



Design Your Dream Space: AI & AR Home Decor Assistant Case Study

An UX/UI Case Study on blending Artificial Intelligence and Augmented Reality to revolutionize the process of home interior design.



About the Project



Core Goal

Create an intuitive AI-powered application that empowers users to design and visualize their dream home spaces with unparalleled realism using Augmented Reality.



Project Scope

Covered the full design spectrum: from foundational user research and competitive analysis to detailed UX/UI design, focusing on the seamless integration of AI suggestions and AR visualization tools.

Addressing Core User Challenges

Problem Statements & Solutions

Problems

The Visualization Gap: Users struggle to visualize how furniture and decor truly fit their space—scale, color, and style—before committing to a purchase. This uncertainty leads to high return rates and customer frustration.

- **Users can't visualize furniture scale and fit in their actual space**
- **Online furniture looks different than in real rooms**
- **Expensive returns from poor purchasing decisions**
- **Overwhelmed by too many choices without guidance**



Our Solutions

- **AI analyzes preferences for personalized recommendations**
- **AR shows exact furniture placement in real space**
- **Direct purchase links eliminate shopping friction**
- **3D models and measurements build purchase confidence**



User Research: Understanding Our Audience

Research Summary

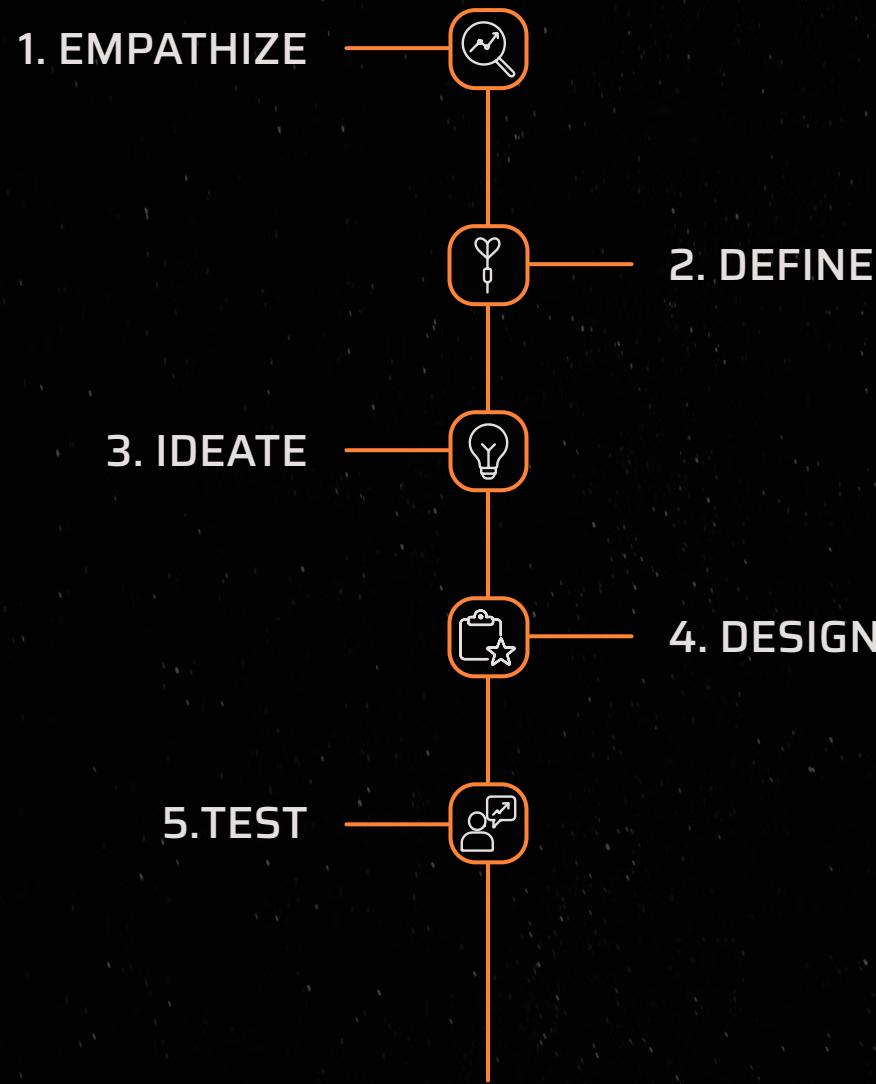
We conducted extensive interviews with over 5+ users across key demographics, including home decor enthusiasts, committed DIYers, and first-time homeowners.

This qualitative research revealed three critical user needs that our solution must address:

- Accurate measurement and style matching
- Desire for consolidated shopping (avoiding app hopping)
- Demand for direct purchase links from inspiration sources

Our Design Process

Following the Design Thinking methodology to create user-centered solutions



Our Vision: Goals & Audience

Major Goals



Enhanced Visualization

Empower users to accurately preview furniture and decor in their living spaces using AR, boosting confidence and reducing purchase uncertainty.



Personalized Design

Provide AI-driven style suggestions and product recommendations tailored to individual tastes, budget, and room dimensions.



Streamlined Experience

Integrate a smooth shopping flow from visualization to purchase, minimizing friction and consolidating the entire design process.

Primary Persona



Sarah Chen, The Aspiring Home Stylist

Demographics: 30 years old, Marketing Manager, lives in a recently purchased urban apartment.

Background: Sarah recently moved into her first apartment and is eager to make it reflect her personal style without breaking the bank. She loves browsing home decor magazines and Pinterest for inspiration but feels overwhelmed by the sheer number of choices and unsure how different pieces will look together in her actual space. She's tech-savvy and uses apps for many aspects of her life.

Goals:

- Decorate her apartment with a cohesive, modern aesthetic.
- Avoid costly mistakes when buying furniture and decor.
- Find unique, quality pieces that fit her budget.
- Simplify the shopping process from inspiration to purchase.

Frustrations:

- Difficulty visualizing how items look in her small space.
- Too much "app-hopping" between inspiration, measurement, and shopping.
- Fear of purchasing something that doesn't fit or clashes with existing decor.
- Lack of personalized guidance for her specific style and budget.

"I want my apartment to feel like me, but it's hard to get it right. I wish there was an easy way to try things out before I buy them, and know they'll actually work."

Target Audience



New Homeowners

Individuals furnishing their first homes, often seeking guidance and efficient, budget-friendly solutions.



Decor Enthusiasts

Passionate about interior design, they seek advanced tools for precise styling and experimentation.



Tech-Savvy Shoppers

Early technology adopters who value innovative solutions for a simplified and efficient home decor shopping experience.

Competitive Analysis & Strategic Positioning

A detailed analysis of key competitors, highlighting market gaps our AI/AR solution is uniquely positioned to fill, alongside a comprehensive SWOT assessment.

