

Home Designer



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Final Approval

This is to certify that we have read the report submitted by **Malik Muhammad Farhad Ashraf (12354)**, **Usama Hussain (24878)**, for the partial fulfillment of the requirements for the degree of the Bachelors of Science in Software Engineering (BSSE). It is our judgment that this report is of sufficient standard to warrant its acceptance by Riphah International University, Islamabad for the degree of Bachelors of Science in Software Engineering (BSSE).

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Declaration

We hereby declare that this document “**Home Designer**” neither as a whole nor as a part has been copied out from any source. It is further declared that we have done this project with the accompanied report entirely on the basis of our personal efforts, under the proficient guidance of our teachers especially our supervisor **Mr. Shahzad Ahmed Khan**. If any part of the system is proved to be copied out from any source or found to be reproduction of any project from anywhere else, we shall stand by the consequences.

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Dedication

"We offer this project in honor of Allah, our supreme creator, our steadfast foundation, the wellspring of our inspiration, sagacity, erudition, and insight. His unwavering support sustained us throughout this endeavor. Moreover, we dedicate our efforts to our relatives, companions, and mentors. The unparalleled motivation from our families and exceptional backing from educators were pivotal to the triumph of this project. Additionally, we dedicate this work to our mentor, **Mr. Shahzad Ahmed Khan**, and the academic staff."

Acknowledgement

First of all, we are obliged to Allah Almighty the Merciful, the Beneficent and the source of all Knowledge, for granting us the courage and knowledge to complete this Project. We are grateful to our supervisor **Mr. Shahzad Ahmed Khan** for his enthusiasm, patience, insightful feedback, beneficial records, realistic recommendation, and unceasing ideas that continually helped us quite in our project. Without his guide and steering, this undertaking might no longer have been viable. Also, a special way to the rest of the faculty members for their unconditional guide.

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Abstract

Interior designing is all about creating and shaping the experience of interior spaces. This involves arranging furniture, choosing color schemes, setting up lighting, and selecting materials to create an appealing atmosphere within a room or building.

However, traditional interior designing can be challenging. It often involves mockups, using material samples, and referring to design booklets. These methods can make it tough to visualize the final design clearly and accessibly.

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Chapter 1: **Introduction**

Chapter 1:

Introduction

Interior designing is all about creating and shaping the experience of interior spaces. This involves arranging furniture, choosing color schemes, setting up lighting, and selecting materials to create an appealing atmosphere within a room or building.

However, traditional interior designing can be challenging. It often involves mockups, using material samples, and referring to design booklets. These methods can make it tough to visualize the final design clearly and accessibly.

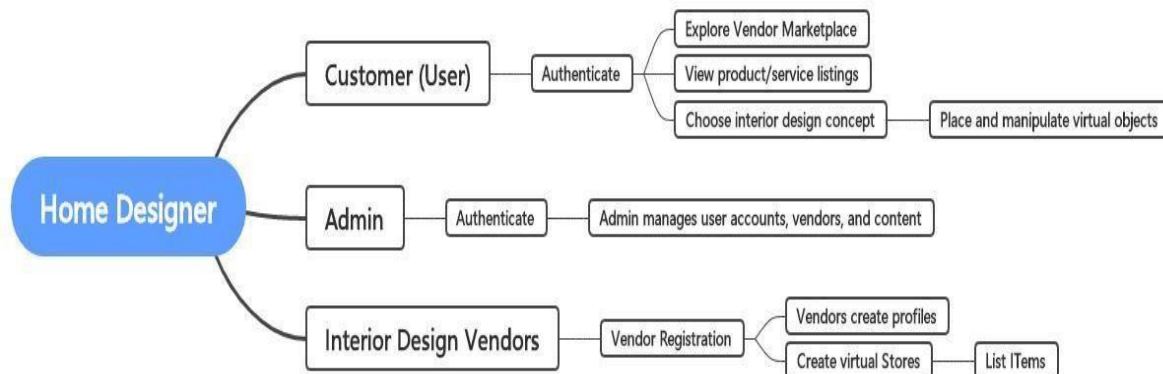
1.1 Opportunity & Stakeholders:

- The process of selecting materials and color schemes that align with the customer's environment can be time-consuming.
- Producing visual representations of designs demands expensive hardware and software.
- Customers have to take time out of their busy schedules to visit design firms and see the designs in person.
- In case of mismatch, redesigning the entire visual concept from scratch may be necessary.
- Decision-making regarding product selection can be a complex process and time consuming. • Some firms offer products on a trial basis, which may not be suitable for all customers.
- Local vendor posts their designs and products to online social media platforms and don't have any market place to connect online customers
- Also designers and organizations don't have market place for product listing besides have to visit in person to get visuals.

