

SOFTWARE REQUIREMENT SPECIFICATION

1. INTRODUCTION

Introducing our innovative Home Design App, a revolutionary platform dedicated to unleashing your creativity in the realm of interior and architectural design, all through the power of 2D imagery. Seamlessly marrying user-friendly functionality with cutting-edge technology, our app empowers homeowners, architects, and interior designers to visualize and conceptualize their dream spaces with precision. With an intuitive interface, our design tools facilitate the creation of detailed floor plans, allowing users to effortlessly arrange rooms, doors, and windows. The app boasts an extensive catalog featuring a myriad of furniture, fixtures, and materials, ensuring a diverse palette for users to craft their ideal environments. Beyond mere aesthetics, our app offers practicality by enabling accurate measurements and scaling, ensuring meticulous planning. Delve into the world of interior design with real-time collaboration features, allowing multiple users to synchronize efforts, share feedback, and refine designs collaboratively. From cost estimation to budget tracking, our Home Design App simplifies the entire design process. Whether you're a seasoned designer or a homeowner with a vision, immerse yourself in the limitless possibilities of home design through the lens of 2D, revolutionizing the way you conceptualize and realize your living spaces. Welcome to a new era of design innovation.

(i) PURPOSE OF THIS DOCUMENT

The purpose of this project is Home Design App serves as a versatile and user-friendly platform that empowers individuals to envision and plan their living spaces with efficiency and creativity. By providing intuitive design tools, 2D modeling, and extensive catalogs of furniture and materials, the app enables users to digitally craft detailed floor plans and interior layouts. It serves as a virtual canvas for homeowners, architects, and interior designers, fostering a collaborative and immersive environment. With features such as real-time collaboration, cost estimation, and augmented reality integration, the app not only sparks creativity but also assists in practical aspects like budgeting. Ultimately, the Home Design App revolutionizes the way people conceptualize, refine, and share their home design ideas, making the process more accessible, interactive, and tailored to individual preferences and needs.

(ii) SCOPE OF THIS DOCUMENT

The scope of a Home Design App is vast, offering users a versatile platform to visualize, plan, and execute their home design projects. Users can create detailed floor plans, experiment with interior design elements, and visualize their ideas in 2D. The app can feature an extensive catalog of furniture and materials, aiding users in making informed design choices. Real-time collaboration options facilitate teamwork among homeowners, architects, and designers. Integration with user experience by allowing immersive previews of designs. Budgeting tools

enable cost estimation and financial planning, while export and sharing functionalities ensure seamless communication. The app's scope extends to catering to various user roles, from DIY enthusiasts to professional architects, making it an indispensable tool for anyone involved in the home design process.

(iii) OVERVIEW

The Home Design App is a versatile and user-friendly application that empowers individuals to envision and plan their dream homes with ease. With a robust set of features, users can create detailed floor plans, experiment with interior designs, and visualize their ideas in stunning 2D. The app boasts a comprehensive catalog of furniture, fixtures, and materials, enabling users to personalize every aspect of their space. Intuitive design tools allow for precise measurements, scaling options, and the seamless placement of objects, fostering a dynamic and interactive design process. Real-time collaboration features enable users to work collaboratively on projects, providing a platform for architects, interior designers, and homeowners to share ideas effortlessly. The app also addresses practical considerations, offering tools for cost estimation, budget tracking, and exporting designs for easy sharing. Security measures ensure the protection of sensitive data, while user support features and regular updates contribute to a positive and evolving user experience. Compatible across various devices, from smartphones to desktop computers, the Home Design App is a comprehensive solution for anyone seeking to bring their home design visions to life.

2. GENERAL DESCRIPTION

- The "Home Design App" is an innovative mobile application designed to assist renters, and interior/exterior design in transforming their living spaces.
- Not only transforming but also assists you to build the whole structure from the scratch (i.e., core structure).
- This app leverages cutting-edge technologies to provide personalized design suggestions, advice, and inspiration for both interior and exterior spaces.
- Finally, this app offers a holistic approach to design, transforming the way people approach and execute their design.
- It serves as a one-stop solution for anyone looking to enhance the aesthetics and functionality of their homes.
- The app boasts an extensive catalog of interior and exterior design elements, including furniture, lighting, paint colors, landscaping options, and more.
- Users can explore various products and styles to find the perfect fit for their space, for the creation of functional and aesthetically pleasing living spaces.

3. FUNCTIONAL REQUIREMENTS

These are the requirements that the end user specifically demands as basic facilities that the system should offer. All these functionalities need to be necessarily incorporated into the system as a part of the contract. These are represented or stated in the form of input to be given to the system, the operation performed and the output expected. They are basically the requirements stated by the user which one can see directly in the final product, unlike the non-functional requirements. For example, in a hospital management system, a doctor should be able to retrieve the information of his patients. Each high-level functional requirement may involve several interactions or dialogues between the system and the outside world. In order to accurately describe the functional requirements, all scenarios must be enumerated. There are many ways of expressing functional requirements e.g., natural language, a structured or formatted language with no rigorous syntax and formal specification language with proper syntax.

- User Authentication
- Interior and Exteriors Design Features
- Device Compatibility

4. NON-FUNCTIONAL REQUIREMENTS

These are basically the quality constraints that the system must satisfy according to the project contract. The priority or extent to which these factors are implemented varies from one project to other. They are also called non-behavioral requirements. They basically deal with issues like:

- Portability
- Maintainability
- Reliability
- Scalability
- Performance
- Reusability
- Flexibility

NFR's are classified into following types:

- Interface constraints
- Performance constraints: response time, storage space, etc.
- Operating constraints

Life cycle constraints: maintainability, portability, etc.

5. INTERFACE REQUIREMENTS

If a hardware device is not compatible with your computer, it is up to the manufacturer to release drivers. Unfortunately, many manufacturers only release updated drivers to fix problems with older drivers and often do not release drivers for newer operating systems or alternative operating systems. If a hardware device doesn't have drivers for your operating system, the only solution may be to get a more up-to-date replacement device.

Minimum hardware requirements are very dependent on the particular software being developed by a given Enthought Python / VS Code user. Applications that need to store large arrays/objects in memory will require more RAM, whereas applications that need to perform numerous calculations or tasks more quickly will require a faster processor.

- Processor: Dual core
- Ram: minimum 8GB
- Hard disk: minimum 50GB

6. PERFORMANCE REQUIREMENTS

Performance requirements define how well the software system accomplishes certain functions under specific conditions. Examples include the software's speed of response, throughput, execution time, and storage capacity.

- User Module.
- Minimal loading time
- Compatibility across various devices.
- Optimal memory Usage

7. DOMAIN REQUIREMENTS

Domain requirements are the requirements which are characteristic of a particular category or domain of projects. The basic functions that a system of a specific domain must necessarily exhibit come under this category. For instance, in an academic software that maintains records of a school or college, the functionality of being able to access the list of faculty and list of students of each grade is a domain requirement. These requirements are therefore identified from that domain model and are not user specific.

The software requirements that are required for this project are as follows: Operating System:

- Windows: 7/8/10
- Tool: Android Studio
- Coding Language: Java
- UMLS: Star UML

8. DESIGN CONSTRAINTS

System Architecture

