

MENTAL HEALTH



Creating the Serenity Space Project

Discover how we used data structures and algorithms in C++ and the SDL2 library to develop a powerful app focused on mental well-being. Let's explore its unique features!



App Overview: Serenity Space

Purpose of the Project

Serenity Space," a groundbreaking mental health app developed as our DSAA Project. Providing a variety of mental health activities, helping users manage stress and promote relaxation through a unique combination of user engagement, sophisticated data structures and graphics.

Description of the 5 Options

Explore different features: Journaling, Painting, Two Stress Relieving Games, and Piano Playing.

Data Structures and Algorithms in C++

Importance in Developing the App

By leveraging efficient data structures and algorithms, we ensure smooth execution and enhanced user experience.

Specific Structures and Algorithms Used

We utilized linked lists, queues and stacks, binary trees, 2D arrays, sorting, tree backtracking algorithms to manage app data and optimize performance.

Benefits of Chosen Data Structures

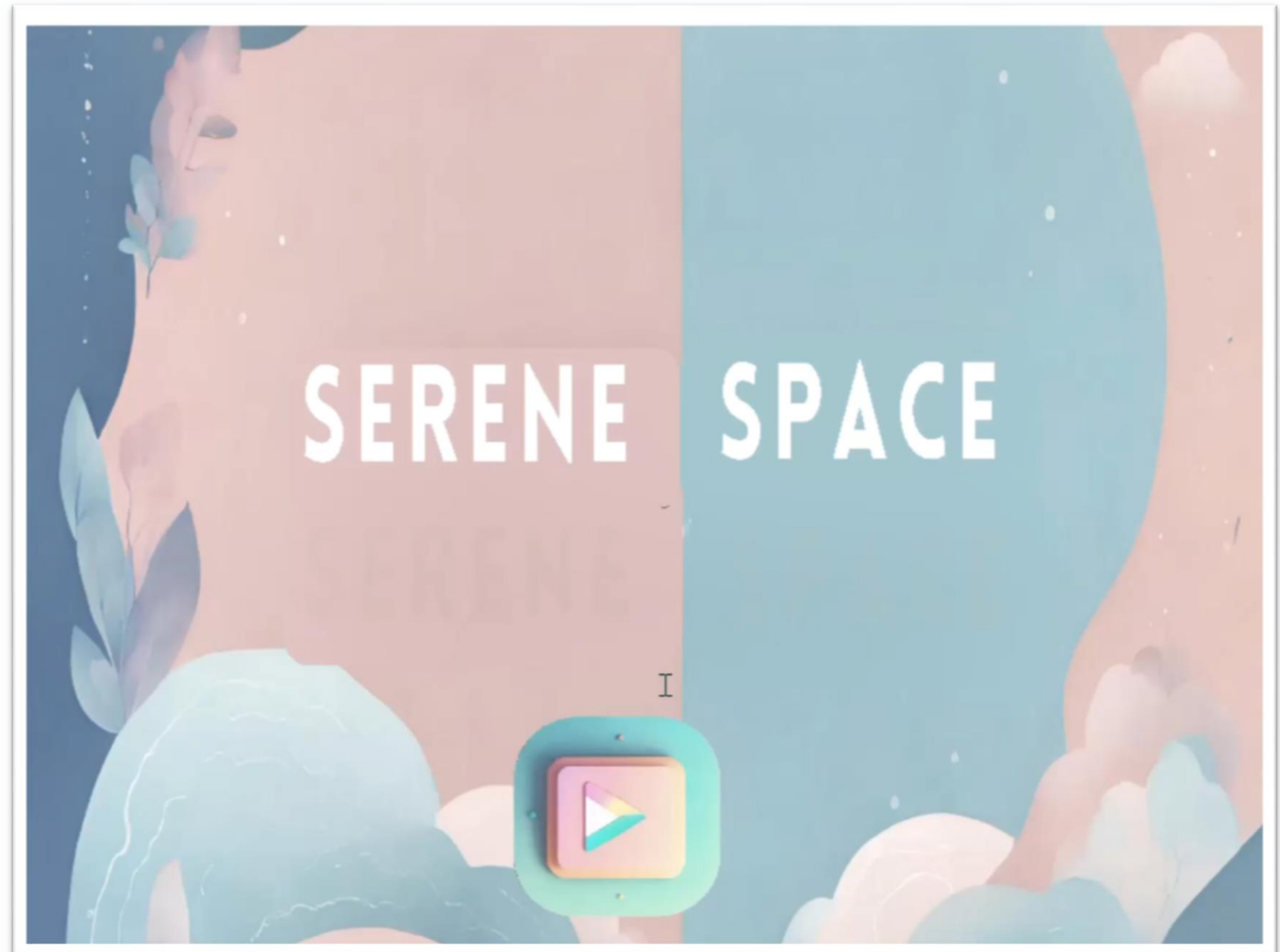
Linked lists, queues, and stacks optimize data management, while binary trees, 2D arrays, sorting, and backtracking algorithms enhance performance for a smoother user experience in Serenity Space.

