



American International University-Bangladesh (AIUB)

Department of Computer Science

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BrainBoost: A Children Learning Management System

A Software Requirement Engineering Project Submitted

By

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Software Requirements Specification

for

**< BrainBoost: A Children Learning
Management System>**

Version 1.0 approved

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Revision History

Name	Date	Reason for Changes	Version
System Description	24.04.2023	Extending the system capacity	1.1
Use Case Diagram	01.05.2023	Added a new user (Tool Manufacturer)	1.1
User deprecated	04.05.2023	Deprecated a user (Sponsor)	1.2
Feature elicitation	07.05.2023	Complexity of system design	1.3
Modified paper prototype	09.05.2023	Change of usability	1.4
Changed UI/UX Design	10.05.2023	Prioritized features	1.4

1. Introduction

1.1 Purpose

The purpose of the SRS (Software Requirement & Specification) document for the Children Learning Management System (CLMS) is to clearly define the functional and non-functional requirements of the system. The SRS serves as a comprehensive reference document that captures the needs, expectations, and constraints of the stakeholders involved in the development and deployment of the LMS.

The product's goal is to create a digital learning management system for children. This system will provide an easy-to-use platform for **parents**, **course instructors**, and **learners (children)** to access educational materials, track progress. The learners and course instructors can communicate with each other through the built-in messaging system. It will also provide a variety of educational tools and resources to help children learn and grow. The system will be designed to be intuitive and user-friendly so that it can be used by all ages. Admin can manage this system easily with the software. Last but not least, this system is digitized to free up a lot of time so that individuals can use it.

1.2 Document Conventions

- **Bold words:** Important words are in bold for highlighting.
- **Hierarchical Numbering Structure:** Hierarchical Numbering Structure have been used for categorizing each category of the SRS documents.
- **Sequence and hierarchical numbering:** Functions/Features have been written in a manner where textual keywords used for the purpose of being the feature scope self-explanatory.

For example:

CI - Review the quiz or assignment

Here, CI means Course Instructor; thus, it is a feature related to the Course Instructor.

- **Used keywords:** **CLMS** (Children Learning Management System), **CI** (*Course Instructor*), **AD** (*Admin*), **CC** (*Content Creator*), **LR** (*Learner*), **ETM** (*Educational Tool Manufacturer*)

1.3 Intended Audience and Reading Suggestions

When considering the intended audience for a document related to a Learning Management System (CLMS), there are several types of readers to consider, each with their specific roles and responsibilities. Here are the different types of readers that the document may be intended for:

- **Developers:** These readers are primarily interested in technical details, code documentation, and system architecture. They need information about the CLMS's underlying technology, programming languages, APIs, and integration options. They may also require guidance on customizing or extending the CLMS through development.
- **Project Managers:** Project managers are responsible for overseeing the implementation of the CLMS within an organization. They require information about project timelines, resource allocation, budgeting, and high-level project planning. They may also need documentation on deployment strategies, risk management, and project management methodologies.
- **Marketing Staff:** Marketing staff focuses on promoting the CLMS to potential customers or users. They require documentation that highlights the CLMS's key features, benefits, and competitive advantages. This includes marketing collateral, user case studies, product brochures, and any other materials that can help market the CLMS effectively.
- **Users:** These readers encompass a wide range of individuals who will interact with the CLMS on a regular basis. They include teachers, instructors, trainers, students, or employees, depending on the context. User documentation should provide clear instructions on how to use the CLMS, including login procedures, course enrollment, content creation and management, assessment tools, and communication features.
- **Testers:** Testers play a critical role in ensuring the quality and functionality of the CLMS. They require detailed documentation on test plans, test cases, and instructions on how to execute various types of tests, including functional testing, usability testing, performance testing, and security testing. This documentation helps them identify and report any issues or bugs they encounter during the testing process.
- **Documentation Writers:** These readers are responsible for creating and maintaining the official documentation for the CLMS. They require comprehensive information about the CLMS's features, configuration options, system requirements, troubleshooting guides, frequently asked questions (FAQs), and other relevant details. They use this information to produce user manuals, administrator guides, API references, and other forms of documentation.

It is important to tailor the document content and style to the specific needs and expertise of each type of reader to ensure that the information provided is relevant, clear, and effective for its intended audience.

When organizing the document for an CLMS, it's essential to provide a logical sequence that allows readers to grasp the key information they need. **Here's a suggested sequence for reading the document, starting with the overview sections and then proceeding through sections that are most pertinent to each reader type:**

- **Introduction and Executive Summary:** Begin with an introduction that provides an overview of the document's purpose, scope, and objectives. Follow it with an executive summary that highlights the key features and benefits of the CLMS.
- **General Overview:** Provide a general overview of the CLMS, including its main functionalities, target audience, and the benefits it offers. This section can be useful for all reader types to get a high-level understanding of the CLMS.
- **Developers:**
 - a. **Technical Architecture:** Explain the technical architecture of the CLMS, including its components, database structure, and integrations with other systems.
 - b. **APIs and Integration:** Describe the available APIs and integration options, including documentation on how to interact with the CLMS programmatically.
 - c. **Customization and Extension:** Provide guidance on how developers can customize and extend the CLMS to meet specific requirements.
- **Project Managers:**
 - a. **Project Timeline and Planning:** Present a detailed project timeline, outlining the different stages, milestones, and dependencies involved in implementing the CLMS.
 - b. **Resource Allocation:** Provide information on the resources required for successful CLMS implementation, including human resources, budget, and infrastructure needs.
 - c. **Deployment Strategies:** Explain various deployment options and their implications, such as cloud-based hosting or on-premises installation.
 - d. **Risk Management:** Discuss potential risks associated with CLMS implementation and strategies to mitigate them.
- **Marketing Staff:**
 - a. **Key Features and Benefits:** Highlight the CLMS's key features and the benefits it offers to potential users, emphasizing its unique selling points.
 - b. **Target Market Analysis:** Provide insights into the target market for the CLMS, including industry trends, user demographics, and competitor analysis.
 - c. **Marketing Collateral:** Include sample marketing collateral, such as brochures, presentations, or videos, to help marketing staff effectively promote the CLMS.