Competitive Feature Analysis

Feature	Our Solution	IKEA Place	Houzz	Wayfair
AR Visualization	✓	✓	✓	✓
AI Recommendations	✓	✗	🟡	🟡
Product Integration	✓	✓	✓	✓
User Experience	✓	🟡	✓	🟡
Price Range	Freemium	Free	Free	Free
Platform Availability	iOS, Android, Web	iOS, Android	iOS, Android, Web	iOS, Android, Web

✓ = Yes, 🟡 = Partial, ✗ = No

SWOT Analysis

Strengths

- AI-driven personalization
- Accurate AR visualization
- Integrated shopping experience
- Strong user engagement focus

Weaknesses

- New tech adoption barriers
- Initial complexity of onboarding
- Brand recognition in crowded market
- High development costs

Opportunities

- Growing \$3.5B AI design market
- Rising AR device adoption
- Partnerships with major retailers
- Expansion into commercial design

Threats

- Established brands with large user bases
- Subscription fatigue in app market
- Rapid evolution of AR technology
- Potential data privacy concerns

User Personas: Bringing Our Users to Life

Understanding our diverse user base is crucial for designing a solution that truly resonates. We've identified two primary personas that represent key segments of our target audience, each with unique needs and challenges in their home decor journey.



Healan, The Aspiring Home Stylist

Demographics: 30 years old, Marketing Manager, lives in a recently purchased urban apartment.

Bio: Sarah recently moved into her first apartment and is eager to make it reflect her personal style without breaking the bank. She loves browsing home decor magazines and Pinterest for inspiration but feels overwhelmed by the sheer number of choices and unsure how different pieces will look together in her actual space. She's tech-savvy and uses apps for many aspects of her life.

Favorite Brands: Pottery Barn, West Elm, Article, Target Home.

Goals:

- Decorate her apartment with a cohesive, modern aesthetic.
- Avoid costly mistakes when buying furniture and decor.
- Find unique, quality pieces that fit her budget.
- Simplify the shopping process from inspiration to purchase.

Frustrations:

- Difficulty visualizing how items look in her small space.
- Too much "app-hopping" between inspiration, measurement, and shopping.
- Fear of purchasing something that doesn't fit or clashes with existing decor.
- Lack of personalized guidance for her specific style and budget.

"I want my apartment to feel like me, but it's hard to get it right. I wish there was an easy way to try things out before I buy them, and know they'll actually work."



David Miller, The Practical Family Man

Demographics: 45 years old, Software Engineer, married with two young children, owns a suburban house.

Bio: David is focused on functionality and durability for his family home. He needs furniture that can withstand daily wear and tear from kids and pets, but also wants his space to look presentable and comfortable. He has limited time for shopping and relies heavily on online reviews and efficient solutions. He values practical advice and clear information over endless browsing.

Favorite Brands: Crate & Barrel, Room & Board, Wayfair, Amazon Home.

Goals:

- Furnish rooms efficiently with durable, family-friendly items.
- Ensure new purchases fit well and are safe for children.
- Make informed decisions quickly due to time constraints.
- Create a harmonious living space that is both functional and aesthetically pleasing.

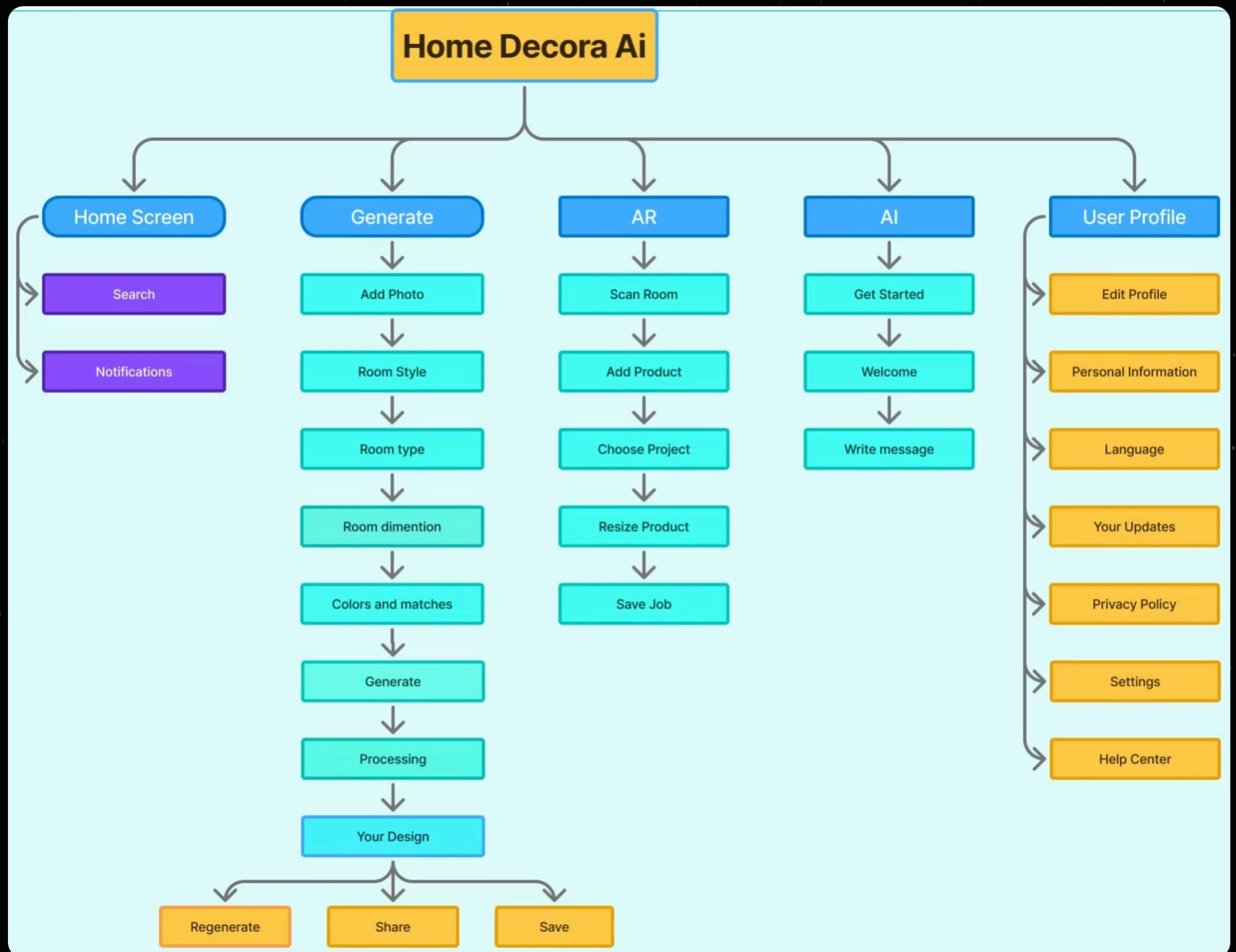
Frustrations:

- Lack of time to visit multiple physical stores.
- Uncertainty about product quality and material durability from online descriptions.
- Difficulty visualizing large items in a crowded family home.
- Worry about assembly complexity and return logistics for big items.

"I just need to get this done. If I could quickly see how a sofa fits in my living room and know it's good quality, that would save me so much headache."

