

Graphics Artistry Studio



SOFTWARE ENGINEERING LAB ***Graphical Editor Software – Group 1***

Presented by :-

Saidarshan Sahu (121CS0229)

Ashutosh Sharma (121CS0239)

Ripal Pattanaik (121CS0601)

Sneha kumari (121CS0758)

Ashimjung Saud (121CS1141)

Guided by :-

Mrs. Asha Murugun

Graphics Artistry Studio

Software Requirements Specification(SRS) For Graphics Editor

Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04//24>
<document identifier>	

Revision History

Date	Version	Description	Author
<04/04/24>	<1.0>	SRS 1.0	Group-1
<04/15/07>	<2.0>	SRS 2.0	Group-1
<04/15/07>	<3.0>	SRS 3.0	Group-1
<04/16/07>	<4.0>	SRS 4.0	Group-1

Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04/24>
<document identifier>	

Table of Contents

Introduction	6
1.1 Purpose	6
1.2 Scope	6
1.3 Definitions, Acronyms, and Abbreviations	6
System Overview	7
2.1 System Description	7
2.2 System Features	7
Data Flow Diagram	9
3.1 Context Diagram	9
3.2 DFD Level 1	9
3.3 Data Dictionary	10
3.3.1 Project/File	10
3.3.2 Image Data	10
3.3.3 Shapes	10
3.3.4 Text	10
3.3.5 Color	10
Structure Chart Diagram	11
4.1 Structure Chart Diagram	11
Functional Requirements	12
5.1 User Authentication	12
5.2 User Roles and Permissions	12
5.3 Canvas Management	12
5.4 Drawing and Editing Tools	12
5.5 Export and Sharing	12
5.6 Undo/Redo Functionality	12
5.7 Customization Options	13
5.8 Integration with External Tools	13
5.9 Smart AI Assistant	13
Non-functional Requirements	13
6.1 Performance	13
6.2 Security	13
6.3 Reliability	13
6.4 Usability	14
6.5 Compatibility	14
Use Case Diagram	15
7.1 Use Case Diagram	15
Database Design	16
8.1 Project	16
8.2 Layers	16

Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04//24>
<document identifier>	

8.3 Image Data	
8.4 Shapes	16
8.5 Text	16
8.6 Tools	17
8.7 Effects	17
Class Diagram	18
9.1 Class Diagram	18
System Interfaces	18
10.1 User Interfaces	18
10.2 External Interfaces	18
Conclusion	19

Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04/24>
<document identifier>	

Software Requirements Specification

1. Introduction

The introduction of the Software Requirements Specification (SRS) for Graphics Artistry Studio provides a comprehensive overview of the software system, outlining its purpose, scope, definitions, acronyms, and abbreviations. The primary objective of this document is to delve into the intricacies of the Graphics Artistry Studio software, elucidating its functionalities and addressing the needs of stakeholders. By delineating the problem statement and focusing on stakeholder requirements, this document aims to provide a detailed insight into the Graphics Artistry Studio project. Furthermore, it delineates high-level product features essential for meeting stakeholder expectations. Through this SRS, a thorough understanding of Graphics Artistry Studio's requirements is elucidated, paving the way for its successful development and implementation.

1.1 Purpose

The purpose of this document is to define the software requirements for the Graphic Editor. It provides a detailed description of the editor's functionality, constraints, and interfaces. This document serves as a guide for the development team and stakeholders to understand the scope and objectives of the Graphic Editor project.

1.2 Scope

The Graphic Editor will serve as a comprehensive tool for creating and editing digital graphics. It will offer a wide range of features to facilitate the creation, manipulation, and enhancement of images and visual content. These features may include but are not limited to drawing tools, image editing functions, layer management, text manipulation, and export options. The Graphic Editor aims to provide users with a versatile platform for expressing their creativity and fulfilling their graphic design needs.

1.3 Definitions ,Acronyms and Abbreviations

SRS: Software Requirements Specification

Graphic Editor: A software application designed for creating, editing, and manipulating digital graphics and visual content.

Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04/24>
<document identifier>	

Image ID: A unique identifier assigned to each image within the Graphic Editor, facilitating easy retrieval and management.

Layer: A separate level within the Graphic Editor's workspace, allowing users to organize and manipulate elements independently.

Toolbox: A collection of tools and features available within the Graphic Editor for performing various actions such as drawing, editing, and selecting.

Export Formats: File formats supported by the Graphic Editor for saving and exporting created or edited graphics, such as JPEG, PNG, SVG, etc.