1.1.1 Stakeholders:

- Customer (User)
- Admin Local Vendors
- Designer

1.2 Solution Overview: Interior Design Marketplace and Visualization Platform.



- **Online Marketplace:**

For Local Vendors: Create a marketplace where local vendors can list their products, including furniture, materials, and decor items. This platform allows them to showcase their offerings and connect with a broader customer base.

For Customers: Offer a wide range of products for customers to browse, compare, and purchase. Implement filters for preferences like style, color, price range, etc.

- **Design Visualization Tools:**

Virtual Room Design: Provide tools for customers to virtually design their spaces. They can upload photos or floor plans of their rooms and experiment with different products, colors, and layouts to visualize the final look.

Material & Color Selection: Offer a library showcasing various materials and color schemes. Customers and designers can mix and match these virtually to see how they blend in a space.

- **Collaborative Features:**

Designer Collaboration: Allow customers to connect with designers virtually, share ideas, and receive expert advice. Designers can create and modify designs in real-time based on customer preferences.

Feedback Loops: Enable easy communication between customers and vendors. Customers can leave reviews, ask questions, and get prompt responses.

- **Mobile Application & AR Integration:**

Create a mobile app for on-the-go access, enabling users to visualize products and designs in their space using augmented reality (AR) technology.

- **Simplified Decision-Making:**

Offer comprehensive product information, reviews, and even allow customers to order samples to see how they fit within their space before making a purchase.

Implement a feature for mood boards or collections, where users can curate and save their preferred products and designs for future reference.

- **Admin Panel & Support:**

Admin Dashboard for vendors and designers to manage listings, orders, and customer queries.

Customer support to assist with design-related queries and technical issues.

- **Security & Trust:**

Implement secure payment gateways and ensure data protection to foster trust among users.

Verify vendors for quality and reliability to maintain the marketplace's reputation. By integrating an online marketplace with powerful visualization tools and collaboration features, this solution aims to streamline the interior design process, making it more accessible, efficient, and enjoyable for all stakeholders involved.

1.2.1 Project Scope

Develop a mobile application (Android) that integrates augmented reality (AR) technology to allow users to visualize interior design items(virtual) in real-time.

To Empower the local vendors, create a web-based marketplace platform that connects local interior design vendors with potential customers.

1.2.1.1 MODULES

- **User Authentication and Management**

- Allow users to create accounts and profiles.
- Implement authentication and authorization mechanisms.
- Manage user roles (e.g., customers, vendors, administrators)

- **Augmented Reality Interior Design Module**

- AR based mobile application for visualizing interior design concepts.
- 3D models of furniture, decor, and paint colors.
- Real-time placement and manipulation of virtual objects.
- Scene saving and retrieval for later editing.
- Sharing and collaboration features

- **Vendor Marketplace Module:**

- Vendor registration and profile creation.
- Product and service listings with descriptions and prices.
- Vendor reviews and ratings.

- **Product Selection Module:**

- Adding selected items to a shopping cart.
- Enable users to select a specific product of interest from the catalog.

- Allow users to view the selected product within their physical space through their device's camera.
- **Payment and Transactions Module:**
 - Secure payment processing for purchases.
 - Handling transactions between users and vendors.
 - Order history and transaction records.
- **Notifications Module:**
 - Email notifications for account-related actions and updates.
 - Messaging system for user-vendor communication
- **Admin Panel:**
 - Backend admin panel for managing user accounts, vendors, and content moderation.
- **location Integration:**
 - Implement geolocation services to determine the Vendor's store location

1.3 Report Outline

This report covers the detail of all aspects of the system, for understanding and clarity. This report has been divided into seven chapters.