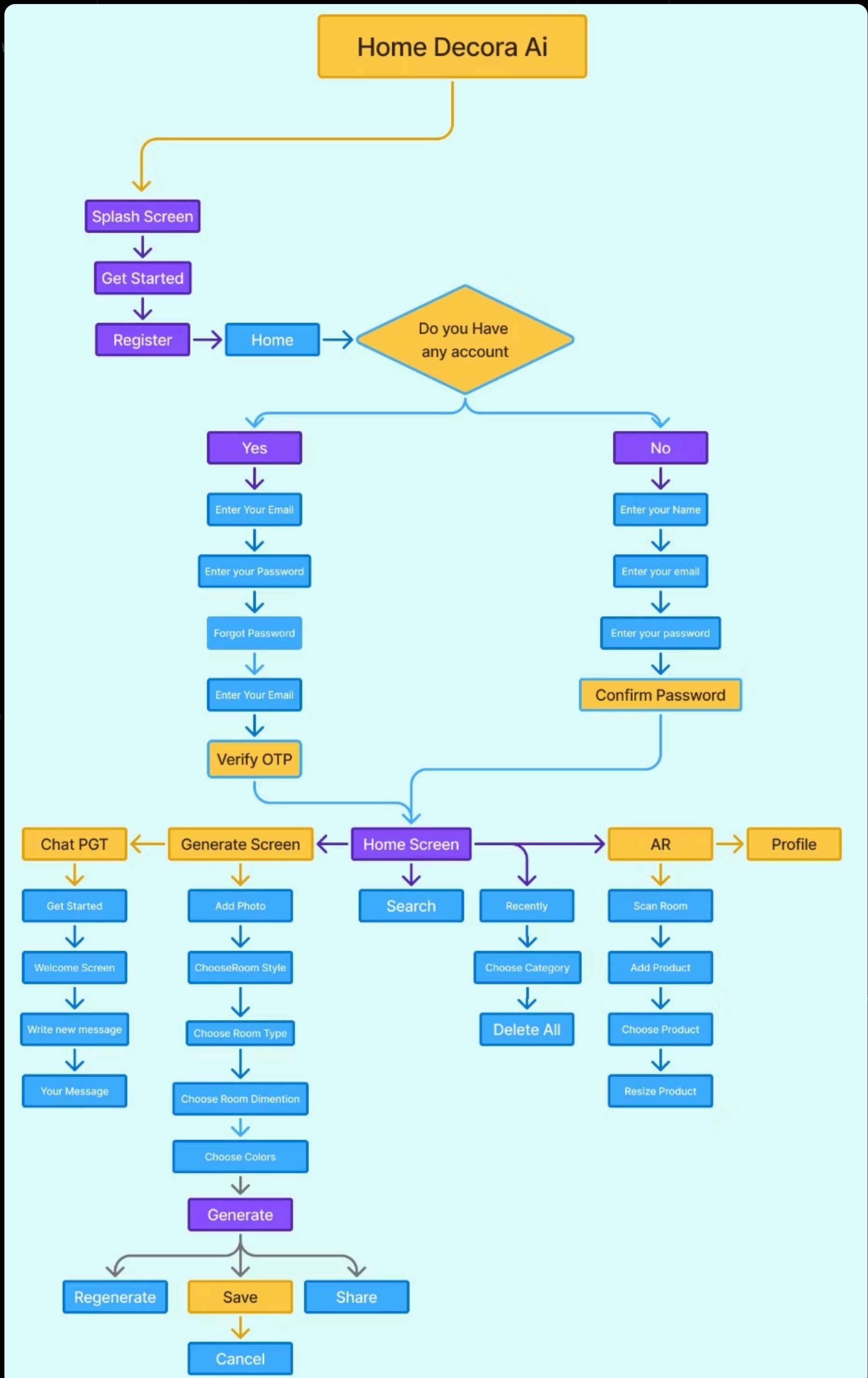
Information Architecture

This diagram illustrates the hierarchical structure and navigation flow of the DecorAI app, providing a clear overview of its key sections and features. The comprehensive flowchart organizes all the app's elements in an intuitive hierarchy, guiding users efficiently from discovery to purchase and personalized account management.