2. System Overview

2.1 System Description

The Graphics Editor is a software application designed for creating, editing, and manipulating digital graphics and visual content. It provides users with a versatile platform to express their creativity and fulfill their graphic design needs efficiently.

The Graphics Editor offers a user-friendly interface equipped with a variety of tools and features for creating and enhancing images. Users can draw, paint, add text, apply filters, and manipulate layers to achieve desired effects.

The Graphics Editor is designed to cater to the needs of graphic designers, artists, photographers, and anyone else who works with visual content. It aims to provide a seamless and intuitive experience for users to unleash their creativity and produce high-quality graphics.

2.2 System Features

1. Canvas Management:

- Create, open, and save canvas files.
- Modify canvas properties such as size, resolution, and background colour.

2. Drawing Tools:

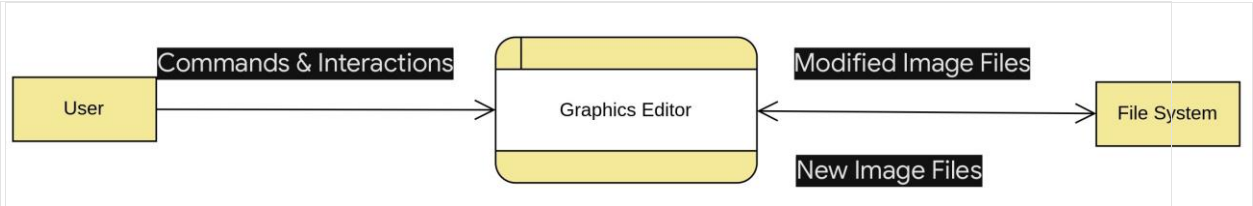
Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04//24>
<document identifier>	

	<ul style="list-style-type: none">• Provide a variety of drawing tools such as pencil, brush, eraser, shapes, and text.• Enable users to customize brush settings including size, opacity, and hardness.
3. Image Editing:	<ul style="list-style-type: none">• Support image editing functions like crop, resize, rotate, and flip.• Implement advanced editing features such as layers, masks, filters, and adjustments.
4. Export and Sharing:	<ul style="list-style-type: none">• Allow users to export graphics in various formats including JPEG, PNG, SVG, and PDF.• Provide options for sharing graphics directly to social media platforms or cloud storage services.
5. Undo/Redo Functionality:	<ul style="list-style-type: none">• Enable users to undo and redo their actions to revert changes or experiment freely.
6. Customization Options:	<ul style="list-style-type: none">• Offer customizable user interfaces, including themes, layouts, and toolbars.• Allow users to create and save custom presets for brushes, filters, and effects.
7. Keyboard Shortcuts:	<ul style="list-style-type: none">• Support keyboard shortcuts for quick access to frequently used tools and commands.
8. Integration with External Tools:	<ul style="list-style-type: none">• Allow integration with external applications or plugins for additional functionality such as 3D rendering, vector editing, or animation.