- **Users:**
 - a. **User Guide:** Provide a comprehensive user guide that explains how to navigate the CLMS, enroll in courses, access learning materials, participate in discussions, and track progress.
 - b. **Content Creation and Management:** Describe the process of creating and managing course content, including multimedia integration, assessments, and grading.
 - c. **Communication Features:** Explain the various communication tools available within the CLMS, such as chat, discussion forums, and messaging systems.
- **Testers:**
 - a) **Testing Procedures:** Provide detailed instructions on how to perform different types of tests, including functional testing, usability testing, performance testing, and security testing.
 - b) **Test Cases:** Include a collection of test cases that cover the most critical functionalities and potential edge cases of the CLMS.
- **Documentation Writers:**
 - a. **Administrator Guide:** Offer a comprehensive guide for administrators, explaining how to configure and manage the CLMS, including user roles, permissions, and system settings.
 - b. **Troubleshooting and FAQs:** Provide troubleshooting guides and a list of frequently asked questions to address common issues and challenges users may encounter.

By organizing the document in this suggested sequence, readers can quickly locate the information relevant to their roles and responsibilities, ensuring a smooth and efficient reading experience.

If there is any problem of understanding or there is any unwanted mistake then readers are encouraged to contact the contributors of the report. This is a list of those who contributed to this report. This mailing group will be sent the draft for feedback and input.

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2. Overall Description

2.1 Product Perspective

The “**BrainBoost: A Children Learning Management System**” is a **new product** developed for the better learning environment and to ensure effective learning.

The LMS serves as a hub for educational content, enabling course instructors to create and manage multimedia resources, including videos, quizzes, and interactive lessons. This content can be organized by subject, grade level, or other criteria, making it easy for teachers to customize their teaching materials. The LMS also allows for the integration of external educational tools, expanding the available learning options for students.

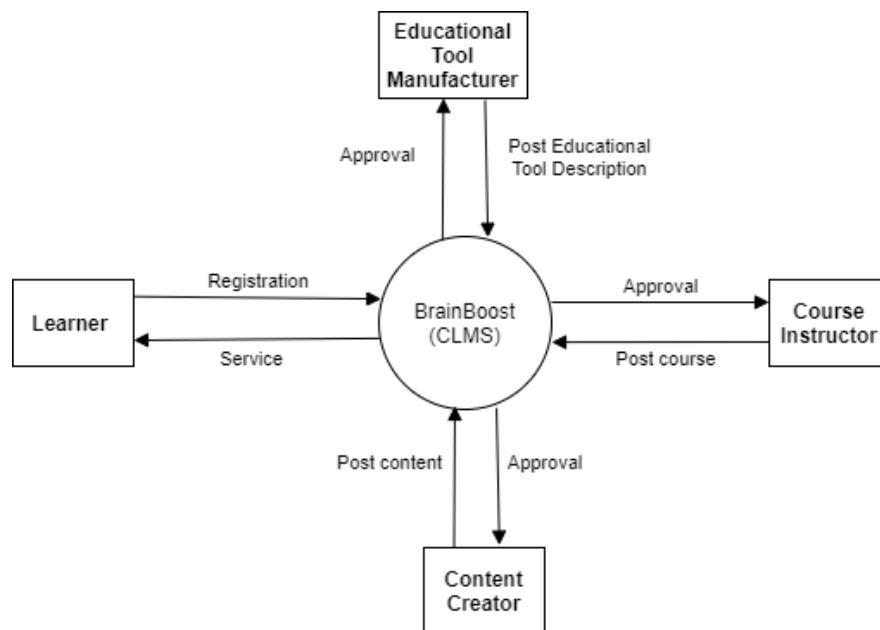


Figure-1: Main components of the CLMS (Control flow diagram)

2.2 Product Functions

- Registration page (For all users)
- Login page (For all users)
- Log-out (For all users)
- View courses (Learner)
- Enroll course (Learner)
- View tools & videos (Learner)
- Purchase tool (Learner)
- Update course (Course Instructor)
- Post videos (Content creator)
- Post tool description (Educational Tool Manufacturer)
- Approve post & videos (Admin)
- Manage users account (Admin)
- Customize system (Admin)

The Learning Management System (LMS) will operate in a specific environment that includes the hardware platform, operating system, and other software components. Here is a description of the environment:

Hardware Platform: The hardware platform should be able to support the software and its users. This includes having enough RAM, storage, and processing power to handle the number of users expected.

Operating System and Versions: The LMS should be compatible with popular operating systems such as Windows, MacOS, and Linux in educational settings. The system should support Windows 10, Windows 8, Windows 7, macOS Catalina, macOS Mojave, macOS Big Sur, Ubuntu, Fedora, CentOS, etc.

Mobile Operating Systems: The LMS should also have support for mobile operating systems to provide access to educational content on smartphones and tablets. The LMS should be compatible with commonly used mobile operating systems to ensure access across different platforms such as iOS, Android, Blackberry, and so on. The system should be compatible with the latest versions of all mobile operating systems.

Web Browsers: The LMS should be compatible with commonly used web browsers to ensure access across different platforms such as Google Chrome, Mozilla Firefox, Microsoft Edge, and so on. The system should be fully compatible with the latest versions of all web browsers.