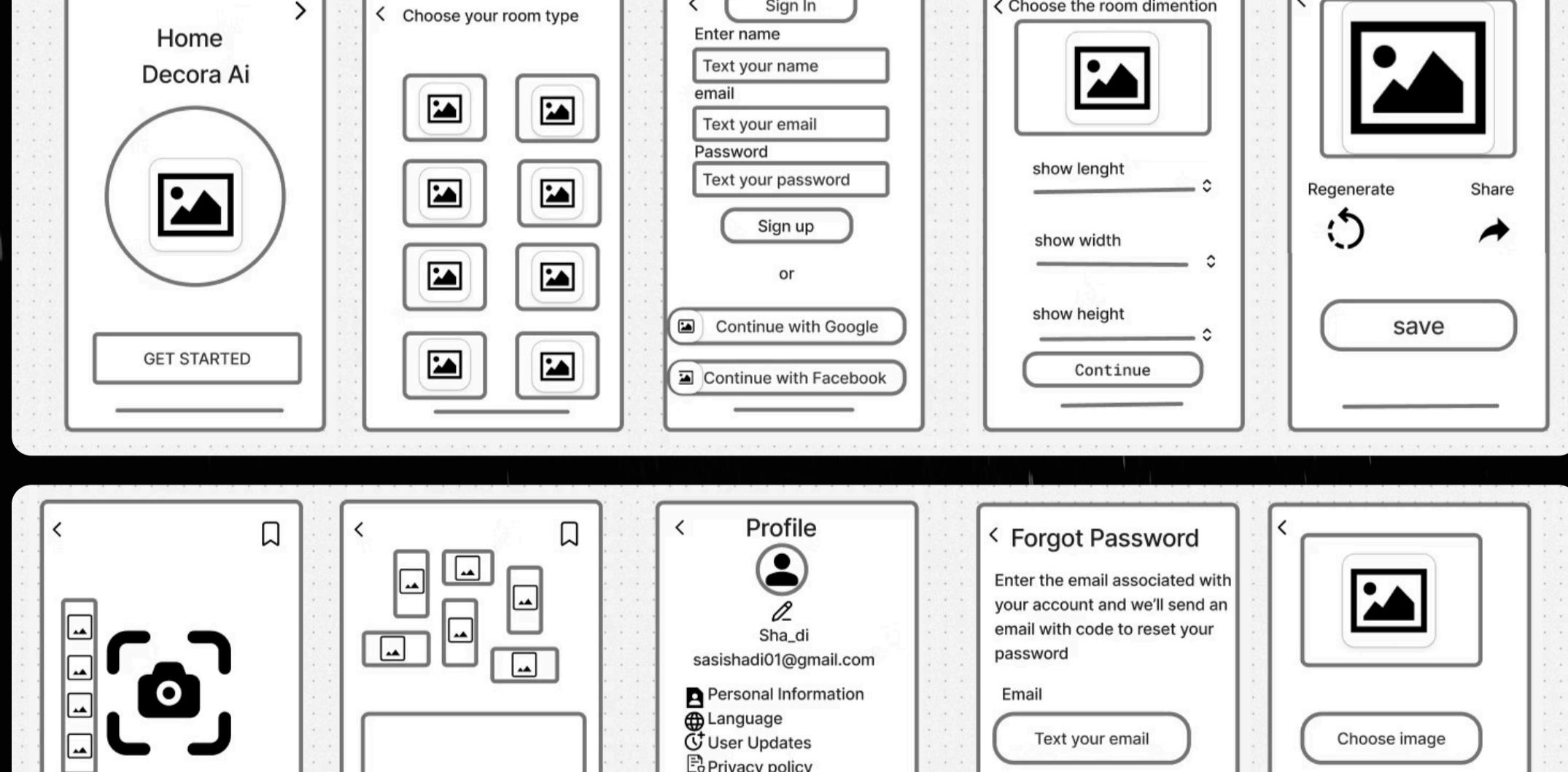
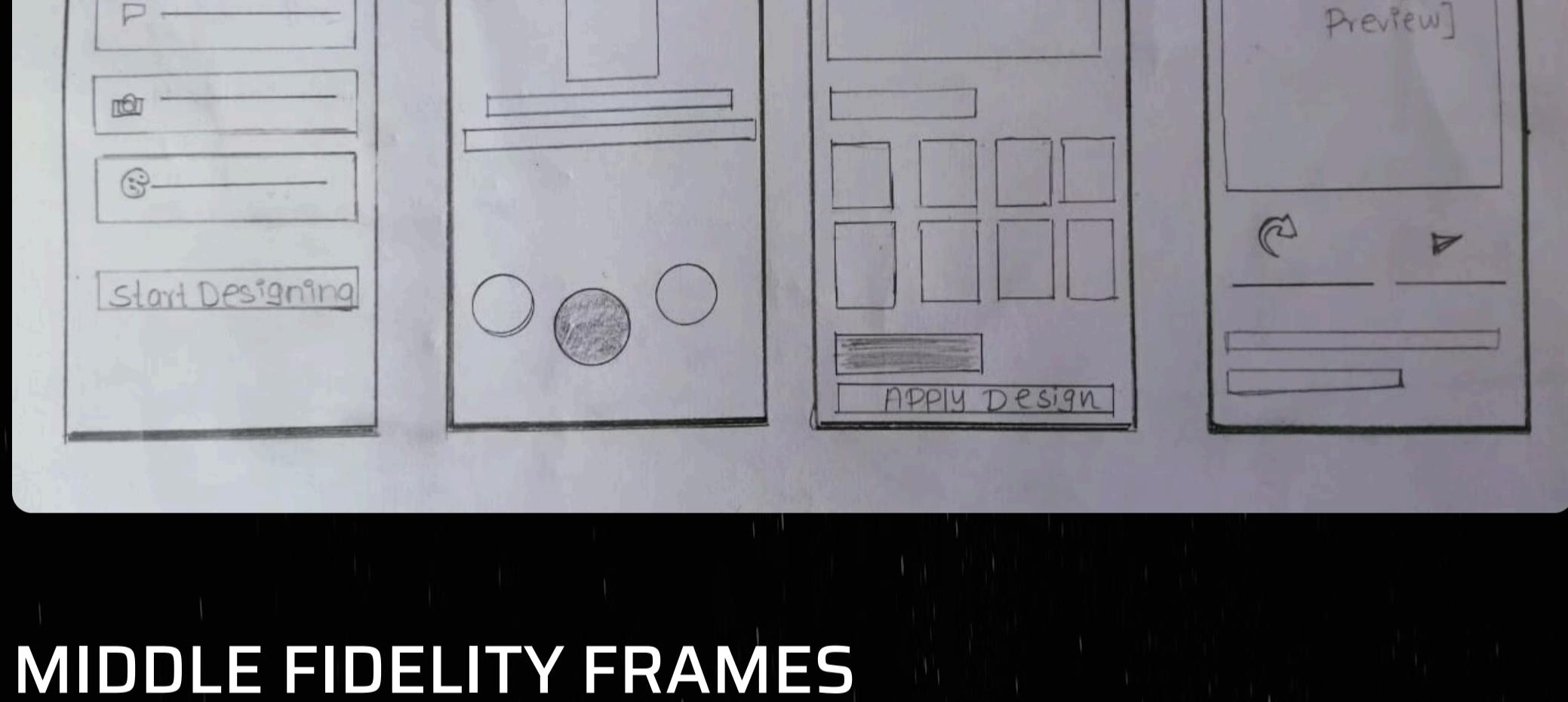
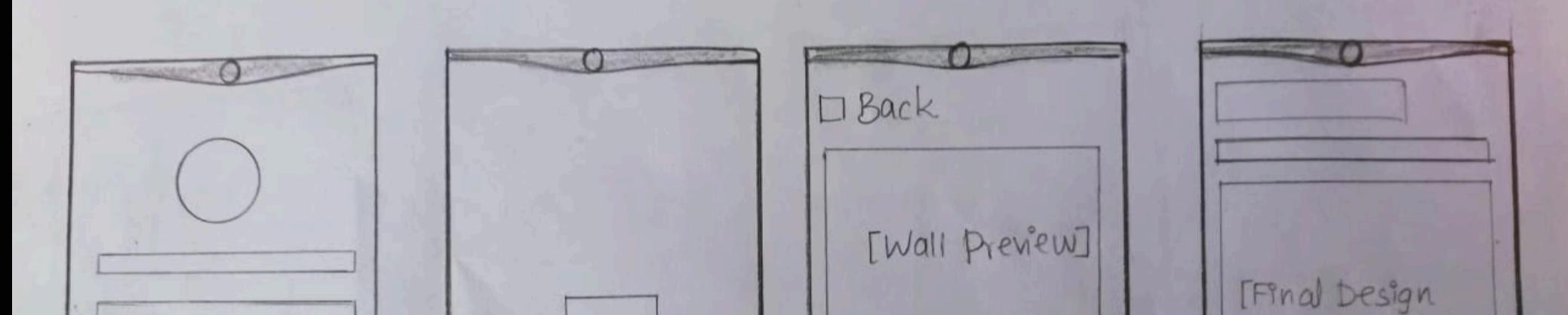