Exploring Serenity Space Features

► Main Screen

Daily Check in

The Application opens with a friendly chat, asking you about your day. Through a conversational binary tree, subsequent questions unfold based on your responses, creating an interactive and evolving experience tailored to your mood and needs

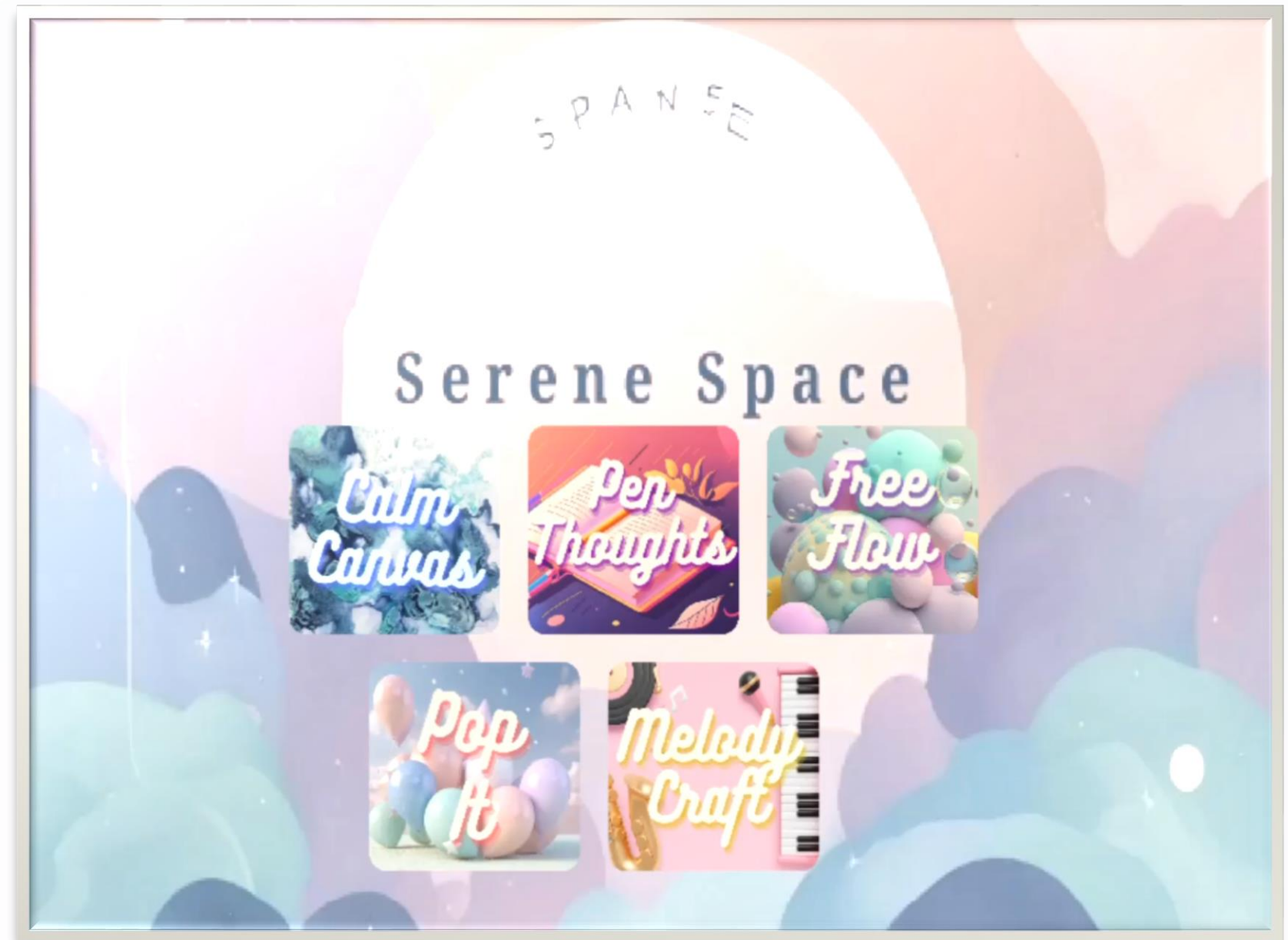


Exploring Serenity Space Features

► Main Screen

Painting

Paint App enhances user interactions, undo/redo, and shape drawing through smart use of DSA like stacks and queues ensuring a responsive digital painting experience.