2.3 Design and Implementation Constraints

Security and Privacy: Given the sensitive nature of educational data, the CLMS must prioritize security and privacy. It should implement robust authentication mechanisms, data encryption, secure connections, and access controls to protect user information and prevent unauthorized access.

Database technology: The CLMS should be developed using the PHP MyAdmin database and query will be written as per the technology of the database system.

Programming language: The CLMS should be developed using the latest version of PHP and JavaScript.

Compatibility: The CLMS needs to be compatible with various operating systems, browsers, and devices to ensure broad accessibility for users. It should be designed and tested to work seamlessly across different platforms.

Scalability: The CLMS should be designed to handle a large number of concurrent users and be capable of scaling up as the user base grows. The system architecture should support scalability without compromising performance or user experience.

Performance: The CLMS should be designed to deliver a responsive and smooth user experience. It should be optimized for quick loading times, efficient data retrieval, and minimal downtime. Performance testing and optimization techniques should be employed during development.

Usability and User Experience: The CLMS should prioritize a user-friendly interface and intuitive navigation. It should be designed to accommodate users of varying technical skills and provide clear instructions and guidance throughout the platform.

Localization: The CLMS need to support Bangla and English language and other language for international deployment.

2.4 User Documentation

Following User Documentation Components will be provided:

1. **User Manual:** A comprehensive guide to the system, including instructions on how to use the system, troubleshooting tips, and other relevant information.
2. **On-line Help:** Context-sensitive help topics that provide users with detailed information about specific features of the system.
3. **Tutorials:** Step-by-step instructions on how to use the system, including screenshots and videos.
4. **FAQs:** A list of frequently asked questions and answers about the system.

Following user documentation delivery formats or standards will be provided:

1. **HTML:** Hypertext Markup Language is a standard for creating web pages and delivering user documentation online.
2. **PDF:** Portable Document Format is a standard for delivering user documentation in a printable format.
3. **CHM:** Compiled HTML Help is a standard for delivering user documentation in a single, compressed file.

3. System Requirements

3.1 Functional Requirements (System Features)

A Learning Management System (CLMS) typically comprises a variety of functional requirements or system features that enable the efficient management of online courses and the tracking of student progress. Some of these features may include the ability to create and manage course content, such as lectures, quizzes, and assignments, as well as tools for learners' assessment and grading. Other key features may include student enrollment and registration, user management, communication and collaboration tools, as well as reporting and analytics to track learner performance and identify areas for improvement. Additionally, an CLMS may integrate with third-party systems, such as video conferencing or e-commerce platforms, to provide a more comprehensive learning experience. Ultimately, the functional

requirements of an CLMS are designed to support both the instructor and the learner in achieving their educational goals in a streamlined and effective manner.

3.1.1 Software Login

- The software shall allow users to login with their given username and password.
- The login credentials (username and password) will be verified with database records.
- If the login successful, the home page of the user account will be displayed.
- If the username and/or password has been inserted wrong, the random verification code will be generated and sent to the user's email address by the system to retry login.
- If the number of login attempt exceed its limit (3 times), the system shall block the user account login for one hour.

Priority Level: High

Precondition: Users have valid user id and password.

Cross-references: 3.1.2

3.1.2 Registration

- Allows users to create an account to access the system.
- Ensures that the user's email address or phone number is valid before allowing access to the system.
- Allows users to login using their social media accounts like Facebook, Google, or Twitter.
- Allows users to create custom roles with different permissions and access levels for users.
- Users will be able to re-type their password for ensuring the password.

Priority Level: High

Precondition: User should have a valid phone no.

Cross-references: N/A

3.1.3 Communication system (Learner & Course Instructor)

- The messaging system should be integrated within the CLMS and allow parents to communicate with their child's instructor directly through the platform.
- This feature should also allow parents to see messages from the teacher or educator and respond accordingly.
- The messaging system should allow parents and teacher to share files if needed.

Priority Level: High

Precondition: N/A.

Cross-references: 3.1.4

3.1.4 LR1 - View courses and tools

- The software shall allow learners to view the courses and tools.
- The course or tools will be seen in a list.
- Detailed information of the course and tools, including learning objectives, course outline, and grading criteria will be seen.
- A searchable directory of courses offered

Priority Level: High

Precondition: The learner will see the list if and only if he/she has a registered account and logged in that account.

Cross-references: N/A

3.1.5 LR2 - Select courses and tools

- The software shall allow learners to select the courses and tools.
- The CLMS will display the course schedule, including the start and end dates, course duration, and any important dates or deadlines.
- If courses are not free, the CLMS should offer a payment processing system to handle transactions securely.
- The CLMS should provide a certificate or digital badge upon completion of a course, which learners can share on their resume or social media profiles.

Priority Level: High

Precondition: N/A

Cross-references: N/A

3.1.6 LR3 - Purchase courses and tools

- The software shall allow learners to purchase courses and tools.
- The ability for learners to view their order history, including the courses and tools they have purchased.
- The software shall allow learners to view the date of purchase.
- The amount paid will also be viewed.

Priority Level: High

Precondition: N/A.

Cross-references:

3.1.7 LR4 - Join on live classes

- Learners will be able to join class which will be conducted by the instructors.
- Learners will be able to leave class which is joined.
- Will have access to a calendar with scheduled live classes.
- Audio and video communication tools to interact with the instructor and other learners.
- Will have access to chat and messaging features.

Priority Level: High

Precondition: N/A

Cross-references: N/A

3.1.8 LR5 - Progress Reports of the learner

- The software shall be generated the progress reports automatically based on the child's activity within the platform.
- The reports should be easy to understand and provide actionable insights into the child's strengths and areas for improvement.
- The CLMS system software should allow parent & instructors to download the progress reports as a PDF file.

Priority Level: High

Precondition: Learners have to attend in any examination.