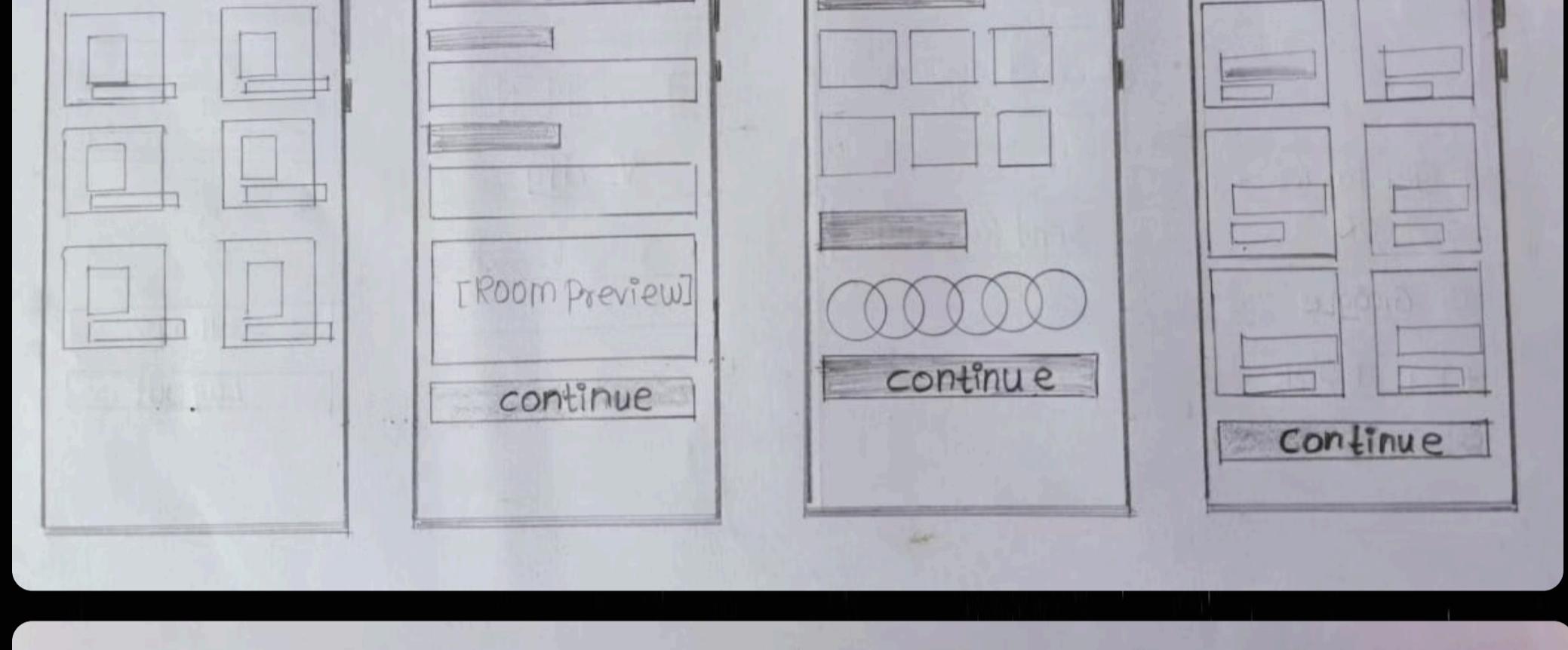
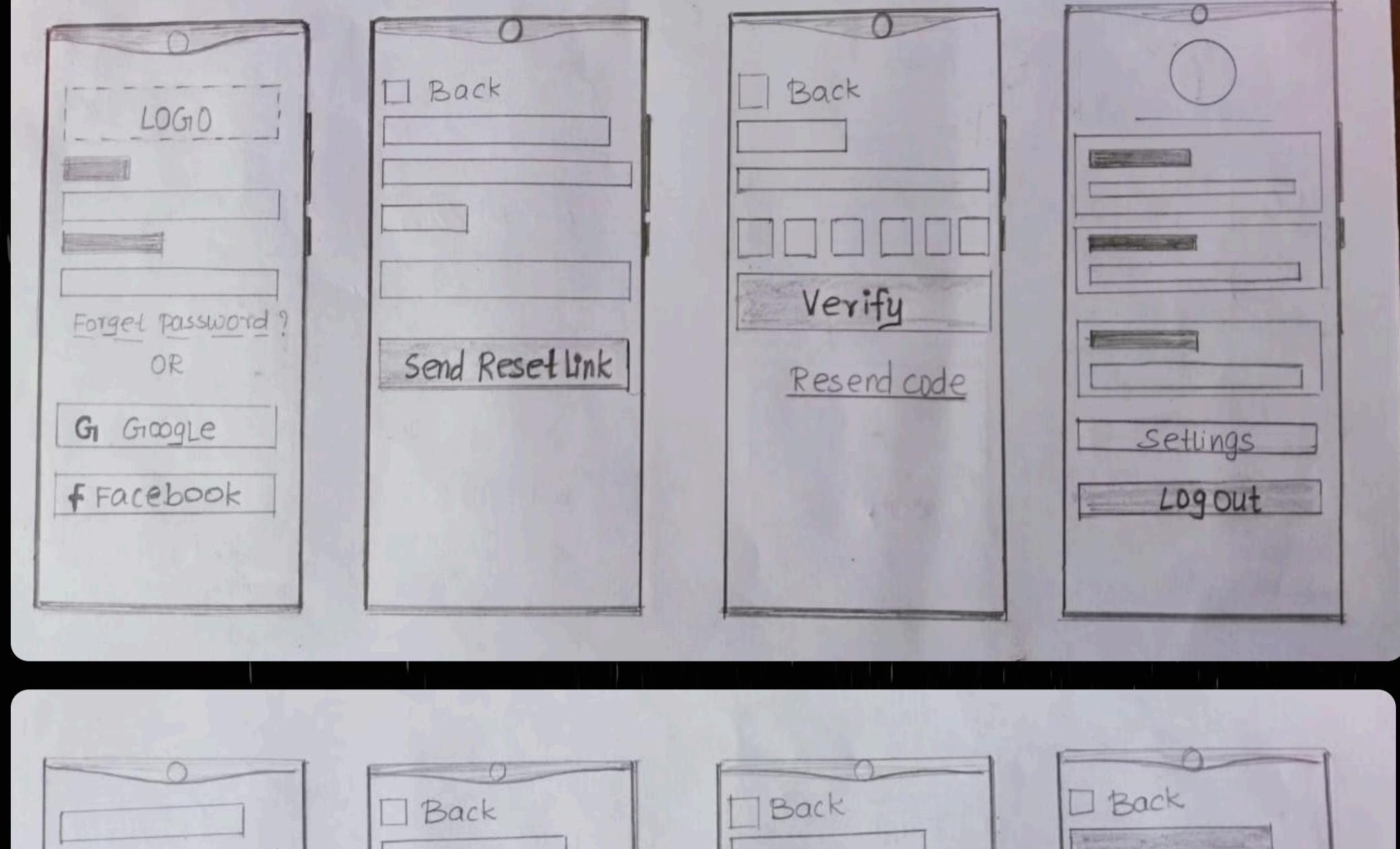


