VIT®

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

School of Computer Science and Engineering

Winter Semester 2024-25

Slot: L39 + L40

Course Name: IT Project Management

Course Code: CBS3012

Faculty Name: Prof. Dr. Senthilnathan P

LAB PROJECT REPORT

DyslexiLearn - Emphasizing learning for specially-abled individuals

Team members:

Rishbh Arora - 22BBS0112
Swapnil Mondal - 22BBS0116
Swayam Singal - 22BBS0144
Siddhesha Thepade - 22BBS0147
Yash Thakker - 22BBS0177
Anush Kar - 22BBS0246

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PROJECT PLANNING

Aim:

To design and develop an inclusive and interactive platform tailored for individuals with dyslexia, offering personalized learning modules, support systems, and community engagement to enhance their educational journey and overall well-being.

Abstract:

Dyslexia affects 10-15% of the global population, creating significant barriers to reading, writing, and language processing that traditional educational methods often fail to address. This project seeks to bridge that gap by developing an accessible, engaging, and comprehensive platform tailored specifically for dyslexic learners. It features user authentication, personalized profiles, an adaptive learning system, a supportive chatbot, and a progress tracker. Additionally, it fosters a sense of community through discussion forums and connects users with professionals for personalized guidance. By integrating interactive learning tools, emotional support, and expert assistance, the platform empowers dyslexic individuals, enhancing their educational experience and personal development.

Scope:

The scope of this project revolves around developing an inclusive, user-friendly platform specifically designed to support individuals with dyslexia by integrating personalized learning, community engagement, and professional assistance. The platform will ensure a secure and customized experience through user authentication and profile-building features, allowing individuals to input relevant details such as their disability type, education level, and personal learning goals. This data will help tailor their interactions within the platform, providing a personalized and adaptive learning environment.

A key component of the platform is its dyslexia-friendly learning system, which employs gamification to make the educational process engaging and effective. Interactive exercises will incorporate dyslexia-friendly fonts like OpenDyslexic, optimized spacing, and customizable color schemes to enhance readability. The learning experience will be adaptive, adjusting the difficulty based on user progress to keep motivation high while preventing frustration. Multi-sensory techniques, including audio and visual aids, will further support comprehension and retention.

To assist users in real time, the platform will feature a chatbot powered by natural language processing. This virtual assistant will help users navigate the platform, answer queries, provide encouragement, and suggest relevant exercises and resources. Additionally, a community discussion forum will foster a supportive environment where users can share experiences, seek advice, and collaborate. Moderation tools will ensure that discussions remain positive and focused on learning and personal growth.

Progress tracking will be another integral feature, offering users a dashboard with visual insights into their achievements and areas for improvement. Users can set personal goals and receive rewards for reaching milestones, fostering a sense of accomplishment and encouraging continuous engagement. Furthermore, the platform will provide a professional connection service, linking users with certified doctors, therapists, and educators for consultations and guidance. Appointment booking and feedback mechanisms will ensure seamless interactions with specialists.

Designed with accessibility at its core, the platform will feature dyslexia-friendly fonts, customizable color schemes, and intuitive navigation to enhance usability. Personalization will be a key focus, ensuring that each user experiences a learning journey tailored to their specific needs. The combination of interactive tools, emotional support, and expert assistance will empower

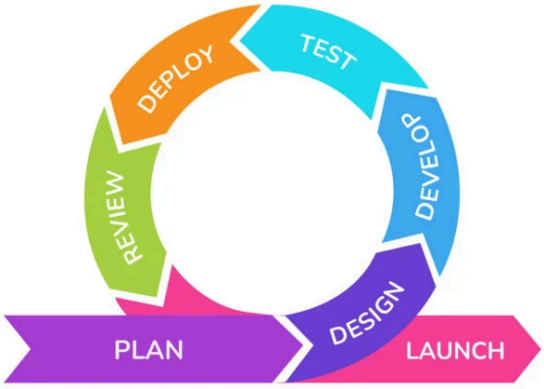
dyslexic individuals, improving both their learning outcomes and overall well-being. With a modular and scalable structure, the platform also has the potential to expand in the future, addressing the needs of individuals with other disabilities or learning challenges.

Process Model:

Scrum Model following Agile Principle

Justification:

1. **User-Centric**: Enables continuous feedback and improvements tailored to dyslexic users' needs.
2. **Flexible**: Adapts to evolving requirements and accessibility standards.
3. **Faster Delivery**: Delivers functional modules early for quicker stakeholder feedback.
4. **Continuous Testing**: Ensures features like fonts and layouts meet accessibility goals.
5. **Collaborative**: Promotes teamwork among developers, designers, and dyslexia experts.



The development of this platform will follow an Agile methodology, specifically using the **Scrum model**, to ensure flexibility, collaboration, and continuous improvement. The process begins with **requirement gathering**, where input from dyslexia experts, educators, and potential users is collected to identify key needs. This information is organized into a **product backlog**, which serves as a prioritized list of features to be developed. The backlog helps structure the project effectively, ensuring that the most essential aspects—such as accessibility, personalized learning, and professional support—are addressed first.

Sprint planning is then conducted to break the development process into short, manageable iterations called sprints, each lasting a few weeks. Each sprint focuses on delivering a specific set of features, such as authentication, learning modules, or chatbot integration. The team collaboratively defines the sprint goal, selects tasks from the backlog, and ensures clear objectives are set. By adopting an **iterative development** approach, the platform is built step by step, with each sprint producing a functional, testable increment.

At the end of each sprint, **testing and feedback** play a crucial role. Features are tested by users and accessibility experts to ensure usability, effectiveness, and adherence to dyslexia-friendly design principles. Feedback is gathered and used to refine and improve the platform in subsequent sprints. Through **continuous integration**, completed features are merged into the platform and deployed for further testing, ensuring a seamless and evolving user experience.

The Scrum framework also includes **retrospectives**, conducted after each sprint to assess what worked well and identify areas for improvement. This iterative reflection process allows the team to refine its workflow, address challenges, and enhance productivity in future sprints. Once all essential features are developed and rigorously tested, the **final deployment** occurs in phases, beginning with a beta version to gather real-world feedback before a full-scale launch.

Even after deployment, the project remains an ongoing effort through **maintenance and updates**. Continuous improvements are made based on user input, ensuring the platform evolves to meet the changing needs of dyslexic individuals. New features, accessibility enhancements, and bug fixes will be released regularly, making the platform a dynamic and sustainable solution for personalized learning and support. The Scrum model ensures that development remains adaptable, user-centered, and responsive to feedback, ultimately leading to a high-quality, impactful platform.

Tools:

Frontend Development:

- **React.js**: Provides a dynamic and responsive user interface, suitable for interactive and visually engaging platforms.

Backend Development:

- **Django Python framework**: Offers scalability and efficiency along with compatibility with python modules implemented for ML module

Database:

- **PostgreSQL**: system known for its reliability, extensibility, and support for complex queries and data types.

Chatbot Framework:

- **Dialogflow**: Easy integration and ability to handle complex, natural language queries.

Design Tools:

- **Figma**: Facilitates collaborative prototyping and designing accessible UI/UX.

Version Control:

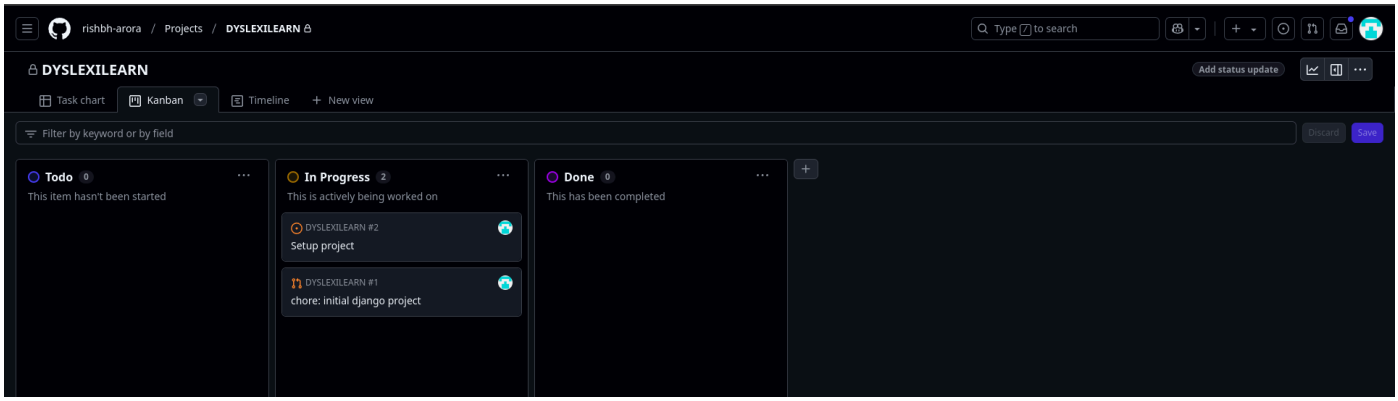
- **Git and GitHub**: Effective for collaboration and maintaining the codebase history.

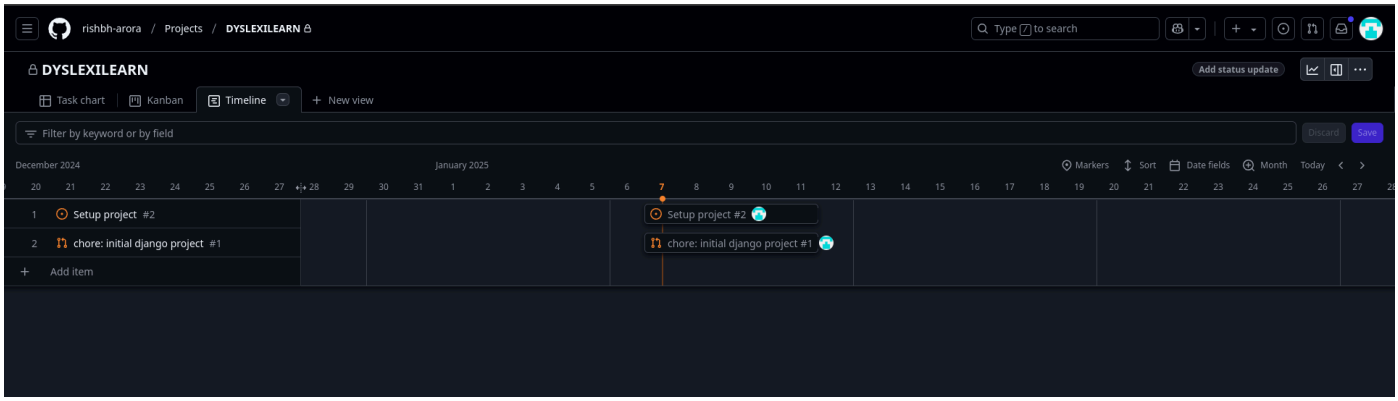
Testing Tools:

- **Selenium**: Enables automated testing for the web platform to ensure a smooth user experience.

Project Management Tool:

- **GIthub Projects**: GitHub Projects is an excellent choice for development teams, offering integrated issue tracking, Kanban-style boards, and real-time collaboration, seamlessly aligning with your iterative and version-controlled development workflow.





Project Risk Management Tool:

- **SWOT Analysis:** identifies Strengths, Weaknesses, Opportunities, and Threats related to accessibility, adoption, and platform scalability.
- **Probability and Impact Matrix:** Helps prioritize risks based on their likelihood and potential impact on the project's success.

Cost Estimation Tool:

- **Bottom-up**: Bottom-up estimation is the most accurate and detailed method for cost estimation in a software project. Since our project involves multiple features (chatbot, gamified learning, etc.), estimating costs at the component level and aggregating them provides precise budgeting.

These tools are chosen for their proven efficiency, scalability, and community support, ensuring the platform's robust performance and ease of maintenance.

Functional Requirements:

- **Module 1: User Authentication**
  The platform will allow users to securely sign up, log in, and reset their passwords using email or phone-based authentication mechanisms.

- **Module 2: Profile Management**
  Users can create and edit their profiles, including fields for name, contact information, disability type, education level, and a short bio.

- **Module 3: Learning Platform**
  The system will provide learning exercises with levels and adaptive difficulty to cater to the specific needs of dyslexic learners. There would be certain questions at each level which the user should answer to go to the next level.

- **Module 4: Progress Tracker**
  A dashboard will visualize users' learning progress, displaying completed levels, achievements, and areas for improvement.

- **Module 5: Community Forum**
  Users can engage with each other through a moderated discussion forum, with the ability to post, comment, and share experiences.

- **Module 6: Chatbot Assistance**
  A chatbot will assist users by answering queries, and suggesting relevant learning activities. It will have user friendly features like easy-to-read, dyslexia-friendly fonts and audio-based interactions.

- **Module 7: Professional Consultancy**
  The platform will facilitate connections with certified doctors, therapists, and educators, including features for searching and booking appointments.

Non-Functional Requirements:

1. **Performance**
   - The platform must support concurrent users with minimal latency and optimal responsiveness.
2. **Usability**

    - The user interface must be intuitive, simple, and specifically optimized for individuals with dyslexia.
3. **Security**
    - User data will be secure using encryption, authentication, and authorization mechanisms.
4. **Maintainability**
    - The codebase will be modular and well-documented, enabling easy updates, debugging, and the addition of new features.
5. **Response Time**
    - All platform features should load within **5 seconds** under normal operating conditions.
6. **Platform Independence**
    - The platform must be accessible on **multiple operating systems (Windows, macOS, Linux)** and **various devices (desktops, tablets, and mobile phones)** without performance degradation.
    - It should be built using **cross-platform technologies** such as **Flask/Django for backend (web-based), React.js/Vue.js for frontend, and TensorFlow/PyTorch for AI models**, ensuring compatibility across different environments.

Stakeholder Identification:

1. Primary Stakeholders (Directly Impacted Users)

Dyslexic Individuals (End Users)

- Role: Primary users of the platform.
- Needs: An accessible, personalized, and engaging learning experience.

Parents & Guardians

- Role: Support and guide dyslexic learners.
- Needs: Progress tracking, professional connections, and recommendations for additional resources.

Educators & Special Education Teachers

- Role: Utilize the platform to assist dyslexic students.
- Needs: Tools to monitor progress, suggest learning modules, and engage with students.

Speech Therapists & Learning Disability Specialists

- Role: Provide expert advice and offer professional support to dyslexic learners.
- Needs: Integration of professional support features like appointment scheduling and consultations.

2. Secondary Stakeholders (Supporting & Indirectly Impacted Users)

Software Developers & UI/UX Designers

- Role: Build and maintain the platform.
- Needs: Clear development roadmap, accessibility standards, and collaboration tools.

Project Managers & Product Owners

- Role: Oversee development, testing, and deployment of the platform.
- Needs: Agile project management tools like Jira for sprint planning and backlog management.

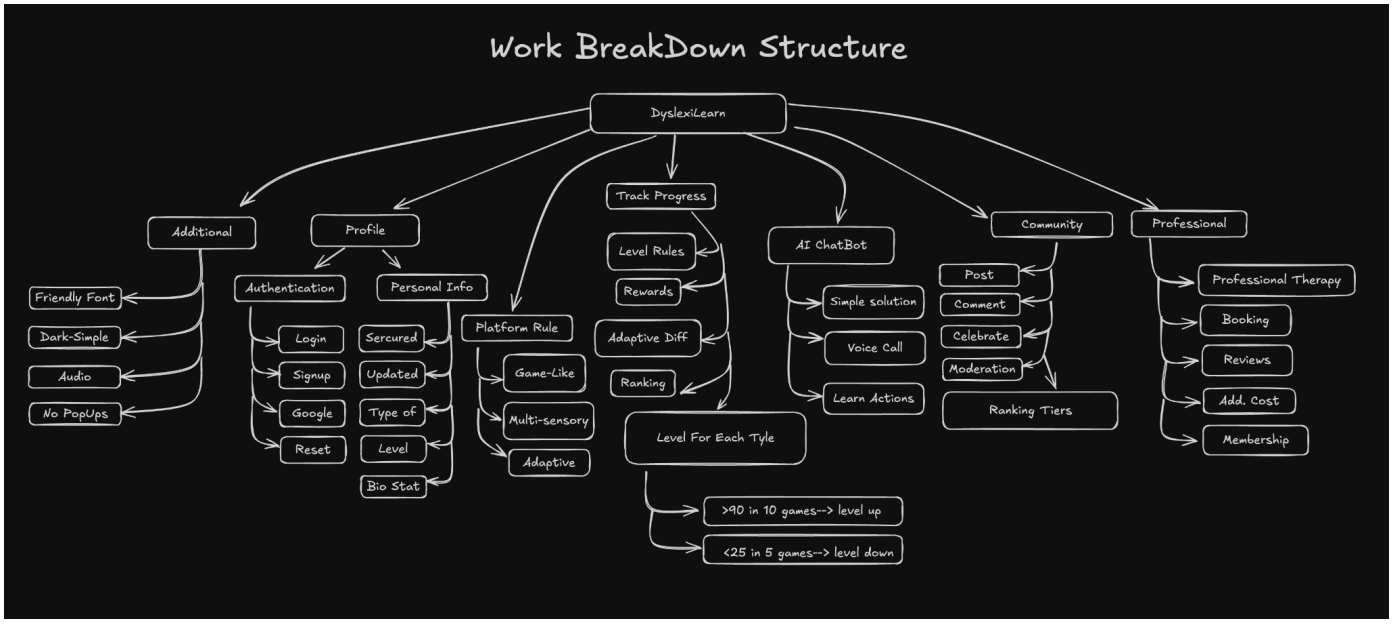
Investors & Sponsors

- Role: Provide funding and financial support.
- Needs: Regular progress reports, user adoption rates, and potential monetization strategies.

Non-Profit Organizations & NGOs (Supporting Learning Disabilities)

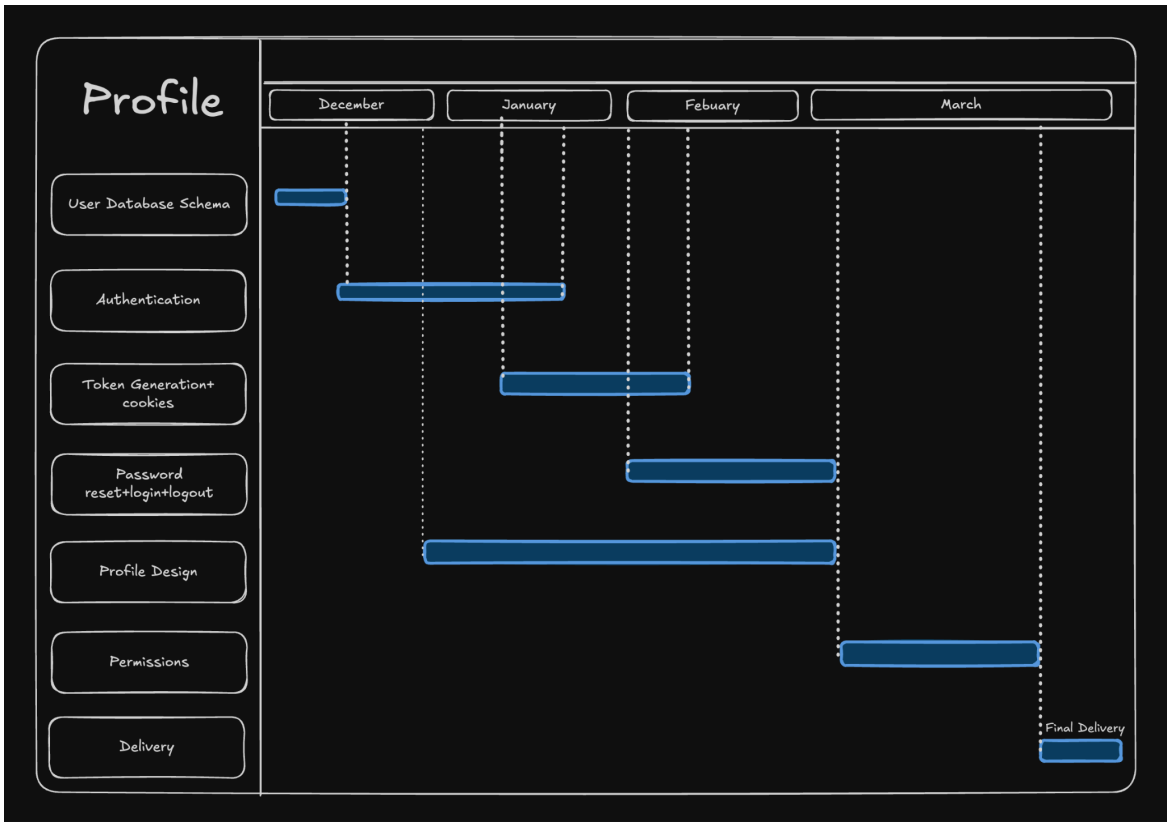
- Role: Advocate for dyslexia-friendly education and may provide funding or partnerships.
- Needs: Collaboration opportunities and impact reports on how the platform benefits dyslexic learners.

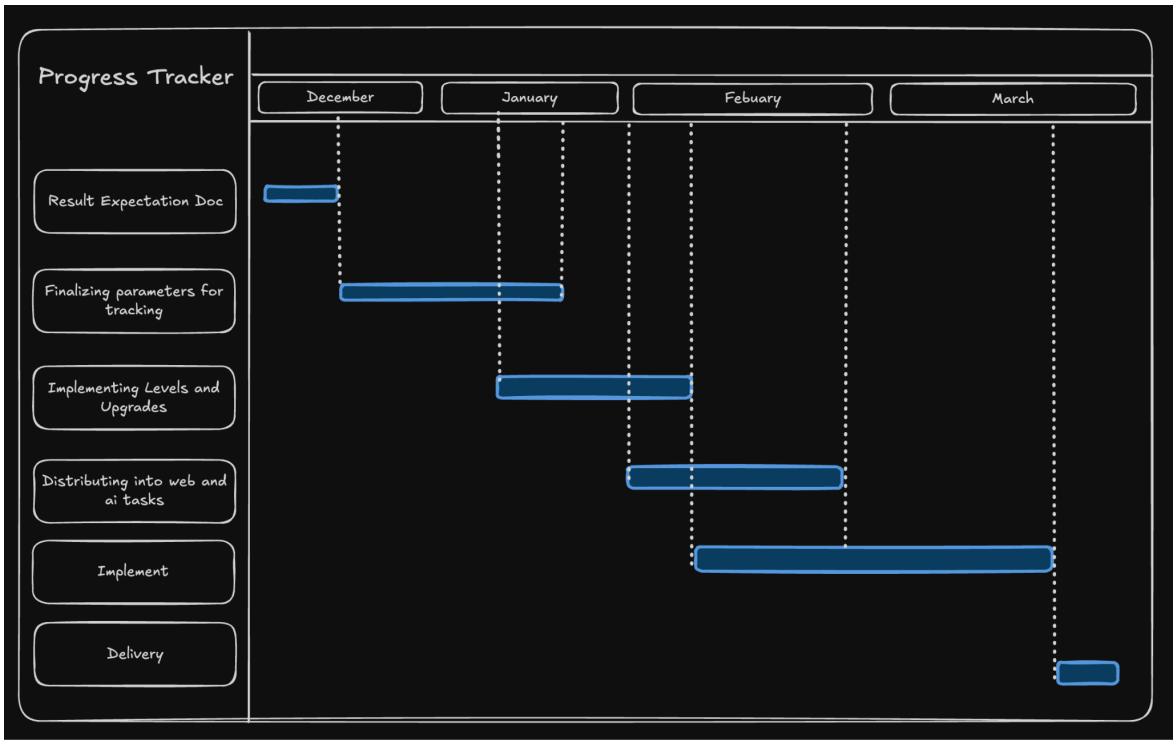
Work Breakdown Structure:

