STARBOOKS
WHIZ CHALLENGE

NEXUS - SF 231

Dumbrique, Kelly

Gercan, Arcielle Marie

Quianzon, Shandrae Lois

Salipande, Janice Maxene

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STARBOOKS

DOST-STII

About STARBOOKS

- An initiative by DOST-STII to promote science and technology learning

- STARBOOKS = Science & Technology Academic and Research-Based Openly Operated KioskS

- Launched in 2011 as the Philippines' first digital science library

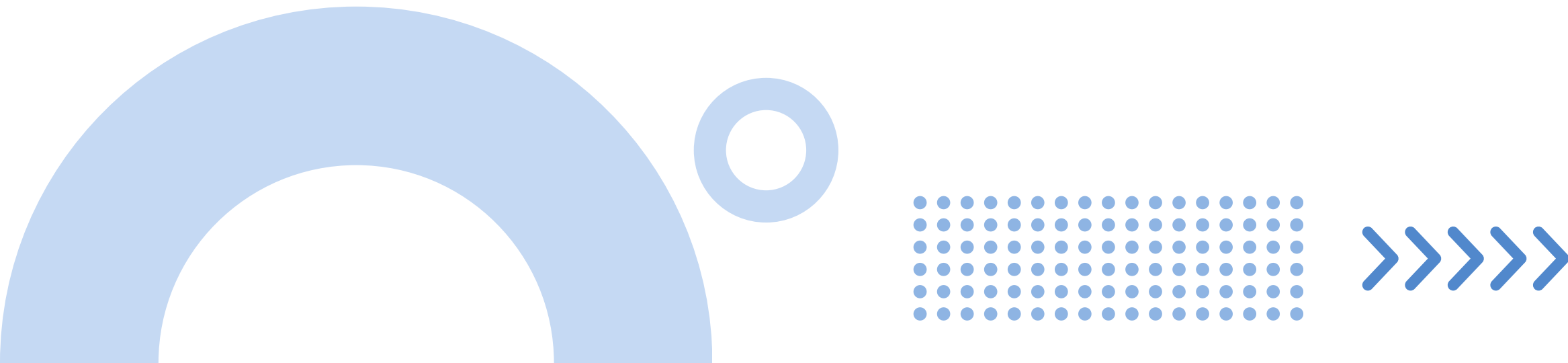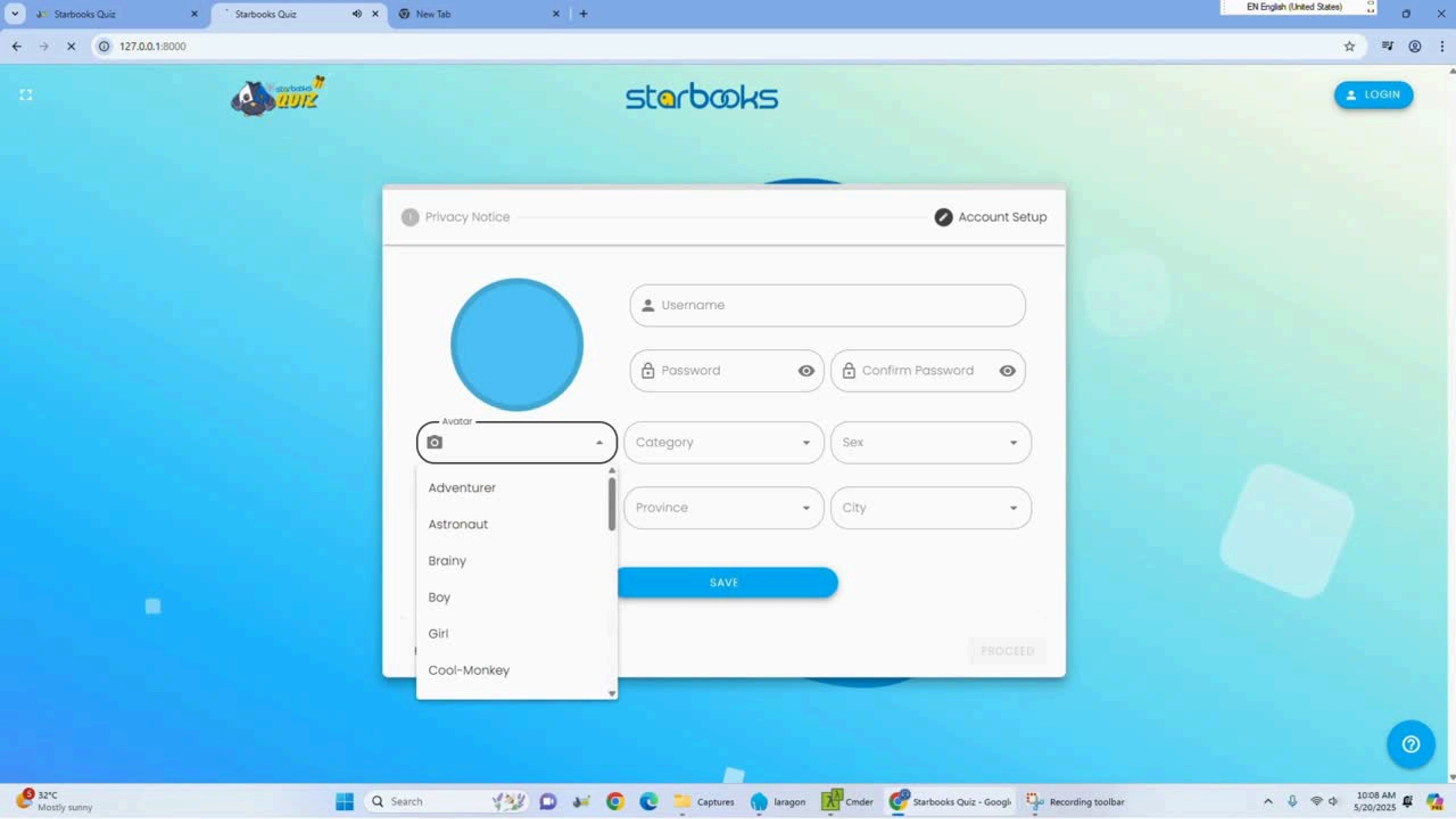- Designed as a free, offline learning tool for schools and communities