1.3.1 Chapter 1

This chapter introduces our system by the needs and technical issues addressed by the system. Goals, objectives, and methodologies used for the development of the proposed solution.

1.3.2 Chapter 2

This chapter focuses on the current situation of the market, and how the system is unique and useful for the users.

1.3.3 Chapter 3

This chapter is all about need analysis as it examines the real requirements and problem scenarios addressed by the developed system. It also identifies the real user of the system and those affected by the system.

1.3.4 Chapter 4

This chapter provides all the information related to design factor of the developed system by describing the system architecture design consideration and different diagrams that model the working behavior of the system.

1.3.5 Chapter 5

This chapter provides information about the environment in which the developed system was used and evaluated for the performance, usability, and other related consideration.

Chapter 2: Literature/Market Survey

Chapter: 2

Literature/Market Survey

2.1 Introduction

In this chapter, we are discussing the literature/market survey of our project “Home Designer”.

For our project, we've got used interviewing method to acquire the functional requirements of the project. Further, we've created a table in which we've got as compared the features of the similar current systems of our project.

2.1.1 Client Profile

- Name of Organization: Home Designer
- Industry: Non-Fungible Tokens
- What are the key responsibilities of your organization?
- What services do you provide?
- For whom are these services?
- How is the success of your services measured?
- Which problems interfere with your success?

2.1.2 Problem Details

- Why does this problem exist?
- How is the problem currently being solved, if solved?
- How would you like to get the problem solved?

2.1.3 Understanding the User Environment

- Who are the users of this AR project?
- What are their geographical locations?
- Do they have any previous experience with a similar AR project?
- Do you plan to expand the system to more platforms in the future?

2.1.4 Usability of the system

- Are any other systems that are to be integrated with this system?
- How usable should be the website for AR base?
- Do you expect the training, to get the users familiar with the system?

2.1.5 Analyst's Input on the Client's Problem

- What causes the problem that you currently face?
- How is the problem currently being solved?
- What would you like the solution of the problem to be?
- How would you rank each problem when compared with others?

2.1.6 Assessing the solution

What if you could

- Have a mobile application for the AR base platform?
- Have cloud data storage for everything on the AR project?
- How would you rank the importance of these?

2.1.7 Assessing the Opportunity

- Who is this project's targeted user?
- How many users will use it?
- On what basis would you find the solution successful?

2.1.8 Assessing Reliability, Support & Performance Needs

- How reliable do you expect the system to be?
- What are your expectations for performance of the system?
- Will you support the system or someone else? if so, who?
- Do you have special needs for support?
- What are the security requirements?
- Is there any special licensing that is needed for this type of system?
- What kind of maintenance, if any, do you want for the system?

2.1.9 Legal Limitations

- Are there any legal and regulatory limitations or standards that we must observe when building the system?

2.1.10 Wrap-up

- Are there any further details that you might want to add that this questionnaire did not cover?
- How would you like to be contacted for any further follow-ups and requirements?

2.3 Brainstorming

2.4 Existing Systems

Existing System/ Description of the Current Situation:

Comparison Matrix of Existing Systems:

Features	Ikea Place	Houzz	Augment	Home Styler	AR viewer	Dulux Paints	homify	Magic plan	HomeBy Me	Decor Matter
Furniture / Product Catalog:	✓	✓	✓	✗	✗	✓	✗	✗	✗	✓
Authentication	✗	✓	✓	✗	✗	✗	✓	✓	✗	✓
Customization and Personalization:	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓
Use of 3D Models	✓	✓	✓	✓	✓	✗	✓	✗	✓	✓
Offline Functionality	✗	✓	✓	✗	✗	✗	✗	✓	✗	✗
Vendor Integration:	✓	✓	✗	✗	✗	✓	✗	✗	✗	✓
Guidance/UserManual	✓	✗	✓	✗	✗	✓	✗	✓	✗	✗
E-commerce Availability	✓	✓	✓	✗	✗	✓	✗	✗	✗	✓
History of Designs	✓	✗	✓	✗	✗	✗	✓	✗	✗	✗
User Feedback and Complaints	✓	✓	✓	✗	✗	✗	✓	✓	✓	✓