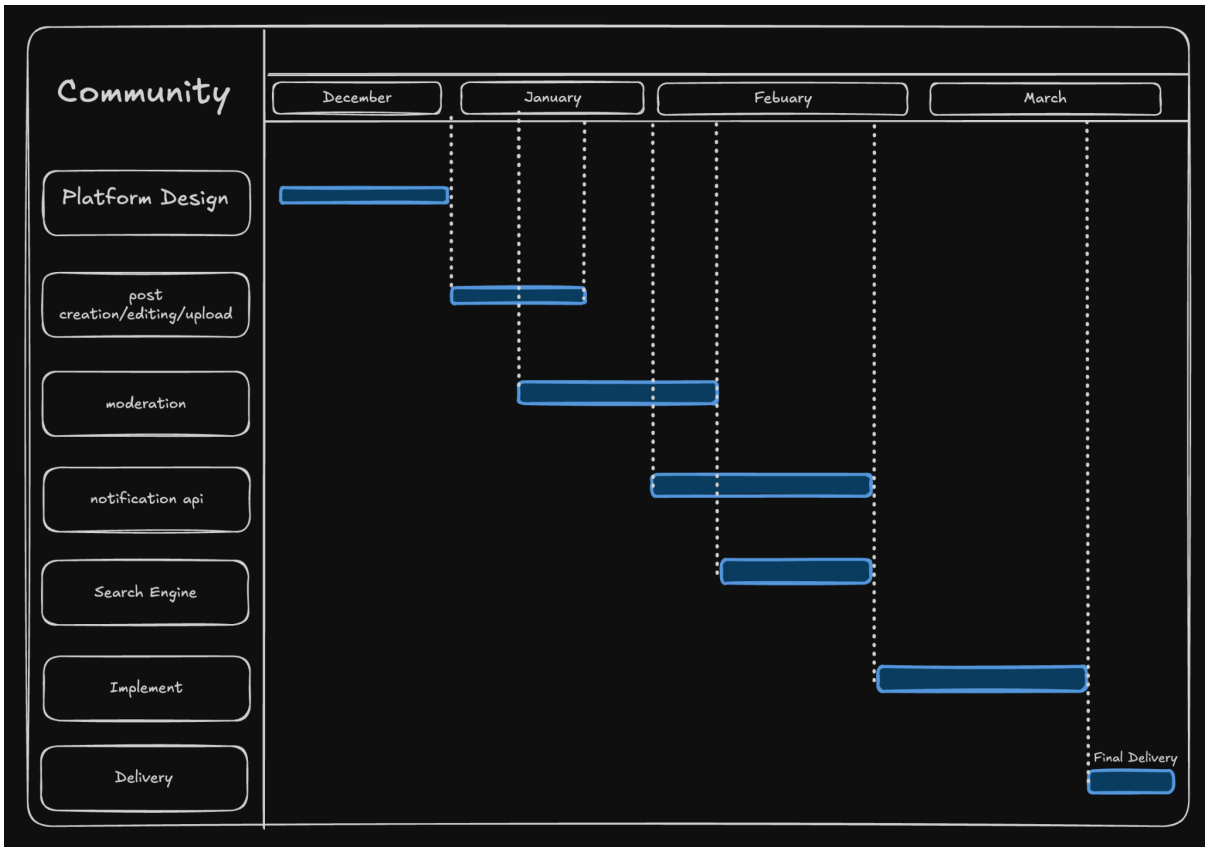


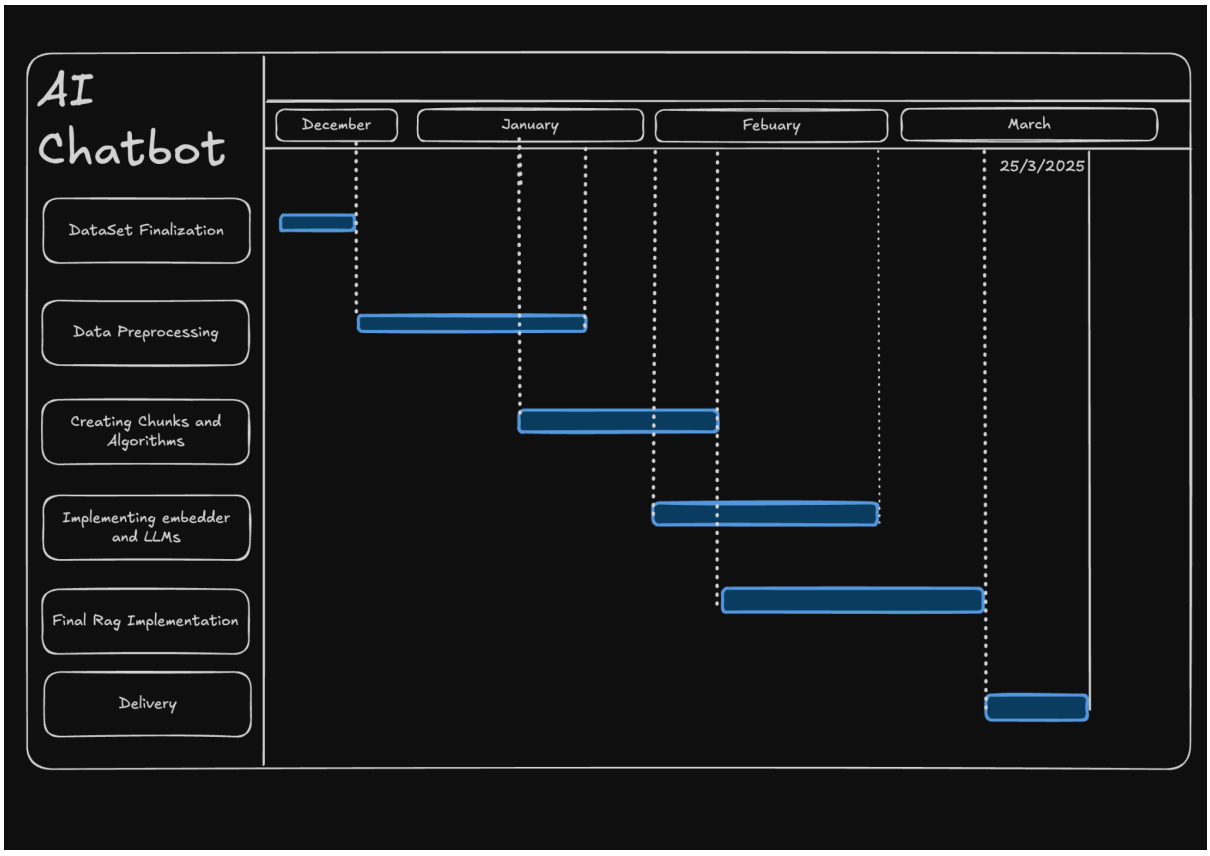
PROJECT SCHEDULING

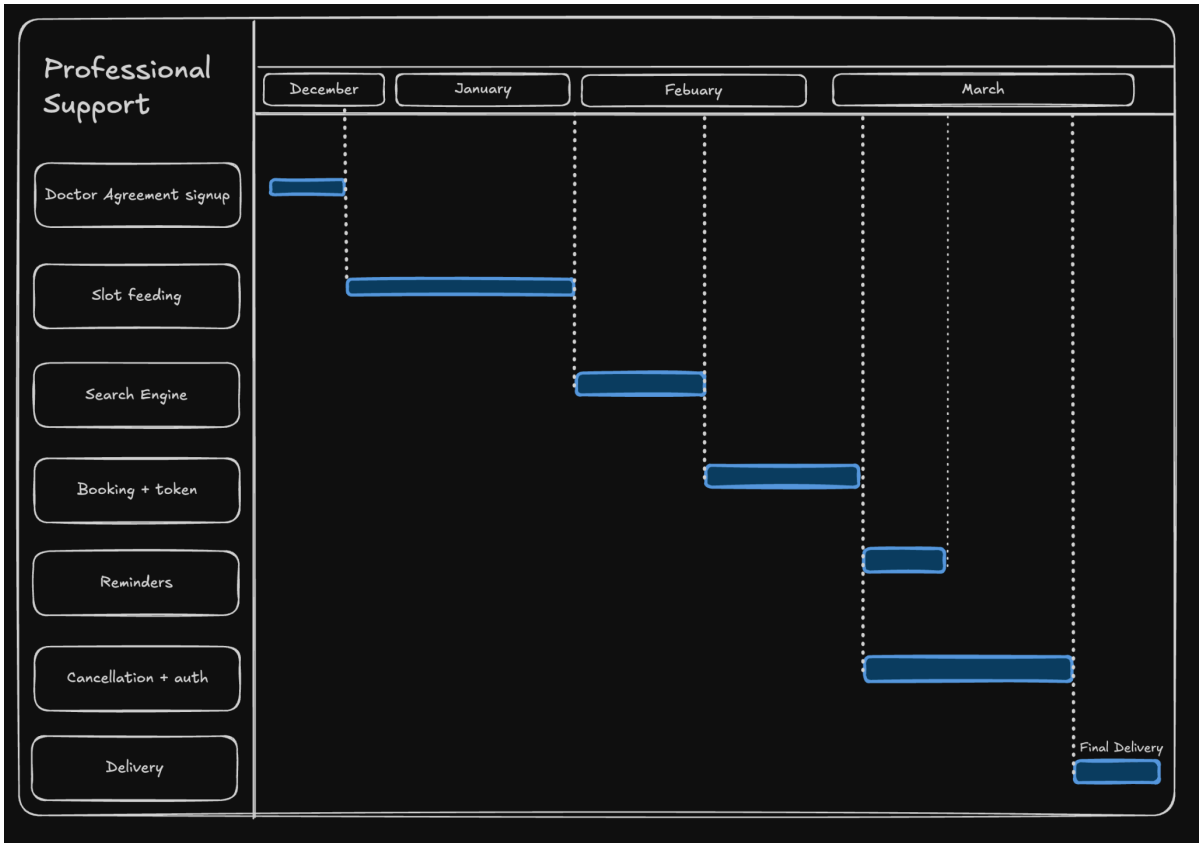
Gantt Chart:



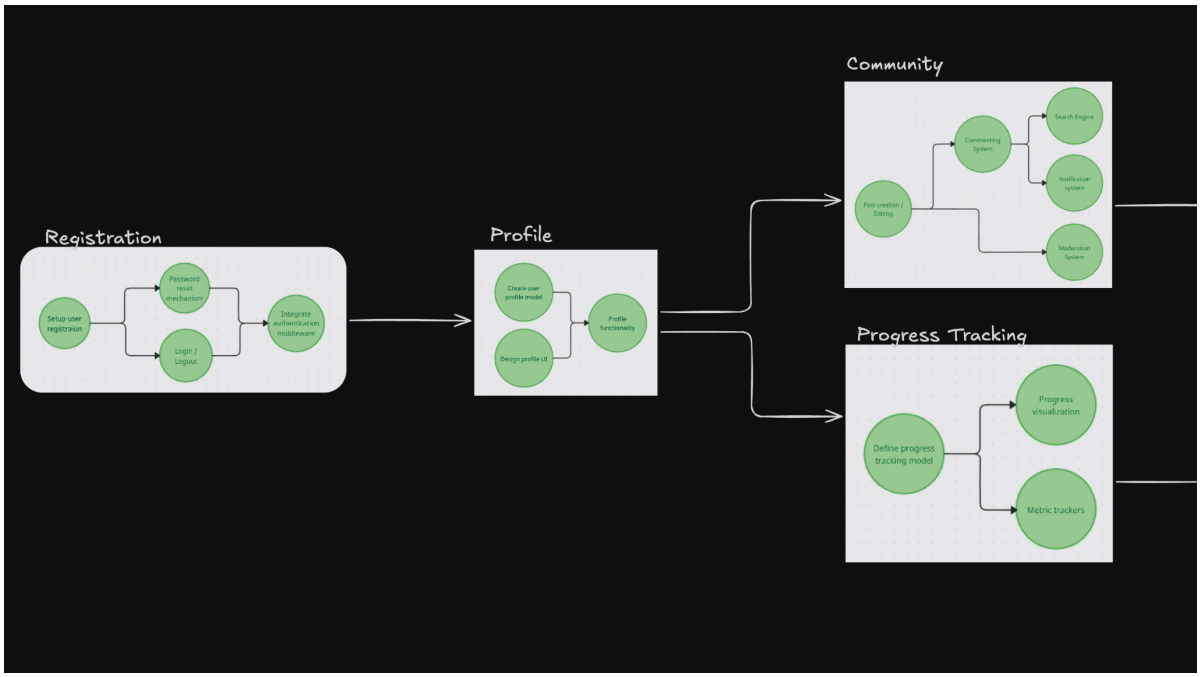


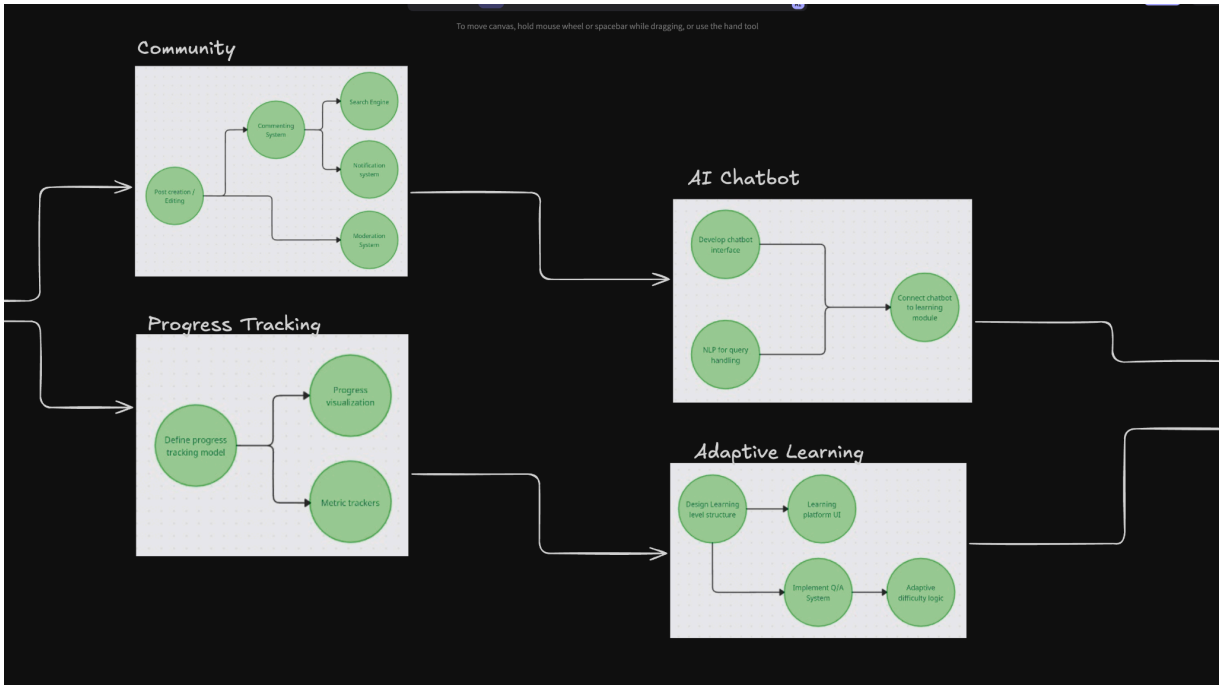

Community
December
January
Febuary
March
Platform Design
post creation/editing/upload
moderation
notification api
Search Engine
Implement
Delivery
Final Delivery

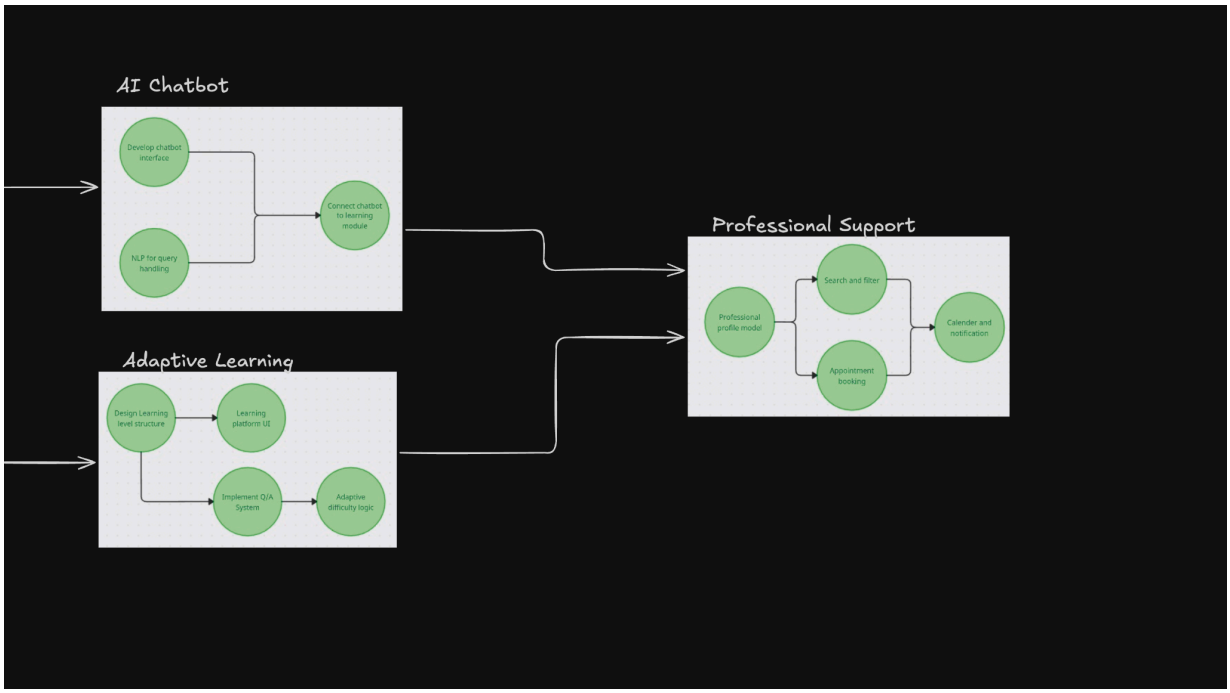

AI Chatbot
December
January
Febuary
March
25/3/2025
DataSet Finalization
Data Preprocessing
Creating Chunks and Algorithms
Implementing embedder and LLMs
Final Rag Implementation
Delivery



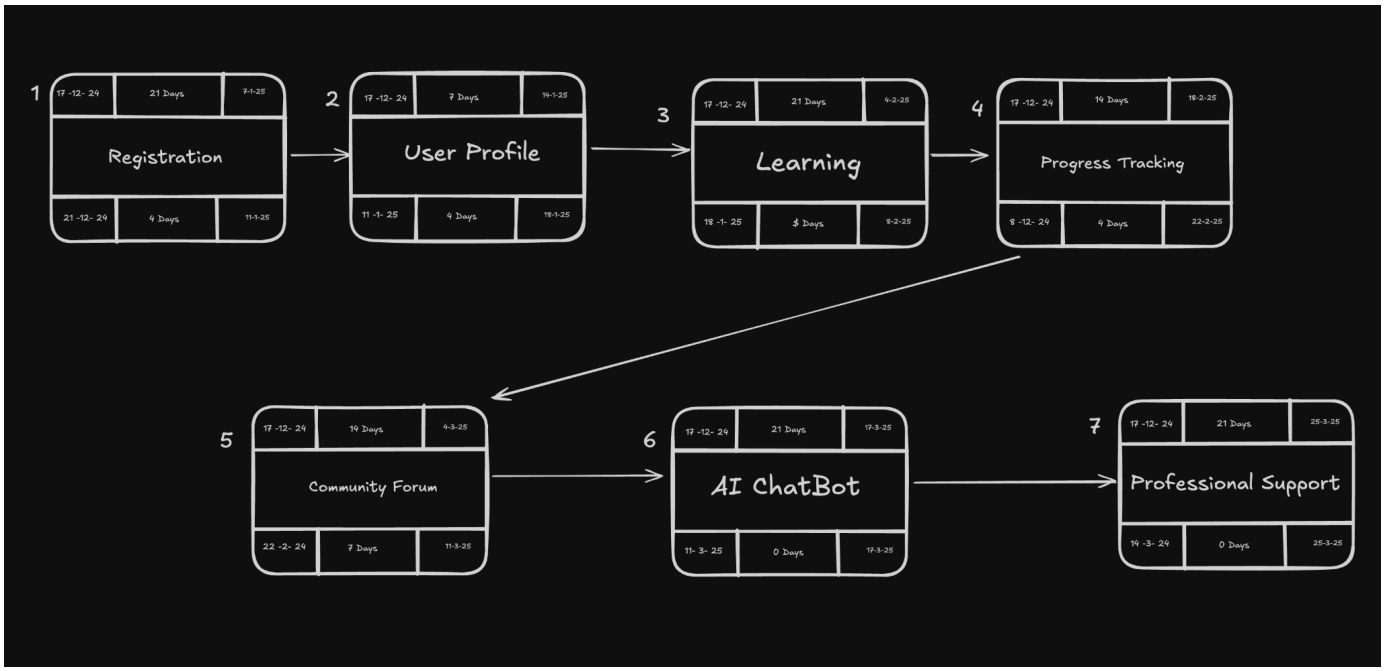
Timeline Chart:


Registration
Setup user registraion
Password reset mechanism
Login / Logout
Integrate authentication middleware
Profile
Create user profile model
Design profile UI
Profile functionality
Community
Post creation / Editing
Commenting System
Search Engine
Notification system
Moderation System
Progress Tracking
Define progress tracking model
Progress visualization
Metric trackers


To move canvas, hold mouse wheel or spacebar while dragging, or use the hand tool
Community
Post creation / Editing
Commenting System
Search Engine
Notification system
Moderation System
AI Chatbot
Develop chatbot interface
NLP for query handling
Connect chatbot to learning module
Progress Tracking
Define progress tracking model
Progress visualization
Metric trackers
Adaptive Learning
Design Learning level structure
Learning platform UI
Implement Q/A System
Adaptive difficulty logic


AI Chatbot
Develop chatbot interface
NLP for query handling
Connect chatbot to learning module
Adaptive Learning
Design Learning level structure
Learning platform UI
Implement Q/A System
Adaptive difficulty logic
Professional Support
Professional profile model
Search and filter
Appointment booking
Calender and notification

Pert Chart:


1
17 -12- 24
21 Days
7-1-25
Registration
21 -12- 24
4 Days
11-1-25
2
17 -12- 24
7 Days
14-1-25
User Profile
11 -1- 25
4 Days
18-1-25
3
17 -12- 24
21 Days
4-2-25
Learning
18 -1- 25
5 Days
8-2-25
4
17 -12- 24
14 Days
18-2-25
Progress Tracking
8 -12- 24
4 Days
22-2-25
5
17 -12- 24
14 Days
4-3-25
Community Forum
22 -2- 24
7 Days
11-3-25
6
17 -12- 24
21 Days
17-3-25
AI ChatBot
11- 3- 25
0 Days
17-3-25
7
17 -12- 24
21 Days
25-3-25
Professional Support
14 -3- 24
0 Days
25-3-25

COST ESTIMATION - BOTTOM UP APPROACH

1. **Total Estimated Monthly Cost**

Category	**Cost (₹)**
Figma Professional Team	₹3,735
GitHub Team	₹1,045.05
Django & React.js	₹0
PostgreSQL on AWS RDS	₹1,480
Subtotal	**₹6,260.05**
Additional Costs (Optional)	~₹770–₹1,625
Total	**₹7,030–₹7,885**

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2. Total Estimated Annual Cost

Category	**Monthly Cost (₹)**	**Annual Cost (₹)**
Figma Professional Team	₹3,735	₹44,820
GitHub Team	₹1,045.05	₹12,540.60
Django & React.js	₹0	₹0
PostgreSQL on AWS RDS	₹1,480	₹17,760
Subtotal	₹6,260.05	₹75,120.60
Additional Costs (Optional)	~₹770–₹1,625	~₹9,240–₹19,500
Total	**₹7,030–₹7,885**	**₹84,360–₹94,620**

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3. Breakdown of Additional Costs

Additional Cost Item	**Monthly Cost (₹)**	**Annual Cost (₹)**
Domain Name	~₹70–₹125	~₹840–₹1,500
Hosting for Frontend	~₹500–₹1,000	~₹6,000–₹12,000
Email Services	~₹200–₹500	~₹2,400–₹6,000
Total Additional Costs	~₹770–₹1,625	~₹9,240–₹19,500

Cost Breakdown

1. Design Tools

- **Figma Professional Team** (for 3 members):
  - Cost per member: ₹1,245/month.
  - Total: ₹1,245 * 3 = **₹3,735/month**.

2. Hosting Services

- **GitHub Team** (for 3 members):
  - Cost per member: ₹348.35/month.
  - Total: ₹348.35 * 3 = **₹1,045.05/month**.

3. Development Frameworks

- **Django** (Backend): Free and open source.
- **React.js** (Frontend): Free and open source.
- **Total**: **₹0/month**.

4. Database

- **PostgreSQL on Amazon AWS RDS**:
  - Instance: ₹1,200/month.
  - Storage: ₹250/month.
  - Backup: ₹30/month.
  - **Total**: **₹1,480/month**.

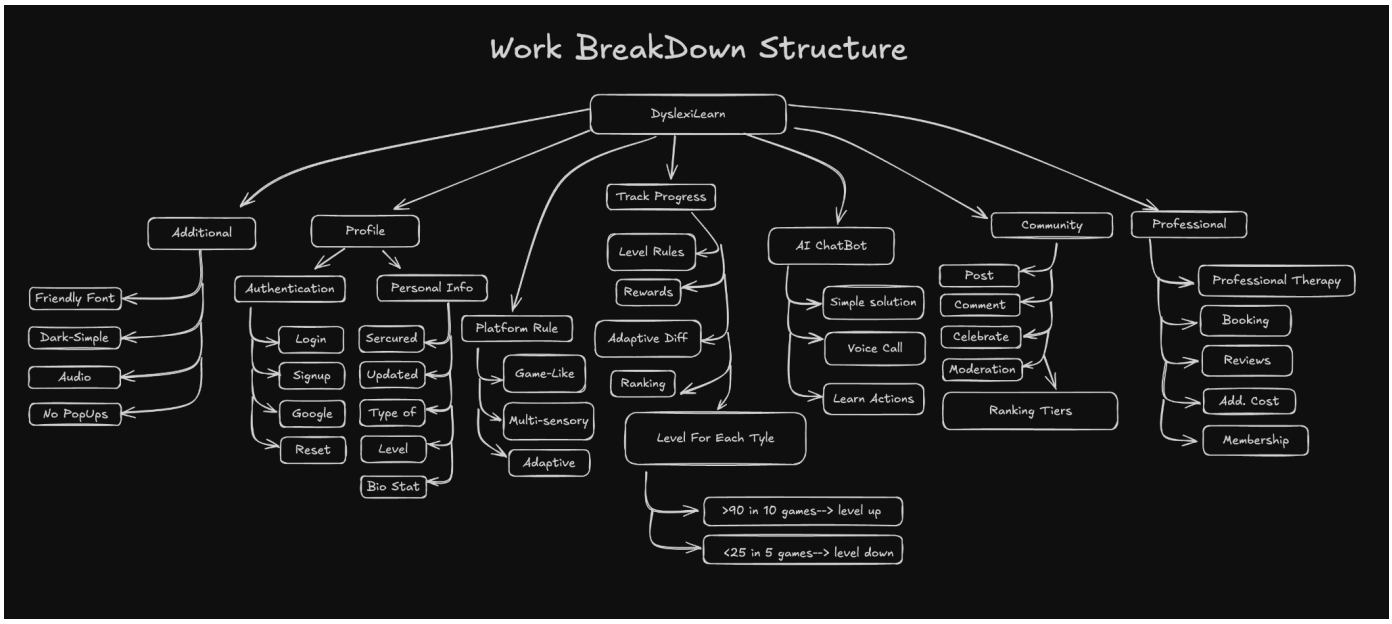
5. Additional Costs (Optional)

- **Domain Name**: ~₹800–₹1,500/year (e.g., .com or .in domain).
  - Monthly equivalent: ~₹70–₹125/month.
- **Hosting for Frontend** (e.g., Vercel, Netlify, or AWS S3):
  - Free tier available for small projects.
  - If usage exceeds the free tier: ~₹500–₹1,000/month.
- **Email Services** (e.g., AWS SES, SendGrid):
  - Free tier available for small usage.
  - If usage exceeds the free tier: ~₹200–₹500/month.

Key Notes

1. **Scalability**: As your user base grows, costs for hosting, database, and email services may increase.
2. **Team Size**: If you add more team members, the cost for Figma and GitHub will increase proportionally.