Cross-references: N/A

3.1.9 LR6 - Resource Library for the learners

- The resource library should provide learners with access to a range of educational materials, including videos and educational tools that can help support their learning outside of the CLMS platform.
- The CLMS system should allow learners to view items and add to wish-list.
- The CLMS system should allow learners to buy tools from the resource library.

Priority Level: High

Precondition: Users have valid user id and password.

Cross-references: N/A

3.1.10 LR7 - Analytics activities of learner

- The analytics feature should provide learners with insights into their learning behavior.
- The analytics feature should provide learners how much time they spend on each activity, which activities they find most engaging, and areas where they may be struggling.

Priority Level: Medium

Precondition: Users have valid user id and password.

Cross-references: N/A

3.1.11 LR8 - Feedback Mechanism of learners

- The feedback mechanism should provide learners with a way to offer feedback to the CLMS development team about their experience using the platform.
- This feature should also allow learners to report any issues they encounter or suggest improvements to the platform.

Priority Level: Medium

Precondition: Users have to be logged in.

Cross-references: 3.1.2

3.1.12 AD1 - User Management of Admin

- The CLMS should allow school administrators to manage user accounts for learners, instructors, content creators and educational tool manufacturers.
- This feature should include the ability to create, modify, and delete user accounts as needed.

Priority Level: High

Precondition: N/A

Cross-references: N/A

3.1.13 AD2 - Educational Tools Management

- The CLMS should allow school administrators to check eligibility for the tools those are posted by manufacturers.
- This feature should include the ability to allow or postpone or delete tool manufacturers post or request if any irrelevance is found.

Priority Level: High

Precondition: N/A

Cross-references: N/A

3.1.14 AD3 - Video Resource Materials Management

- The CLMS should allow school administrators to check eligibility for the videos those are posted by content creators.
- This feature should include the ability to allow or postpone or delete any content for content creators post or request if any irrelevance is found.

Priority Level: High

Precondition: N/A

Cross-references: N/A

3.1.15 AD4- Admin can monitor student progress

- The CLMS should allow admins to involve monitoring student progress
- This feature should allow admins to track learner's attendance
- This feature should allow admins to track learner's engagement
- This feature should allow admins to monitor learner's overall performance

Priority Level: High

Precondition: N/A

Cross-references: N/A

3.1.16 AD5 - Admin can generate reports and analytics

- The CLMS should allow admins to generate reports and analytics that provide insights into learner's attendance, result and class performance.
- The CLMS should allow admins to put comments on the overall report of the student.

Priority Level: High

Precondition: A learner should be enrolled in a course.

Cross-references: N/A

3.1.17 AD6 - Admin can do the required customization of the system

- The CLMS should allow admin to customize the platform to fit their specific needs and requirements.
- This feature should include the ability to add custom branding
- This feature should allow admin to configure settings
- This feature should allow admin to add different classrooms or departments.

Priority Level: High

Precondition: N/A

Cross-references: N/A

3.1.18 CC1 - Upload video post (Content Creator)

- The software shall give the ability for content creators to upload videos to the CLMS
- The ability to support a range of video file formats, including MP4, MOV, or AVI.
- The ability to add closed captions to the video to make it accessible to learners with hearing impairments.
- The CLMS should provide privacy options for videos, such as making them public, private, or accessible to specific groups or individuals only.

Priority Level: High

Precondition: N/A

Cross-references: N/A

3.1.19 CC2 - Update video post

- The software shall give the ability for content creators to update the title of videos.
- The ability to update closed captions.

Priority Level: Medium

Precondition: N/A

Cross-references: N/A

3.1.20 CI1 - Post course adding request

- The software shall allow course instructor to post a course adding request to the system.
- The software shall allow course instructor to upload course introductory video longer than 3 minutes.
- The software shall allow course instructor to upload a range of video file formats, including MP4, MOV, or AVI.
- The software must require course outline and description before posting the request.
- The software shall allow course instructor to set the enrollment fee.

Priority Level: Medium

Precondition: N/A

Cross-references: N/A

3.1.21 CI2 - Course material upload

- The software shall allow course instructor to upload the course materials after course have been approved.
- The software shall allow course instructor to customize the allocation of study materials, quizzes and assignments.

Priority Level: Medium

Precondition: N/A

Cross-references: N/A

3.1.22 CI2 - Course material upload

- The software shall allow course instructor to upload the course materials after course have been approved.
- The software shall allow course instructor to customize the allocation of study materials, quizzes and assignments.

Priority Level: Medium

Precondition: N/A

Cross-references: N/A

3.1.23 CI3 - Assign quiz or assignment

- The software shall allow course instructor to assign new assignment or quiz.
- The software shall allow course instructor to set start time and end time to the assignment or quiz.
- The software shall allow course instructor to delete any previously assigned assignment or quiz.
- The software shall allow course instructor to set mark of the assignment or quiz.

Priority Level: Medium

Precondition: N/A

Cross-references: N/A

3.1.24 CI2 - Review the quiz or assignment

- The software shall allow course instructor to show the answers/answer scripts of the assigned assignment or quiz.
- The software shall allow course instructor to show the result of the assigned assignment or quiz.
- The software shall allow course instructor to sort the result according to the mark obtained by learners.
- The software shall allow course instructor to post the result to the learners feed.

Priority Level: Medium

Precondition: N/A

Cross-references: N/A

3.1.25 ETM1 – Upload tool description for eligibility

- The software shall give the ability for educational tool manufacturer to upload tools description to the CLMS
- The CLMS should provide options to the educational tool manufacturer for selling price of the tool.
- The CLMS should provide options for uploading pictures of the tool.
- The CLMS should provide the ability to support a range of image file formats, including PNG, JPG or JPEG.

Priority Level: High

Precondition: Education tool manufacturer must register.

