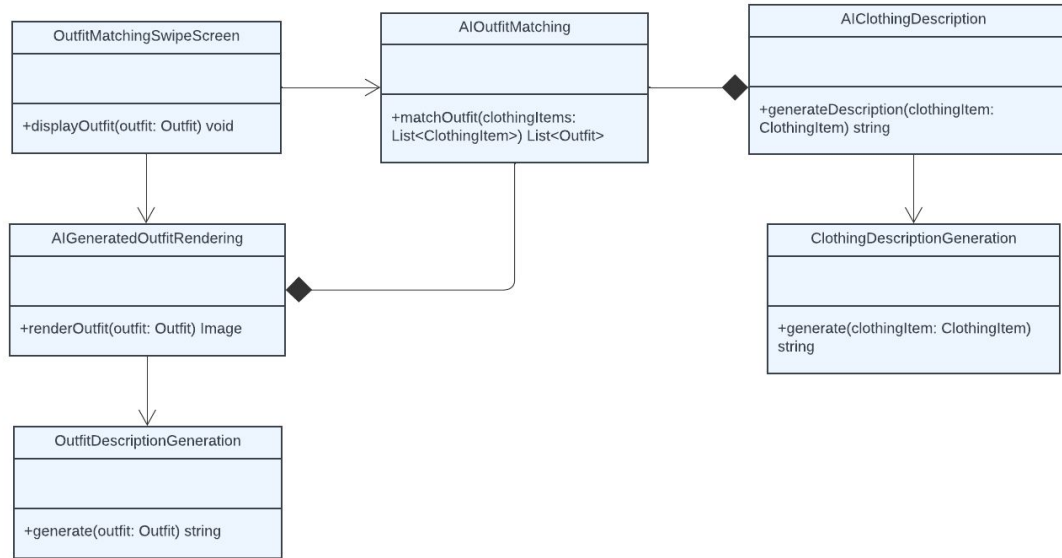
Donate clothes that aren't included in liked outfits