User Flow

This diagram illustrates the complete step-by-step journey a user takes through the AI/AR home decor application, from initial project setup to final purchase.



WIREFRAME LOW FIDELITY FRAMES

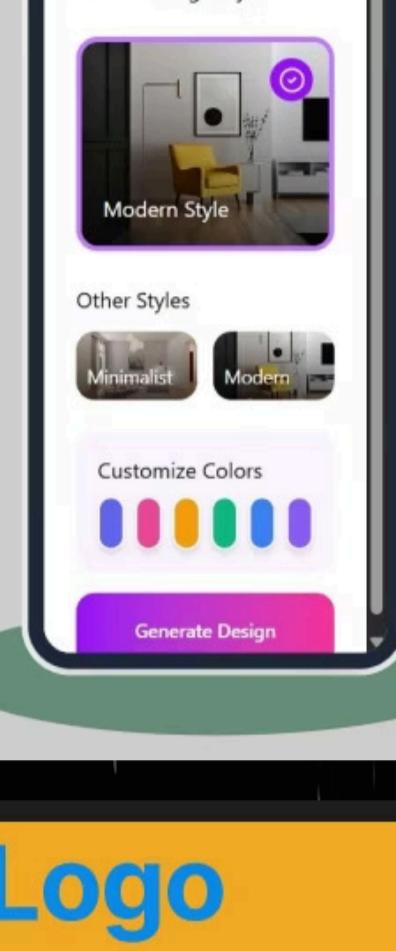
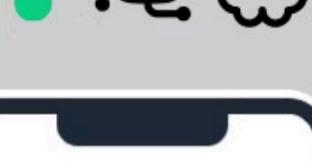


HOME DECOR AI ASSISTANT

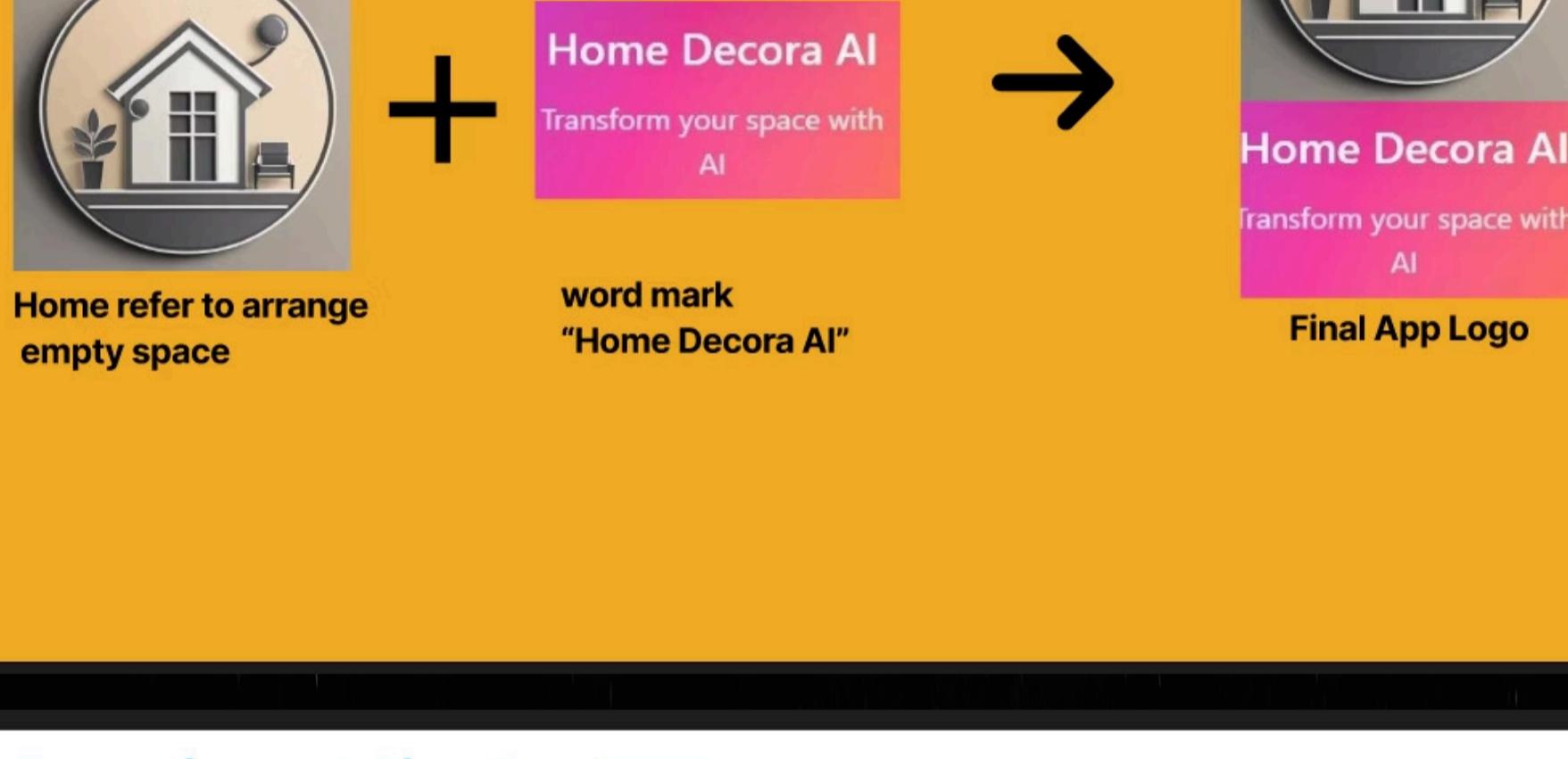
UI CASE STUDY

UI Case Study

Tools Used



App Logo



UI Design Kit Color

Primary



FD17CB
Glamour Pink

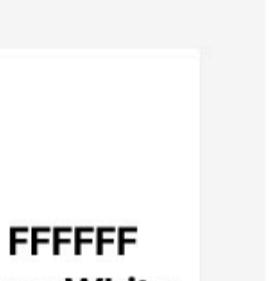
Secondary



A92BE8
bright purple

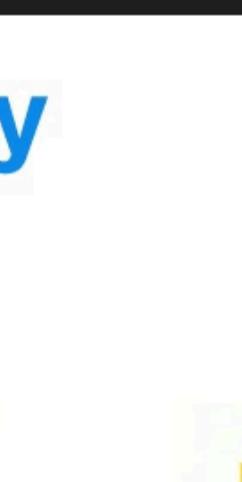


0C8CE9
vivid blue



F3C11B
golden yellow

Tertiary



CFCFCF
Grey

FFFFFF
Pure White

Typography

POPPINS

	Semi Bold	Medium	
Heading 1	24 PX	Heading 3	12 PX
Heading 2	12 PX	Body 1	10 PX
	Regular		
Body 3		9 PX	
Body 4		8 PX	

