

CS348 Software Engineering Course

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1.INTRODUCTION

This Software Requirement Specification (SRS) Document describes an android/web application that provides children to draw, paint, and create their own art along with having fun.

1.1 PURPOSE

The purpose of this document is to build an offline painting application to aid children to develop their mobility and creativity skills.

1.2 DOCUMENT CONVENTIONS

The format specified by IEEE was followed while creating this document.

User: Person interacting with the application

SRS: Software Requirements Specifications

1.3 INTENDED AUDIENCE AND READING SUGGESTIONS

This project is a prototype of the paint application for children of five to nine years age. The intended audience for this SRS is Professor Samit Bhattacharya, who is in charge of the CS-346: Software Engineering course.

1.4 PROJECT SCOPE

The software that this SRS specifies is the Creative Paint (CP) Application. Its goal is to create a convenient and easy-to-use application for children, trying to have fun while drawing. Above all, we hope to provide a comfortable user experience.

1.5 REFERENCES

IEEE, IEEE Standard 830-1998 IEEE Recommended Practice for Software Requirements Specifications, IEEE Computer Society, 1998.

1.6 OVERVIEW

The remaining part of the SRS contains:

- a. The Overall Description and Functioning of the Software
- b. Specific Requirements:
 - i. Functional - defining the fundamental actions that the software incorporates in accepting and processing the inputs and corresponding outputs.
 - ii. Non-Functional - software system attributes that are used to judge the operation of the system.

2.OVERALL DESCRIPTION

2.1 PRODUCT PERSPECTIVE

The product described in the document is a Paint App. The product is envisioned to give children of the age group 5yrs to 9yrs a platform to explore their creative skills. It aims to provide a user friendly experience to them. Equipped with two different modes: 1)Game Mode 2)Practice Mode, the paint app offers a wholesome experience to art lovers.

2.2 PRODUCT FUNCTIONS

Functions included in the final app will be as follows:

- 1. Paint App Start Menu
- 2. Practice Mode
- 3. Game Mode
- 4. My Work
- 5. Inspiration

2.3 USER CLASSES AND CHARACTERISTICS

Information regarding users who can use the app:

- 1. Our app is targeted mainly for children between age range 5-9 years.
- 2. Children who just wanted to play for fun of any age.
- 3. Children who wanted to develop their art skills starting from basic levels.

The intended users for the product will have the following characteristics:

1. Able to understand the functioning and operation of the software on a basic level.
2. Able to afford and use a mobile app following the minimum hardware and software requirements.
3. The users of all ages can use our app.

2.4 OPERATING ENVIRONMENT

2.5 ASSUMPTIONS AND DEPENDENCIES

3.FUNCTIONAL REQUIREMENTS:

R 3.1 Paint App Start

- Input: App Icon is selected
- Output: Main Menu appears
- Description: When the user starts the app, the main menu appears on the screen having options like practice mode, game mode, my work and motivation.

R 3.1.1 Practice Mode

- Input: Practice Mode is selected
- Output: Two different modes
- Description: Two underlying modes appear on the screen: Free Style and Image Practicing.

R 3.1.1.1 Freestyle Mode

- Input: Freestyle mode is selected
- Output: Different drawing boards
- Description: User is prompted to select a drawing board from different choices to practice his/her skills

R 3.1.1.1.1 Drawing Board

- Input: Drawing board is selected
- Output: White board and Toolbox
Description: User selects a board from given alternatives. A toolbox along with white board appears.

R 3.1.1.2 Image Practicing Mode

- Input: Image practicing mode is selected
- Output: Different drawing boards

- Description: User is prompted to select a drawing board from different choices to practice his/her skills.

R 3.1.1.2.1 Drawing Board

- Input: Drawing board is selected
- Output: White board, Toolbox and default reference image.
- Description: User selects a board from given alternatives. A toolbox and white board, along with a default reference image appears.

R 3.1.1.2.1.1 Image Selection

- Input: Image is selected
- Output: Image
- Description: User selects an image from given alternatives.

R 3.1.2 Game Mode

- Input: Game Mode is selected
- Output: Multiple Levels
- Description: Game mode starts. It is the game zone of the app where the user has many levels of the game to take part. The user can choose the current unfinished level or from the levels which the user has finished.

R 3.1.2.1 Select a level

- Input: A particular level is selected
- Output: Different drawing boards
- Description: User is prompted to select a drawing board from different choices to practice his/her skills.

R 3.1.2.1.1 Drawing Board

- Input: Drawing board is selected.
- Output: White Board, Toolbox and default reference image.
- Description: User selects a board from given alternatives. A toolbox and white board, along with a default reference image appears.