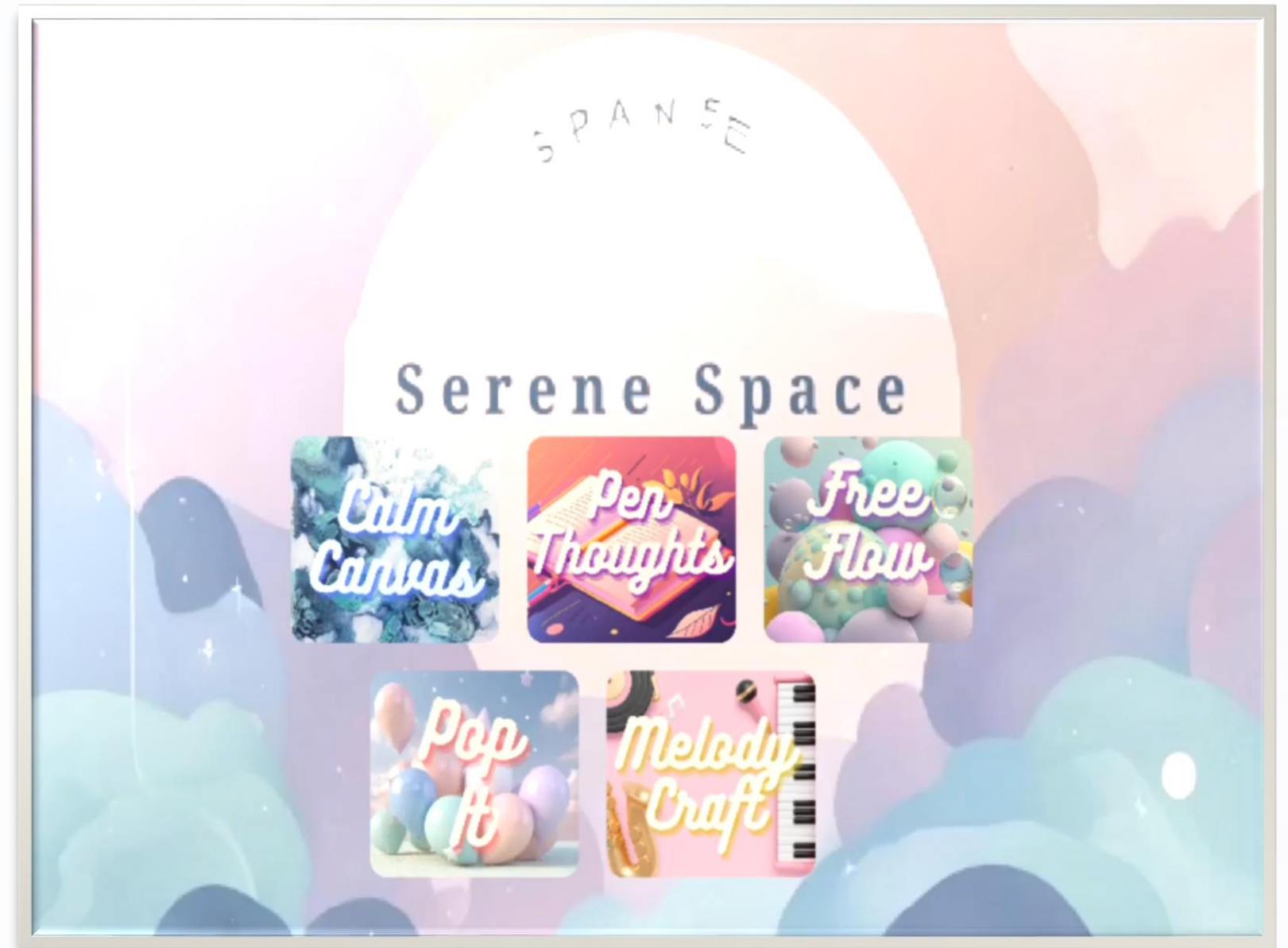


Exploring Serenity Space Features

► Main Screen

Journaling

A digital sanctuary for users to express their thoughts and feelings. Our application utilizes Doubly linked lists to efficiently manage and organize journal entries, allowing users to reflect on their mental health journey