Cross-references: N/A

3.1.26 ETM2 – Update tools description and price

- The CLMS should allow the educational tool manufacturer to update the approved post of the tools.
- The user should be able to update the description & price.

Priority Level: Medium

Precondition: N/A

Cross-references: 3.1.19

3.2 Non-Functional/Quality Requirements

QA1: Usability: The system should be user-friendly, intuitive, and easy to navigate, ensuring that users can access content and complete tasks with minimal effort. The user (Learner) should be able to find the desired course within **10 minutes** and after enrolling in any courses the user (Learner) should be able to understand the way of work of the system within **5 minutes**.

Priority Level: Medium

Precondition: N/A

Cross-references: N/A

QA2: Performance: The system should be responsive and fast, providing quick access to content and features, and should be able to handle a large number of users and transactions without slowing down.

Priority Level: High

Precondition: N/A

Cross-references: N/A

QA3: Reliability: The system should be reliable and stable, ensuring that it is available when needed and minimizing the risk of downtime or system failures. The CLMS should be operable **24/7** without any interruptions.

Priority Level: High

Precondition: N/A

Cross-references: QA5

QA4: Security: The system should be secure and protect user data from unauthorized access, ensuring that user information is stored and transmitted safely.

Priority Level: Medium

Precondition: N/A

Cross-references: N/A

QA5: Interoperability: The system should be able to integrate with other systems and technologies, allowing for seamless data exchange and interoperability with other platforms.

Priority Level: Medium

Precondition: N/A

Cross-references: N/A

QA6: Customizability: The system should be customizable, allowing users and administrators to configure settings and personalize the system according to their needs and preferences. The CLMS should allow user to **drag & drop** some features like sorting dashboard options.

Priority Level: Medium

Precondition: N/A

Cross-references: N/A

3.3 Project Requirements

○ Environment & resource needs:

- Microsoft Windows 7 with Service Pack 1 or higher.
- Intel Core i3 or higher. (The 7th generation)
- 4 GB of RAM (minimum).
- 128 GB of free disk space for installation, plus extra space for temporary files during test runs.
- Mouse and keyboard

○ Software Requirements:

- **Automated Testing tool:** selenium.
- **Web Browsers:** Internet Explorer/ Mozilla Firefox/ Google Chrome.
- **Database:** MySQL (phpMyAdmin)
- **UI/UX:** Figma
- **UML Diagram:** Draw.io