Use Case Diagram

Use case shape key

Actor

Use case

Induō

Log in/Sign up

<<include>>

Upload Full Body Image

Access Virtual Wardrobe

Upload Clothing Image

Select Clothing Item

<<include>>

Generate AI Outfits

Swipe Through Outfits

Save Outfit
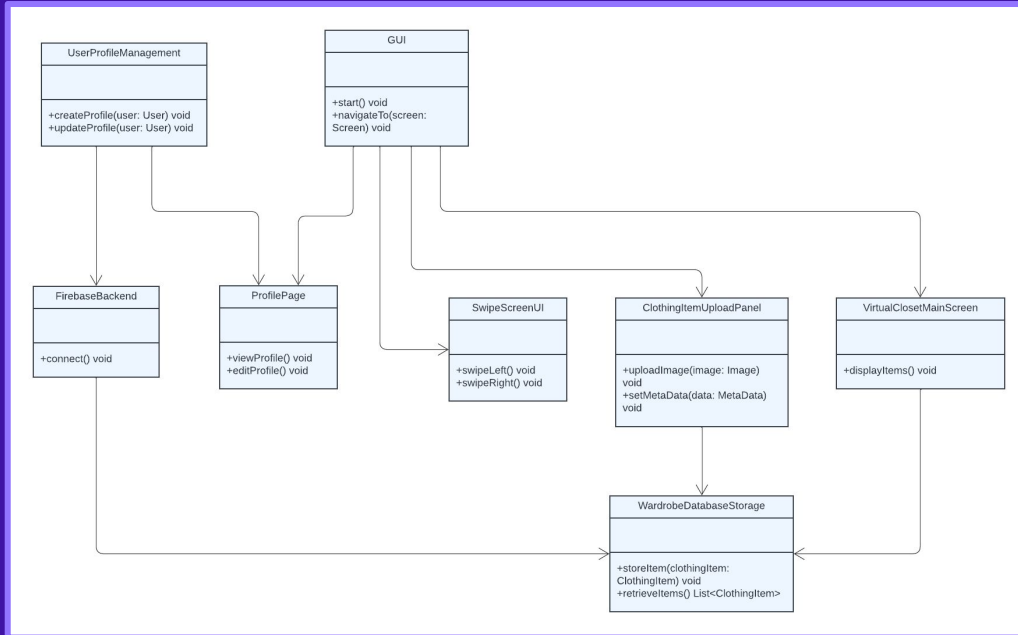
User

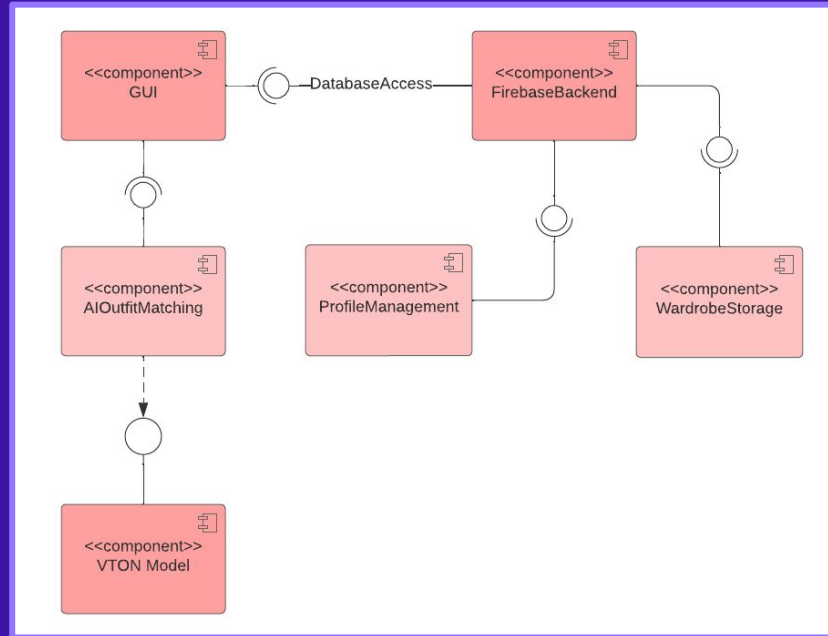Firebase

VTON Model

User Interface

Detailed Class Diagram (Pt. 1)

Detailed Class Diagram (Pt. 2)

Detailed Component Diagram

Detailed Database Diagram
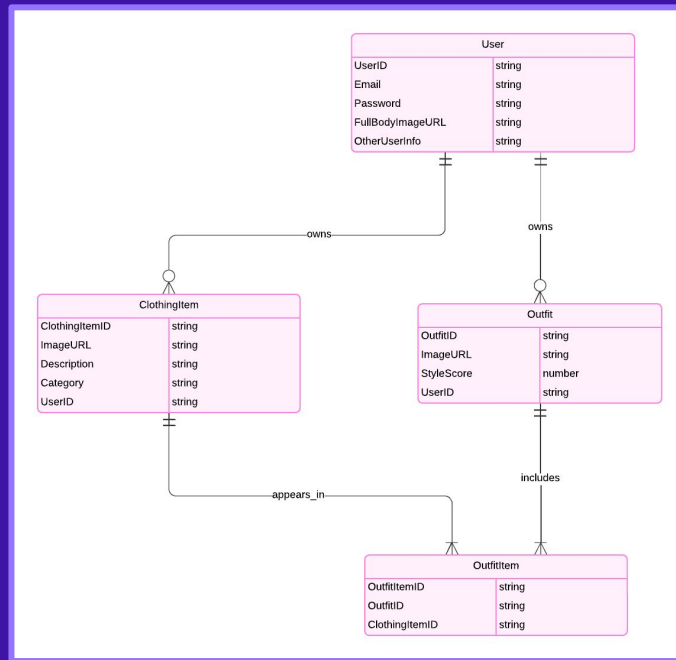
Demonstration!

Challenges

I GET BORED REALLY EASILY.
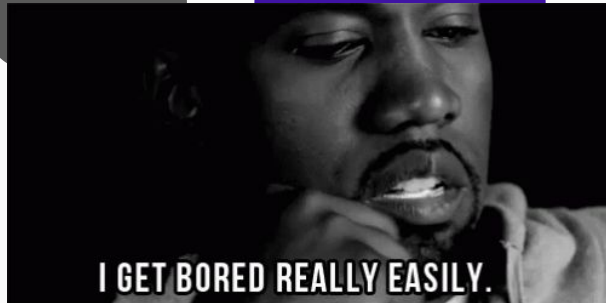
- **Model Initialization Delay:** CAT-VTON is a research model, not optimized for commercial use. It takes ~4 minutes to start up after inactivity due to Fal shutting it down.
- **Time Constraints:** Fal.ai promises a new and improved try-on model in 1–2 weeks, but project deadlines might not align with this timeline.
- **Workaround Costs:** Keeping the model "warm" by running periodic samples prevents delays but incurs additional costs.
- **Creative Solution [cheating lol]:** A custom "keep-warm" script tricks Fal.ai into throwing intentional errors to avoid charges while keeping the model hot, ensuring faster response times (~10 seconds for image generation).
- **Implementation Challenge:** The script must run every 30 seconds in the background, which requires integrating it efficiently within the app or running it manually during development.

Status Update Chart

Progress:
- ***Frontend Structure***: Completed and functional.
- **Database Setup & Authentication:** Done and tested.
- **Image Rendering:** Can render virtual closet outfits on a user's image.

Challenges/Obstacles:
- **UI Design:** Still in development; not up to the desired standard yet.
- **User Input Pages:** Missing pages for better user input/interaction.
- Teammate communication & division of work

Upcoming Goals:
- **UI Improvements:** Refine and polish the interface to meet our standards.
- **Add User Input Pages:** Design and implement additional pages for better user feedback and interaction.
- **Outfit Recommendation System:** Integrate a personalized recommendation system based on style preferences.

Long term Vision:
- **AI-Powered Fashion Assistance:** Developing AI integration to optimize outfit suggestion algorithm.
- **Improved User Experience:** Make clothing selection easier and more personalized for users.
- **Expanded User Base:** Scale the app to allow more users and provide diverse fashion recommendations.
- **Industry Adoption:** Potential for integration with fashion retailers or influencers for collaboration

Thank You!!

Questions?