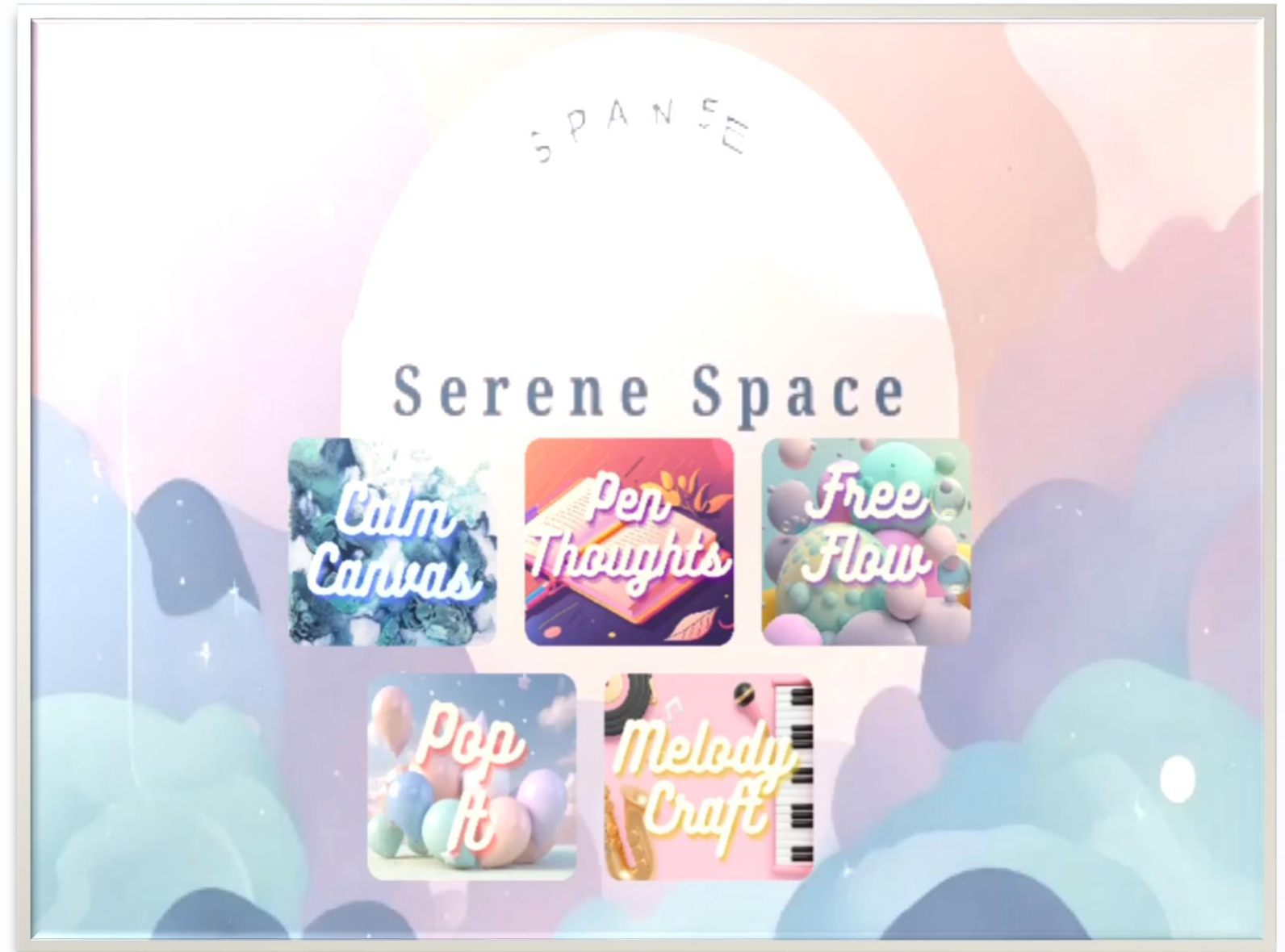


Exploring Serenity Space Features

► Main Screen

Pop-It Stress-Relieving Game

In our stress-relieving game "Pop It," Linked Lists are ingeniously utilized, creating a dynamic and engaging experience for users to effectively relieve stress and anxiety.