Description: Comparison of the features of the mentioned interior design systems:

1. **Furniture/Product Catalog:** All systems offer a furniture and product catalog, allowing users to explore various design options.
2. **Authentication:** Houzz, Augment, and DecorMatter provide user authentication, enhancing security and personalization.
3. **Customization and Personalization:** All systems except AR Viewer and Homify allow users to customize and personalize their design choices.
4. **Use of 3D Models:** Most systems utilize 3D models to enhance the visualization of interior designs.
5. **Offline Functionality:** Houzz, Augment, and HomeByMe offer offline functionality, ensuring users can work on their designs even without an internet connection.
6. **E-Commerce Integration:** Ike a Place, Dulux Paints, and HomeByMe integrate with vendors, streamlining the purchasing process.
7. **User Feedback and Complaints:** Ike a Place, Houzz, and DecorMatter offer user feedback and complaints features, promoting user engagement and feedback collection. These features vary across the systems, catering to different user preferences and needs in the field of interior design.

2.5 Summary

Chapter 2 of the "Home Designer" project report delves into an extensive literature and market survey, employing methods such as interviews and comparative analysis of similar systems to gather essential project requirements. The chapter covers a diverse range of areas, starting with the client profile of Home Designer within the non-fungible tokens industry, outlining their responsibilities, services, success metrics, and hindrances. It delves into the detailed problems faced, user environment analysis, usability aspects, analyst input on client issues, potential solutions assessment, opportunity evaluation, reliability and performance needs, legal limitations, and a concluding section for additional inputs and contact preferences. The chapter also includes a comparison matrix of existing interior design systems, highlighting core features such as furniture catalogs, authentication, customization, 3D modeling, offline capabilities, e-commerce integration, and user feedback mechanisms, aiming to capture a comprehensive understanding of user requirements and existing market dynamics for the project's development.

Chapter 3: Requirement Analysis

Chapter 3:

Requirement Analysis

3.1 Introduction

In this chapter, we will discuss the Functional & Non-Functional requirements of our project “Home Designer”. Prior to that, we will discuss all the problem statements we have found while doing research on the project idea. These functional requirements are gathered from the client using several techniques like interviewing and brainstorming. The Non-Functional requirements are gathered by observing the functional requirements.

3.2 Problem Scenarios

The Problem of Time-Consumption in Interior Design:

Elements	Description
The problem	Traditional interior design methods demand a significant amount of time for tasks such as furniture and color scheme selection, as well as physical visits to design firms. These time-consuming processes can lead to project delays and inconvenience for both customers and designers.
Affects	Customers, Designers.
The Result of which	The result is prolonged project timelines, potential missed opportunities, and increased customer frustration.
Benefits of	Addressing this Time-related problem would make interior design services time and cost-effective and accessible, benefiting both customers and professionals.

The High Costs of Interior Design Visualization:

Elements	Description
The problem	Producing visual representations of interior designs demands expensive hardware and software, which can significantly increase project costs. This cost burden can be a limitation for both customers and interior design professionals.
Affects	Customers, Designers.
The Result of which	The result is increased project expenses, which may be passed on to customers, making interior design services less affordable.
Benefits of	Addressing this problem would Accelerate the Visualization process, reduce costs, and enhance customer satisfaction by aligning designs with their vision more effectively.

The Complexity of Decision-Making in Interior Design:

Elements	Description
The problem	Decision-making in interior design, including material and product selection, can be a complex and time-consuming process. Customers often struggle to make informed choices due to limited visualization options and a lack of trial opportunities.
Affects	Customer.
The Result of which	The result is a less streamlined interior design process, potential mismatches, and customer frustration.
Benefits of	Addressing this issue would simplify the decision-making process, improve customer satisfaction, and reduce project timelines through informed choices and trial options.

Lack of Visibility for local Vendors:

Elements	Description
The problem	Local interior design vendors often lack a dedicated online marketplace to showcase their products and connect with potential customers. This lack of visibility restricts their reach and opportunities for growth.
Affects	Vendors.
The Result of which	The result is missed opportunities for vendors to expand their businesses and for customers to access a variety of design products.
Benefits of	Addressing this vendors-related problem would create a platform for vendors to reach a potential customer base and provide customers with more product options, ultimately benefiting both parties involved in interior design projects.