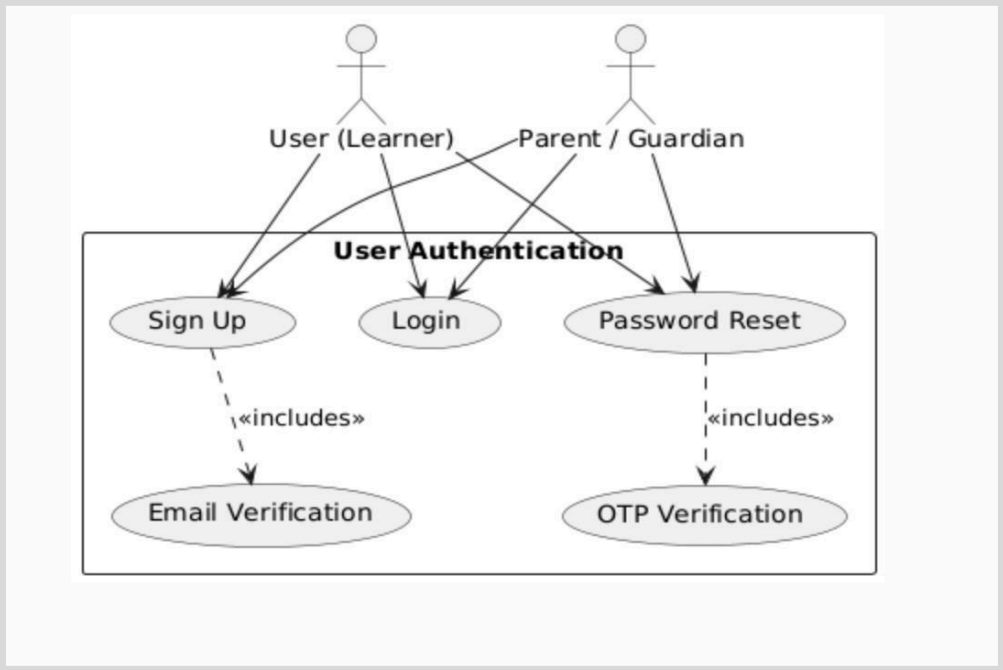
Work Breakdown Structure:


Work BreakDown Structure
DyslexiLearn
Additional
Profile
Track Progress
AI ChatBot
Community
Professional
Friendly Font
Dark-Simple
Audio
No PopUps
Authentication
Personal Info
Level Rules
Rewards
Adaptive Diff
Ranking
Simple solution
Voice Call
Learn Actions
Post
Comment
Celebrate
Moderation
Ranking Tiers
Professional Therapy
Booking
Reviews
Add. Cost
Membership
Login
Signup
Google
Reset
Sercured
Updated
Type of
Level
Bio Stat
Platform Rule
Game-Like
Multi-sensory
Adaptive
Level For Each Tyle
>90 in 10 games--> level up
<25 in 5 games--> level down

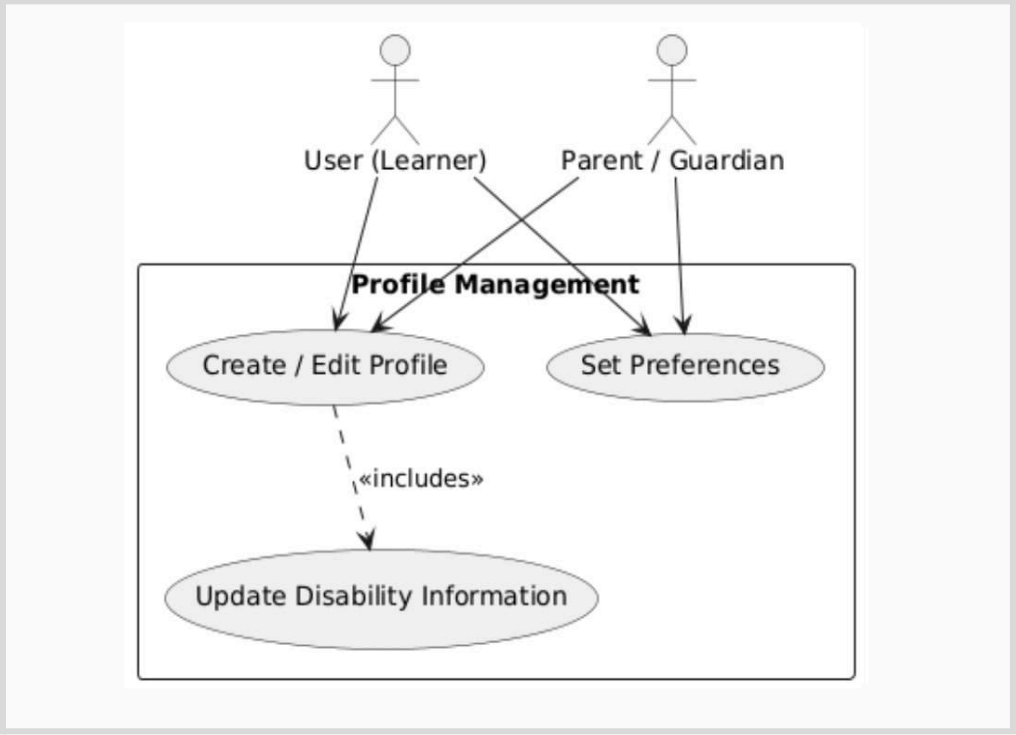
PROJECT DESIGN SPECIFICATIONS

Use-Case Diagrams:

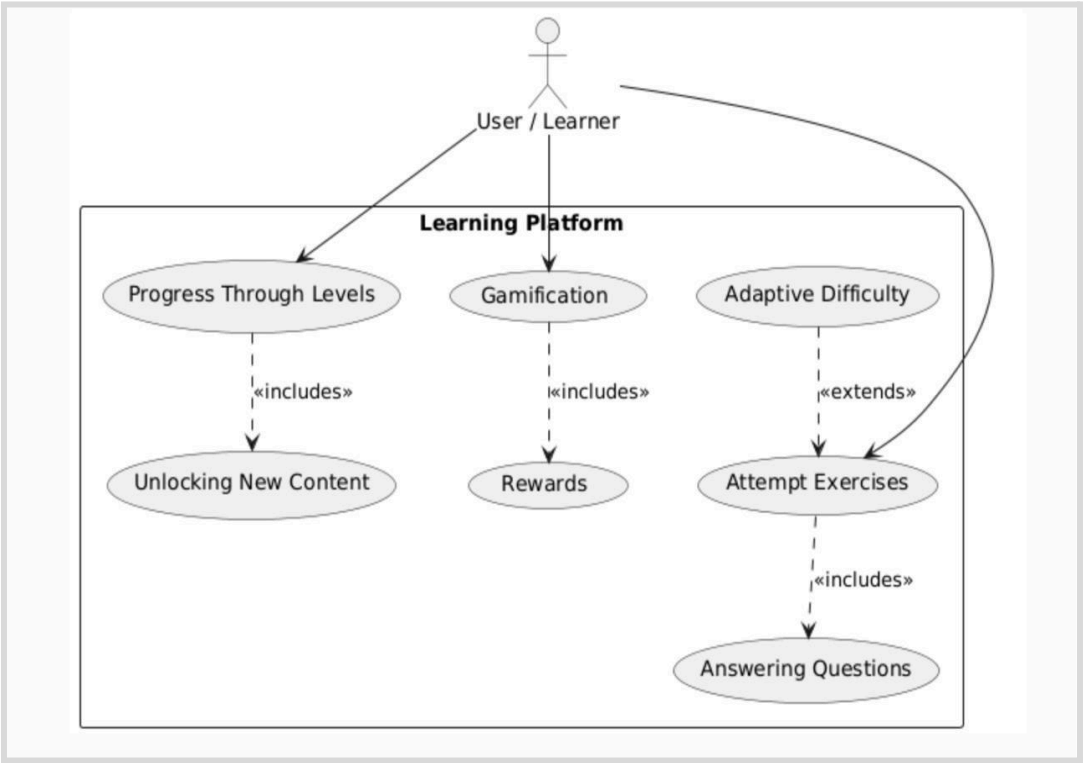
Module 1:



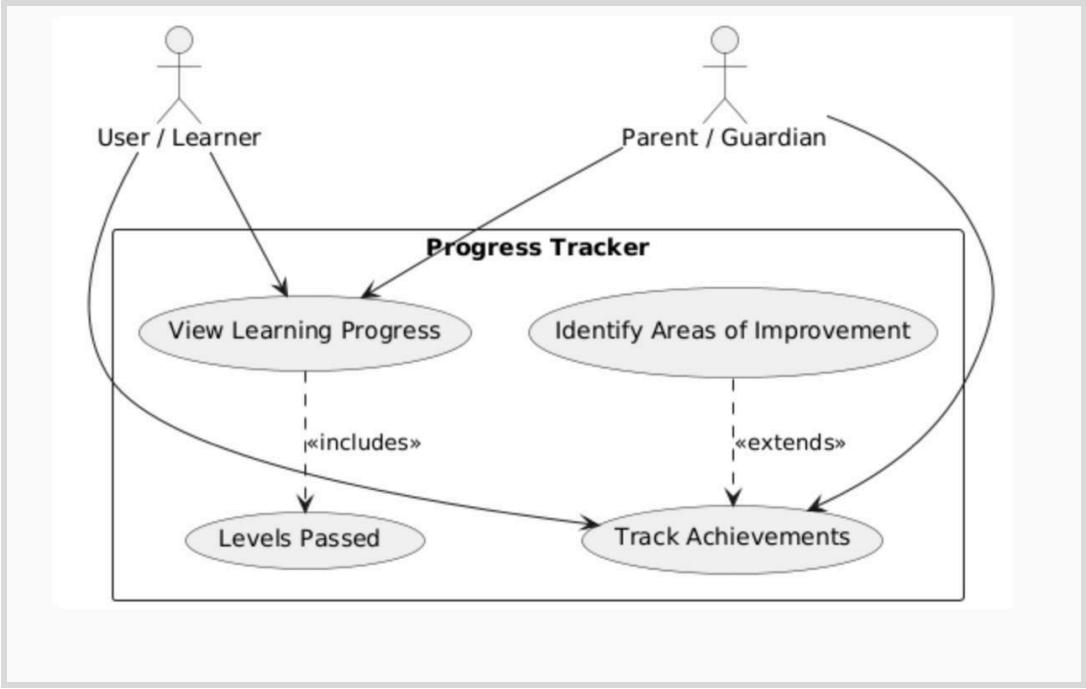
Module 2:



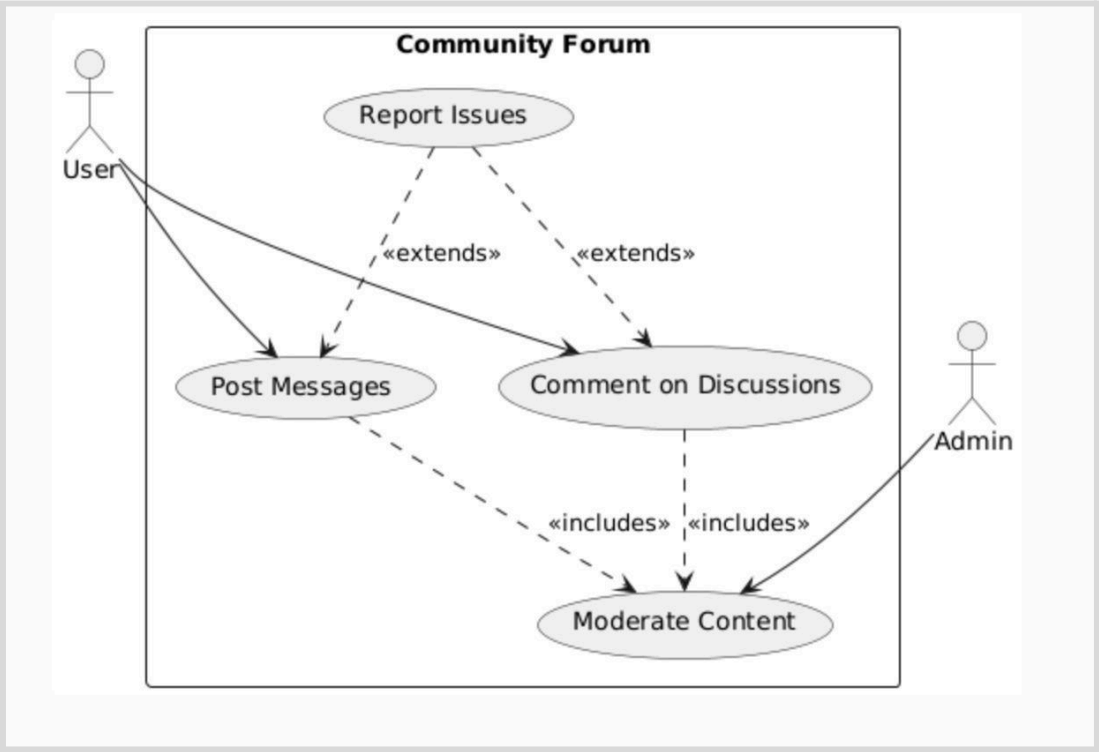
Module 3:



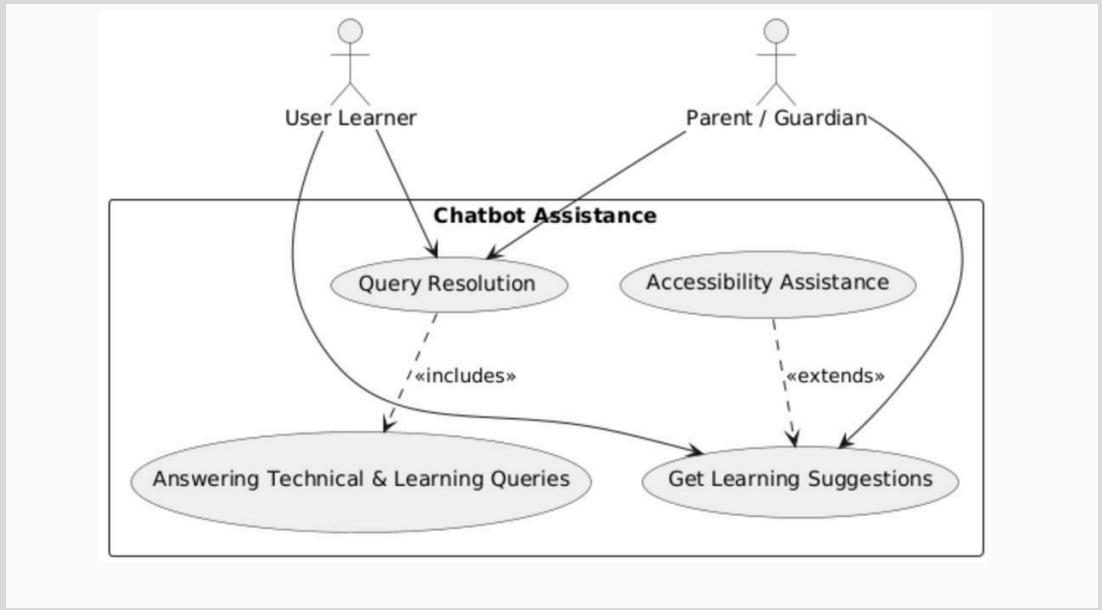
Module 4:



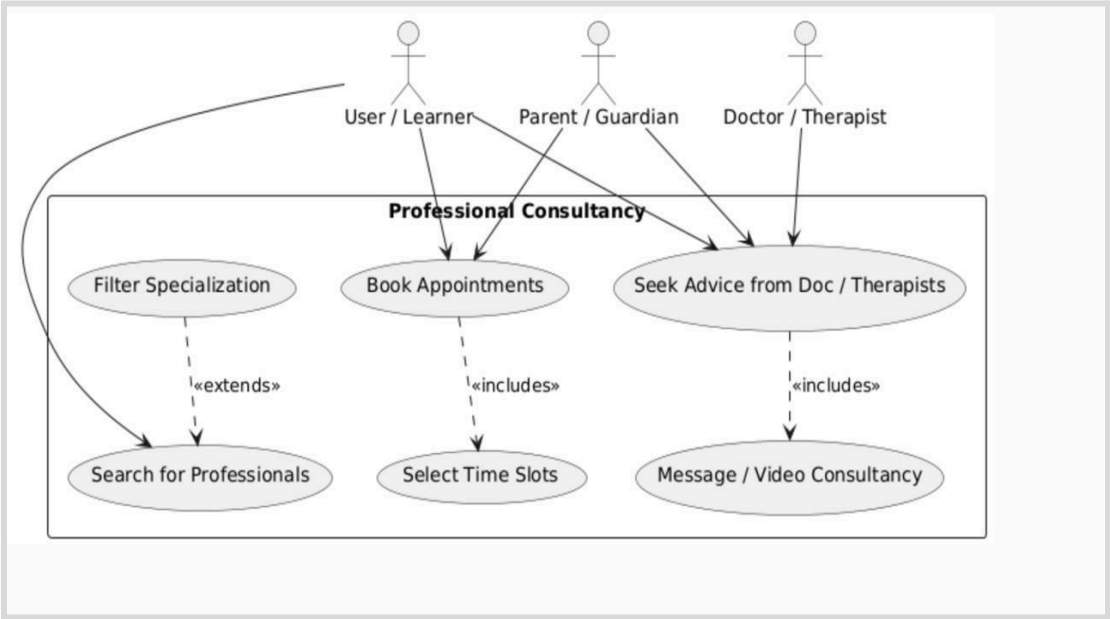
Module 5:



Module 6:

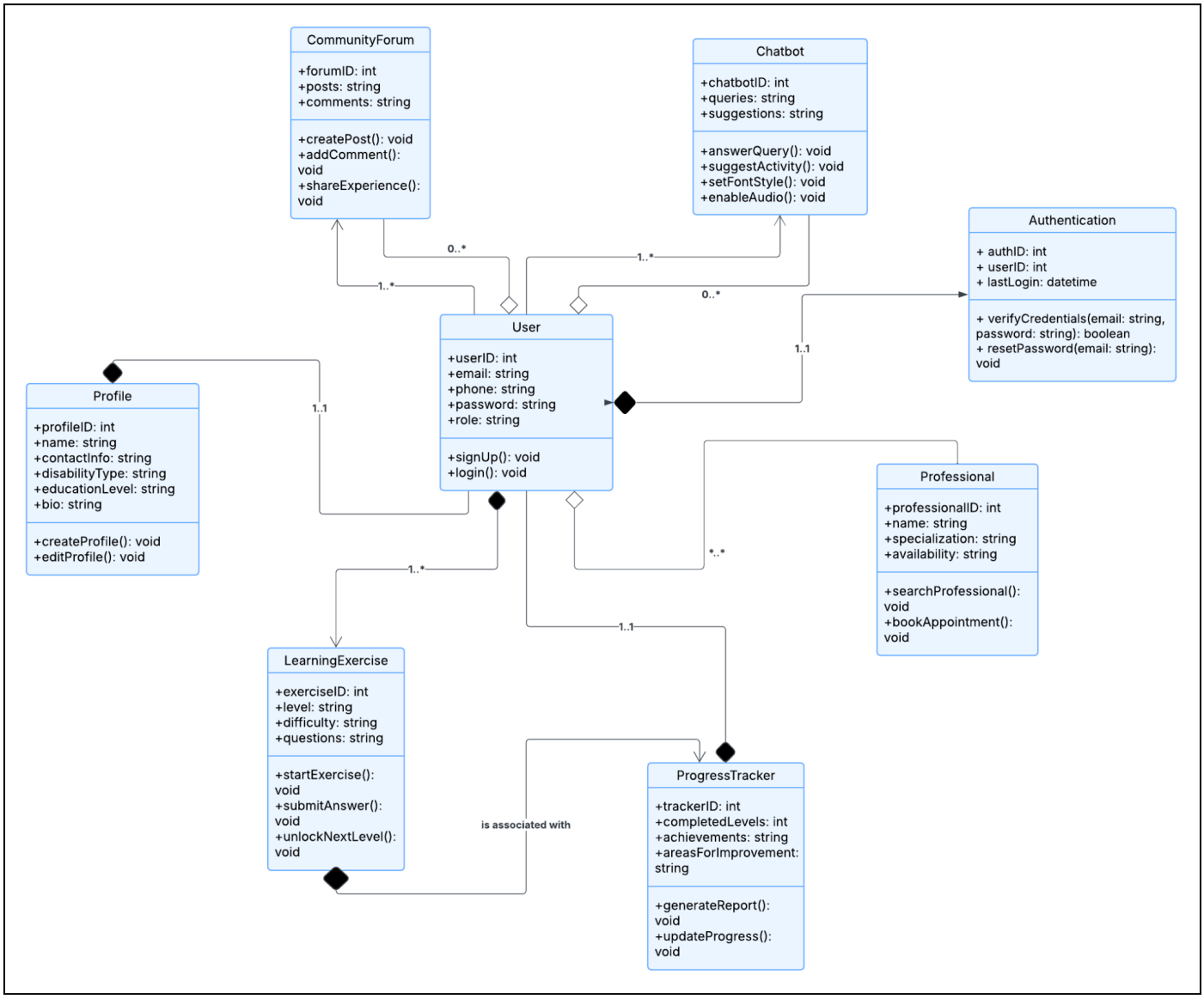


Module 7:

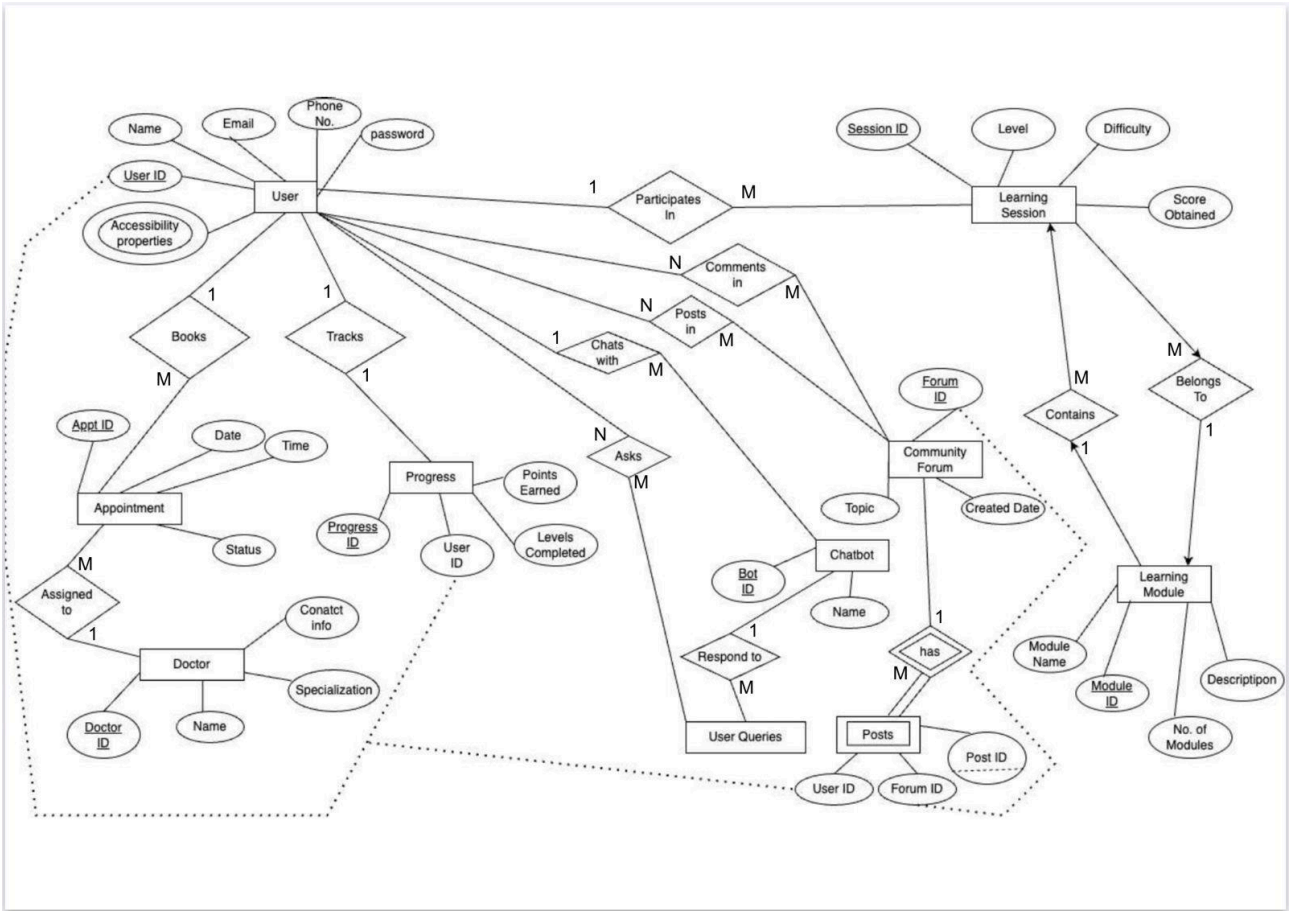

User / Learner
Parent / Guardian
Doctor / Therapist
Professional Consultancy
Filter Specialization
Book Appointments
Seek Advice from Doc / Therapists
«extends»
«includes»
«includes»
Search for Professionals
Select Time Slots
Message / Video Consultancy

Structural Diagrams:

1. Class Diagram

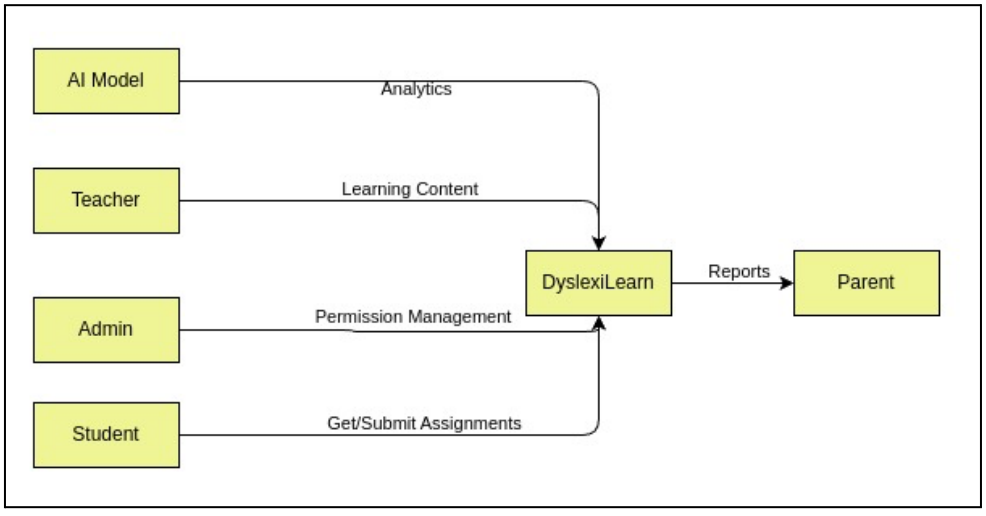


2. ER Diagram

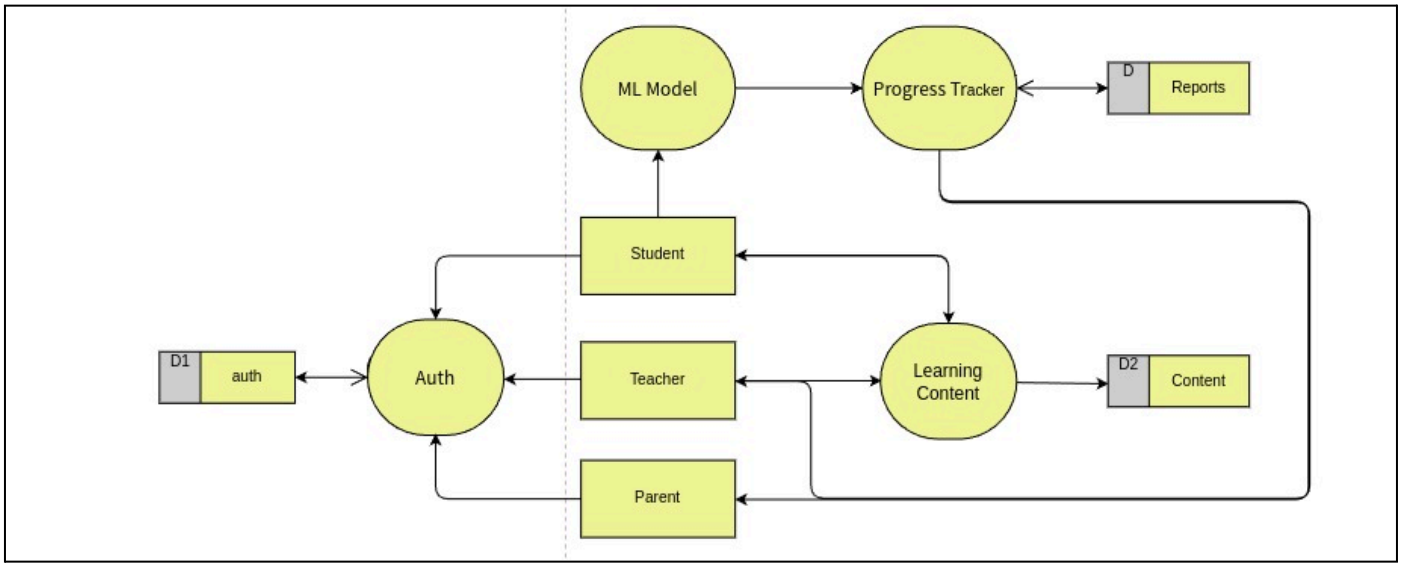


Behavioral Diagrams:

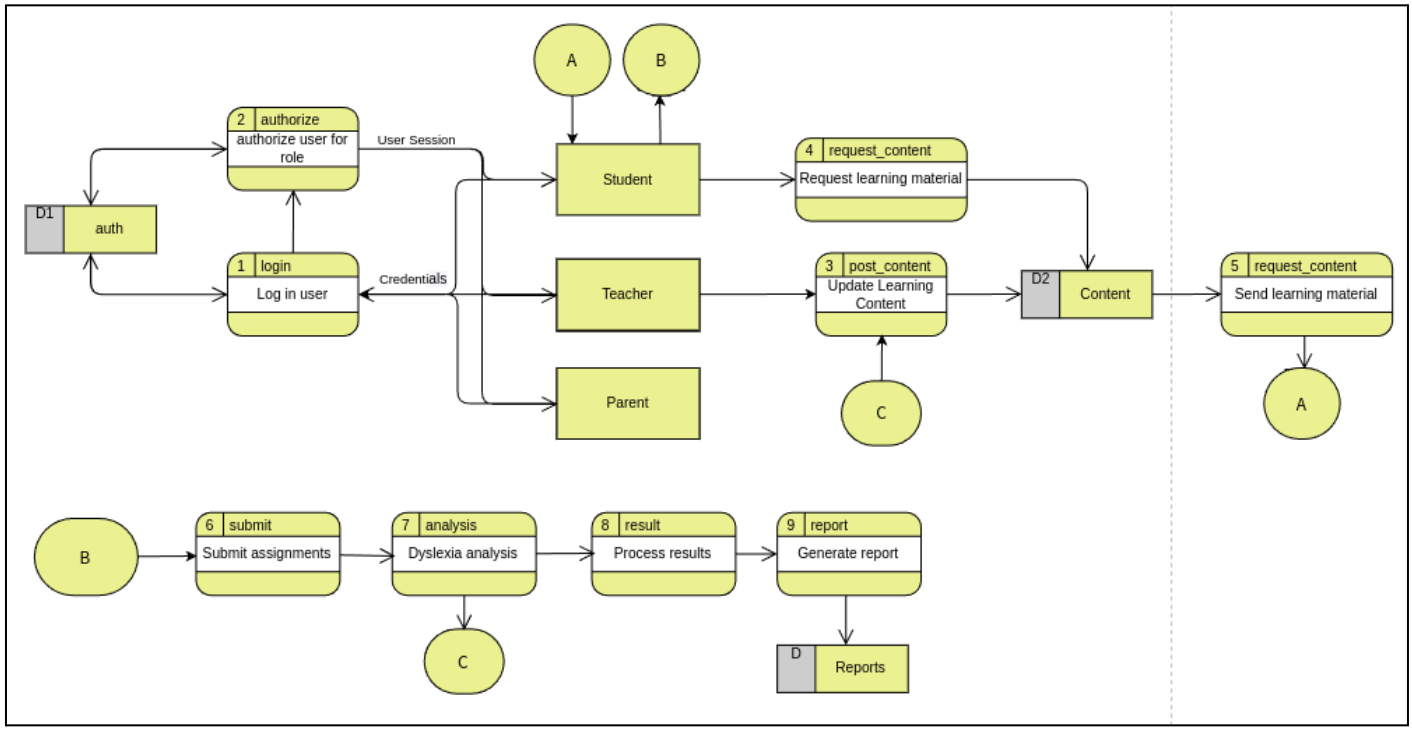
1. Data Flow Diagram - Level 0



2. Data Flow Diagram - Level 1

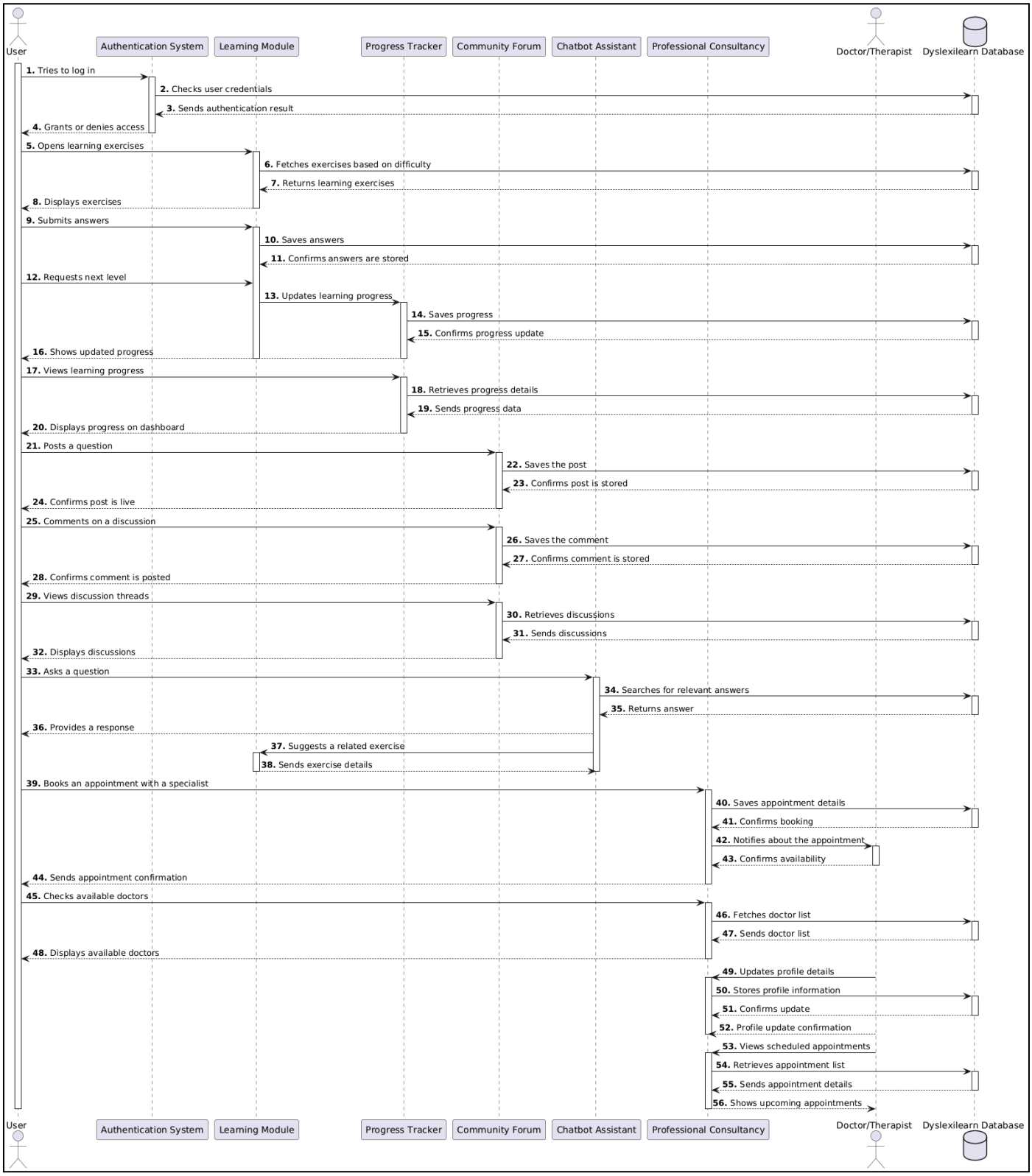


3. Data Flow Diagram - Level 2



Interaction Diagrams:

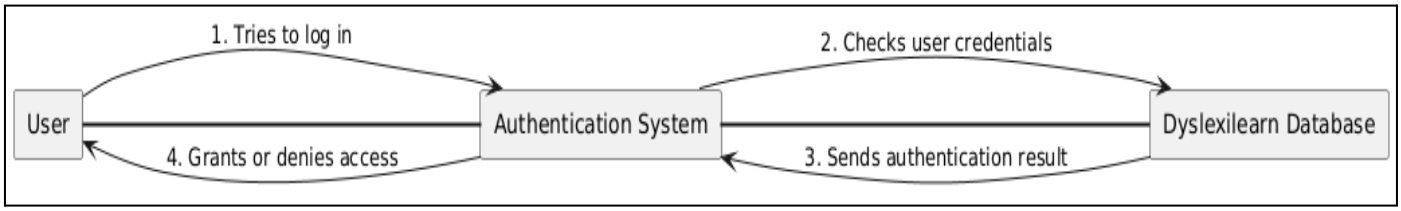
1. Sequence Diagram



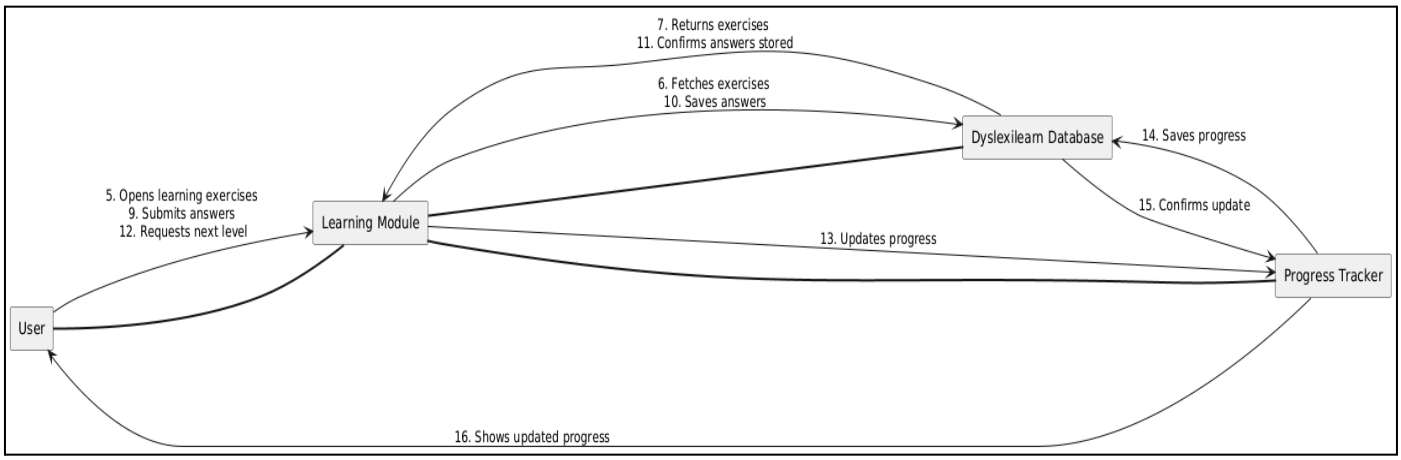
2. Collaboration Diagrams

Module-wise:

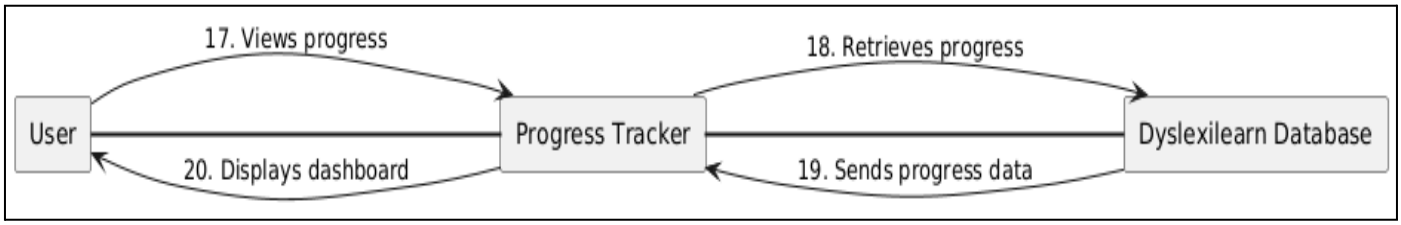
Authentication



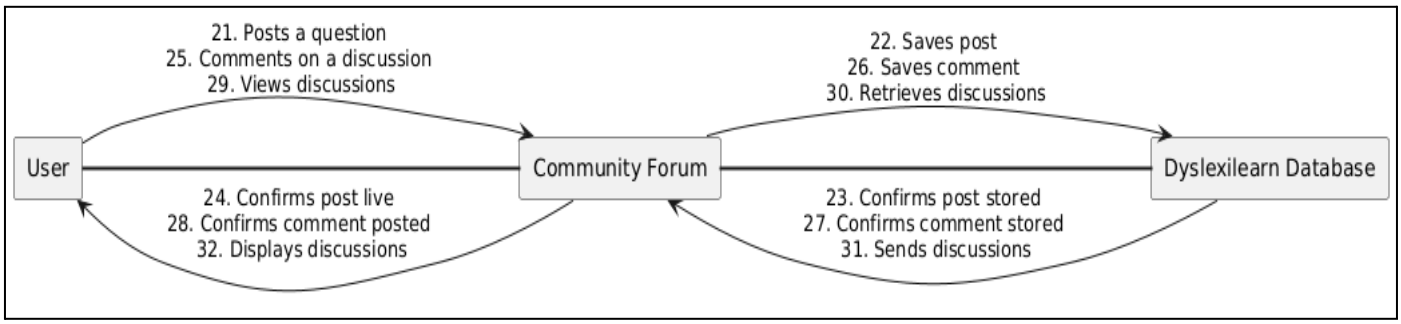
Learning Module



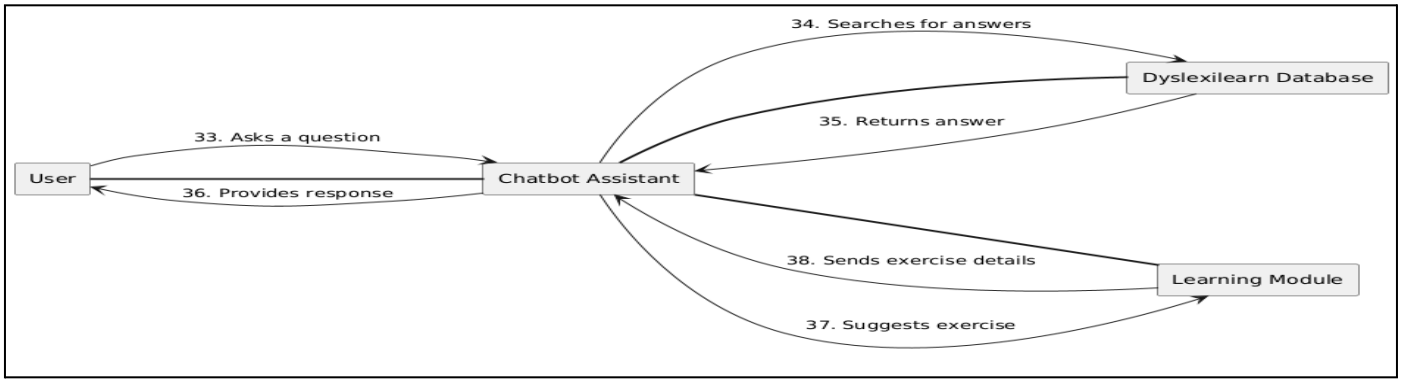
Progress Tracker



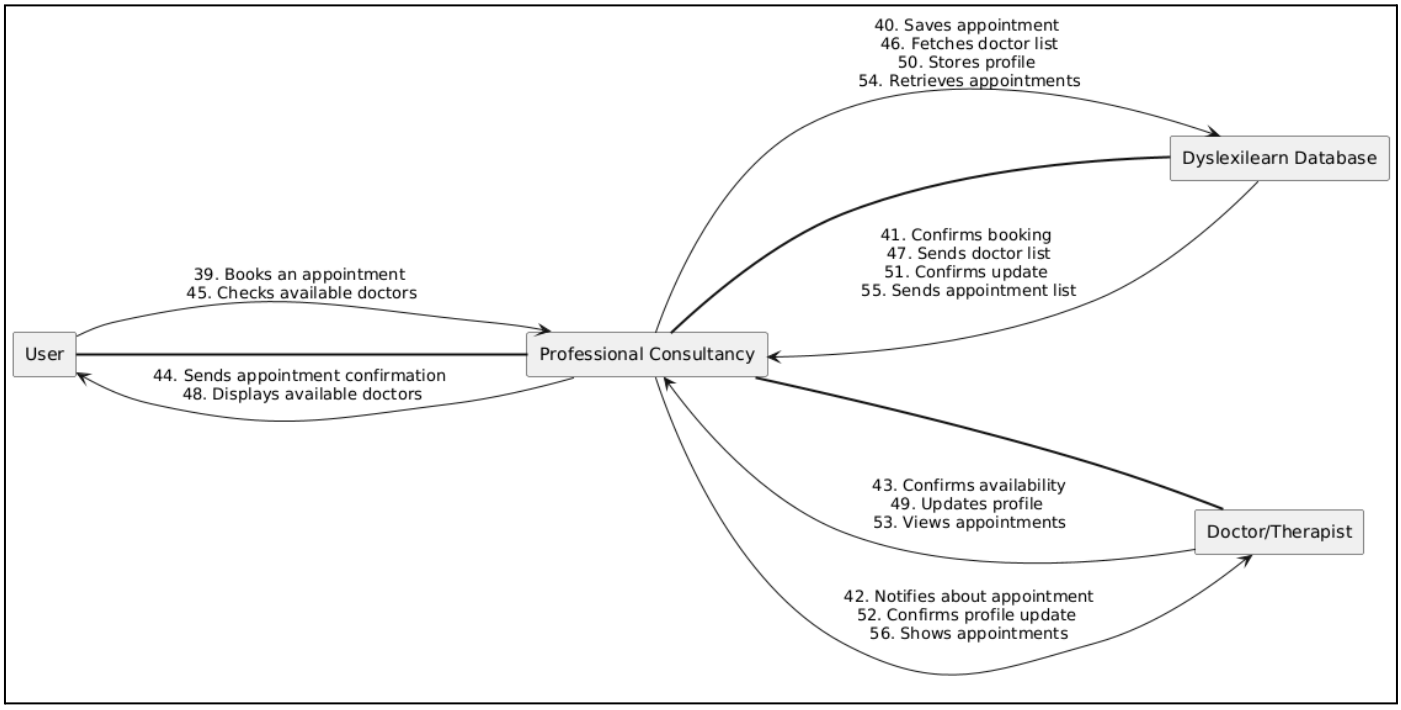
Community Forum



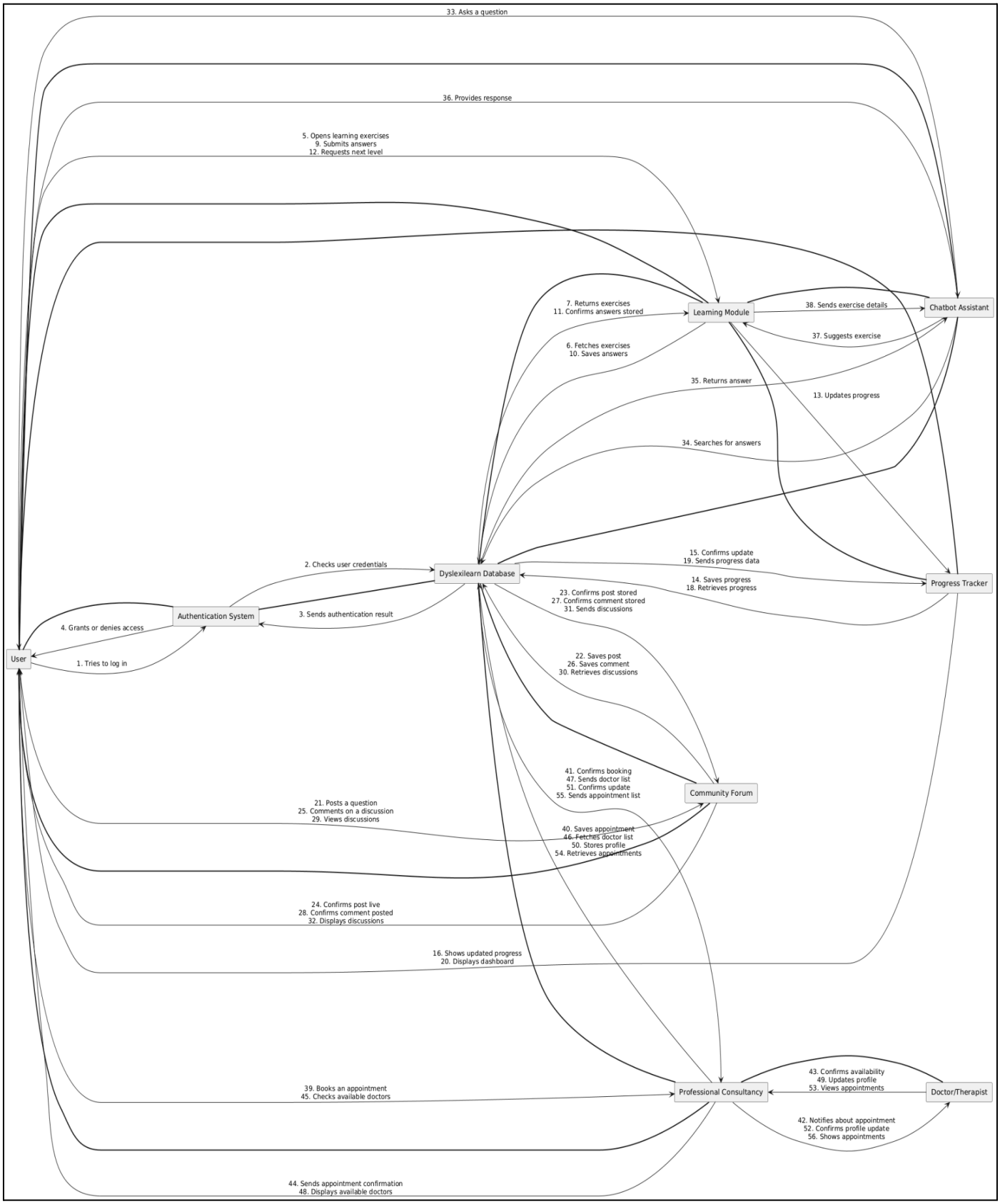
Chatbot Assistance



Professional Consultancy



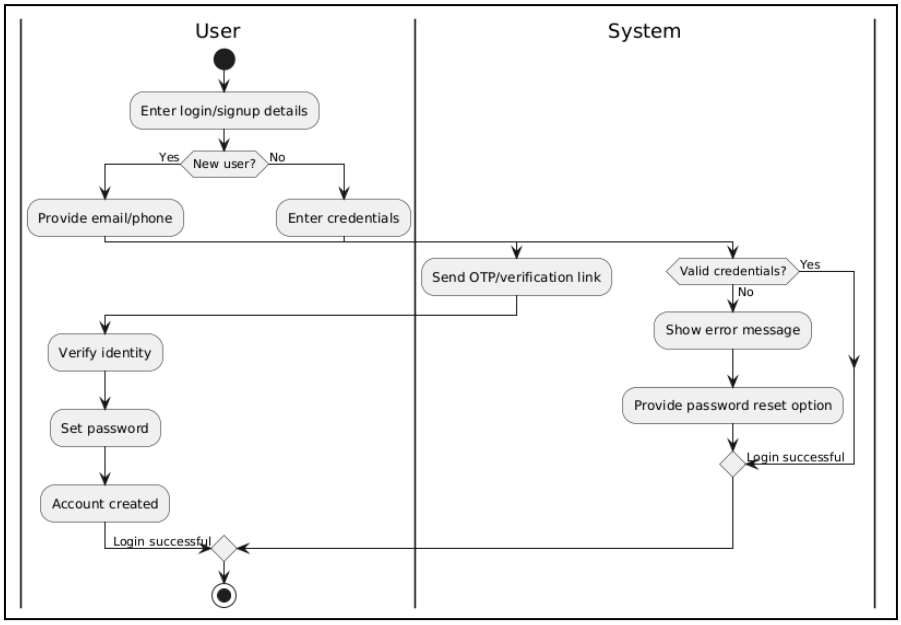
Collaboration Diagram for the complete project:



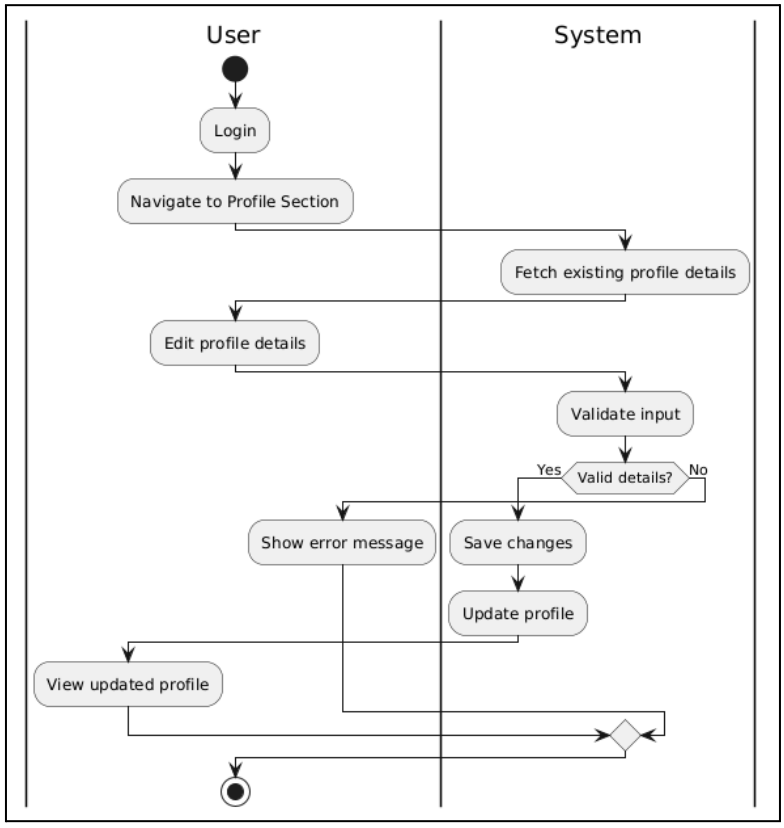
Behavioral Diagrams:

1. Activity Diagrams

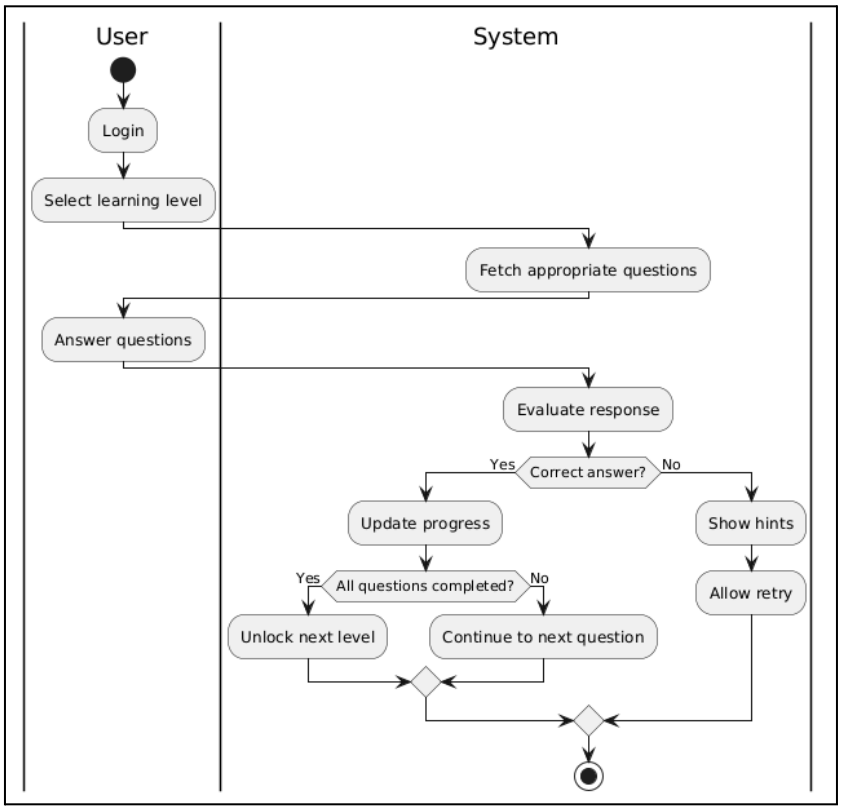
Module 1: Authentication



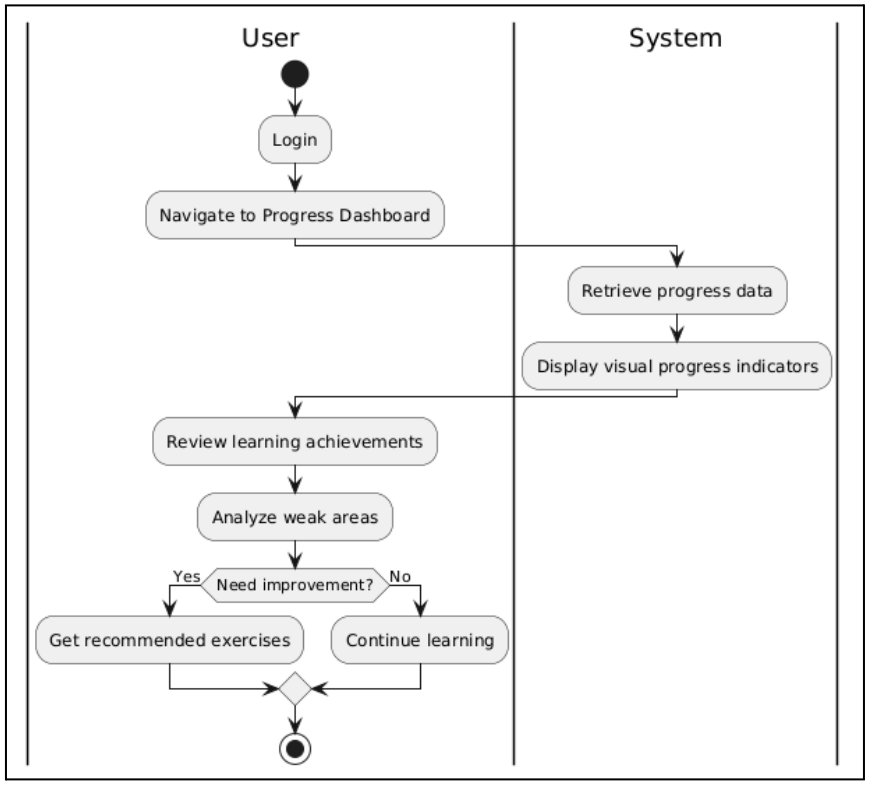
Module 2: Profile Management



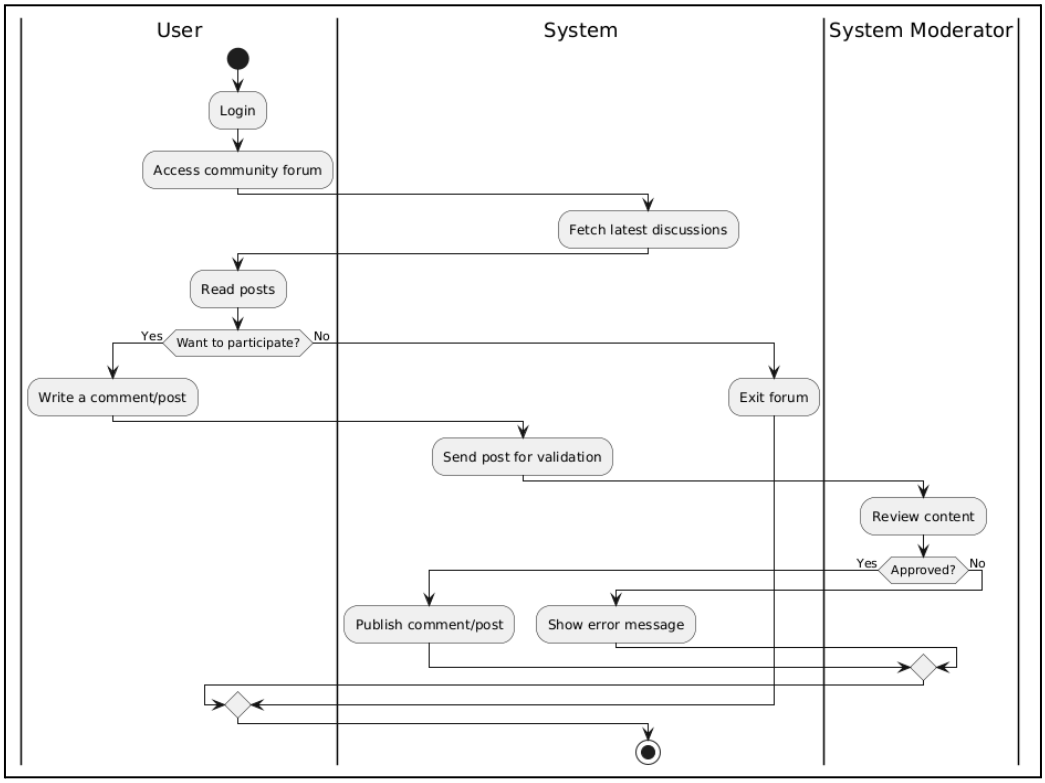
Module 3: Learning Platform



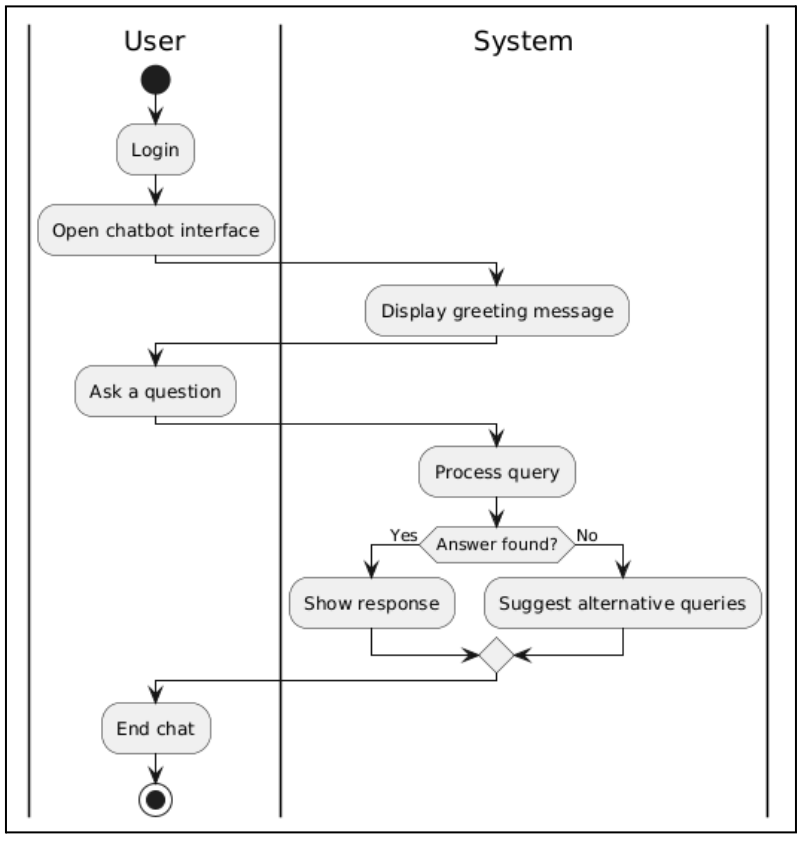
Module 4: Progress Tracker



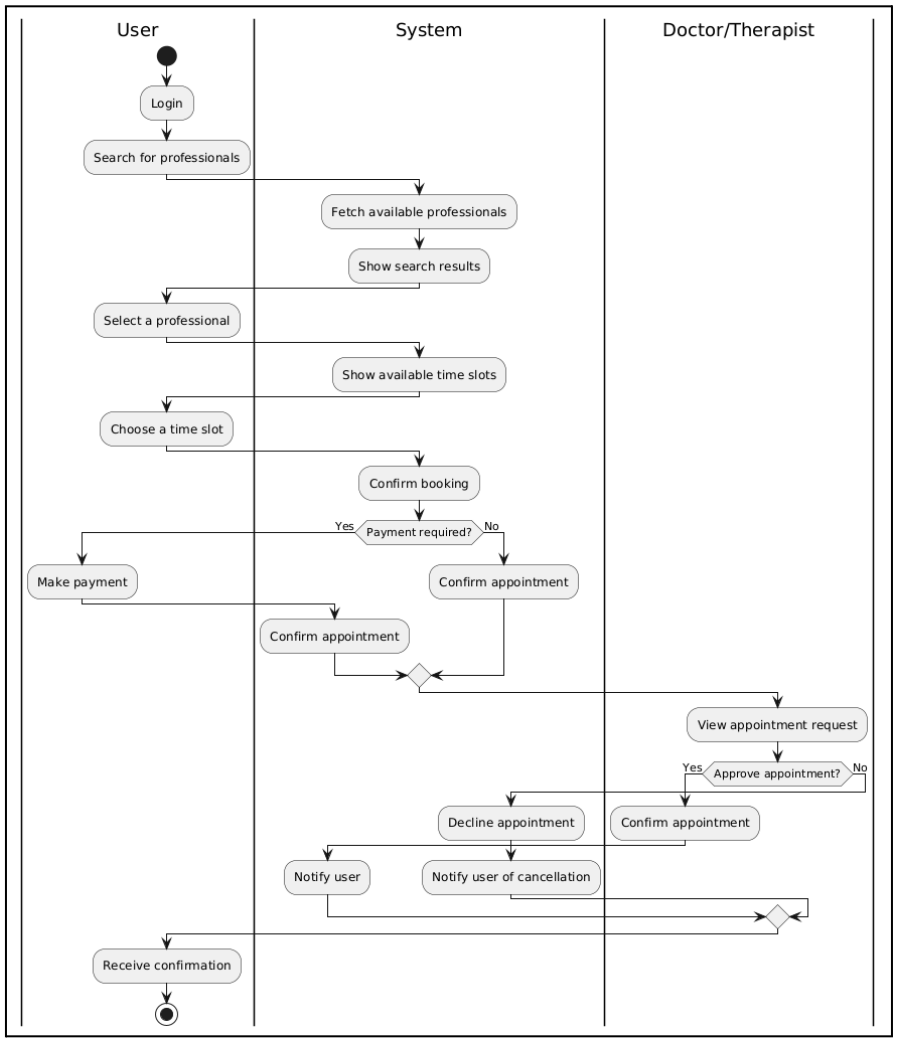
Module 5: Community Forum



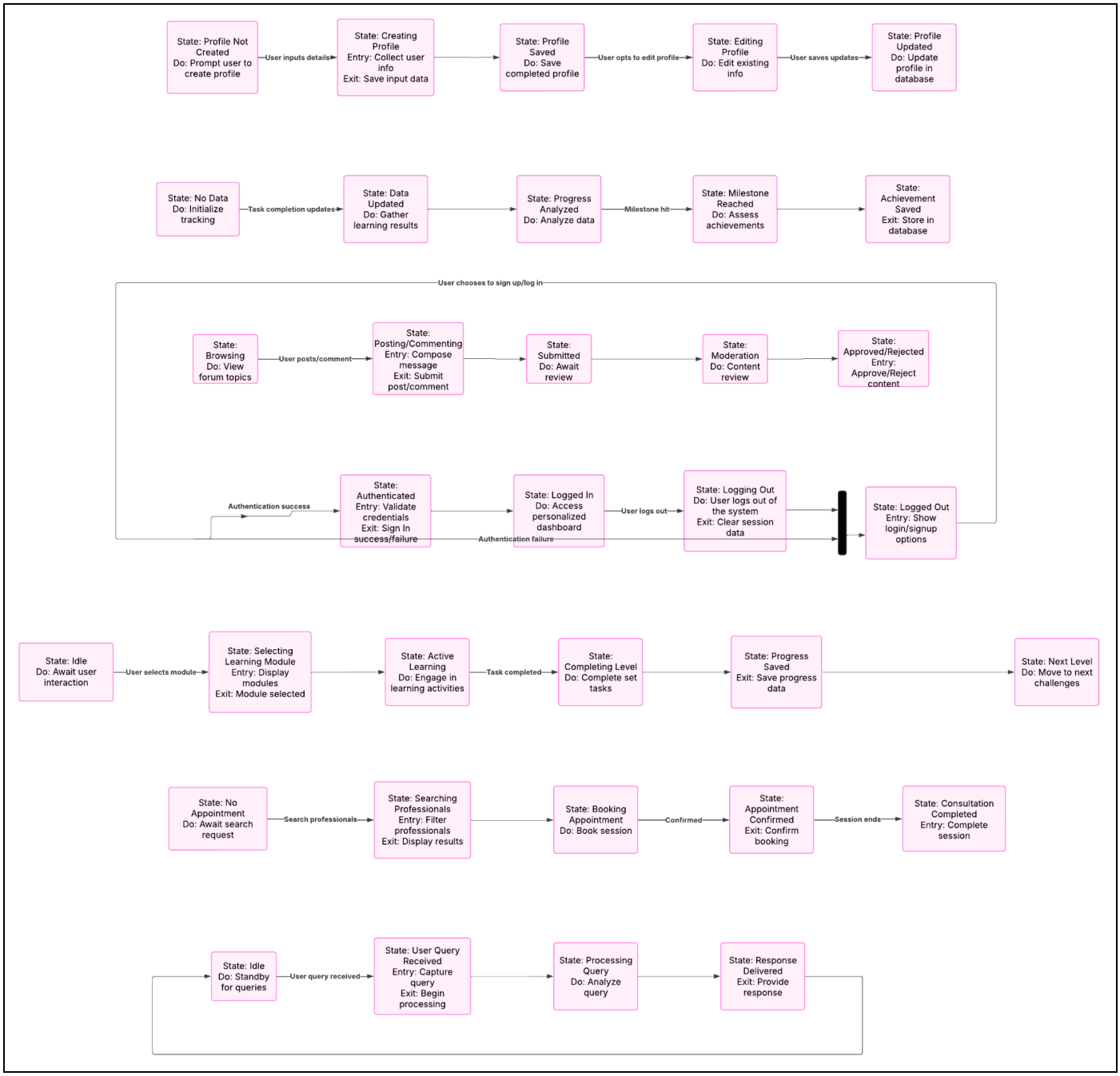
Module 6: Chatbot Assistance



Module 7: Professional Consultancy

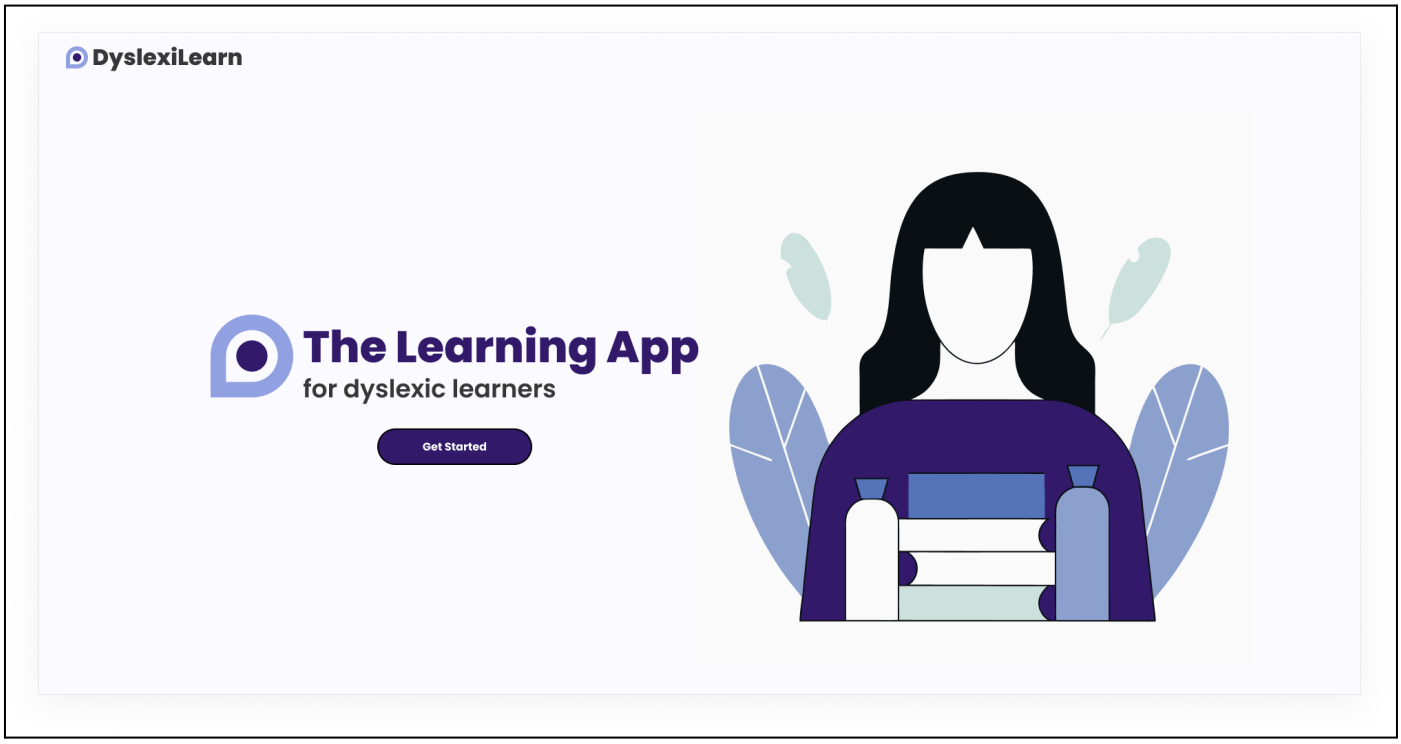


2. State Chart Diagram



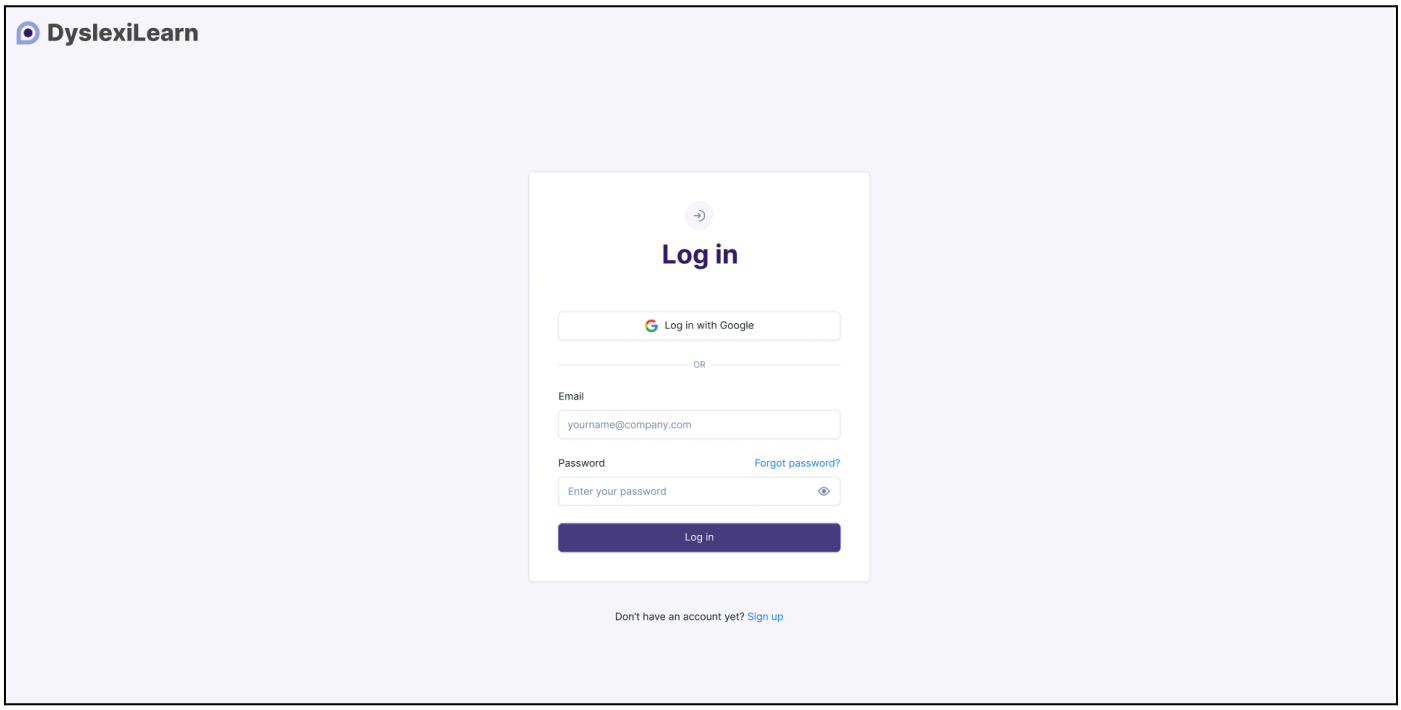
FIGMA PROTOTYPE

Landing Page:



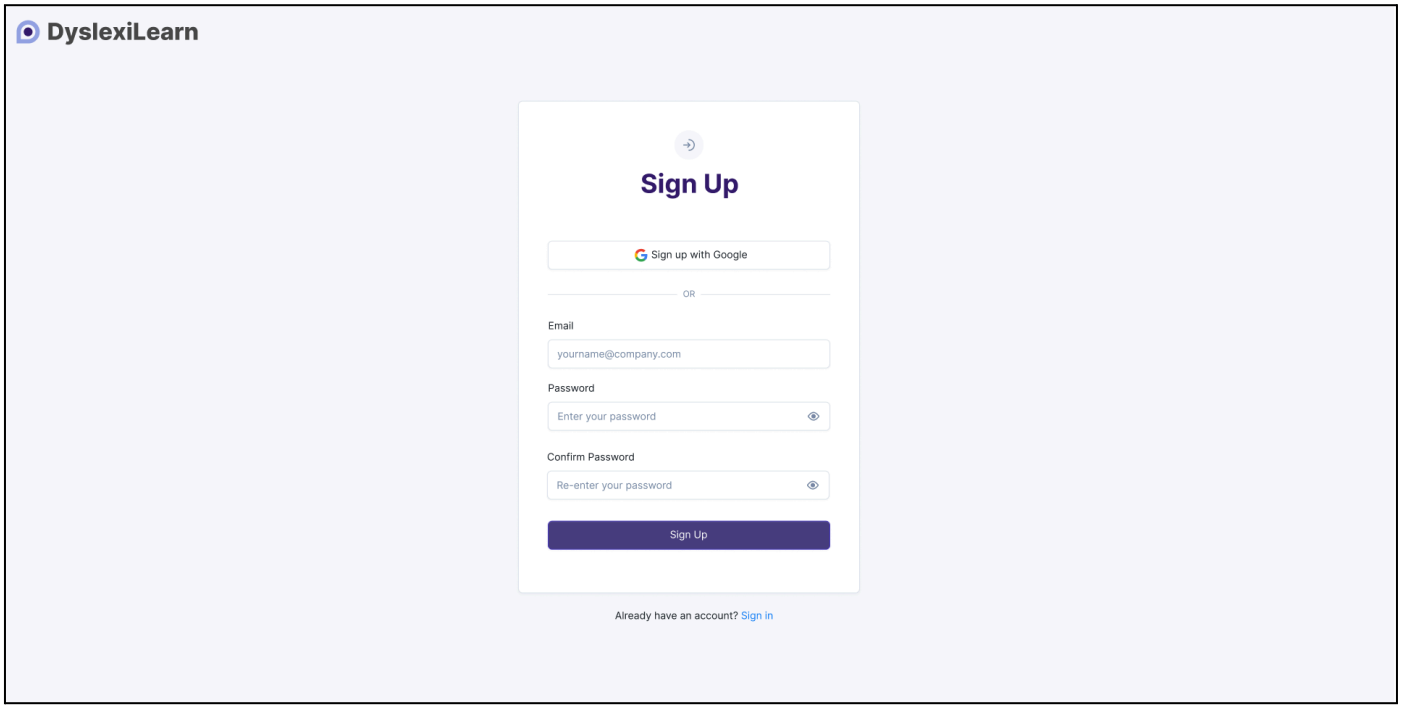
The Landing page serves as the entry point to DyslexiLearn, providing an overview of the platform's purpose, features, and benefits. It uses engaging visuals and concise descriptions to introduce the platform to new visitors.

Login Page:



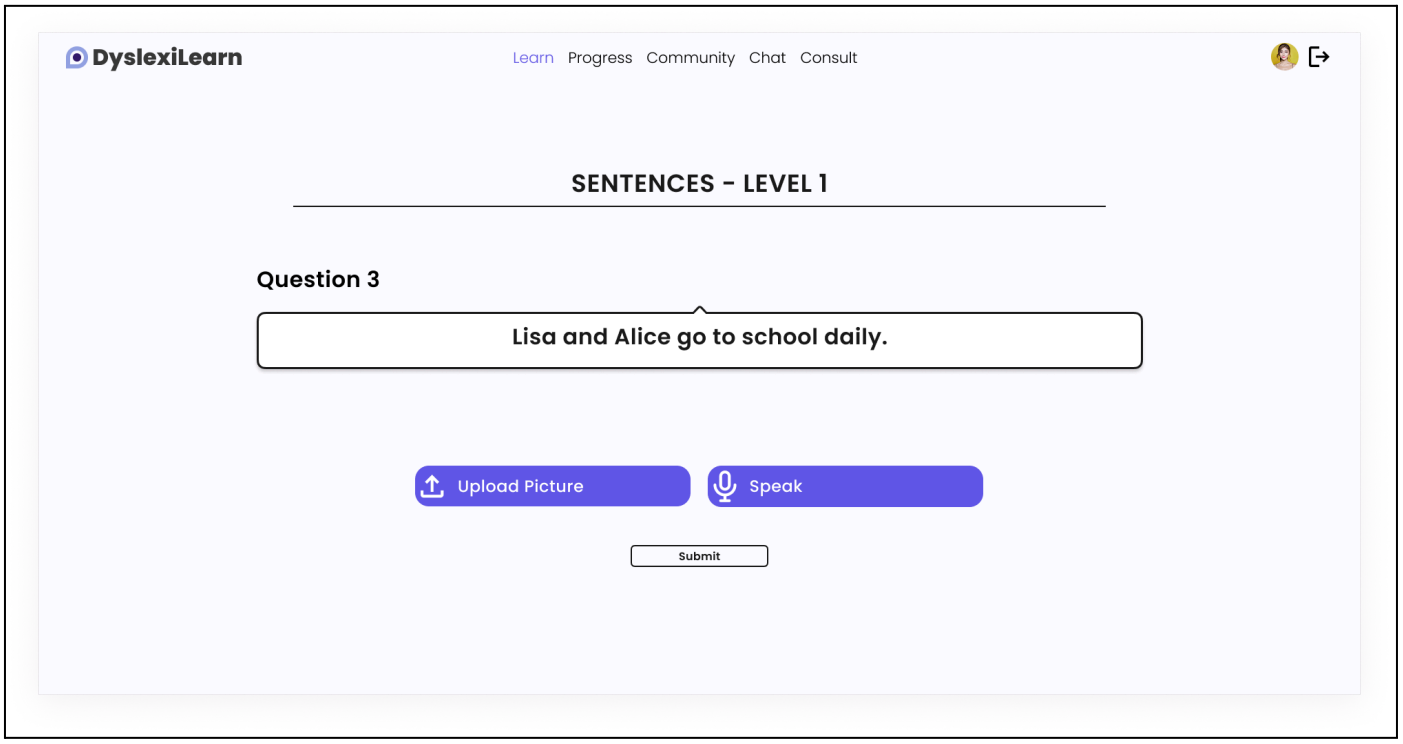
The Login page allows users to securely access their personalized DyslexiLearn accounts. The design is simple, with a focus on accessibility, offering options for email/password login as well as social login integrations.

