Sprint 1

Cyrus

A Collaborative Art Board

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Introduction:

The purpose of this proposal is to articulate a comprehensive development plan for "Cyrus," an advanced, collaborative pixel art web application designed to facilitate synchronous digital creativity. Cyrus represents an interdisciplinary convergence of art, technology, and human interaction, offering an online environment where multiple users can collaboratively construct intricate pixel-based artworks in real time.

Participants may claim discrete regions of the shared canvas, enabling individual expression while contributing to a cohesive and continuously evolving collective composition. This approach not only fosters cooperative engagement but also provides a pedagogical framework for exploring the complexities of collaborative digital artistry and shared creative ownership.

Moreover, the implementation of Cyrus will exemplify the integration of core full-stack technologies—specifically PUG, Node.js, Express.js, MySQL, Git, and Docker—within a structured and scalable architectural paradigm. Through this initiative, the project seeks to demonstrate the symbiotic relationship between front-end creativity and back-end optimization, illustrating how technological proficiency can augment artistic collaboration.

Ultimately, Cyrus aspires to serve as both a creative platform and an academic case study in the synthesis of art, computation, and networked collaboration.

Application Idea and Purpose:

Cyrus provides users with a fun, social, and interactive platform to collaborate visually.
The main objective is to offer a shared space for students, artists, and creative individuals to express themselves together, pixel by pixel.
This project emphasizes user collaboration, technical teamwork, and the application of Agile development principles.

Key Features

- **Collaborative Canvas:** Users can claim and draw on specific grid squares, fostering teamwork within a shared digital environment.
- **Limited Colour Palette:** Encourages creativity through constraint-based design, promoting innovative artistic decisions.
- **User Profiles:** Maintains personalized accounts that store usernames, individual artworks, and contributions to collective pieces.
- **Real-Time Updates:** Enables instantaneous synchronization of all artistic interactions, ensuring a seamless and engaging user experience.

- **Canvas History:** Records pixel-level modifications, allowing users to track authorship, revisions, and collaborative progress.
- **Community Gallery:** Curates and displays completed artworks from various sessions, enhancing visibility and community participation.
- **Function Features:** Integrates application logic to manage user authentication, drawing permissions, session persistence, and data retrieval. This module ensures operational efficiency by coordinating backend communication between the client interface and the database. Additionally, it supports real-time rendering through optimized API endpoints, guaranteeing stable performance even during high user activity.

How Might We... Questions

a. How might we enable users to collaborate visually in a simple, engaging, and fair way?

b. How might we create a real-time shared drawing space that's smooth, intuitive, and responsive?

c. How might we make collaborative art feel personal, rewarding, and community-driven?

d. How might we ensure scalability, reliability, and long-term technical sustainability?

e. How might we encourage creativity and innovation while maintaining harmony within a shared digital canvas?

Persona 1: Abigail the Artist

Age and Gender: 25 / Female
Occupation: Art & Design Student

Background:
Abigail is a passionate Art and Design student who finds fulfillment in translating her creative ideas into digital form. She is drawn to tools that allow her to experiment freely without overwhelming technical complexity. Collaboration is central to her creative philosophy, as she values interactive spaces where artists can exchange ideas and co-create in real time. Her personality reflects curiosity, adaptability, and a genuine desire to belong to a vibrant artistic community.

Frustrations:

- Overly advanced or cluttered digital art tools that hinder creative flow.

- Limited availability of platforms supporting collaborative creativity in real time.

Wishes:

- A visually stimulating, low-barrier platform for collective artistic expression.

- A supportive online space where creativity, learning, and community intersect.

Scenario:
After her design lecture, Abigail logs into Cyrus to join a group canvas. She selects a small grid area to color, watching her peers' contributions unfold simultaneously. The live interaction fosters a sense of connection, motivating her to refine her work and take pride in contributing to a dynamic collective masterpiece.

Persona 2: Swaraj the System Administrator

Age and Gender: 23 / Male
Occupation: System Administrator

Background:
Swaraj is a meticulous and proactive System Administrator who takes pride in maintaining robust digital infrastructures. With proficiency in cloud systems, containerization, and data management, he ensures technology seamlessly supports collaboration and creativity. He thrives on solving complex technical challenges and enjoys seeing his backend work enable real-time artistic interaction among users.

Frustrations:

- Insufficiently optimized systems that cause lag or downtime during high traffic.

- Lack of automated monitoring tools that track performance and system stability.

Wishes:

- To design and oversee a resilient, scalable infrastructure that supports uninterrupted artistic collaboration.

- To apply modern DevOps and backend technologies that bridge creativity with performance reliability.

Scenario:
Swaraj configures the Docker deployment system and optimizes the server architecture for Cyrus to handle simultaneous user input efficiently. By automating maintenance processes and enhancing data synchronization, he ensures the platform runs smoothly. His technical precision sustains a stable environment where artists like Abigail can create collaboratively without disruption.

Code of Conduct:

A code of conduct establishes the behaviour standards for all team members, fostering a professional, respectful, and inclusive working environment.

Communication:
Team members should communicate openly, clearly, and respectfully using shared tools (Teams, Slack, or GitHub discussions). Constructive feedback is encouraged, and conflicts should be resolved through calm, open dialogue.

Responsibility:
Each member is responsible for their assigned tasks and deadlines. Everyone should test and review their code before committing and inform the team of any blockers early.

Professionalism:
All members must maintain professional conduct, ensuring quality work, consistency, and proper documentation. Sensitive project data should remain confidential.

Respect for Others:
Every member is expected to treat others with kindness and respect, valuing different perspectives.
Discriminatory or harassing behaviour will not be tolerated under any circumstances.

Design and Development Setup:

- **Front-End:** PUG (for templating UI and rendering HTML dynamically)

- **Back-End:** Node.js with Express.js (handles routing, logic, and API endpoints)

- **Database:** MySQL (stores user profiles, pixel data, and canvas state)

- **Version Control:** Git & GitHub for code management and collaboration

- **Deployment:** Docker containers for a consistent environment setup

- **Project Management:** Scrum-based agile workflow using task boards and sprints

Links:

Link for Task Board:

🔗
https://rapakavivek6.atlassian.net/jira/plans/1/scenarios/1/timeline?isPlanShare=true&atlOrigin=eyJpI
joiZGMyMzdjZDk3NWM5NDUzNmEwODhkZjVlMjJjZDM4ODgiLCJwIjoiaiJ9

Link for Team GitHub Repository:
🔗 https://github.com/rapakavivek6-sys/Cyrus.git

Conclusion:

The **Cyrus – Collaborative Art Board** project will provide users with a unique, interactive platform
that blends creativity, collaboration, and technology.
By combining **PUG**, **Node.js**, **Express.js**, **MySQL**, **Git**, and **Docker**, the team aims to build a
responsive, scalable, and user-friendly application.
Cyrus stands as a creative showcase of teamwork and innovation, transforming digital collaboration
into a shared artistic experience.