About STARBOOKS Quiz App

- Features a solo quiz about STEM topics with badge tracking as a reward

- Used in DOST exhibits, science fairs, and events

- Designed to attract and educate visitors in a fun, interactive way

What does the current STARBOOKS system look like?

What are the problems?

1 Lacks Variety Due to Single Game Mode

2 No Competitive/ Multiplayer Feature

3 Lack of Visual Appeal and Modern Interface

4 No Player Stats
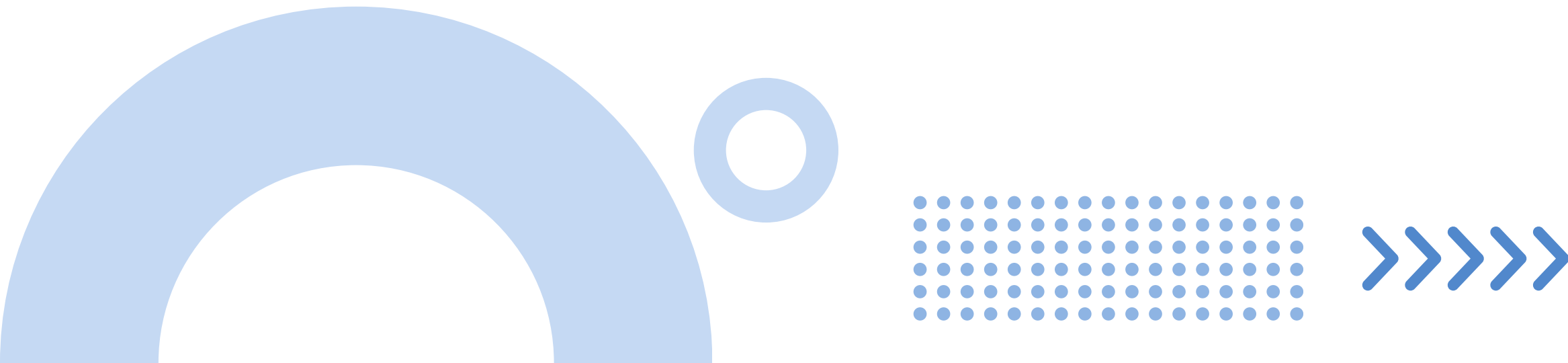
5 Admin Dashboard Lacking Game Analytics

6 No Data Syncing Across Kiosks

7 No System Documentation and Admin User Manual

What can we expect from the new STARBOOKS system?