Signup Page:

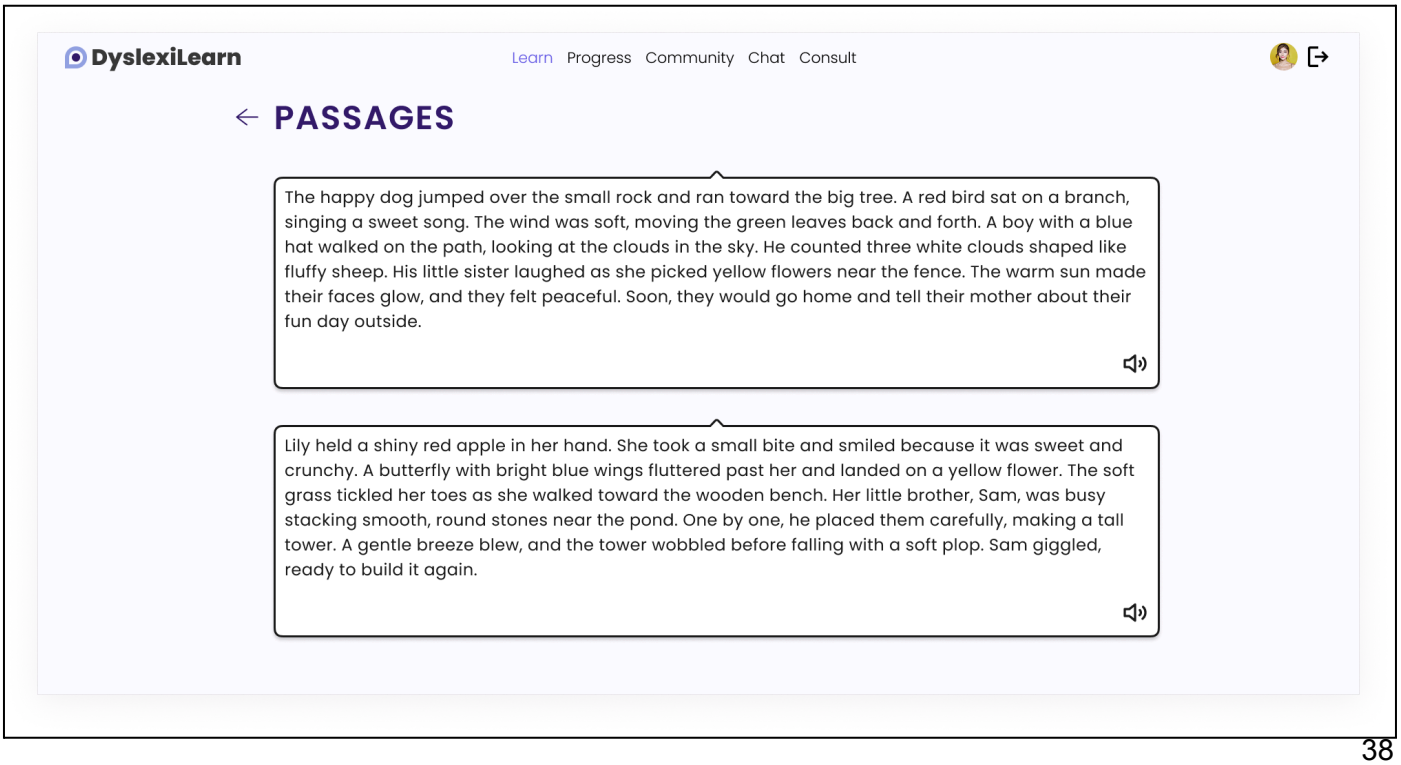


The Signup page facilitates the creation of user accounts, allowing individuals to register for DyslexiLearn. It includes fields for basic user details and an option to customize accessibility preferences from the start.

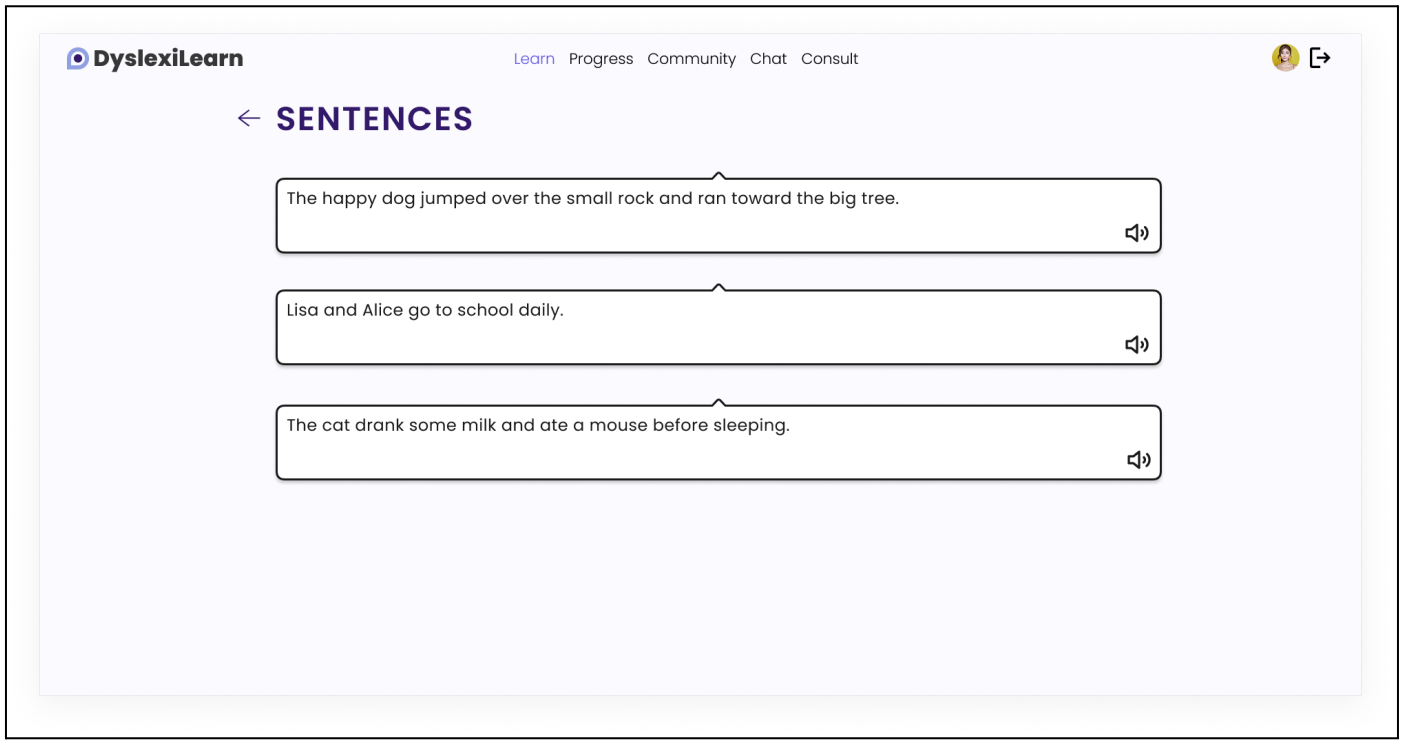
Learn Page:



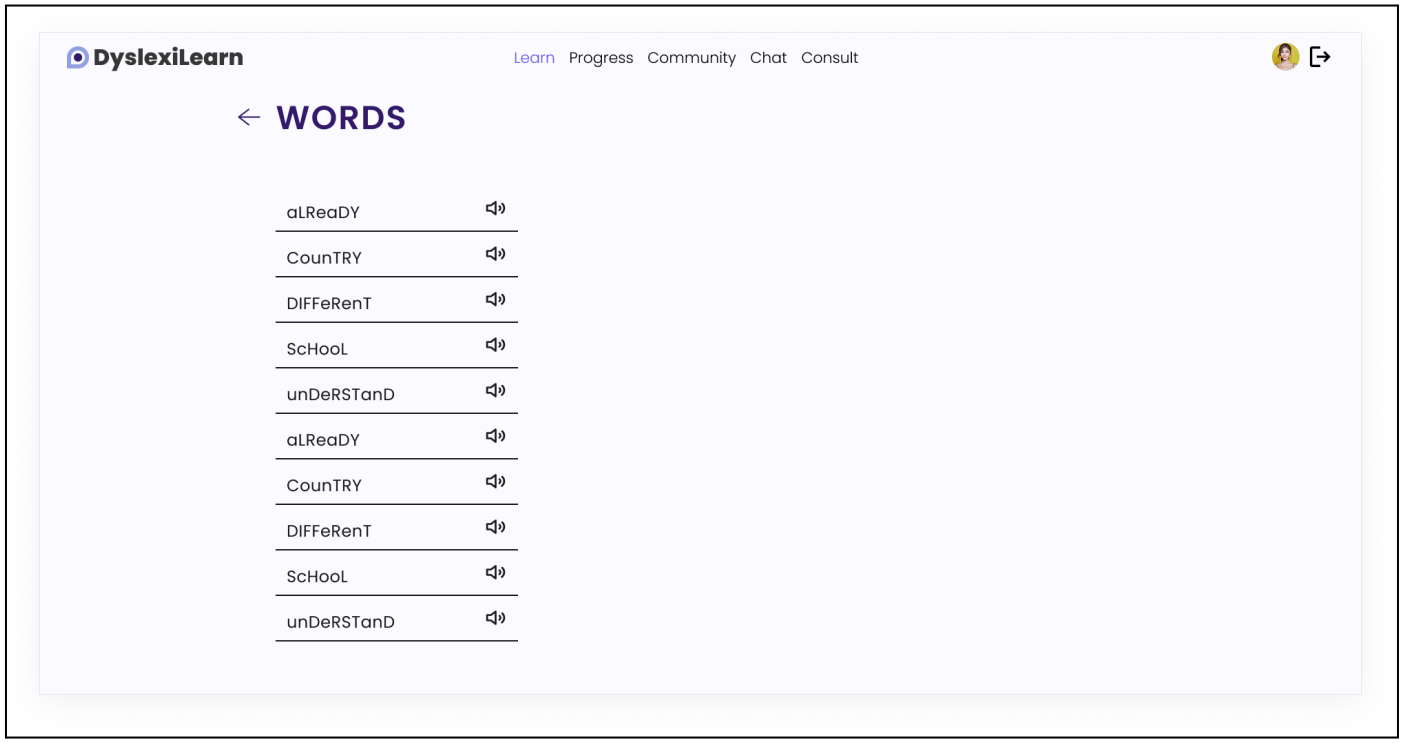
This Learning Page serves as the central hub of DyslexiLearn, guiding users through a structured approach to improving their reading and comprehension skills. It provides access to four key learning modules: Alphabet, Words, Sentences, and Passages, each offering both instructional content and quizzes. With a clean and accessible design, the page ensures a seamless learning experience.



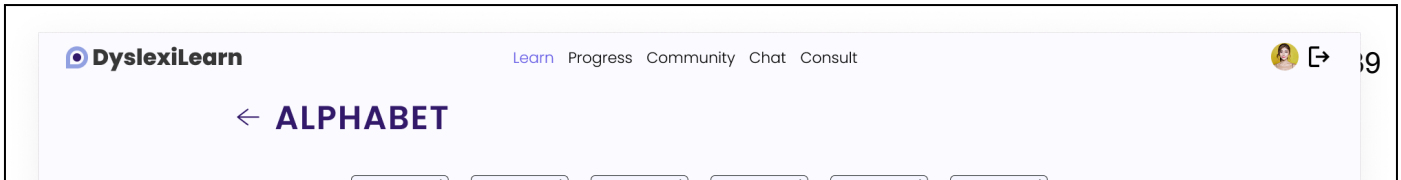
Passages to help learners practice their speech and understand words and sentences. Allows text to speech to asses learning.



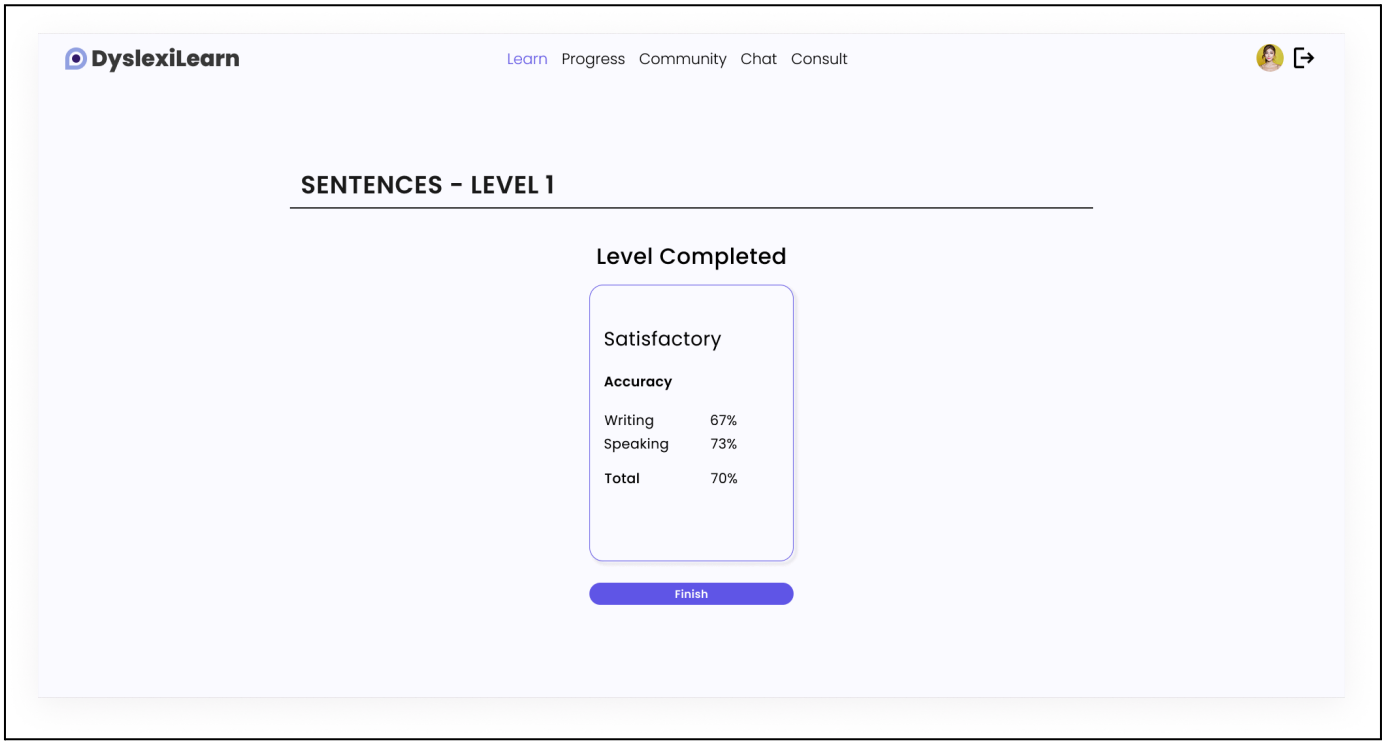
Smaller sentences to support multiple levels of speech training depending on student's capability.

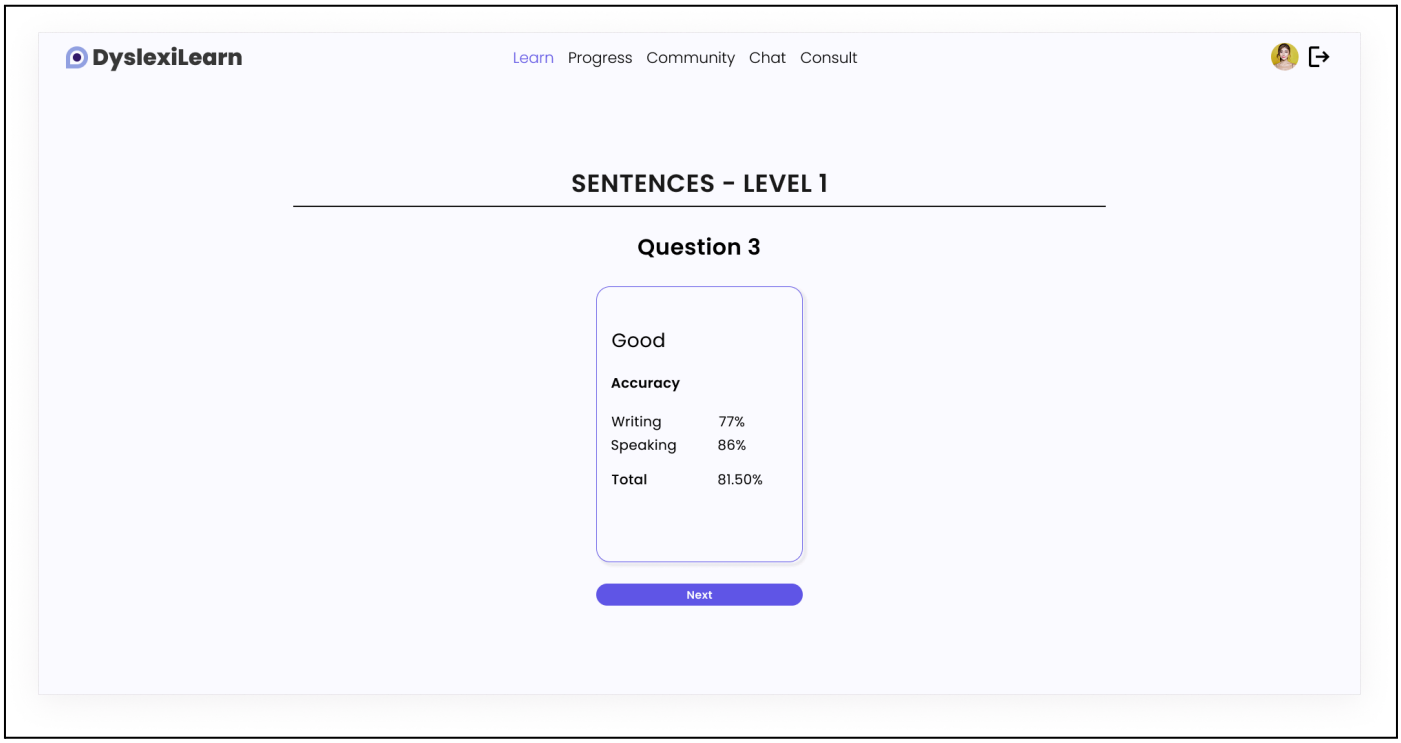


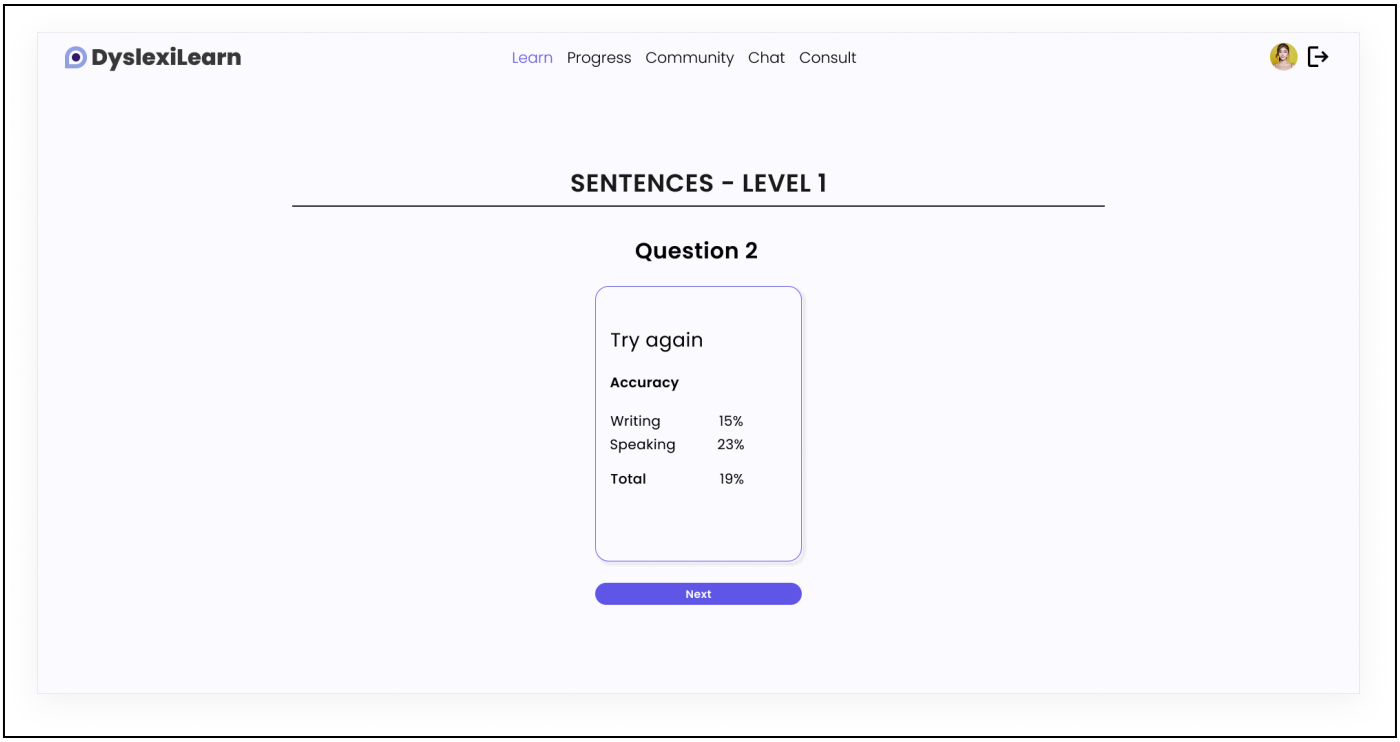
Words page for extreme cases or absolute beginners.



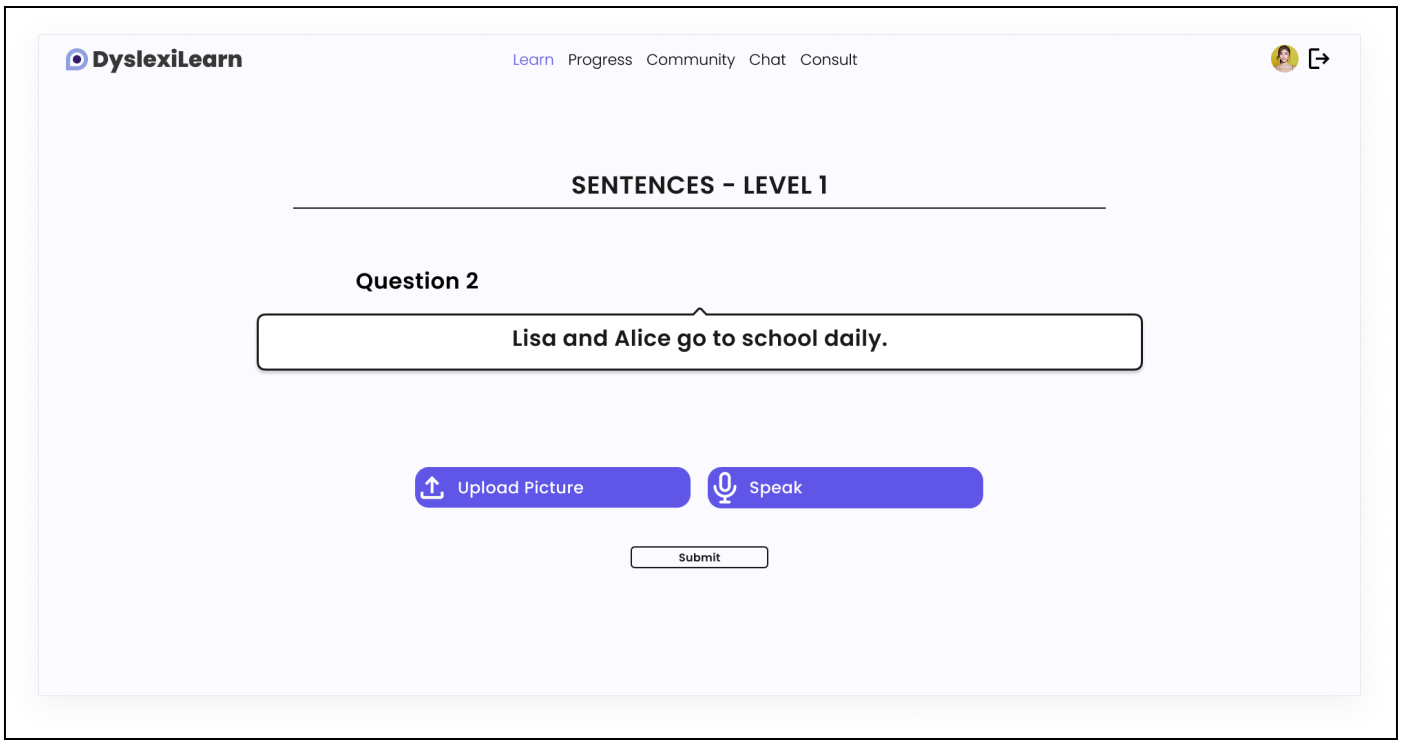
Alphabet page for learning the english alphabet through visual and auditory means.

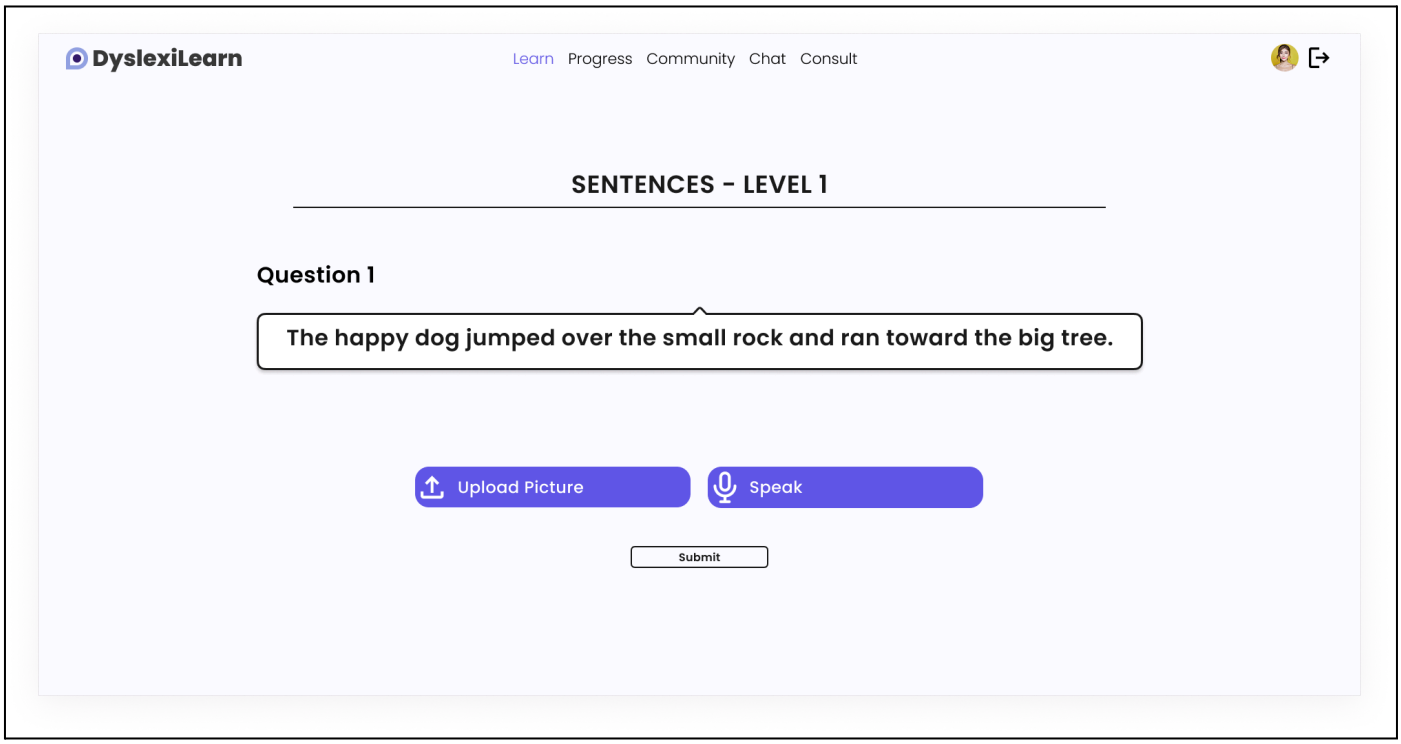




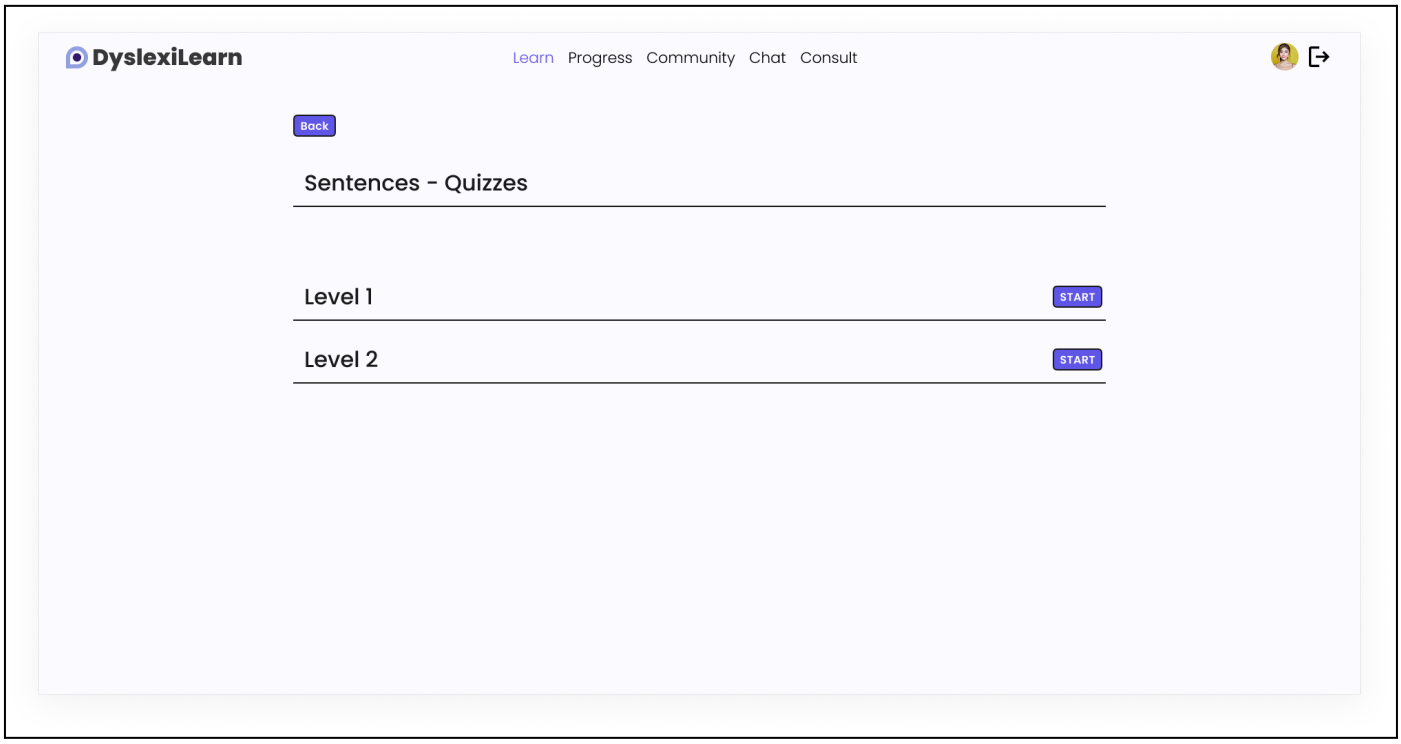


The report page shows up after answering each question and at the end of each quiz. It gives an insight of the learner's performance by displaying the percentage accuracy of speech and written solutions as determined by the AI model.