4. Design and Interface Requirements

4.1 UML Diagrams

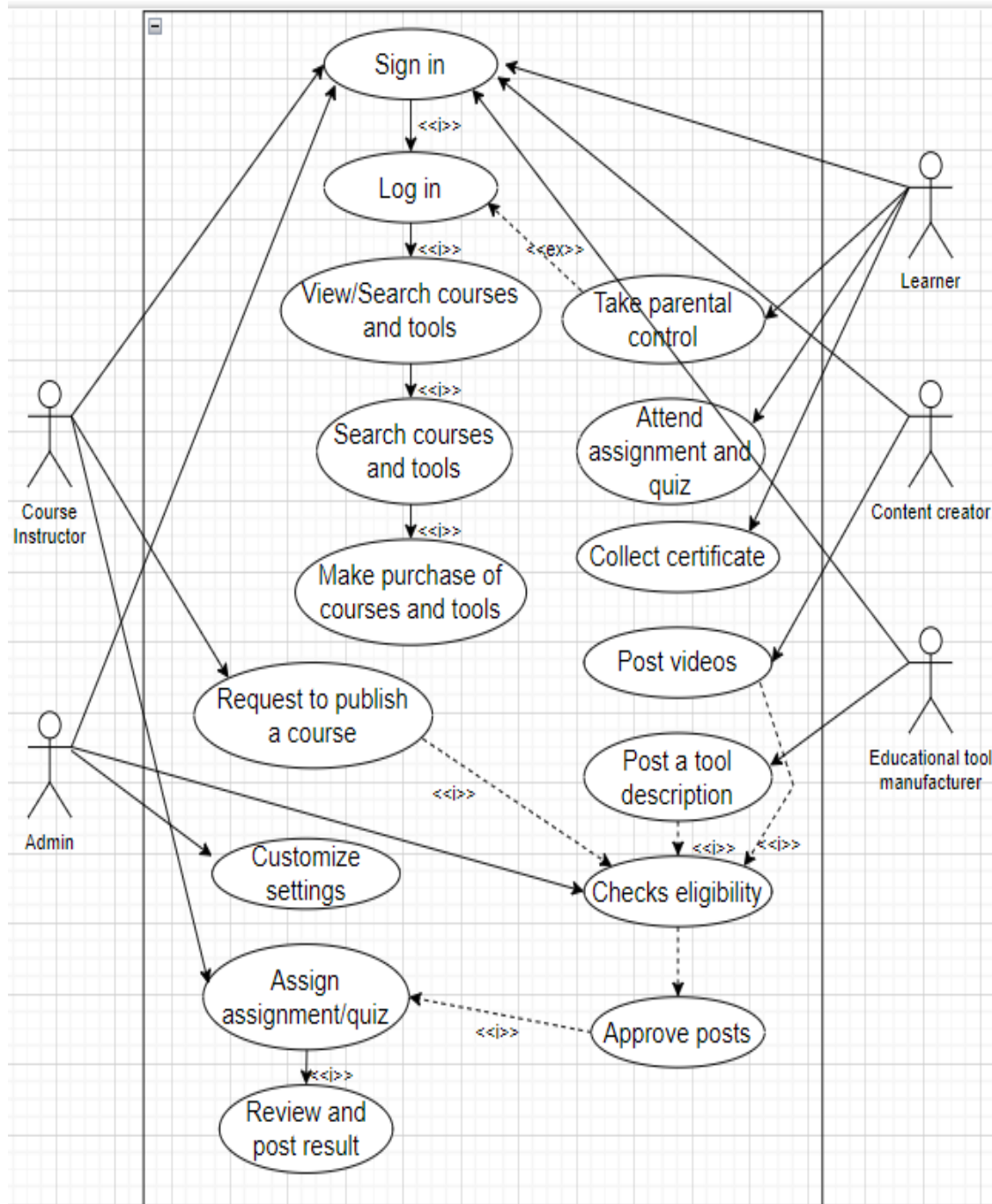


Figure-2: Use case diagram of Children Learning Management System

4.2 Data Dictionary

Entity	Attribute	Type/Size	Validation	Key
Learner	l_Id	Number (5)	10000-99999	Primary
Learner	lUsername	Text (20)	Required	Unique
Learner	lName	Text (20)	Required	
Learner	lAddress	Text (50)		
Learner	lEmail	Text (50)		
Learner	lClass	Text (10)	Required	
Learner	lPhone	Number (11)	Required	
Learner	lPassword	Text (10)	Required	
Learner	l_Image	Image		
Admin	a_Id	Number (2)	10-99	Primary
Admin	aUsername	Text (20)	Required	Unique
Admin	aName	Text (20)	Required	
Admin	aEmail	Text (30)	Required	
Admin	aPassword	Text (10)	Required	
Admin	aAddress	Text (50)	Required	
Admin	aPhone	Number (11)	Required	
Admin	a_Image	Image		
Course Instructor	ci_Id	Number (3)	100-999	Primary
Course Instructor	ciUsername	Text (20)	Required	Unique
Course Instructor	ciName	Text (20)	Required	
Course Instructor	ciAddress	Text (50)	Required	
Course Instructor	ciEmail	Text (30)	Required	
Course Instructor	ciPassword	Text (10)	Required	
Course Instructor	ciSubject	Text (20)	Required	
Course Instructor	ciPhone	Number (11)	Required	
Course Instructor	ci_Image	Image		
Content Creator	cc_Id	Number (3)	100-999	Primary
Content Creator	ccUsername	Text (20)	Required	Unique
Content Creator	ccName	Text (20)	Required	
Content Creator	ccAddress	Text (50)	Required	
Content Creator	ccPassword	Text (10)	Required	
Content Creator	ccPhone	Number (11)	Required	
Content Creator	cc_Image	Image		
Education Tool Manufacturer	etm_Id	Number (3)	100-999	Primary
Education Tool Manufacturer	etmUsername	Text (20)	Required	Unique
Education Tool Manufacturer	etmName	Text (20)	Required	
Education Tool Manufacturer	etmAddress	Text (50)	Required	
Education Tool Manufacturer	etmEmail	Text (30)	Required	
Education Tool Manufacturer	etm_Image	Image	Required	