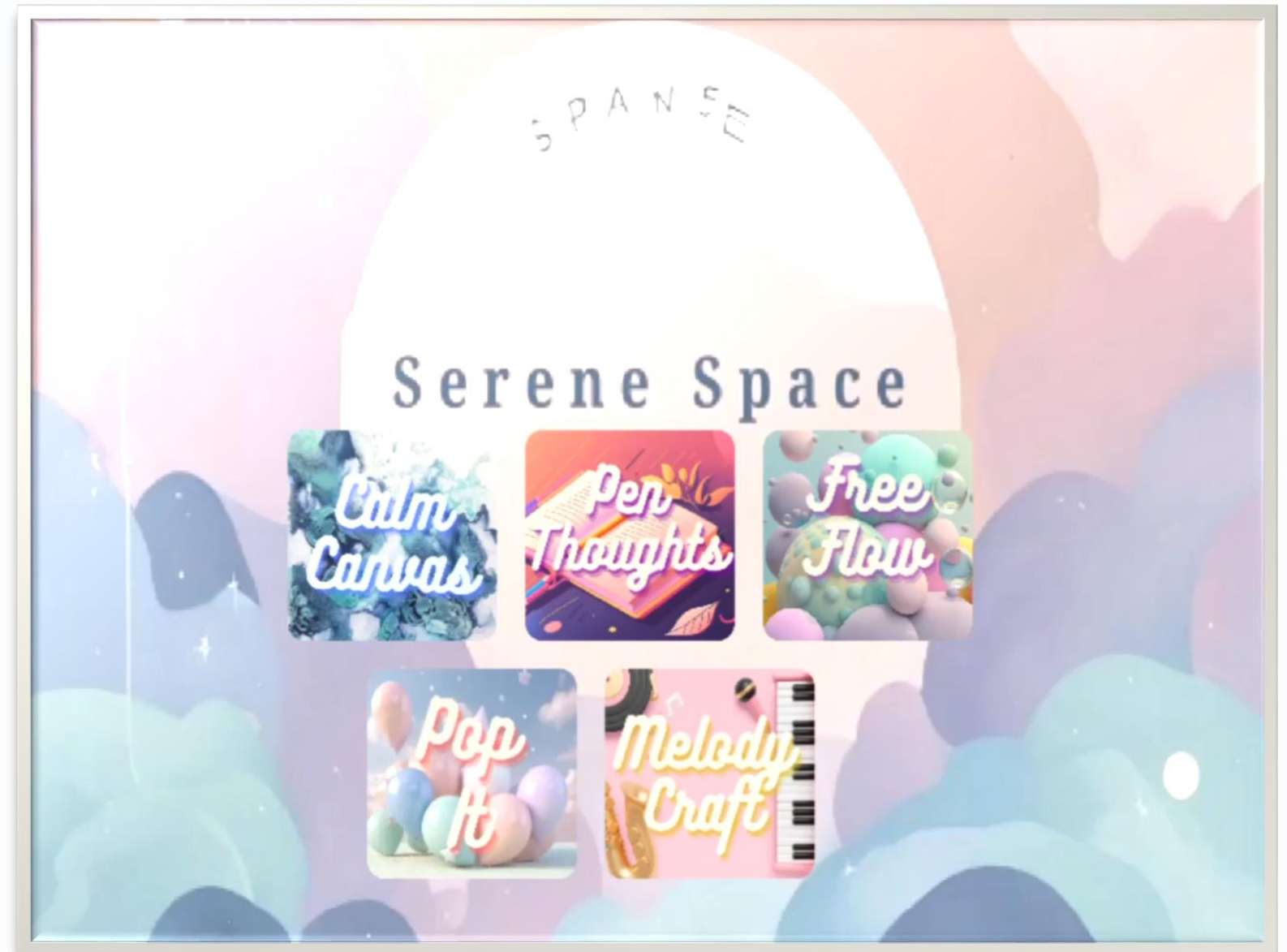


Exploring Serenity Space Features

► Main Screen

Piano Playing

With our app's virtual piano, Circular Linked Lists are employed to create a seamless and continuous musical experience, enhancing the fluidity and harmony of the user's interaction.