WANT TO TEST YOUR KNOWLEDGE AND WIN
EXCITING REWARDS?

Project Description

- **Rebuilding the STARBOOKS Whiz Challenge from scratch**

- **Includes 4 engaging game modes:**
    - **Whiz Challenge – Solo Quiz**
    - **Whiz Memory Match**
    - **Whiz Puzzle**
    - **Whiz Battle – 1v1 Quiz Showdown**

- **Enhanced UI, animations, and overall user experience**

- **Tracks player stats**

- **Improved admin dashboard with game analytics and AI assistance feature**

Project Objectives

1

4 Engaging
Game Modes

2

1v1 Quiz
Battle Mode

3

Enhance the User Interface
and Visual Appeal

4

Implement Player
Performance Stats

5

Improve the
Admin Dashboard

6

Implement Cloud-Based
Progress and Content Syncing

7

Provide System
Documentation and
User Manual

Project Vision

| VISION: To modernize the current STARBOOKS with gamified, engaging Science and Math mini games that enhance learning and spark student interest in STEM.			
TARGET GROUP	**NEEDS**	**PRODUCT**	**BUSINESS GOALS**
• Walk-in visitors and participants of DOST exhibits and events • Students (Grades 1 to 12) in public schools, learning centers • Teachers, librarians, exhibit facilitators • DOST-STII stakeholders	• Existing quiz system lacks engagement and variety • Students need more interactive, motivating ways to learn • Admins need better tracking and management	• An interactive educational game app with 4 game modes: solo quiz, memory match, puzzle, and 1v1 quiz battle • Works offline except for the 1v1 Battle mode which requires internet • Sync automatically once internet is available • Includes badge rewards, player stats, and admin tools for content management	• Reinforce DOST-STII's mission to promote STEM education across the country • Boost engagement with STARBOOKS through modern, game-based content • Equip DOST exhibits and learning centers with a scalable, offline-first educational solution

Project Scope

TARGET USERS

END USERS
Exhibit Visitors and Students

ADMIN USERS
Teachers, Librarians, or Exhibit Facilitators
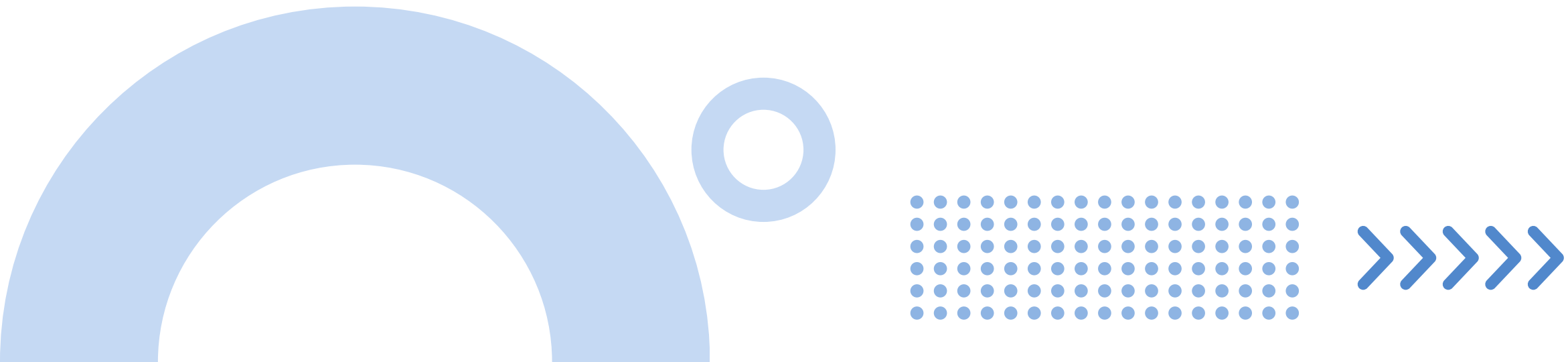
Project Scope