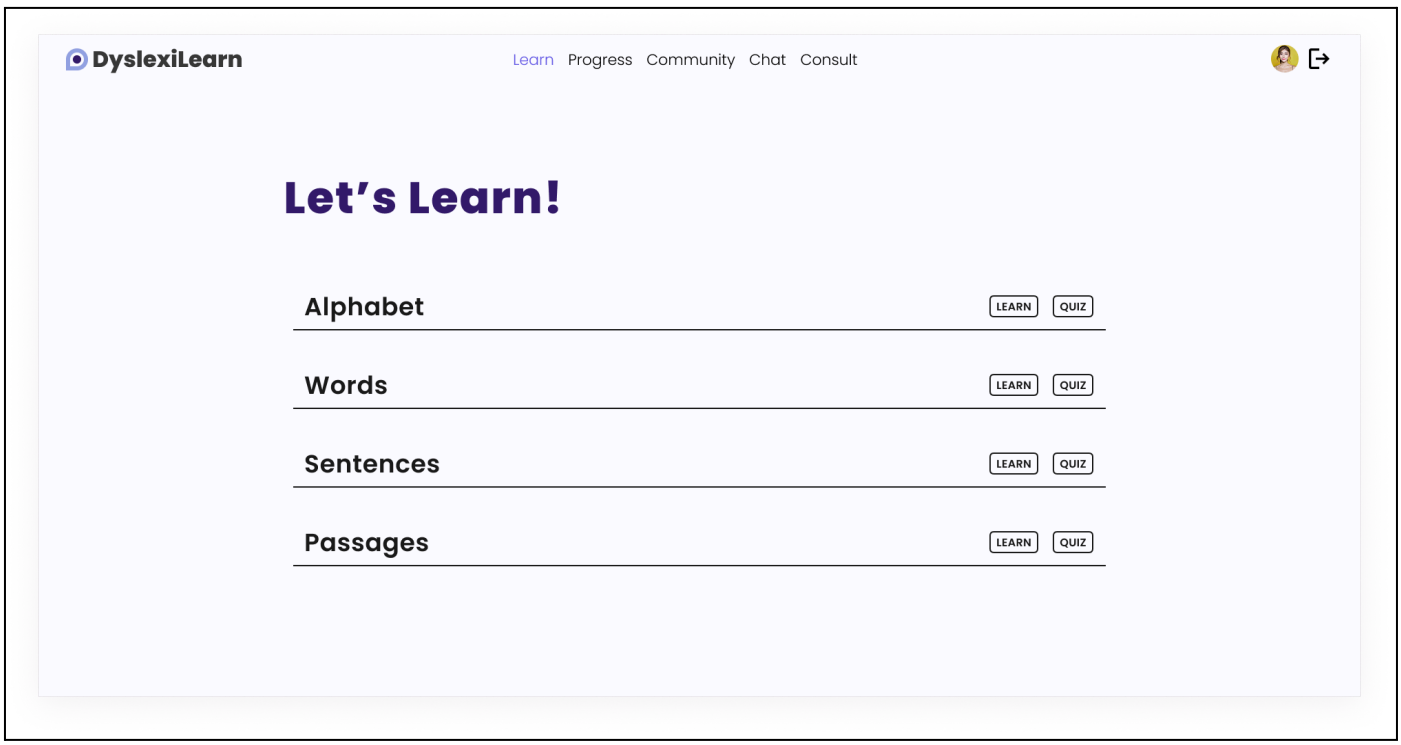




The question page is navigated to on selecting the quiz option on the domain specific quiz page. The learner is made to answer the question by both voice and handwritten channels. On clicking the speak button, the user can speak as per instructed by the question. On clicking the upload picture button, the user can upload a picture of their solution written on paper by hand for the given question based on its instructions.



Each learning domain has a quiz interface, designed to test the ability and understanding of the learner after going through the learning material. These quizzes comprise of questions of varying difficulty levels.

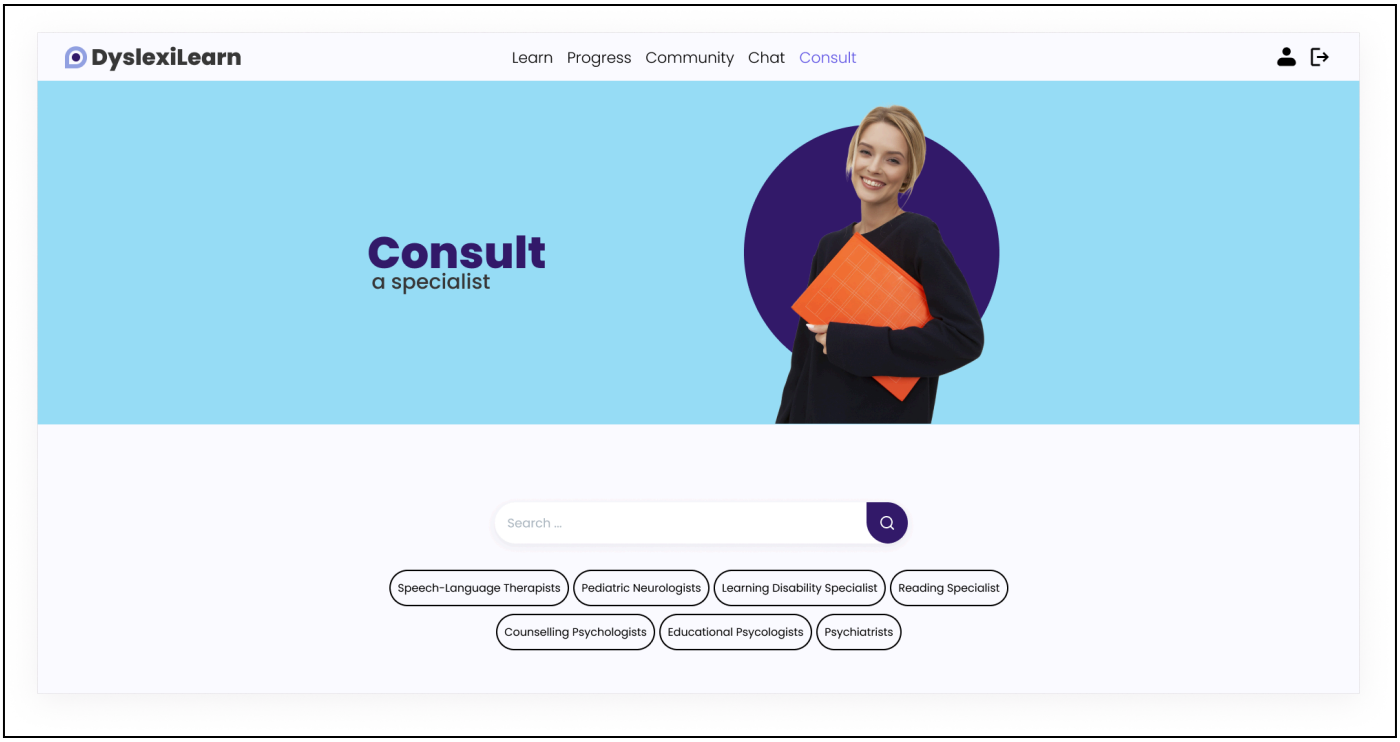


The learn page opens when the user logs into their account. The user sees options for study material on this page. These options, when selected, navigate the user to the respective learning pages.

Progress Tracker:

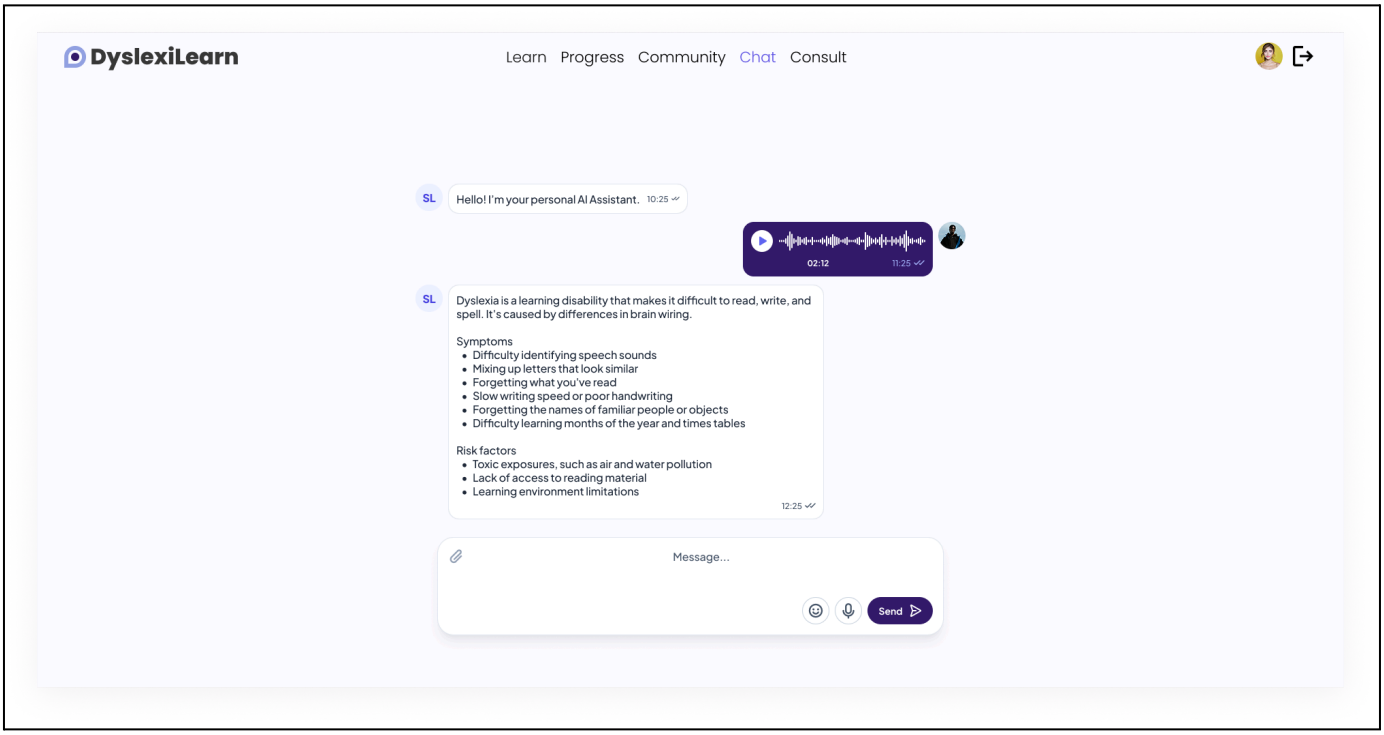
The Progress page provides users with a detailed visualization of their learning journey. It features interactive graphs and performance metrics to track learning hours, module scores, and achievement levels. Users can view their progress in different modules, including Words, Sentences, Alphabet, and Passages. The page aims to motivate users by displaying achievements and goal completion percentages.

Consulting Page:



The Consultation page connects users with specialists who can provide personalized guidance and support. It features a search function for finding relevant professionals, including speech-language therapists, pediatric neurologists, reading specialists, and psychologists. The interface is clean and visually appealing, with categorized search tags for easy navigation. The goal is to ensure that dyslexic individuals can access expert advice tailored to their needs.

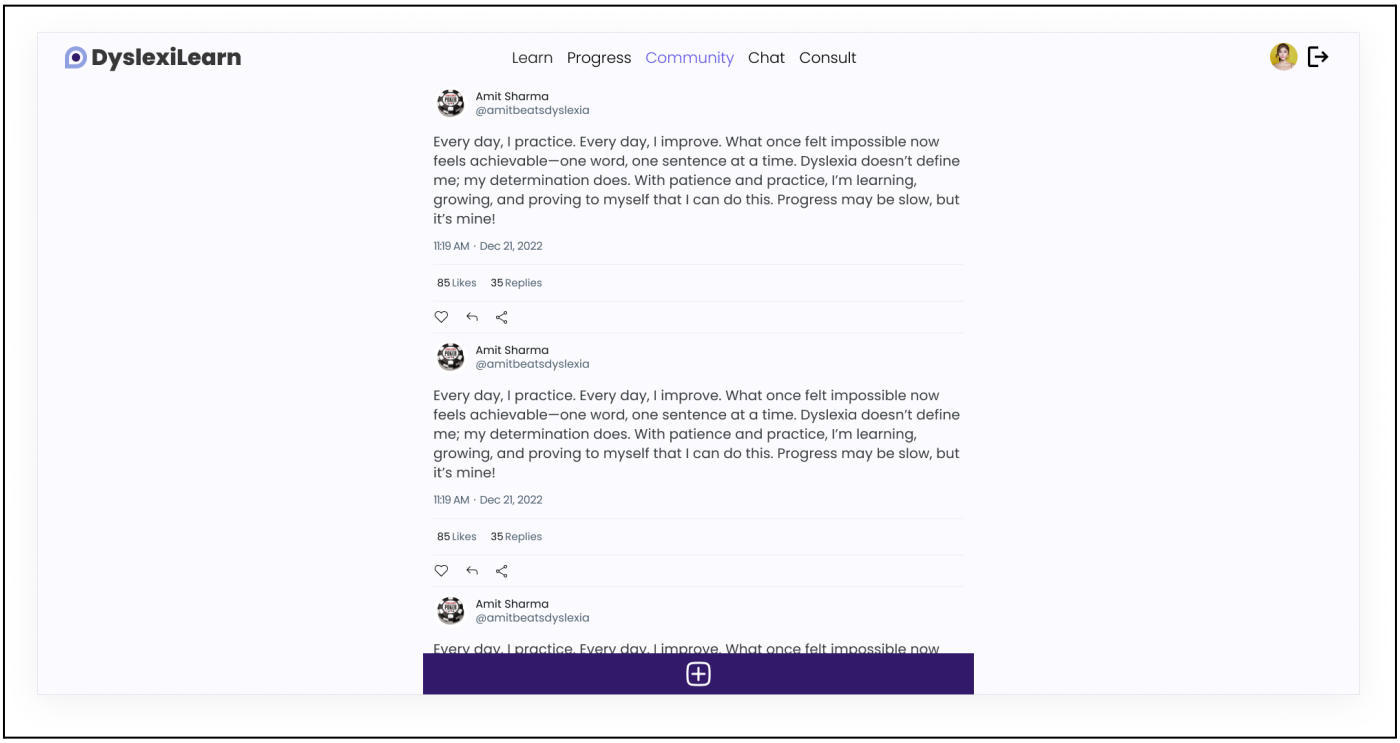
Chatbot:



The Chatbot page serves as an interactive assistant for users, providing real-time guidance and support. The chatbot greets the

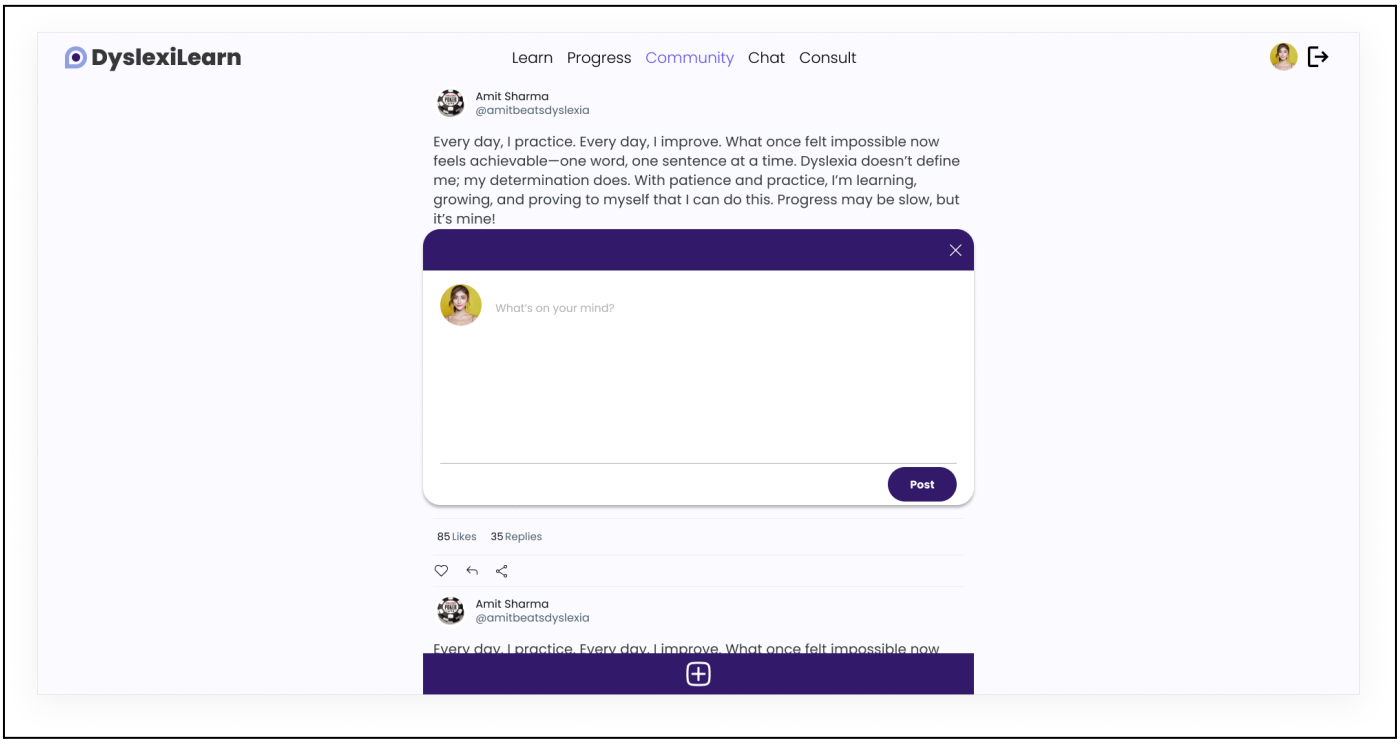
user and offers explanations about dyslexia, including symptoms and risk factors. Additionally, users can send and receive messages in both text and voice formats, ensuring accessibility for individuals with varying reading abilities. The page design is minimalistic, with a dyslexia-friendly font, clear message bubbles, and an intuitive interface to facilitate seamless interactions.

Community Page:



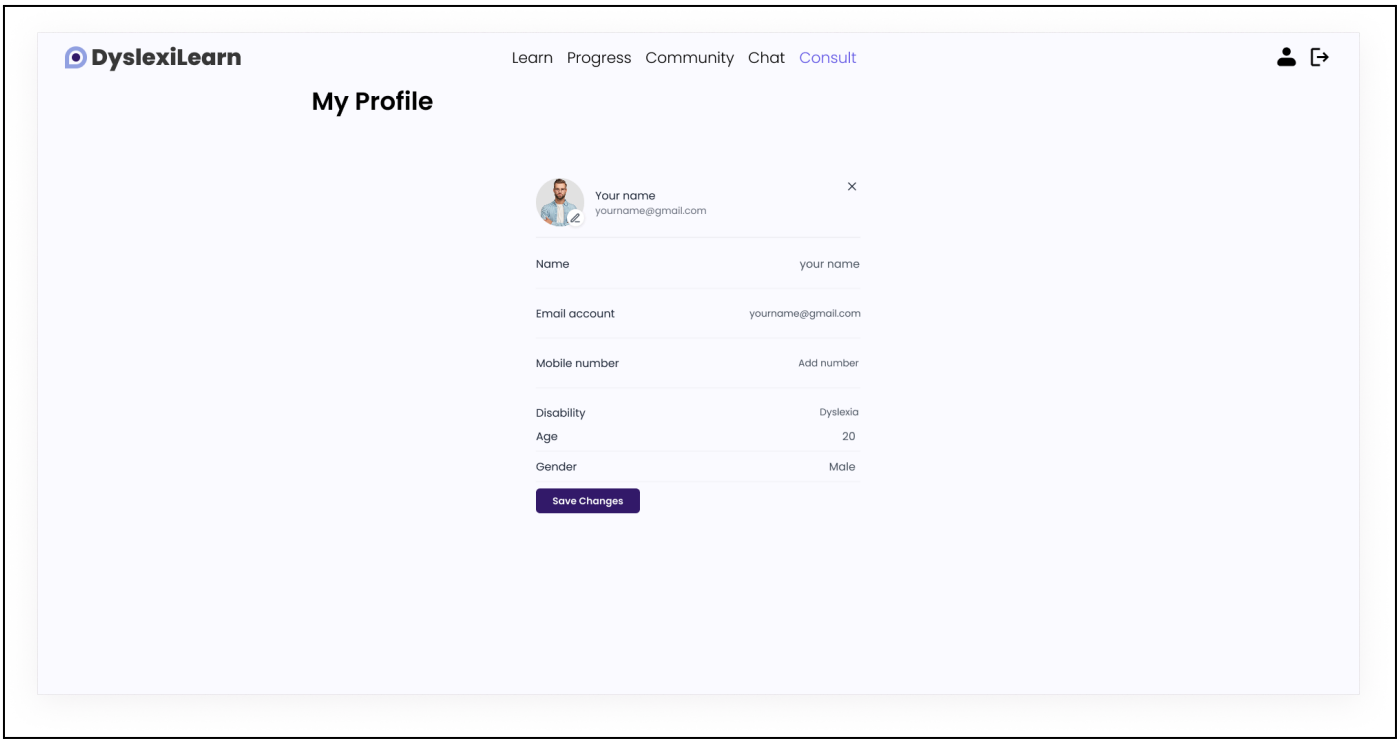
The Community page fosters social interaction and support among users. It allows individuals to share their experiences, post motivational messages, and engage in discussions. The interface features a text input area for users to create posts, along with a feed displaying user-generated content. The page promotes encouragement and a sense of belonging, enabling dyslexic individuals to connect with like-minded peers.

Posting in community:



A dedicated section allows users to create their own posts within the community forum. The interface includes a text input box, a user profile display, and a "Post" button to share messages with the community. This feature enables individuals to express their thoughts, seek support, and participate actively in discussions.

Profile Page:



The Profile page provides users with a personalized dashboard where they can manage their information, track progress, and customize accessibility settings. Users can update their details, set learning goals, and view their achievements.

RISK ANALYSIS REPORT

1. Project Risk

Risk Identification, Analysis & Prioritization

Risk No	Problem	Probability	Risk Effect
PR1	Project timeline delays due to unforeseen issues	Moderate	Serious
PR2	Insufficient funding to sustain development	Low	Catastrophic
PR3	Scope creep due to continuous feature additions	High	Serious
PR4	Lack of coordination among stakeholders	Moderate	Tolerable

Risk Mitigation Plan

- **PR1**: Set realistic milestones, buffer time in the schedule, and use agile development.
- **PR2**: Apply for grants, explore alternative funding, and optimize costs.
- **PR3**: Use a defined scope with stakeholder buy-in and implement change control processes.
- **PR4**: Establish clear communication channels, regular meetings, and defined roles.

Risk Monitoring

- Monthly project review meetings to track progress.
- Regular budget analysis to ensure financial sustainability.
- Stakeholder feedback sessions to prevent scope creep.

---

2. Product Risk

Risk Identification, Analysis & Prioritization

Risk No	Problem	Probability	Risk Effect
PRD1	Learning content is not effective for dyslexic users	Moderate	Serious
PRD2	Accessibility issues (poor font choices, lack of voice support)	High	Serious
PRD3	System fails to provide adaptive learning for users	Moderate	Serious

Risk Mitigation Plan

- **PRD1**: Involve dyslexia specialists in content development and conduct user testing.
- **PRD2**: Implement dyslexia-friendly fonts, voice-based learning, and accessibility compliance.
- **PRD3**: Improve adaptive algorithms using AI-based learning paths.

Risk Monitoring

- Quarterly usability testing with target users.
- Regular feedback loops with educators and therapists.

---

3. Process Risk

Risk Identification, Analysis & Prioritization

Risk No	Problem	Probability	Risk Effect
PRC1	Poor software development practices lead to security vulnerabilities	High	Catastrophic
PRC2	Inadequate testing leads to high defect rates	Moderate	Serious

Risk Mitigation Plan

- **PRC1**: Implement secure coding practices, conduct regular security audits.
- **PRC2**: Follow rigorous testing methodologies, including automated testing.

Risk Monitoring

- Security compliance checks every six months.
- Continuous integration and deployment pipelines to catch defects early.

---

4. Organizational Risk

Risk Identification, Analysis & Prioritization

Risk No	Problem	Probability	Risk Effect
ORG1	Lack of skilled personnel for specialized tasks	High	Serious
ORG2	High attrition rate among developers	Moderate	Serious

Risk Mitigation Plan

- **OR1**: Provide training and hire consultants for critical areas.
- **OR2**: Implement employee retention strategies like career growth opportunities.