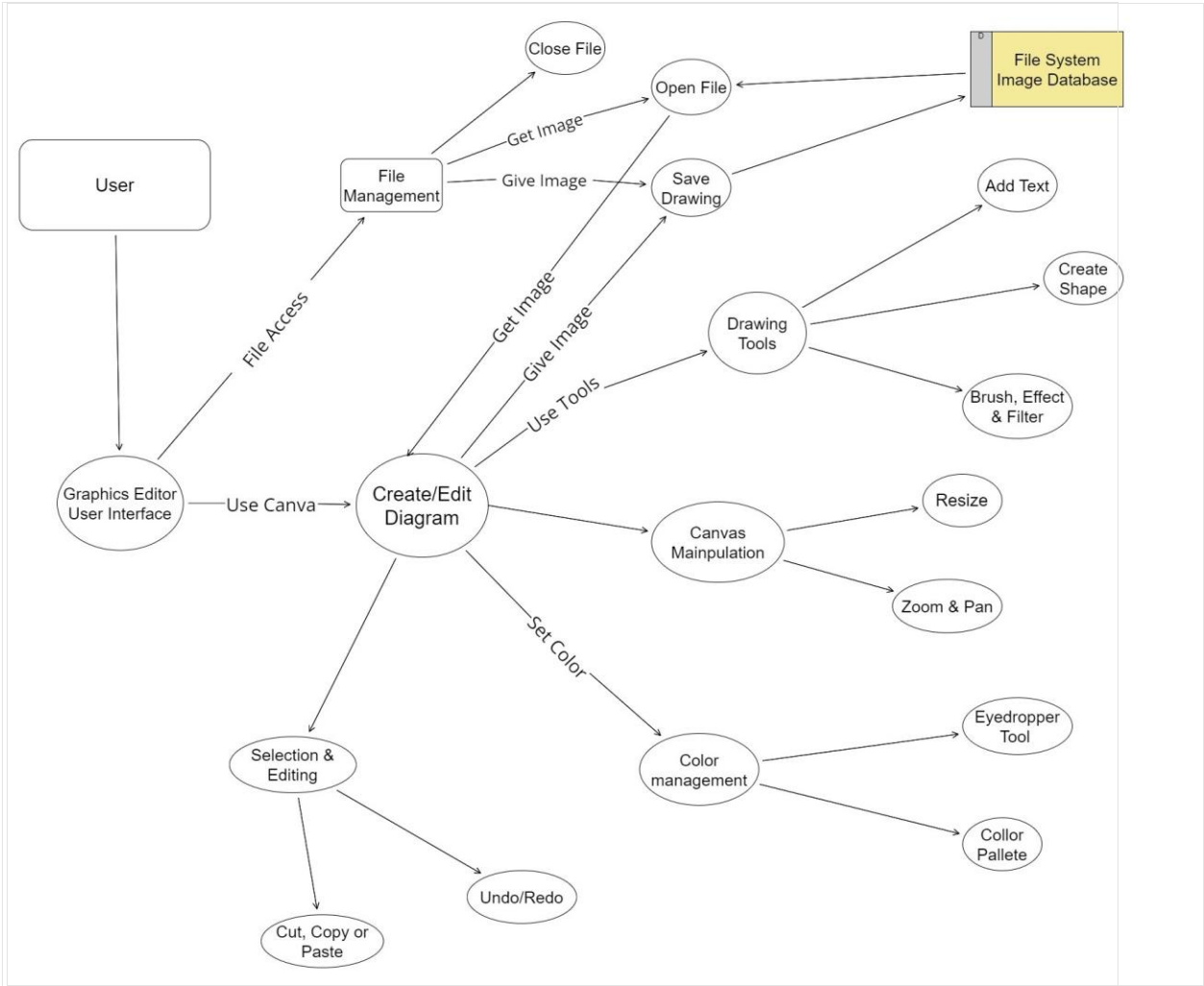
Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04//24>
<document identifier>	

3. Data Flow Diagram

3.1 Context Diagram



3.2 DFD Level 1



Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04//24>
<document identifier>	

3.3 Data Dictionary

3.3.1 Project/File

3.3.1.1 Name

3.3.1.2 Type

3.3.1.3 Thumbnail

3.3.2 Image_Data

3.3.2.1 Source

3.3.2.2 Dimensions

3.3.2.3 Resolution

3.3.2.4 Color Mode

3.3.2.5 Pixel Data

3.3.3 Shapes

3.3.3.1 Type

3.3.3.2 Fill Color

3.3.3.3 Stroke Width

3.3.3.4 Stroke Color

3.3.3.5 Coordinates

3.3.4 Text

3.3.4.1 Content

3.3.4.2 Font

3.3.4.3 Size

3.3.4.4 Style

3.3.4.5 Color

3.3.4.6 Alignment

3.3.4.7 Position

3.3.5 Color

3.3.5.1 Color value

Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04//24>
<document identifier>	

4. Structure Chart Diagram



Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04//24>
<document identifier>	

5. Functional Requirements

5.1 User Authentication

- The system shall authenticate users based on their credentials (username and password).
- Passwords must be securely stored using encryption techniques.

5.2 User Roles and Permissions

- The system shall have three user roles: Administrator, Designer, and Guest.
- Administrators have full access to all system functionalities.
- Designers can create, edit, and save graphics.
- Guests have limited access for viewing graphics without editing capabilities.

5.3 Canvas Management

- Users can create, open, and save canvas files.
- The system shall support multiple canvases open simultaneously.

5.4 Drawing and Editing Tools

- The system shall provide a variety of drawing tools such as pencil, brush, shapes, and text.
- Users can apply editing functions including crop, resize, rotate, and flip to graphics.

5.5 Export and Sharing

- Users can export graphics in various formats including JPEG, PNG, SVG, and PDF.
- The system shall provide options for sharing graphics via email, social media, or cloud storage services.

5.6 Undo/Redo Functionality

- Users can undo and redo their actions to revert changes or experiment freely.

Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04/24>
<document identifier>	

5.7 Customization Options

- The system shall offer customizable user interfaces, including themes, layouts, and toolbars.
- Users can create and save custom presets for brushes, filters, and effects.