✅ **User registration and login system**

✅ **Four game modes**: Whiz Challenge (Solo Quiz – offline); Whiz Memory Match (offline); Whiz Puzzle (offline); Whiz Battle (1v1 Quiz Showdown – online)

✅ **Science and Math subject** categories with three difficulty levels **(Easy, Average, Difficult)**

✅ **Badge and reward system**

✅ **Player statistics dashboard:** best time, accuracy, top category, win rate, battle history, and more)

✅ **Admin panel:** player/admin list, quiz questions (with AI-assisted question generation feature), difficulty level settings, rewards, game analytics

✅ Data is **stored locally first** and **syncs to the cloud** when internet becomes available

Project Scope

❌ **Not integrated with the main STARBOOKS digital library**

❌ **No mobile/tablet version; kiosk-only deployment**

❌ **No topic-specific categories for Whiz Memory Match**

❌ **Only jigsaw-type puzzles for Whiz Puzzle**

❌ **No customization for memory or puzzle game assets**

❌ **Whiz Battle allows only 1v1 matchmaking (via code)**

❌ **No player-level analytics; admins see only overall stats**

Use Case Diagram

STARBOOKS Whiz Challenge

Player

- Register Account
- Log in
- Edit Profile
- View Badges
- Play Whiz Challenge
- Play Whiz Memory Match
- Play Whiz Puzzle
- Play Whiz Battle
- View Stats
- Log out

Admin

- Manage Player List
- Manage Admin List
- Manage Quiz Questions
- Manage Dificulty Settings
- Manage Player Rewards
- View Analytics Dashboard
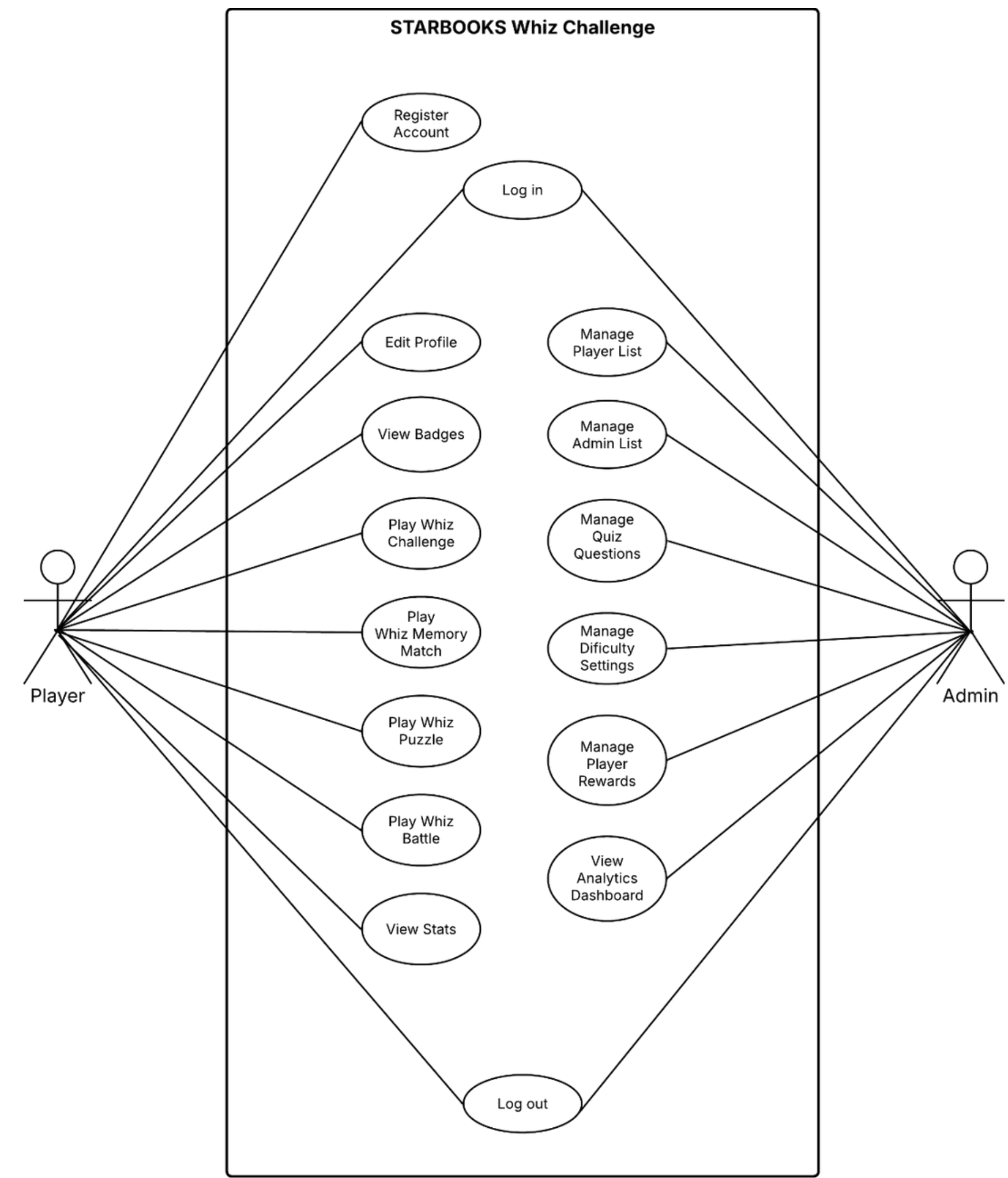
Project Feasibility

