Cultivate Learning App: By Tutor Nation

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Motivation

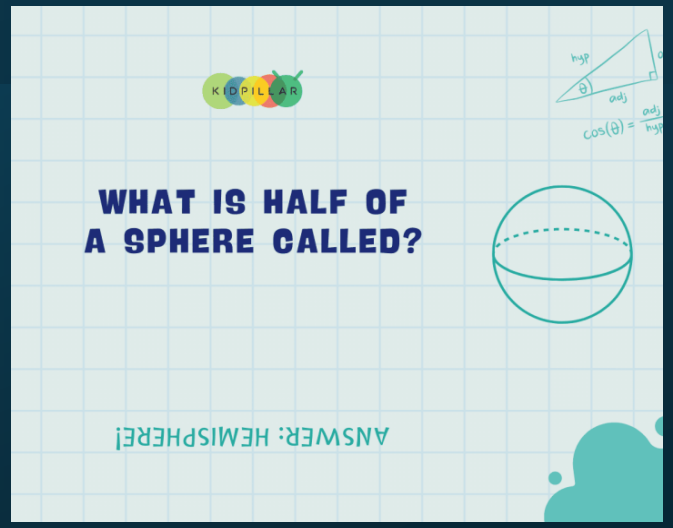
- Personalized tutoring services for K-12 students
- Students can't always meet
- Practice time is still necessary, tutors are not
- Students can practice lessons on their own time
- App provides personalized, more engaging content, and can improve learning

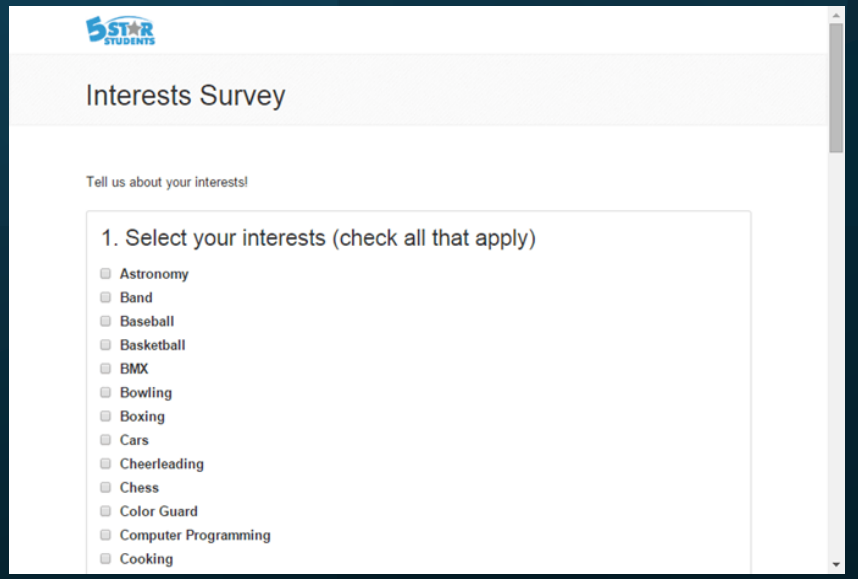
Users

- Four Primary Categories of User
  - Students
    - Engage with learning content
  - Parents
    - Monitor student's progress
  - Tutors
    - Monitor student's progress and tweak content
  - Admins

Features

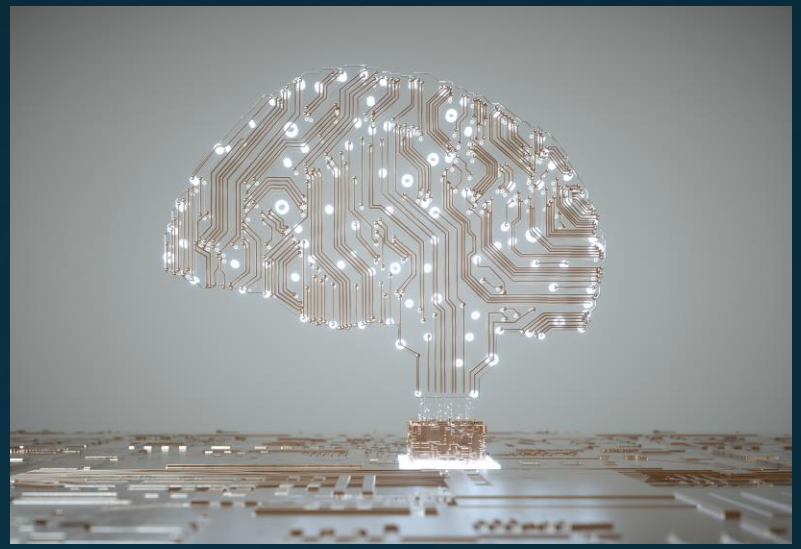
- The app should be able to:
  - Allow students to create their own profile
  - Provide a survey to gain insights on student
    - What they would like to learn, their age, and their interests
  - Deliver lessons based on student's profile.
  - Track student's progress
- Curriculum Alignment





Technical Specifications

- Platform accessibility
  - Primary focus: IOS application
  - Chromebook-compatible and Android applications
- AI integration
  - Personalized learning recommendations
  - Adaptive game content based on student performance/interests
- Data Management
  - Secure user authentication and role-based access control
    - OAuth
  - Cloud database for user profiles, progress data, and analytics
- Security and Privacy
  - Compliance considerations for student data privacy (FERPA)



Potential Development Environment

- Primary platform: iOS
  - Future Goals: Chromebook-compatible and Android applications
- Initial Launch
  - Private iOS release for testing/feedback
- Development Tools
  - XCode
  - Swift/SwiftUI for frontend
  - ExpressJS or Spring Boot for backend
- Architecture
  - Client-server model
  - Cloud-based backend

Related Work

- Smart Tutor Matching - Search, filters, personalized recommendations
- Instant Booking - real-time availability, easy reschedule/cancel
- Live Tutoring – video, screen share, whiteboard, file sharing
- Learning Progress – session history, goals, progress tracking

- AI Problem Solver – instant step-by-step solution
- Photo Input – scan homework questions
- Multi-Subject Support – math, physics, chemistry, word problems
- 24/7 Availability – no scheduling or waiting
- Instant AI help, not live tutoring sessions

Challenges/Obstacles

- Development Environment Set up – Current team has Window system, need to figure out how to develop for iOS using virtual computer
- Implementation using AI – sponsor wants to add feature where practice problems for the lesson are generated using AI, need to figure out which model/API to use
- Feature Separation – Sponsor wants to have different user roles such as parents, students, tutors. Need to figure out how to separate features using minimal approach
- Screen Sharing – Tutor Nation expects live online tutoring; a live screen and file sharing feature is needed.

Questions?