Aa Bb Cc Dd Ee Ff Gg Hh Ii
Jj Kk Ll Mm Nn Oo Pp Qq
Rr Ss Tt Uu Vv Ww Xx Yy

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c

Icons and Buttons

Icons



Buttons

login

Submit

Confirm

Share

Navigator Bar

Active

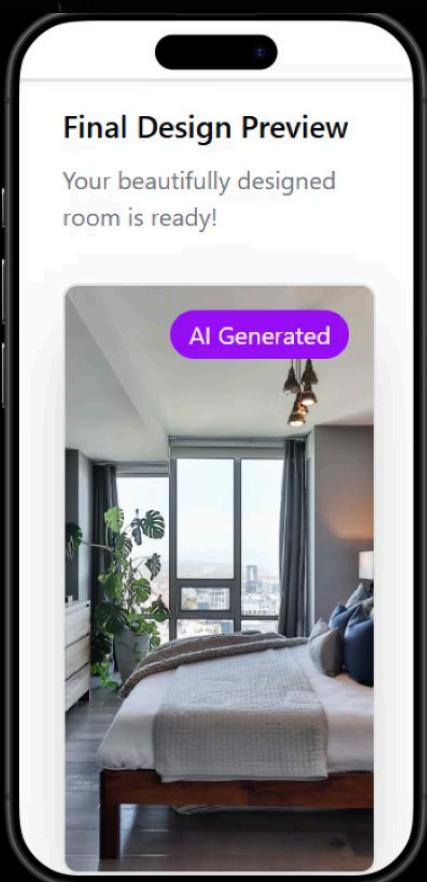
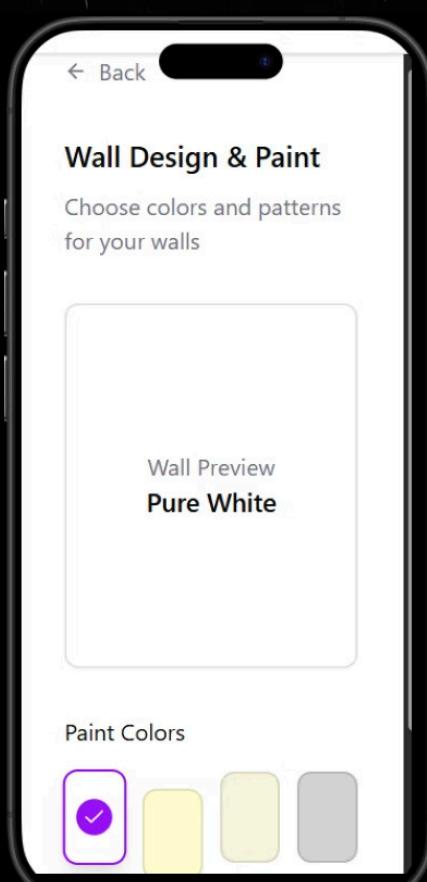
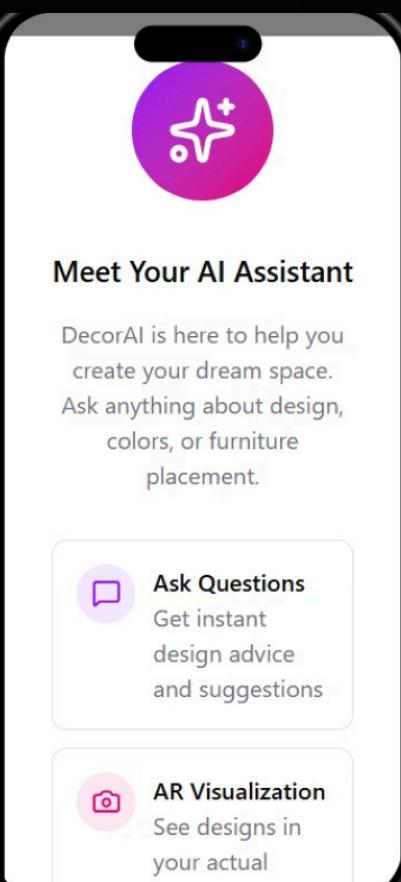
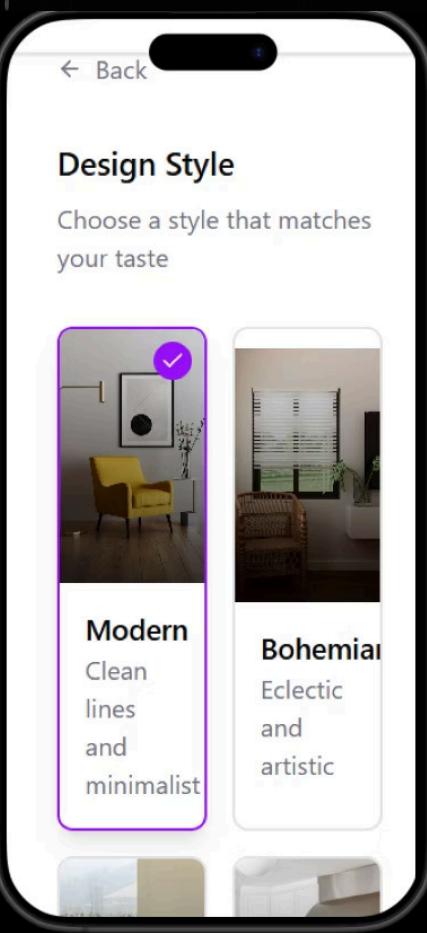
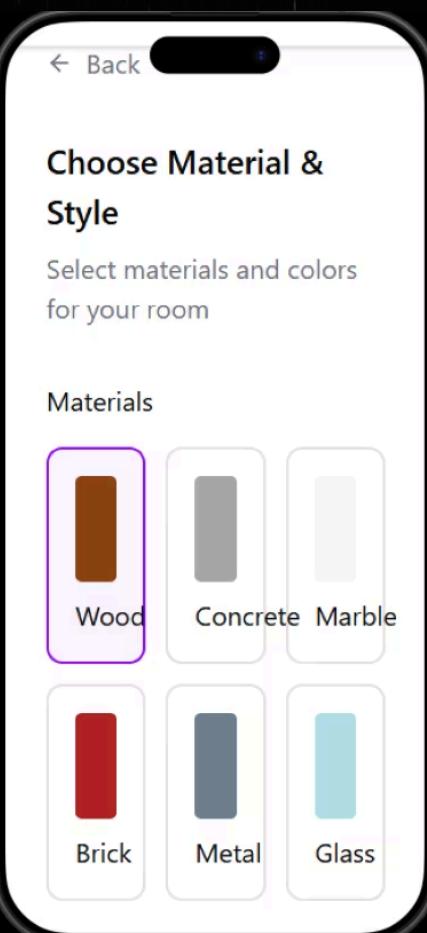
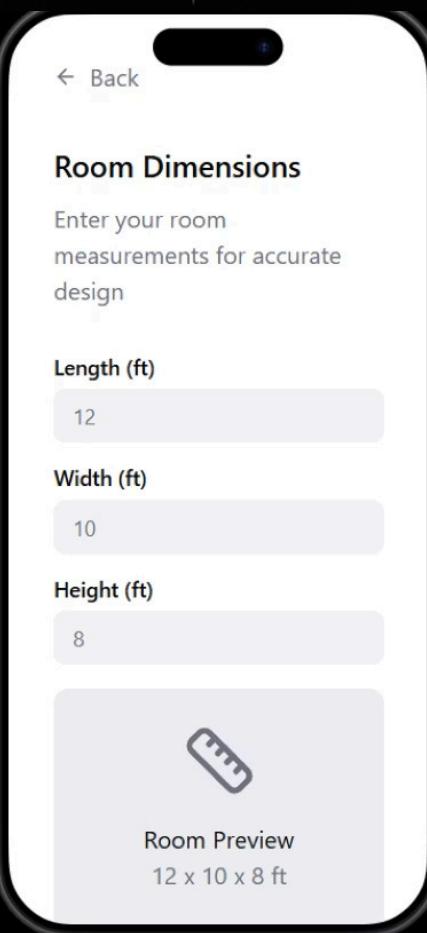
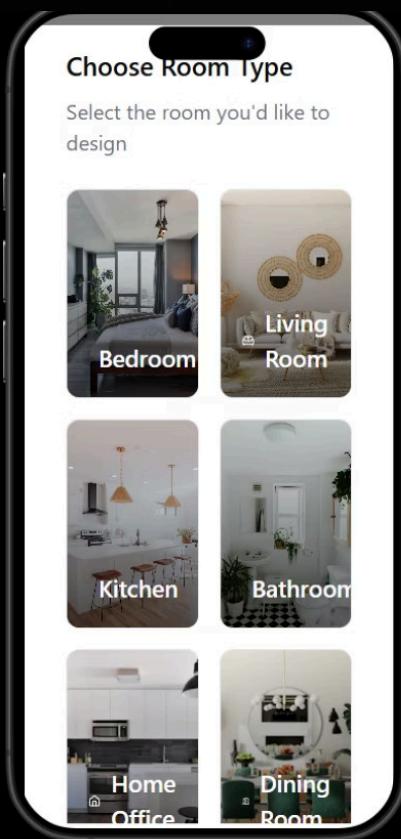
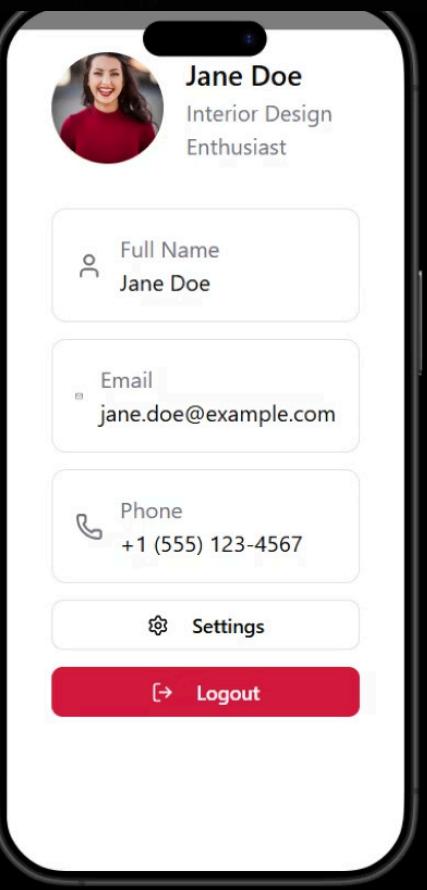
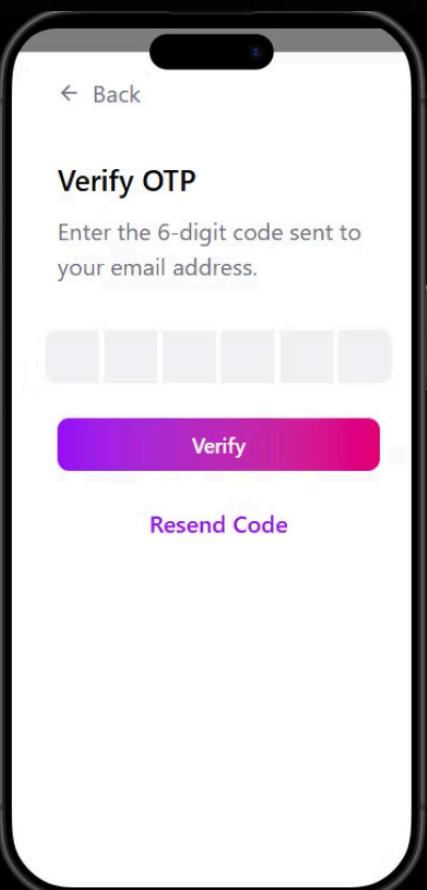
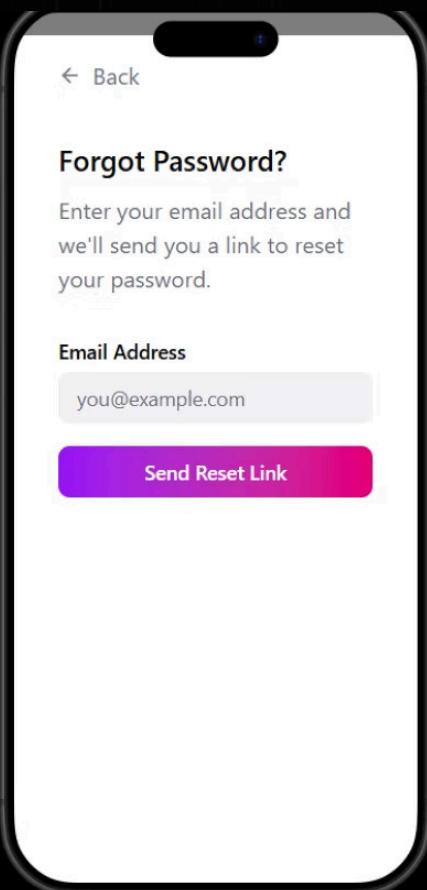
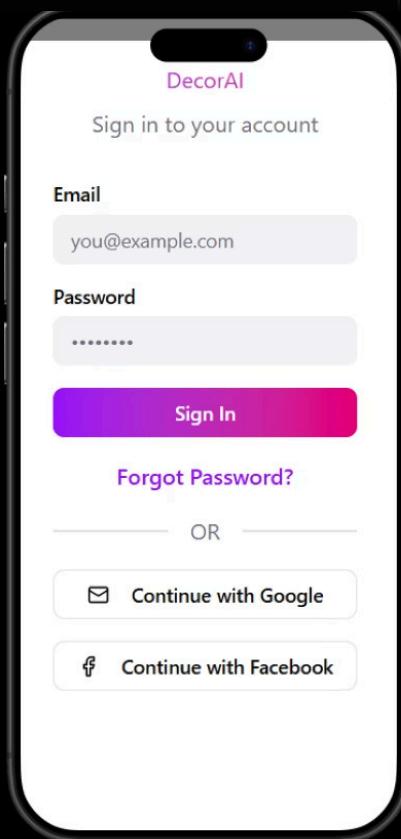


Home



image

HIGH FIDELITY FRAMES



Conclusion: Transforming Home Design with AI & AR

The "Design Your Dream Space" app successfully bridges the gap between abstract inspiration and spatial reality. By combining empathetic UX research with cutting-edge technology, we deliver a seamless, delightful, and highly confident design journey for every user.

Key Takeaways

- Visualization is key: AR eliminates purchase uncertainty and costly returns.
- Personalization matters: AI ensures every design suggestion is relevant and tailored.
- The future is interactive: Home decor planning is moving toward personalized, accessible, and interactive digital tools.