User-Friendly for Players and Admins

Easy Deployment

Offline-First

Aligned with DOST mission

Project Feasibility

ECONOMIC

No Labor Costs

Hardware Compatible

Scalable

Boosts Outreach and Engagement

Project Feasibility

Proven
Technologies

Hardware
Compatible

Offline-First

Developer
Readiness

Project Feasibility

Clear Timeline and Milestones

Manageable MVP Scope

Active Coordination with DOST-STII

Defined Team Roles

Technical Background

The proposed system will remain compatible with the existing kiosk-based setups provided by DOST-STII:

- **Option 1: Touchscreen All-in-One PC**
  - All-in-one: monitor, processor, and storage
  - Touchscreen interface for easy gameplay
  - Optional keyboard & mouse
  - Best for compact spaces (exhibits, learning hubs)

Technical Background

The proposed system will remain compatible with the existing kiosk-based setups provided by DOST-STII:

- **Option 2: Standard Desktop Setup**
  - Separate CPU tower + monitor
  - Uses USB keyboard & mouse
  - More affordable for budget-limited locations

Technical Background

SOFTWARE

Backend:

Frontend:

django

Flutter

Database + Real-Time Multiplayer + Sync Engine:

supabase

Technical Background

NETWORK

- **Offline Mode:**
  - All game modes (except Whiz Battle), player data, admin management operate entirely offline.
  - Data is stored and accessed locally per kiosk.

- **Online Mode:**
  - Internet is only needed for Whiz Battle's real-time multiplayer and for generating AI-assisted questions.
  - Syncing is only triggered when a connection is detected.