4.3 UI/UX Design Specification

4.3.1 Wireframes

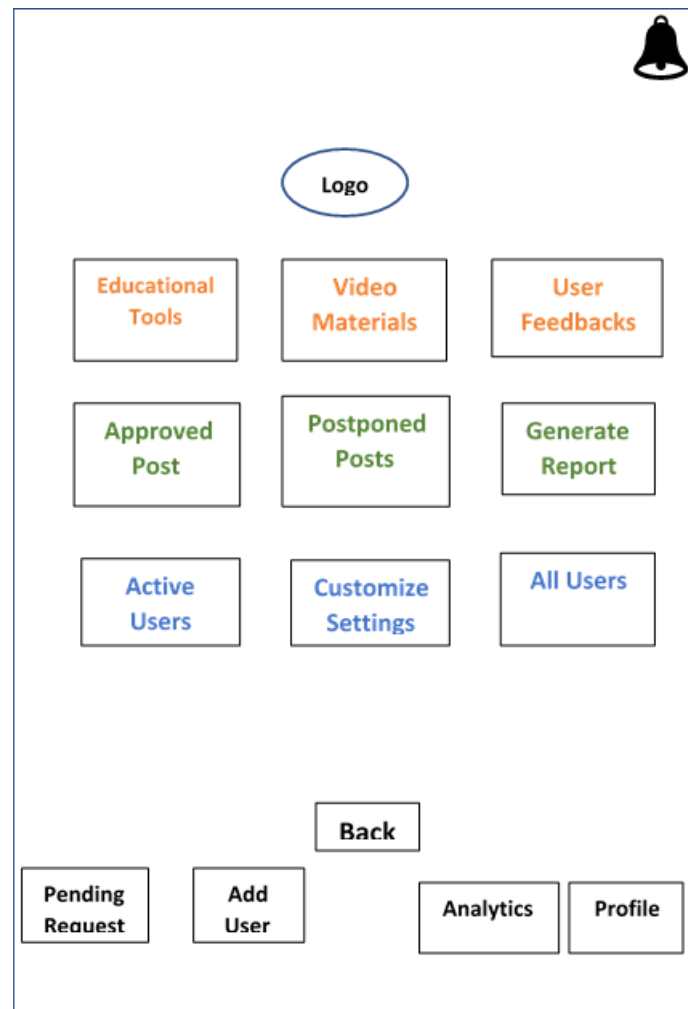


Figure-3: Wireframe of Admin dashboard

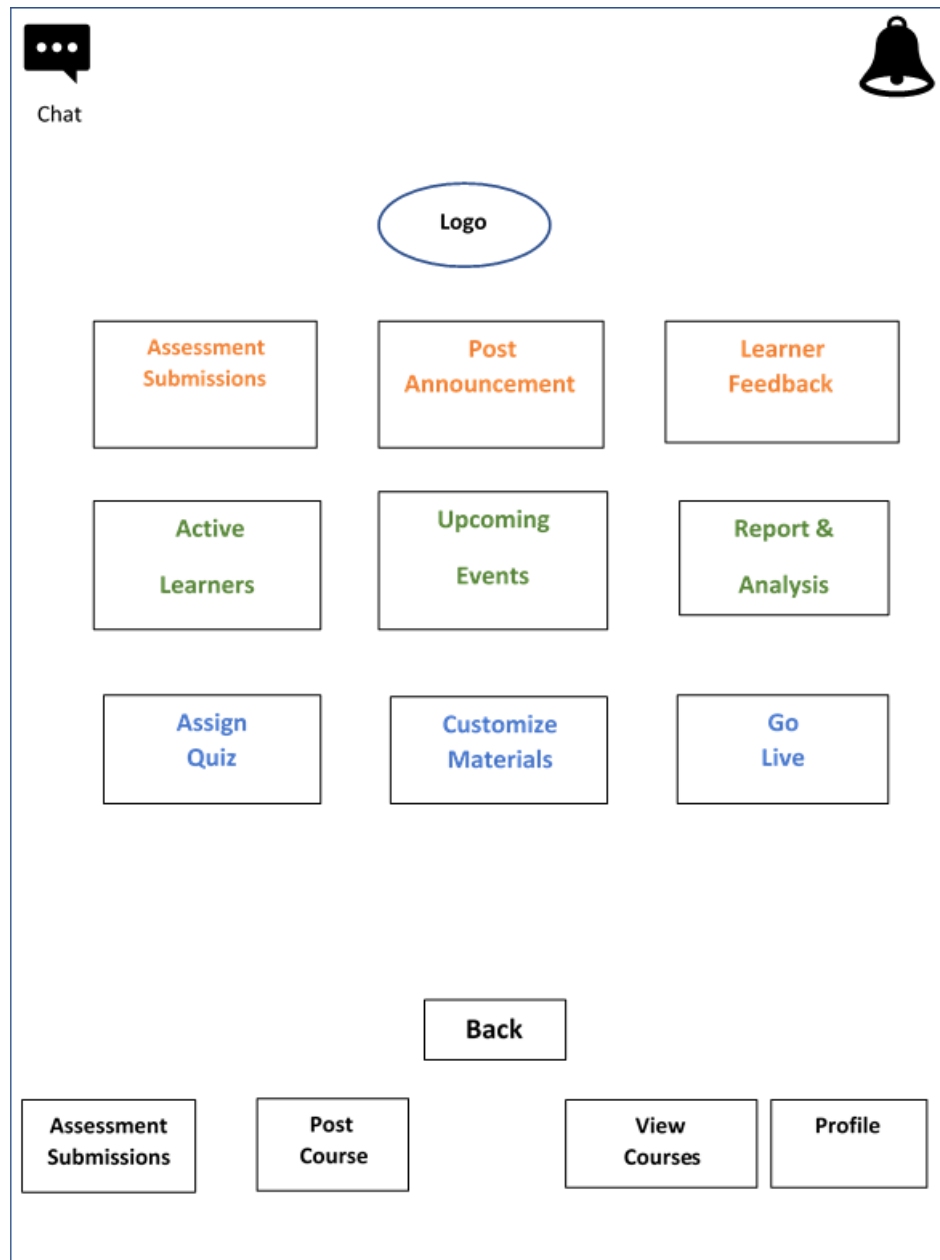


Figure-4: Wireframe of Course Instructor dashboard

4.3.2 Paper prototypes

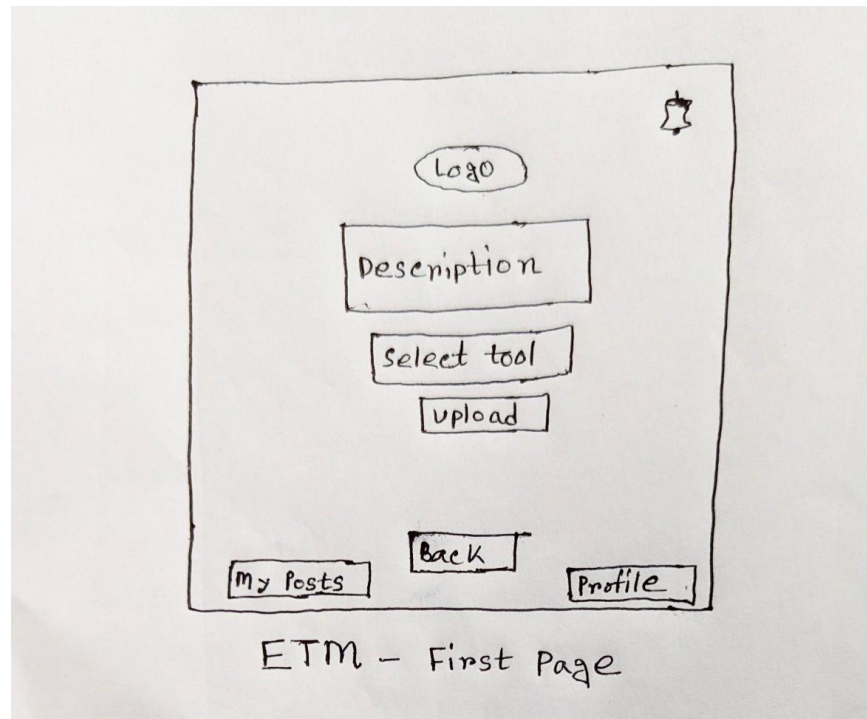


Figure-5: Paper prototype of Educational Tool Manufacturer dashboard (First Page)