5.8 Integration with External Tools

- The system shall allow integration with external applications or plugins for additional functionality such as 3D rendering or vector editing.

5.9 Smart AI Assistant

- The smart AI assistant in the graphics editor software offers personalized guidance, context-aware suggestions, and automation features. Using advanced machine learning and natural language processing, it aids users with design tasks, automates repetitive actions, and provides interactive tutorials. By analyzing user context and learning from interactions, it continuously improves recommendations and workflow optimizations. With a focus on privacy and security, it ensures sensitive design data remains protected. Overall, the AI assistant enhances creativity, streamlines workflows, and empowers users to achieve professional-grade results efficiently and confidently.

6. Non-functional Requirements

6.1 Performance

- The Graphics Editor shall support smooth operation with multiple graphic files open simultaneously.
- Response time for common operations such as drawing, editing, and saving shall be within 2 seconds to ensure a fluid user experience.

6.2 Security

- The Graphics Editor shall implement secure user authentication mechanisms to protect user data and prevent unauthorized access.
- Data transmission between the Graphics Editor and external services shall be encrypted using industry-standard protocols to ensure data privacy.

6.3 Reliability

- The Graphics Editor shall include an automatic backup and recovery mechanism to prevent data loss in case of system failure.

Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04//24>
<document identifier>	

- It shall maintain a high uptime to ensure users can access and work on their graphic files without interruption.

6.4 Usability

- The user interface of the Graphics Editor shall be designed to be intuitive and user-friendly, with easily accessible tools and features.
- The Graphics Editor shall be compatible with different devices and screen sizes, providing a consistent and seamless experience across platforms.

6.5 Compatibility

- The Graphics Editor shall be compatible with major operating systems including Windows, macOS, and Linux.
- It shall support popular graphic file formats such as JPEG, PNG, SVG, and PSD to ensure compatibility with other graphic editing software.

Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04//24>
<document identifier>	

7. Use Case Diagram



Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04//24>
<document identifier>	

8. Database Design

8.1 Project

- 8.1.1 project_id(Primary Key)
- 8.1.2 name
- 8.1.3 file_format
- 8.1.4 creation_date
- 8.1.5 last_modified
- 8.1.6 thumbnail

8.2 Layers

- 8.2.1 layer_id(Primary Key)
- 8.2.2 project_id(Foreign Key)
- 8.2.3 name
- 8.2.4 type
- 8.2.5 order
- 8.2.6 visibility
- 8.2.7 opacity
- 8.2.8 blending_mode
- 8.2.9 is_locked

8.3 Image_Data

- 8.3.1 image_id(Primary Key)
- 8.3.2 layer_id(Foreign Key)
- 8.3.3 source_filename
- 8.3.4 source_path
- 8.3.5 width
- 8.3.6 height
- 8.3.7 resolution
- 8.3.8 color_mode
- 8.3.9 color_profile

8.4 Shapes

- 8.4.1 shape_id(Primary Key)
- 8.4.2 layer_id(Foreign Key)
- 8.4.3 type
- 8.4.4 fill_color
- 8.4.5 stroke_color
- 8.4.6 stroke_width
- 8.4.7 stroke_style
- 8.4.8 coordinates(set of x or y)

8.5 Text

- 8.5.1 text_id(Primary Key)
- 8.5.2 layer_id(Foreign Key)
- 8.5.3 content
- 8.5.4 font_family
- 8.5.5 font_size
- 8.5.6 font_style

Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04//24>
<document identifier>	

- 8.5.7 color
- 8.5.8 alignment
- 8.5.9 position(x, y coordinates)