R 3.1.3 My Work

- Input : My Work Mode is selected.
- Output : An album of saved pictures.
- Description: In this section the user can see all the work he/she has done in the past.

R 3.1.3.1 Delete Image

- Input: Delete is selected
- Output: Multiple images with checkboxes
- Description: On clicking the delete option, each image will have a checkbox to delete that image.

R 3.1.3.1.1 Select All images

- Input: Select All is selected.
- Output: All images selected.
- Description: On clicking the Select All option, all images will be selected for deletion.

R 3.1.3.1.2 Cancel Operation

- Input: Cancel is selected.
- Output: My Work section.
- Description: User will go one step back to My Work section where all his previous work is displayed hence cancelling the deletion.

R 3.1.3.1.3 Delete Operation

- Input : Delete is selected.
- Output : Dialogue box.
- Description : After selecting all required checkboxes, the user has to select the delete button, on doing this a dialogue box appears to confirm deletion or not.

R 3.1.3.2 Image Menu

- Input: Long Press the Image.
- Output: Menu for that image.
- Description: On long pressing an image, options for renaming, deletion and sharing of that particular image appears.

R 3.1.3.2.1 Rename the Image

- Input: Alternative Name for the Image.
- Output: Image name changed.
- Description: After entering the preferred name for the image by the user, image name changed to that name for easier future references.

R 3.1.3.2.2 Delete the Image

- Input: Selecting the Delete button

- Output: Image deleted
- Description: On clicking the delete button of the image, a dialogue box appears to confirm deletion or not.

R 3.1.3.2.3 **Share the Image**

- Input: Share button is selected
- Output: Share Image
- Description: On clicking the share button of the image, different options (whatsapp, facebook, instagram) to share that particular image appears.

R 3.1.3.3 **Back Button**

- Input: Back Button is selected.
- Output: App's Main Menu
- Description: On clicking the back button, the user will be sent one step back, from the My Work section to the My Paint App section.

R 3.1.4 **Inspiration**

- Input: Inspiration mode is selected.
- Output: Images for Inspiration
- Description: This section shows different drawable images to give an inspiration to the child and motivate him/her to draw. He/She can see different drawings by scrolling left and right. Images with drawing and its title appears.

R 3.1.4.1 **Move Left**

- Input: Left arrow button is selected
- Output: Left Image
- Description: It shows the image on the left of the current image. The user has to click on the left button to scroll through the images on the left side.

R 3.1.4.2 **Move Right**

- Input: Right arrow button is selected
- Output: Right Image
- Description: It shows the image on the right of the current image. The user has to click on the right button to scroll through the images on the right side.

R 3.1.4.3 **Back Button**

- Input: Back Button is selected.
- Output: App's Main Menu

- Description: On clicking the back button, the user will be sent one step back, from the Inspiration section to the My Paint App section.

4.EXTERNAL INTERFACE REQUIREMENTS

1. User Interface
2. Software Interface
3. Hardware Interface
4. Communication Interface

5.NON FUNCTIONAL REQUIREMENTS

1. Performance Requirements
2. Availability
3. Maintainability
4. Portability
5. Reliability
6. Usability

6.1 Contextual Inquiry (CI)

Contextual Inquiry is a user centered design research method which is usually structured as an approximately two hour one on one interaction in which the researcher watches the user in the course of the user's normal activities and discusses those activities with the user.

It can be performed in following two ways -:

6.1.1. Active CI - In this type of CI the user is actively included in the development team.

6.1.2. Passive CI - In this type of CI the user merely provides his/her observations and experiences to be recorded by the developers.

While developing our project we adopted a passive type of contextual inquiry. We wanted to know the opinion of users before we finalize the features of the game. We personally asked people some questions. We have also conducted a survey and assembled its result. The link to result of the survey is:

Rough

- Pencils/Brush
 - Different Types

- Markers
 - Wall spray
- Thickness or Size
- Opacity/Transparency
- Erasers
 - Different sizes
- Color Selection Tool
 - Different Colors (Number of colors)
 - Different sizes
 - Using wagon wheel of RGB
- Shapes
 - Types Of Shapes
 - Rectangles, Circles, Polygons, Triangles
 - Allow resizing of the shape
- Rough Work/Stickers
- Colors Fill Bucket
- Image Selection Window
 - Level wise images to choose from
- Undo/Redo
- White Board
 - Will we be having a feature to change the color of the board?
- Images/Drawings for Inspiration
- Save/Download

Hierarchy

App :

Practice :

Freestyle :

Select the board:

Image practicing :

Select the board:

Game :

Select a Level (around 10 levels):

Select the board:

My works:

Motivation