3.3 Functional Requirements:

No#	Functional Requirement	Breakdown		Description
		ID	Sub-Functionality	
1	Vendor Registration and Onboarding	1.1	User-friendly vendor registration process	Provide an intuitive and user-friendly vendor registration process to streamline onboarding.
		1.2	Onboarding assistance and tutorials	Offer onboarding assistance and tutorials to guide vendors through the platform features and processes.
2	Product Management	2.1	Add, edit, and remove products from the catalog	Enable vendors to easily manage their product catalog by adding, editing, and removing products.
		2.2	Upload high-quality images and detailed product descriptions	Allow vendors to upload high-quality images and detailed product descriptions for an enhanced customer experience.
3	Inventory Tracking	3.1	Real-time inventory tracking and management	Implement real-time inventory tracking and management to keep vendors informed about stock levels.
		3.2	Low-stock notifications and reorder suggestions	Provide notifications for low-stock items and suggest reorder quantities to vendors.
4	Order Processing	4.1	Receive and process customer orders efficiently	Streamline the order processing workflow for vendors to efficiently handle customer orders.

		4.2	Order fulfillment status tracking	Allow vendors to track the fulfillment status of customer orders in real-time
5	Communication Tools	5.1	Real-time communication with customers and designers	Implement real-time communication tools for vendors to interact with customers and designers.
		5.2	Automated order confirmation and shipping notifications	Set up automated order confirmation and shipping notifications for customers.
6	Promotions and Discounts	6.1	Ability to create and manage promotional campaigns	Enable vendors to create and manage promotional campaigns to attract customers.
		6.2	Set discounts, bundle deals, and seasonal promotions	Allow vendors to set various types of discounts, bundle deals, and seasonal promotions.
7	Vendor Analytics	7.1	Access analytics on product performance	Provide vendors with analytics to assess the performance of their products on the platform.

		7.2	Sales reports and customer feedback analysis	Offer detailed sales reports and analyze customer feedback to enhance vendor strategies.
8	Shipping and Logistics Integration	8.1	Seamless integration with shipping partners	Integrate the platform with shipping partners for a seamless order fulfillment process.
		8.2	Provide accurate shipping cost estimates	Offer accurate shipping cost estimates to customers during the checkout process.
9	Payment and Invoicing	9.1	Receive payments securely through the platform	Ensure secure payment processing for vendors through the platform.
		9.2	Access invoicing and transaction history	Allow vendors to access invoicing details and transaction history for their records.
10	Vendor Profile Management	10.1	Update and enhance vendor profiles	Enable vendors to update and enhance their profiles to showcase their portfolio effectively.
		10.2	Showcase portfolio and recent projects	Provide a section for vendors to showcase their portfolio and recent projects.

11	Customer Registration and Profile	11.1	Easy customer registration and profile creation	Facilitate an easy registration process for customers with profile creation options.
		11.2	Option to save and manage multiple design projects	Allow customers to save and manage multiple design projects within their profiles.
12	Project Initiation	12.1	Initiate and define interior design projects	Provide tools for customers to initiate and define their interior design projects with goals, budget, and timeline settings.
		12.2	Set project goals, budget, and timeline	Allow customers to set specific goals, budgets, and timelines for their design projects.
13	Product Discovery	13.1	Intuitive search and filtering for products	Implement intuitive search and filtering options for customers to discover products easily.
		13.2	Personalized product recommendations	Offer personalized product recommendations based on customer preferences and project details.

14	Design Collaboration	14.1	Collaborate with designers and vendors	Facilitate real-time collaboration between customers, designers, and vendors within the platform.
		14.2	Real-time chat and feedback on design concepts	Provide real-time chat functionality and feedback features for design collaboration.
15	Budgeting Tools	15.1	Set and manage project budgets	Provide tools for customers to set and manage budgets for their interior design projects.
		15.2	Receive alerts for potential budget overruns	Implement alerts for customers to be notified of potential budget overruns during the project.
16	Order Placement and Tracking	16.1	Seamless product purchase and checkout process	Ensure a seamless product purchase and checkout process for customers.
		16.2	Track orders and receive shipping updates	Enable customers to track their orders and receive real-time shipping updates.