8.6 Tools

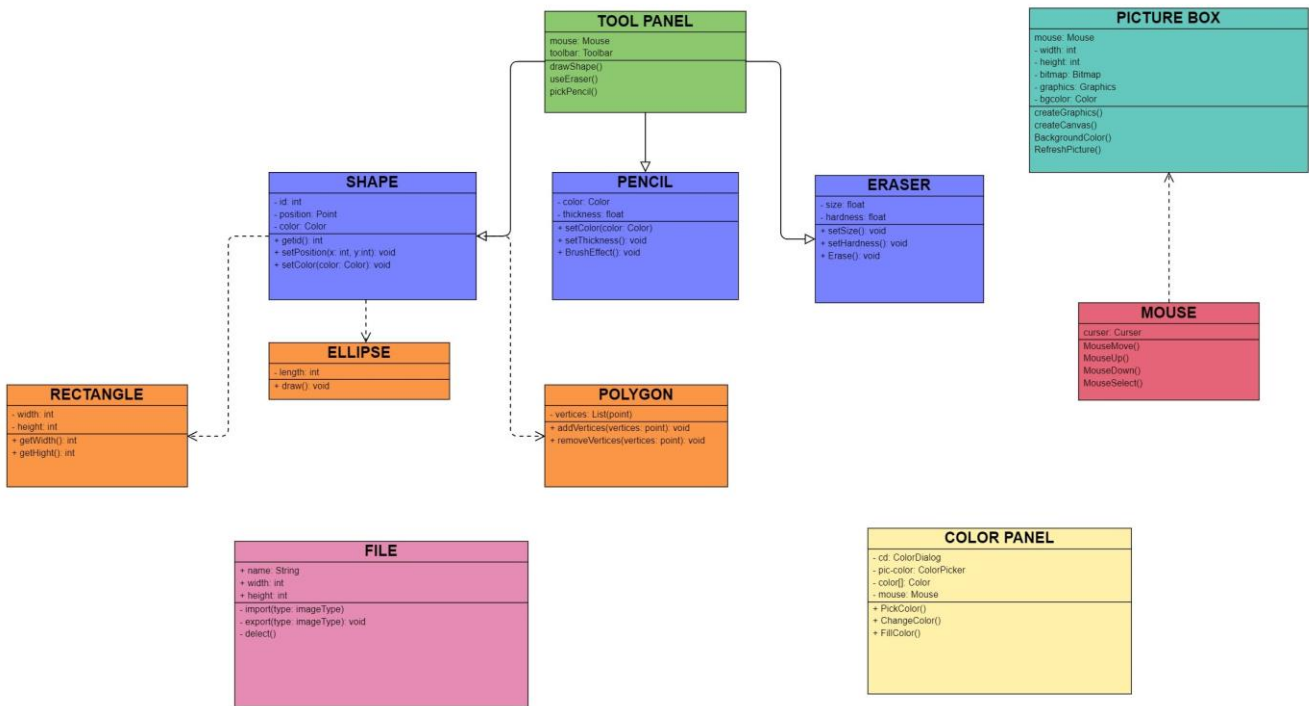
- 8.6.1 tool_id(Primary key)
- 8.6.2 name
- 8.6.3 option

8.7 Effects

- 8.7.1 effect_id(Primary Key)
- 8.7.2 layer_id(Foreign Key)
- 8.7.3 effect-type
- 8.7.4 parameters

Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04//24>
<document identifier>	

9. Class Diagram



10. System Interfaces

6.1 User Interfaces

- The Graphics Editor will feature a user-friendly graphical interface accessible through desktop applications for designers and artists.

6.2 External Interfaces

- Integration with cloud storage services such as Google Drive or Dropbox to allow users to import and export graphics seamlessly.

Graphics Artistry Studio	Version: <1.0>
Software Requirements Specification	Date: <04/04/24>
<document identifier>	

11. Conclusion

In conclusion, this Software Requirements Specification (SRS) document encapsulates a thorough understanding of the Graphics Editor, delineating its fundamental functionalities and imperative requirements essential for the proficient development and implementation of the software. By meticulously outlining the intricacies of its features and user interactions, this document serves as a guiding beacon for the development team, ensuring a coherent and systematic approach towards crafting a cutting-edge graphics editing tool. The Graphics Editor aspires to transcend the conventional boundaries of digital graphics manipulation by amalgamating a user-centric design philosophy with robust backend functionalities. With an unwavering commitment to user satisfaction, the editor is poised to revolutionize the way individuals conceptualize and materialize their creative visions. Central to its ethos is the promise of a seamless user experience, facilitated by an intuitive interface that empowers both novice and seasoned users alike to effortlessly navigate the complexities of graphic design. Moreover, the editor's seamless integration with external services amplifies its utility, fostering a collaborative ecosystem wherein users can leverage a myriad of resources to augment their creative endeavors. As the development journey unfolds, it is imperative to adhere closely to the stipulations laid forth in this SRS document, treating it not merely as a blueprint but as a compass guiding the trajectory of the project. By upholding the principles of agility, adaptability, and innovation, the development team can steer the Graphics Editor towards its zenith, realizing its full potential as a versatile and indispensable tool in the digital landscape. In essence, the Graphics Editor represents a convergence of vision, expertise, and ingenuity—a testament to the boundless possibilities that emerge when technology harmonizes with creativity. With unwavering dedication and collaborative effort, we embark on a journey to redefine the contours of graphic design, empowering individuals to transform their ideas into captivating visual narratives.