Technical Background

Student
Developers

DOST-STII

End Users
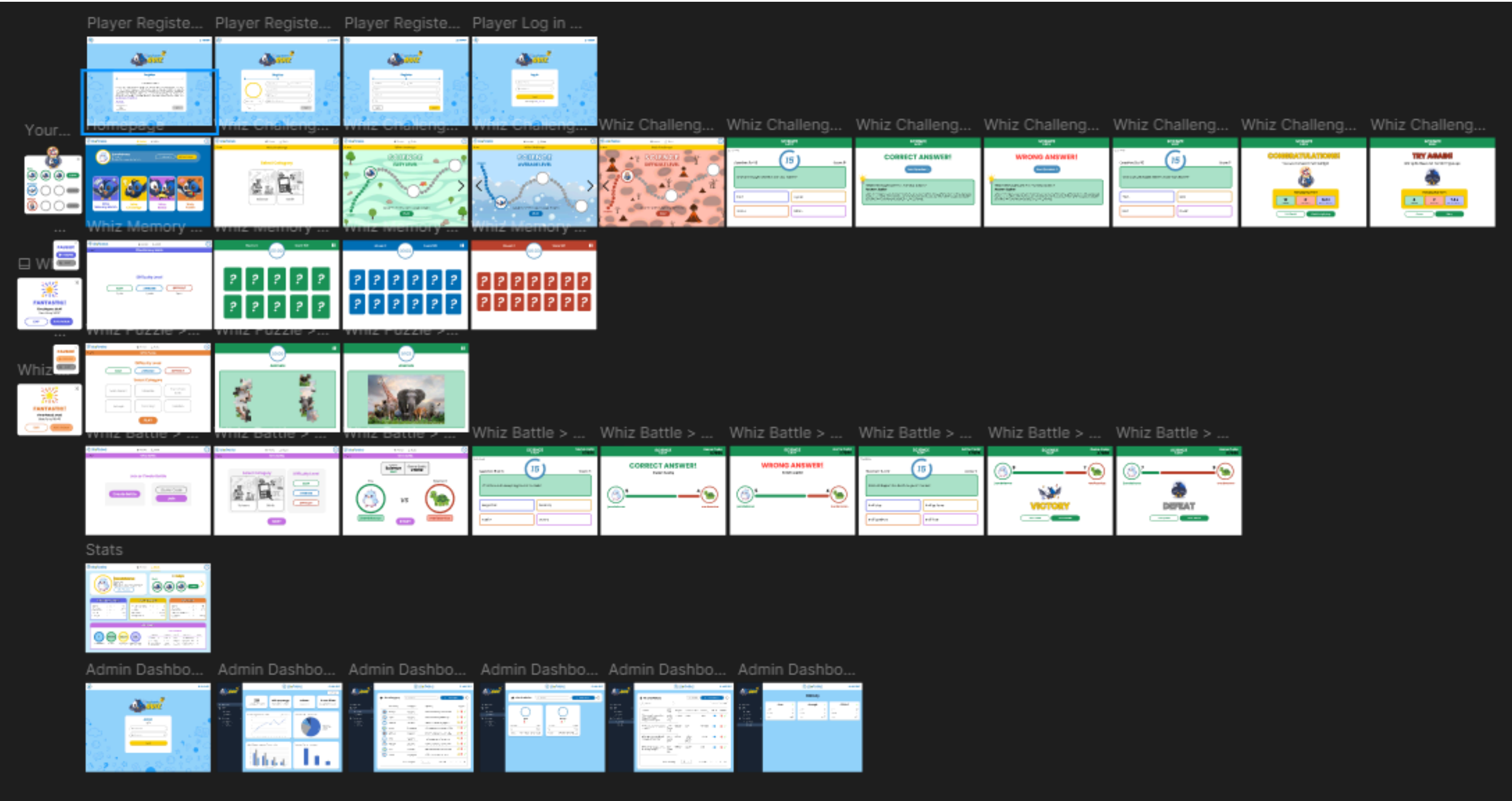(Visitors, Students)