17	Vendor Reviews and Ratings	17.1	Rate and review vendors and products	Allow customers to rate and review vendors and products based on their experiences.
		17.2	Access and contribute to community feedback	Provide access for customers to view and contribute to community feedback on vendors and products.
18	Design Visualization	18.1	Access 3D and VR visualization tools	Offer access to 3D and VR visualization tools for customers to visualize their design concepts.
		18.2	Realistic rendering of proposed designs	Provide realistic rendering of proposed designs for a more accurate visualization.
19	Material and Product Information	19.1	Detailed information on materials and products	Provide detailed information on materials and products to assist customers in making informed choices.
		19.2	Decision support algorithms for material choices	Implement decision support algorithms to assist customers in making optimal material choices for their projects.

20	Communication and Notifications	20.1	Real-time communication with vendors and designers	Facilitate real-time communication between customers, vendors, and designers within the platform.
		20.2	Notifications for project updates and milestones	Provide notifications to customers for updates and milestones in their design projects.
21	Designer Registration and Portfolio	21.1	Simple registration and portfolio creation	Ensure a simple registration process for designers with the option to create portfolios.
		21.2	Showcase design styles and past projects	Allow designers to showcase their design styles and past projects in their portfolios.
22	Project Collaboration	22.1	Collaborate with customers and vendors	Facilitate virtual design studio capabilities for real-time collaboration between designers, customers, and vendors.
		22.2	Virtual design studio for real-time collaboration	Provide a virtual design studio for designers to collaborate in real-time with other stakeholders.

23	Material and Product Selection	23.1	Access to a comprehensive material database	Provide designers with access to a comprehensive material database for easy selection during the design process.
		23.2	Utilize decision support algorithms	Implement decision support algorithms to assist designers in selecting materials and products based on project requirements.
24	Cost Estimation and Budgeting	24.1	Automated budgeting tools for projects	Provide designers with automated budgeting tools to estimate project costs and expenses accurately.
		24.2	Track and manage project expenses	Enable designers to track and manage project expenses throughout the design process.
25	Enable designers to track and manage project expenses throughout the design process.	25.1	In-app communication with clients	Facilitate in-app communication tools for designers to interact with clients and share design concepts.
		25.2	Share design concepts and gather feedback	Allow designers to share design concepts with clients and gather real-time feedback within the platform.

26	Design Version Control	26.1	Maintain version history for design iterations	Implement version control to maintain a history of design iterations for reference and rollback purposes.
		26.2	Efficient rollback to previous versions	Allow designers to efficiently rollback to previous design versions when necessary.
27	Client Approval Workflow	27.1	Implement an approval process for designs	Establish a workflow for client approvals, allowing designers to receive feedback and approvals in a systematic manner.
		27.2	Receive client feedback and approvals	Provide a platform for designers to receive feedback and approvals from clients during the design process.
28	Design Trend Integration	28.1	Stay informed about current design trends	Integrate tools and features that keep designers informed about current interior design trends.
		28.2	Use trend tracking tools for inspiration	Provide trend tracking tools to inspire designers in their creative process.

29	Community Engagement	29.1	Participate in community forums	Allow designers to actively participate in community forums, fostering knowledge sharing and collaboration
		29.2	Share knowledge and collaborate with peers	Facilitate a platform for designers to share their knowledge and collaborate with peers in the industry.
30	Real-Time Rendering Preview	30.1	Real-time preview and adjustments	Offer real-time rendering previews for designers to make instant adjustments and visualize changes.
		30.2	Instant feedback on material and color changes	Provide instant feedback on material and color changes within the design, enhancing the design process.
31	Admin Function Requirements	31.1	User Management	31.1.1 Manage user accounts and profiles
		31.1.2	Implement role-based access controls	Set up role-based access controls to regulate user permissions based on their roles in the platform.