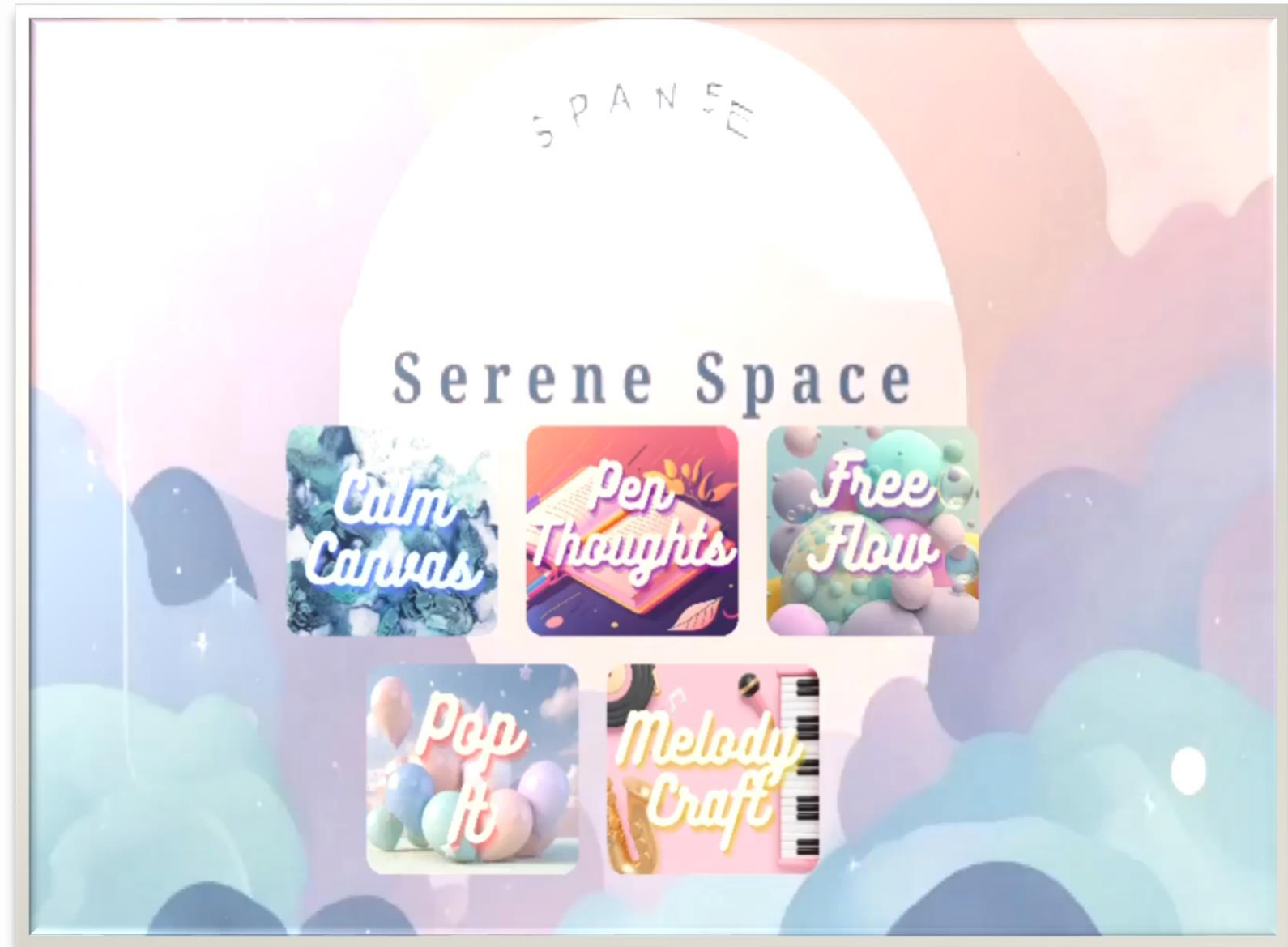


Exploring Serenity Space Features

► Main Screen

Free-Flow Relaxing Game

Designed using 2D arrays and backtracking algorithm to promote relaxation, our game allows users to play at their own pace with no time limits or pressure.



SDL2 Library

1

Introduction to SDL2 Library

SDL2 is a powerful multimedia library that allowed us to incorporate graphics, sound, and interactive elements into our app.

2

Integration into the App

By utilizing SDL2, we created engaging visuals, smooth animations, and immersive audio experiences for app users.



Benefits of the App

1

Mental Health Benefits for Users

Our app fosters self-reflection, creativity, and relaxation, promoting overall mental well-being and stress reduction.

2

Promoting Relaxation and Stress Relief

With activities like painting, playing the piano, and engaging games, users can unwind and find respite from daily stresses.




Conclusion

Recap of Main Points

By leveraging advanced data structures and algorithms, we've crafted an application that not only adapts to individual needs but also provides a creative outlet for self-expression and stress relief. Through the power of C++ and the SDL2 library, we hope to make a positive impact on the mental health journey of our users.

Encouraging Audience to Explore the App

We invite everyone to experience the app's unique features and embrace relaxation, creativity, and stress relief in their lives. We look forward to your feedback and engagement with Serenity Space!



Thank you
for your attention