Admin Users
(Teachers,
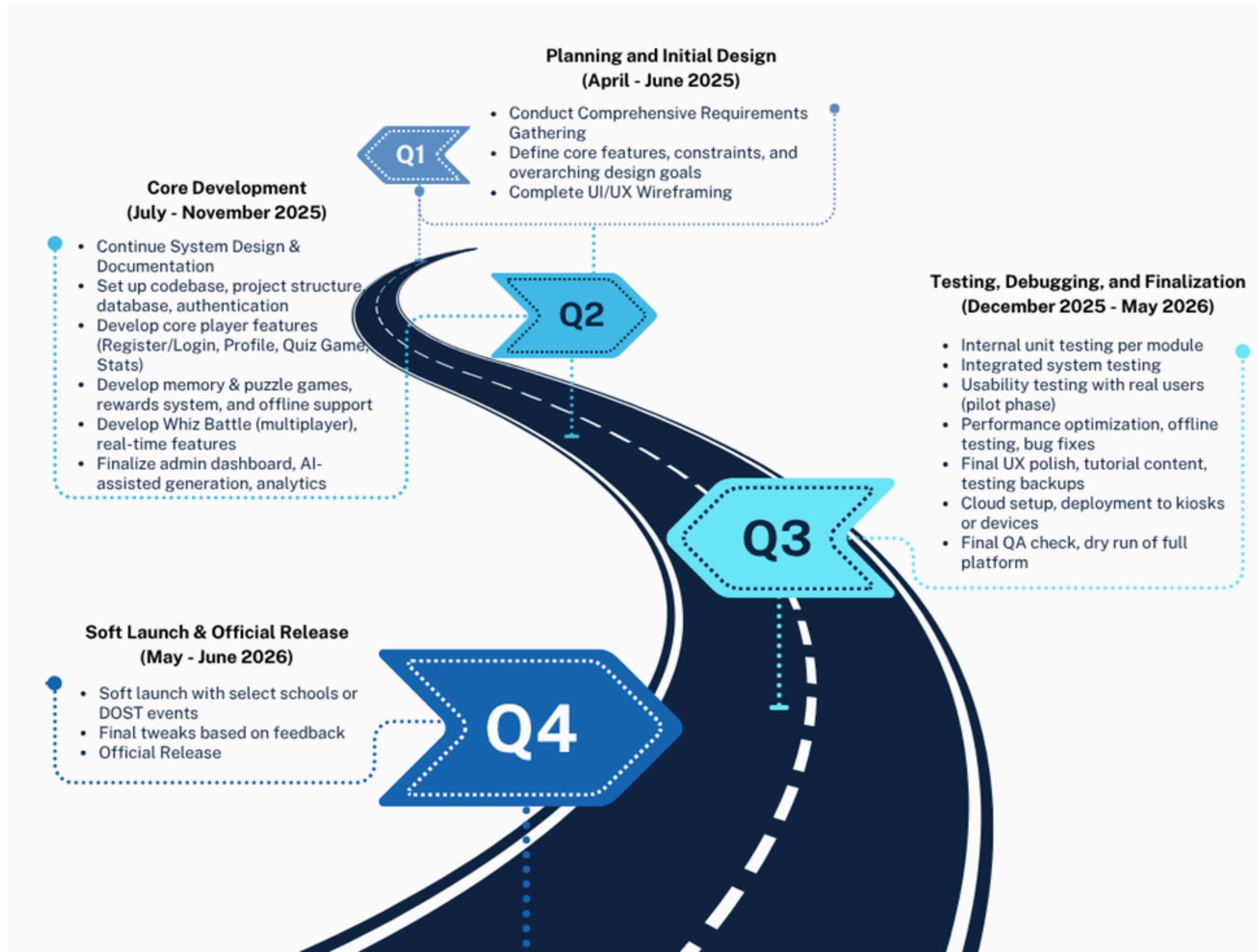Librarians, Staff)

Wireframes

High Fidelity Wireframe

Project Roadmap

Planning and Initial Design
(April - June 2025)

Q1

- Conduct Comprehensive Requirements Gathering
- Define core features, constraints, and overarching design goals
- Complete UI/UX Wireframing

Core Development
(July - November 2025)

- Continue System Design & Documentation
- Set up codebase, project structure, database, authentication
- Develop core player features (Register/Login, Profile, Quiz Game, Stats)
- Develop memory & puzzle games, rewards system, and offline support
- Develop Whiz Battle (multiplayer), real-time features
- Finalize admin dashboard, AI-assisted generation, analytics

Q2

Testing, Debugging, and Finalization
(December 2025 - May 2026)

- Internal unit testing per module
- Integrated system testing
- Usability testing with real users (pilot phase)
- Performance optimization, offline testing, bug fixes
- Final UX polish, tutorial content, testing backups
- Cloud setup, deployment to kiosks or devices
- Final QA check, dry run of full platform

Q3

Soft Launch & Official Release
(May - June 2026)

- Soft launch with select schools or DOST events
- Final tweaks based on feedback
- Official Release

Q4

Release Plan

Planning & Design Phase	April 30, 2025 - June 30, 2025
Project Setup & Core Feature Development	July 21, 2025 - November 15, 2025
Admin Dashboard & Testing Phase	November 16, 2025 - January 31, 2026
Optimization, Deployment & Release	February 1, 2026 - May 31, 2026
Official Launch of STARBOOKS Whiz Challenge	June 1, 2026

THANK YOU!

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