32	Platform Analytics	32.1	Access analytics on user activity	Provide administrators with analytics on user activity for monitoring and decision-making purposes.
		32.2	Generate reports on platform performance	Generate comprehensive reports on the platform's performance, user engagement, and other key metrics
33	Content Management	33.1	Manage and update platform content	Enable administrators to manage and update platform content to ensure accuracy and relevancy.
		33.2	Ensure accurate and up-to-date information	Ensure that all platform information is accurate and up-to-date through efficient content management.
34	Vendor Verification	34.1	Verify and approve vendor registrations	Establish a process for administrators to verify and approve vendor registrations based on compliance and performance criteria.
		34.2	Monitor vendor performance and compliance	Continuously monitor vendor performance and ensure compliance with platform policies.

35	Customer Support	35.1	Provide customer support through the platform	Implement customer support features to address user inquiries and issues within the platform.
		35.2	Address user inquiries and issues	Ensure timely and effective resolution of user inquiries and issues through the customer support system.
36	Security and Compliance	36.1	Ensure platform security and data protection	Implement robust security measures to safeguard user data and ensure data protection compliance.
		36.2	Comply with relevant regulations	Ensure platform compliance with relevant regulations governing data protection and user privacy.
37	Platform Customization	37.1	Customize platform settings and features	Provide administrators with the ability to customize platform settings and features to meet specific needs.
		37.2	Add or integrate new functionalities	Allow administrators to add or integrate new functionalities to enhance the platform's capabilities.

38	Payment and Billing Management	38.1	Manage payment processing and invoicing	Oversee payment processing and invoicing functionalities to ensure seamless financial transactions
		38.2	Monitor financial transactions and revenue	Keep track of financial transactions and revenue generated through the platform.
39	Community Moderation	39.1	Moderate community forums and interactions	Implement community moderation tools to ensure adherence to guidelines and policies in community forums.
		39.2	Enforce community guidelines and policies	Enforce community guidelines and policies to maintain a positive and constructive community environment.
40	Platform Updates and Maintenance	40.1	Monitor collaboration activities	Monitor and track collaboration activities between users to ensure adherence to platform policies.
		40.2	Ensure adherence to platform policies	Enforce adherence to platform policies regarding collaboration and user interactions.

41	Collaboration Monitoring	41.1	Monitor collaboration activities	Monitor and track collaboration activities between users to ensure adherence to platform policies.
		41.2	Ensure adherence to platform policies	Enforce adherence to platform policies regarding collaboration and user interactions.
42	Vendor and Designer Onboarding	42.1	Facilitate onboarding for new vendors and designers	Provide resources and support to facilitate the onboarding process for new vendors and designers
		42.2	Provide training resources and support	Offer training resources and support to help new vendors and designers acclimate to the platform.
43	Feedback and Improvement	43.1	Collect user feedback on platform experiences	Implement mechanisms for collecting user feedback to continuously improve platform features and usability.
		43.2	Implement improvements based on feedback	Act on user feedback to implement improvements and enhancements to the platform.

44	Marketing and Promotion	44.1	Develop and execute marketing strategies	Develop and execute marketing strategies to promote the platform and attract new users.
		44.2	Promote the platform to attract new users	Implement promotional activities to increase awareness and attract a wider user base.

3.4 Non-Functional Requirements

1. Performance

System Response Time:

Ensure the tools or systems respond within acceptable time frames for users' actions.

Visualization Quality:

Maintain high-quality visual representations of designs for accurate client understanding.

2. Usability:

User-Friendly Interface:

Create an intuitive interface for easy navigation and interaction, catering to both designers and clients.

3. Security:

Data Protection:

Implement robust security measures to protect sensitive customer and vendor information within the platform.

4. Scalability:

Platform Expansion:

Design a scalable platform capable of accommodating a growing number of vendors and customers over time.

5. Reliability

System Uptime:

Ensure a high level of system availability and minimize downtime to avoid disruption in service.

6. Cost Efficiency

Operational Costs:

Maintain a cost-efficient system to reduce overall expenses for both customers and designers while using the platform.

3.5 Summary:

As proven above, we've written all of the functional requirements using method like interviewing and brainstorming. Moreover, we've got written Non – Functional necessities of our device which we considered are have to with the aid of studying the functional necessities of the device.