Risk Monitoring

- Bi-annual employee satisfaction surveys.
- HR policies aligned with industry best practices.

---

5. Business Risk

Risk Identification, Analysis & Prioritization

Risk No	Problem	Probability	Risk Effect
BR1	Low user adoption due to lack of awareness	Moderate	Serious
BR2	Competitor platforms outperform Dyslexilearn	High	Serious

Risk Mitigation Plan

- **BR1**: Invest in marketing campaigns and partnerships with schools.
- **BR2**: Continuously update the platform based on user needs.

Risk Monitoring

- Monthly marketing impact analysis.
- Regular competitive benchmarking.

---

6. Technology Risk

Risk Identification, Analysis & Prioritization

Risk No	Problem	Probability	Risk Effect
TR1	Data breaches due to inadequate security	High	Catastrophic
TR2	System downtime due to server failures	Moderate	Serious

Risk Mitigation Plan

- **TR1**: Implement encryption, multi-factor authentication, and security audits.
- **TR2**: Use cloud-based redundancy, automatic failover mechanisms.

Risk Monitoring

- Regular security penetration testing.
- 24/7 system health monitoring with alerts.

---

7. Inherent Risks

Risk Identification, Analysis & Prioritization

Risk No	Problem	Category	Probability	Risk Effect
IR1	Difficulty in designing dyslexia-friendly UI	Product	Moderate	Serious
IR2	Users struggling with adaptive difficulty learning	Product	Moderate	Tolerable
IR3	Privacy concerns regarding medical data	Technology	Very High	Catastrophic
IR4	Authentication issues for dyslexic users	Project	Moderate	Serious
IR5	Lack of engagement in community forum	Process	Moderate	Tolerable
IR6	Regulatory compliance challenges for consultancy	Business	High	Catastrophic
IR7	Scalability concerns with growing user base	Technology	Moderate	Serious

Risk Mitigation and Monitoring Plan for Inherent Risks

IR1: Difficulty in designing dyslexia-friendly UI

- **Mitigation Plan:** Implement research-based UI guidelines, conduct usability tests with dyslexic users, and iterate designs.
- **Monitoring:** Regular UX testing, feedback collection, and iterative improvements.

IR2: Users struggling with adaptive difficulty learning

- **Mitigation Plan:** Provide detailed guidance, allow users to adjust difficulty levels, and implement AI-driven personalized learning paths.
- **Monitoring:** Track user engagement and difficulty completion rates, gather feedback, and refine difficulty adjustments.

IR3: Privacy concerns regarding medical data

- **Mitigation Plan:** Implement end-to-end encryption, comply with data protection regulations (e.g., HIPAA, GDPR), and provide user consent options.
- **Monitoring:** Conduct security audits and compliance checks regularly.

IR4: Authentication issues for dyslexic users

- **Mitigation Plan:** Offer multiple authentication methods (biometric, voice, and simplified text-based options).
- **Monitoring:** Track login success rates and user complaints to refine authentication mechanisms.

IR5: Lack of engagement in community forum

- **Mitigation Plan:** Introduce gamification, moderated discussions, and reward active participants.
- **Monitoring:** Measure forum activity levels and user participation, adjusting strategies accordingly.

IR6: Regulatory compliance challenges for consultancy

- **Mitigation Plan:** Consult legal experts, implement clear terms of service, and ensure adherence to relevant laws.
- **Monitoring:** Regular legal reviews and updates based on regulatory changes.

IR7: Scalability concerns with growing user base

- **Mitigation Plan:** Optimize infrastructure with cloud solutions, implement load balancing, and conduct performance testing.
- **Monitoring:** Track system performance and scale resources as needed.

TEST CASE REPORT

Module 1: User Authentication

Test Case ID	Test Case Input	Expected Output	Actual Output	Test Result
AUTH-001	Login via google	Successful login	Error	Fail
AUTH-001	Login via google	Successful login	Successful login	Pass

Module 2: Learning Platform

Test Case ID	Test Case Input	Expected Output	Actual Output	Test Result
LEARN-001	User pronounces a word/sentence correctly using mic option	Shows Correct	Shows incorrect	Fail
LEARN-001	User pronounces a word/sentence correctly using mic option	Shows Correct	Shows correct	Pass
LEARN-002	User pronounces a word/sentence incorrectly	Shows incorrect	Shows incorrect	Pass
LEARN-003	User draws alphabet correctly	Shows correct	Shows incorrect	Fail
LEARN-004	User chooses a sub-module	Module data get displayed	Module data get displayed	Pass
LEARN-005	User clicks on the speaker icon	The system speaks the word/sentence (audio output)	The system speaks the word/sentence (audio output)	Pass
LEARN-006	User clicks on upload image for alphabet	Opens file explorer to choose a file to upload and allows user to choose	Opens file explorer to choose a file to upload and allows user to choose	Pass
LEARN-007	User submits image of a correctly drawn alphabet	Shows correct	Shows correct	Pass

Module 3: Progress Tracker

Test Case ID	Test Case Input	Expected Output	Actual Output	Test Result
PROG-001	User answers questions of a topic correctly	Progress page updates the correct answers as well as attempts	Progress page updates the correct answers as well as attempts	Pass
PROG-002	User answers questions of a topic correctly	Progress page updates the attempts, no change in correct answers	Progress page updates the attempts, no change in correct answers	Pass
PROG-003	User accesses dashboard	Displays correct stats	Displays correct stats (graph)	Pass

Module 4: Chatbot Assistance

Test Case ID	Test Case Input	Expected Output	Actual Output	Test Result
CHAT-001	User inputs irrelevant text	Provides a user-friendly message	Provides a message of how can it help	Pass
CHAT-002	User asks for learning suggestions	Shows relevant suggestions	Shows relevant results/suggestions	Pass
CHAT-003	User asks for dyslexia-related doubts	Shows relevant answers	Shows relevant answers	Pass

PROJECT MANAGEMENT TOOL REPORT

Tool of choice: **Github Projects**

GitHub Projects is an integrated project management feature within GitHub that allows developers and teams to plan, track, and manage work directly alongside their code. It provides a flexible interface for organizing issues, pull requests, and tasks into customizable views such as boards, tables, and timelines.

GitHub Projects supports methodologies like Kanban and Scrum and is particularly valuable for teams already using GitHub as their version control platform. By bringing planning and development together in one place, it eliminates the need for third-party tools and creates a more seamless development workflow.

Users can create project boards, define columns to represent stages of work, automate task movement, assign responsibilities, and link code-related activity directly to planning documents. It helps keep everyone on the same page, enhances collaboration, and ensures that project goals are consistently met.

Impact of the tool on project management

GitHub Projects was highly useful as a project management tool, especially in a development-focused environment where code and task management need to coexist seamlessly. Its value lay not only in organizing tasks but also in aligning the entire team under a transparent, collaborative, and well-structured system. Here's how it helped:

1. Organized Workflow Through Clear Task Segmentation
GitHub Projects allowed us to break down our work into manageable units and organize them visually through a Kanban-style board. By using columns such as "Backlog," "To Do," "In Progress," "In Review," and "Done," we were able to create a clear roadmap of the project's lifecycle. This helped every team member understand the overall status at a glance, minimizing confusion and miscommunication.

2. Real-Time Visibility and Transparency
One of the major advantages was the real-time visibility it offered. Any updates made to issues, such as changes in task status, comments, or linked pull requests, were instantly visible to the entire team. This transparency was particularly helpful during daily stand-ups or sprint reviews, as team members could easily check progress, identify blockers, and reassign priorities if needed.

3. Seamless Integration with the Development Workflow
Since GitHub Projects is deeply integrated with GitHub repositories, we could link issues and pull requests directly to project tasks. This eliminated the need to switch between separate platforms for coding and task tracking. For example, as soon as a developer opened a pull request, the associated task could be automatically moved to "In Review," maintaining synchronization between the codebase and the project plan without manual effort.

4. Enhanced Collaboration and Communication
Communication became more efficient as all discussions related to a task could happen directly on the GitHub issue or pull request. Features like @mentions, threaded comments, and issue linking encouraged collaboration, while labels and assignments made it easy to know who was responsible for what. This kept the team well-informed and ensured that no task was overlooked or duplicated.

5. Reduced Overhead and Cognitive Load
Because GitHub Projects brought all project elements — code, tasks, updates, and communication — into one cohesive environment, it significantly reduced the overhead associated with managing external tools like Trello or Jira. Developers could focus more on building the product rather than juggling multiple platforms for updates and planning.

Implemented use-cases

We used GitHub Projects very effectively to plan, execute, and monitor both day-to-day development tasks and broader project milestones. The tool became the backbone of our project management strategy, guiding us through each stage of development while keeping our team synchronized and focused.

1. Phase-Based Boards for Clear Structure
To maintain order and direction, we created separate project boards for each sprint or development phase. This allowed us to compartmentalize the work, set focused short-term goals, and track progress without mixing up unrelated tasks. Each board served as a dedicated space for planning and execution, and by the end of every phase, we had a clear record of what was completed, what was delayed, and what needed to be carried forward.

2. Tasks as GitHub Issues – Centralized and Actionable
We managed individual tasks by creating GitHub issues, which we added to the relevant project boards. This helped in maintaining centralized documentation of every feature, bug, or enhancement. These issues weren't just placeholders—they contained detailed descriptions, checklists, screenshots, and references to commits or code discussions. This level of detail made each task actionable and reduced back-and-forth communication.

3. Kanban Columns for Workflow Clarity
We used a custom column structure like “To Do,” “In Progress,” “Fixes,” and “Done” to visualize our workflow. This Kanban-style setup helped us:

Focus on active work in the “To Do” and “In Progress” stages.
Track bugs throughout the review cycles with the “Fixes” column.
Celebrate completed work in the “Done” column.

This system was not just visual—it provided meaningful context for team discussions, sprint planning, and daily stand-ups.

4. Assignments and Deadlines to Ensure Accountability
To promote ownership, we assigned issues to specific team members, along with due dates when necessary. This ensured clarity in roles and responsibilities. Everyone on the team knew what was expected of them, and if there were delays or blockers, we could identify them early and take action. GitHub’s notifications also helped remind contributors of pending work or updates.

5. Frequent Updates and Iteration
Our project boards were living documents. We frequently updated the status of tasks—moving cards across columns, editing issue descriptions, or linking newly created pull requests. This regular maintenance kept the boards accurate and allowed us to respond quickly to changes in scope or priority. Whether it was adding a hotfix mid-sprint or shifting tasks to the next sprint, the tool supported flexible adjustments without losing structure.

6. Effective Use of Labels and Filters
To enhance visibility, we used labels such as bug, enhancement, urgent, and blocked. This allowed us to filter tasks quickly during reviews and prioritize work intelligently. For instance, in times of limited resources, we focused on critical bugs labeled as urgent, and deferred less important enhancements.

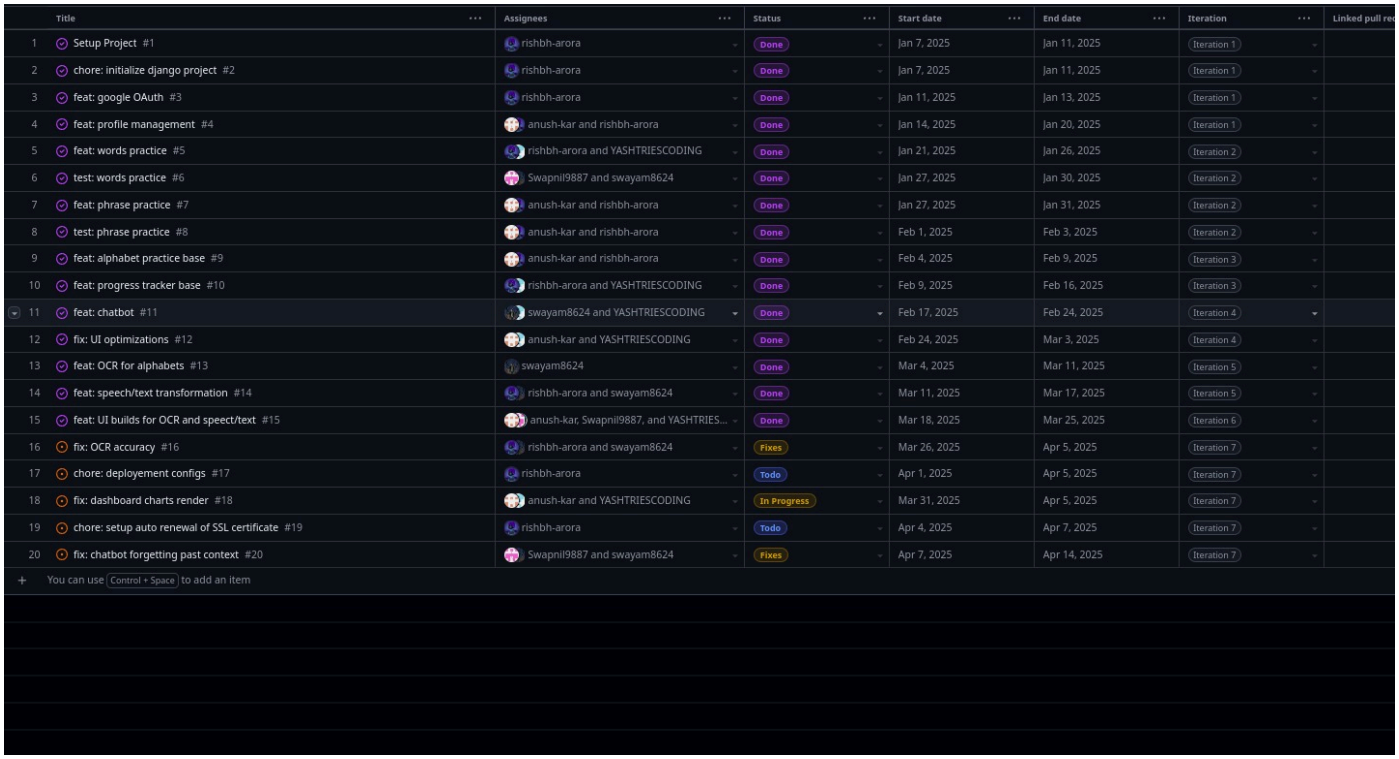
Features Utilized

Some of the core features that made GitHub Projects effective for our workflow include:

- **Kanban-style Boards:** Allowed us to organize work visually and keep the team aligned on priorities.
- **Issues and Pull Request Integration:** Enabled direct linking between tasks and code, making it easier to track work progress.
- **Labels and Filters:** Helped categorize and sort tasks by type, priority, and assignee.
- **Milestones:** Grouped tasks under common goals to track progress towards major deliverables.
- Assignees and Deadlines: Facilitated clear ownership and time-bound completion of tasks.
- **Automations:** Simplified task tracking by automatically moving items across columns based on status changes (e.g., PR merged).

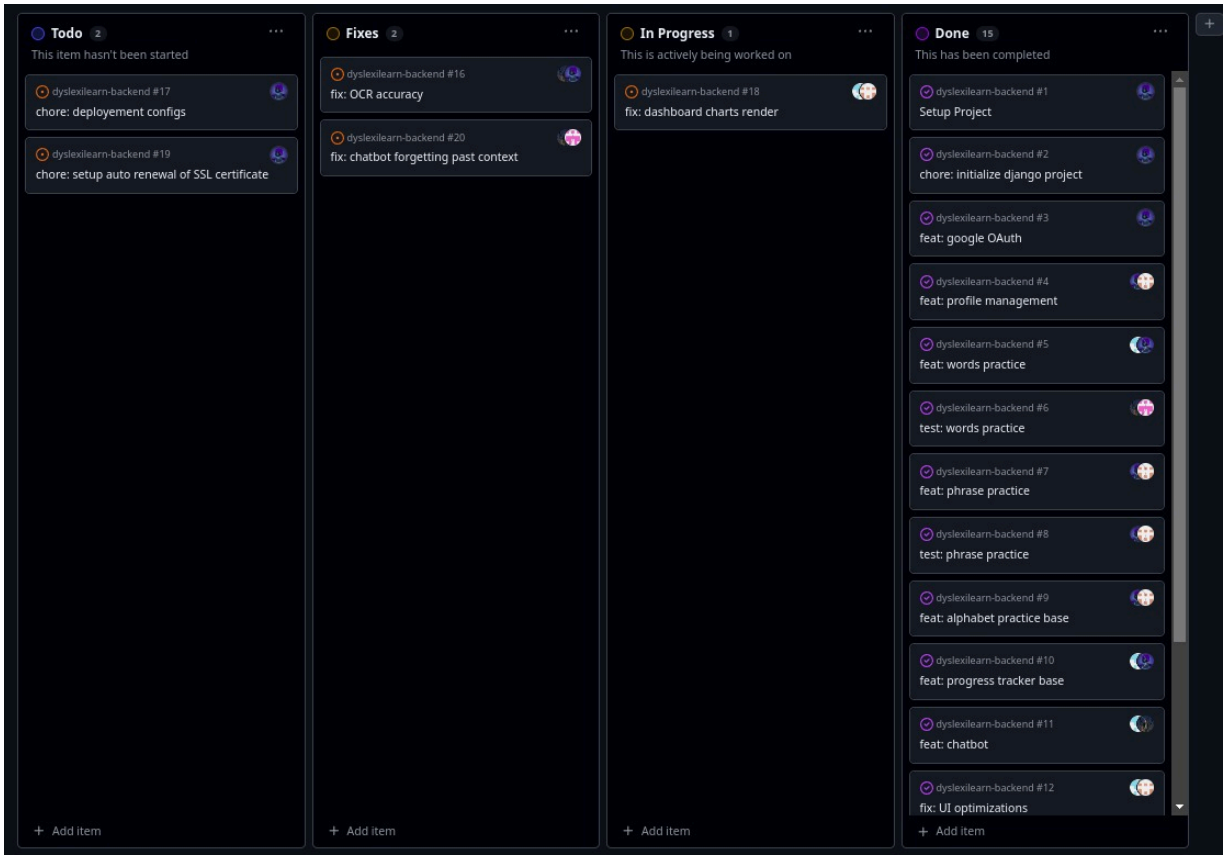
- **Progress Tracking:** Offers an overview of completed vs pending tasks to better manage time and expectations.

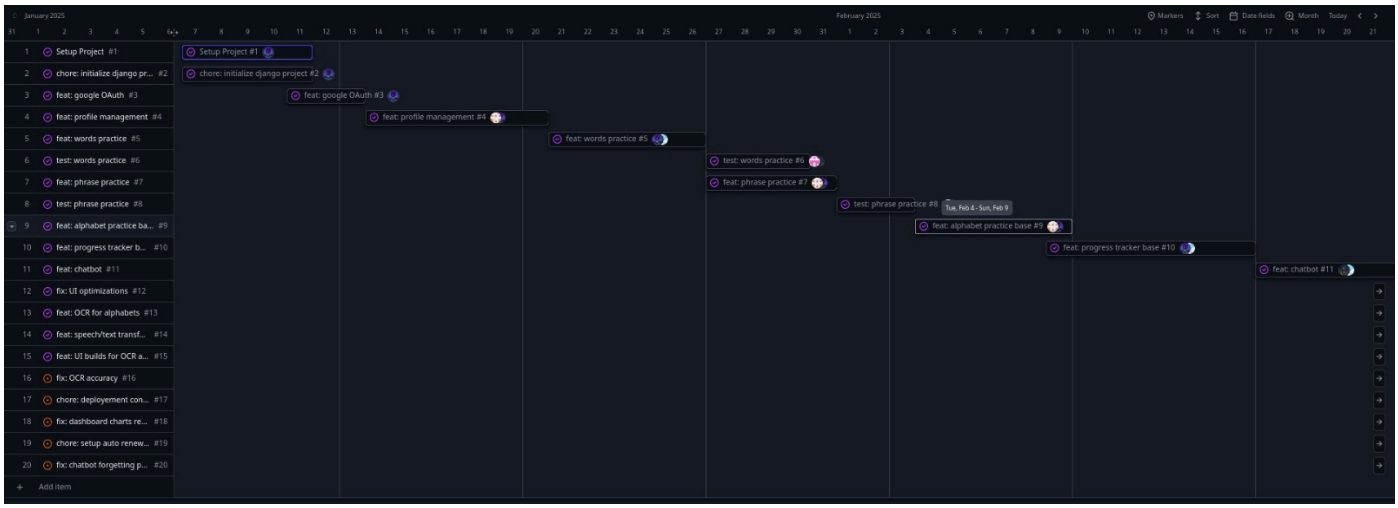
Screenshots:



	Title	Assignees	Status	Start date	End date	Iteration	Linked pull req
1	Setup Project #1	rishbh-arora	Done	Jan 7, 2025	Jan 11, 2025	Iteration 1	
2	chore: initialize django project #2	rishbh-arora	Done	Jan 7, 2025	Jan 11, 2025	Iteration 1	
3	feat: google OAuth #3	rishbh-arora	Done	Jan 11, 2025	Jan 13, 2025	Iteration 1	
4	feat: profile management #4	anush-kar and rishbh-arora	Done	Jan 14, 2025	Jan 20, 2025	Iteration 1	
5	feat: words practice #5	rishbh-arora and YASHTRIESCODING	Done	Jan 21, 2025	Jan 26, 2025	Iteration 2	
6	test: words practice #6	Swapnil9887 and swayam8624	Done	Jan 27, 2025	Jan 30, 2025	Iteration 2	
7	feat: phrase practice #7	anush-kar and rishbh-arora	Done	Jan 27, 2025	Jan 31, 2025	Iteration 2	
8	test: phrase practice #8	anush-kar and rishbh-arora	Done	Feb 1, 2025	Feb 3, 2025	Iteration 2	
9	feat: alphabet practice base #9	anush-kar and rishbh-arora	Done	Feb 4, 2025	Feb 9, 2025	Iteration 3	
10	feat: progress tracker base #10	rishbh-arora and YASHTRIESCODING	Done	Feb 9, 2025	Feb 16, 2025	Iteration 3	
11	feat: chatbot #11	swayam8624 and YASHTRIESCODING	Done	Feb 17, 2025	Feb 24, 2025	Iteration 4	
12	fix: UI optimizations #12	anush-kar and YASHTRIESCODING	Done	Feb 24, 2025	Mar 3, 2025	Iteration 4	
13	feat: OCR for alphabets #13	swayam8624	Done	Mar 4, 2025	Mar 11, 2025	Iteration 5	
14	feat: speech/text transformation #14	rishbh-arora and swayam8624	Done	Mar 11, 2025	Mar 17, 2025	Iteration 5	
15	feat: UI builds for OCR and speect/text #15	anush-kar, Swapnil9887, and YASHTRIES...	Done	Mar 18, 2025	Mar 25, 2025	Iteration 6	
16	fix: OCR accuracy #16	rishbh-arora and swayam8624	Fixes	Mar 26, 2025	Apr 5, 2025	Iteration 7	
17	chore: deployement configs #17	rishbh-arora	Todo	Apr 1, 2025	Apr 5, 2025	Iteration 7	
18	fix: dashboard charts render #18	anush-kar and YASHTRIESCODING	In Progress	Mar 31, 2025	Apr 5, 2025	Iteration 7	
19	chore: setup auto renewal of SSL certificate #19	rishbh-arora	Todo	Apr 4, 2025	Apr 7, 2025	Iteration 7	
20	fix: chatbot forgetting past context #20	Swapnil9887 and swayam8624	Fixes	Apr 7, 2025	Apr 14, 2025	Iteration 7	

+ You can use Control + Space to add an item




January 2025
February 2025
Setup Project #1
chore: initialize django project #2
feat: google OAuth #3
feat: profile management #4
feat: words practice #5
test: words practice #6
feat: phrase practice #7
test: phrase practice #8
feat: alphabet practice base #9
feat: progress tracker base #10
feat: chatbot #11
fix: UI optimizations #12
feat: OCR for alphabets #13
feat: speech/text transf... #14
feat: UI builds for OCR a... #15
fix: OCR accuracy #16
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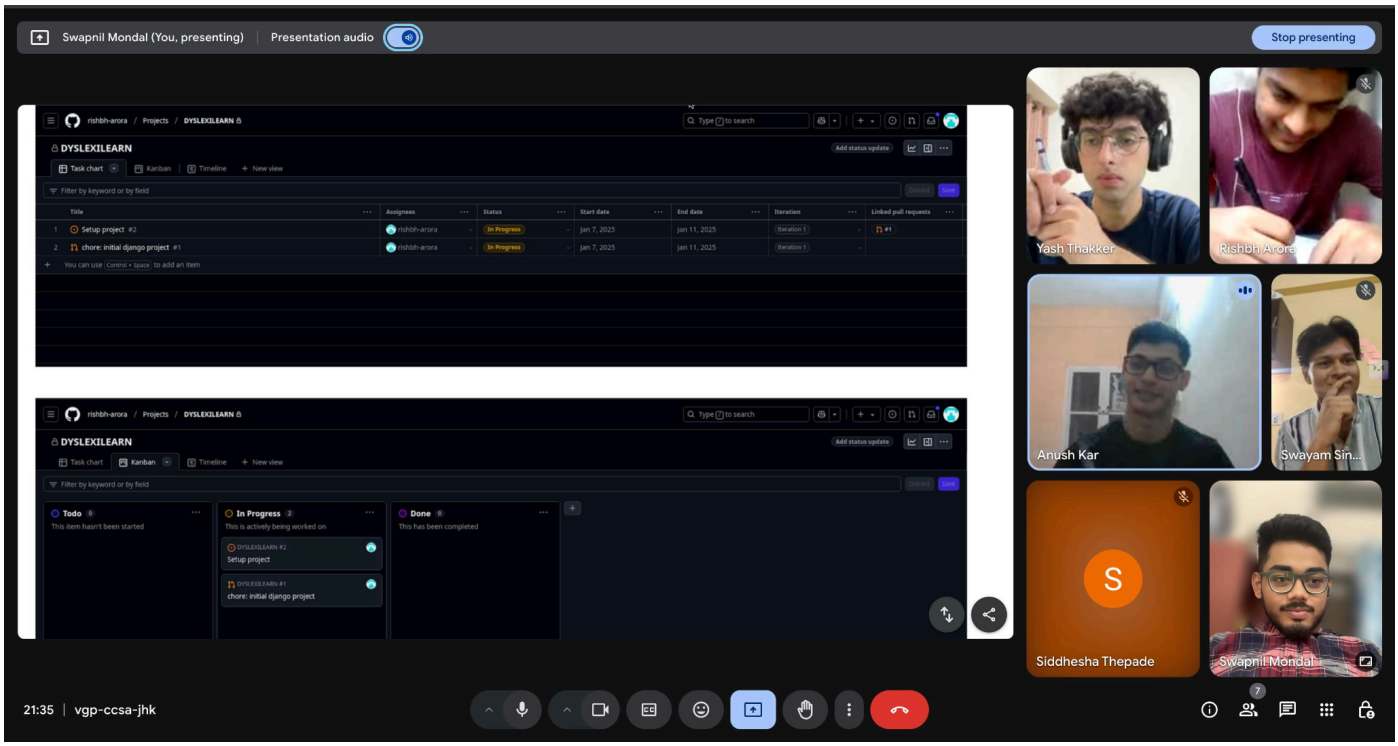
fix: dashboard charts re... #18
chore: setup auto renew... #19
fix: chatbot forgetting p... #20
Add item


Swapnil Mondal (You, presenting)
Presentation audio
Stop presenting
DYSLEXILEARN
Setup project #2
chore: initial django project #1
Todo
In Progress
Done
Yash Thakker
Rishbh Arora
Anush Kar
Swayam Sin...
Siddhesha Thepade
Swapnil Mondal
21:35 | vgp-ccsa-jhk