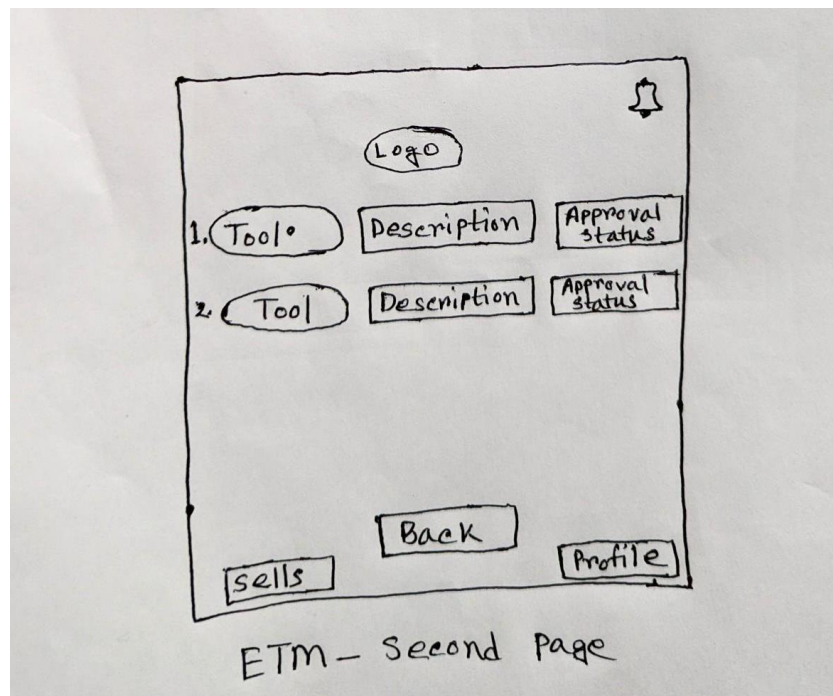


Figure-6: Paper prototype of Educational Tool Manufacturer dashboard (Second page)

4.3.3 Mockups



Figure-7: UI of Start page

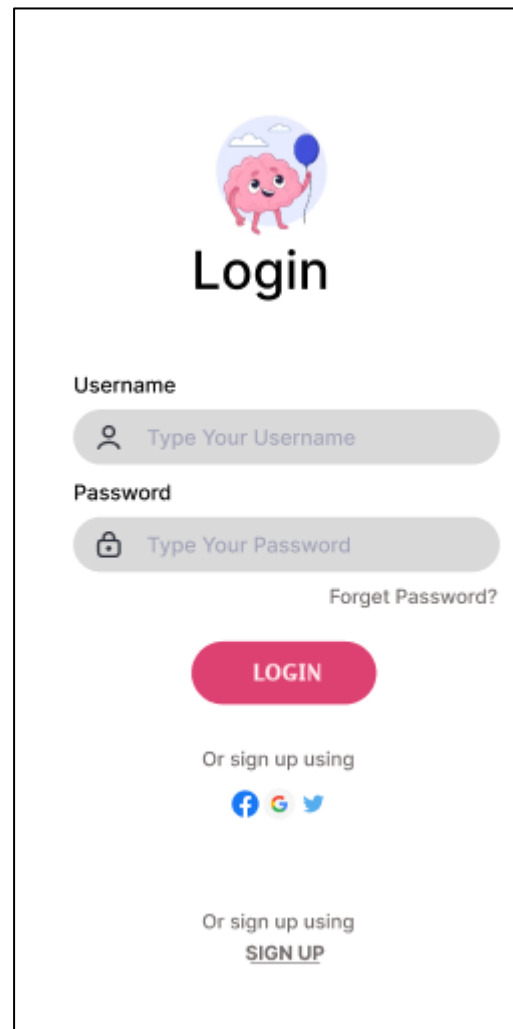
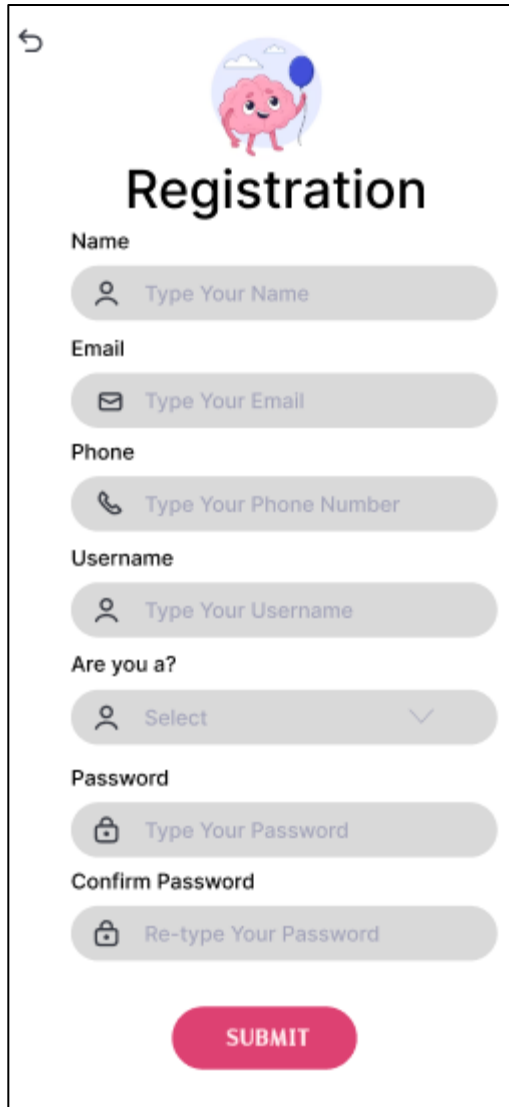


Figure-8: UI of Login page



Registration

Name

Type Your Name

Email

Type Your Email

Phone

Type Your Phone Number

Username

Type Your Username

Are you a?

Select

Password

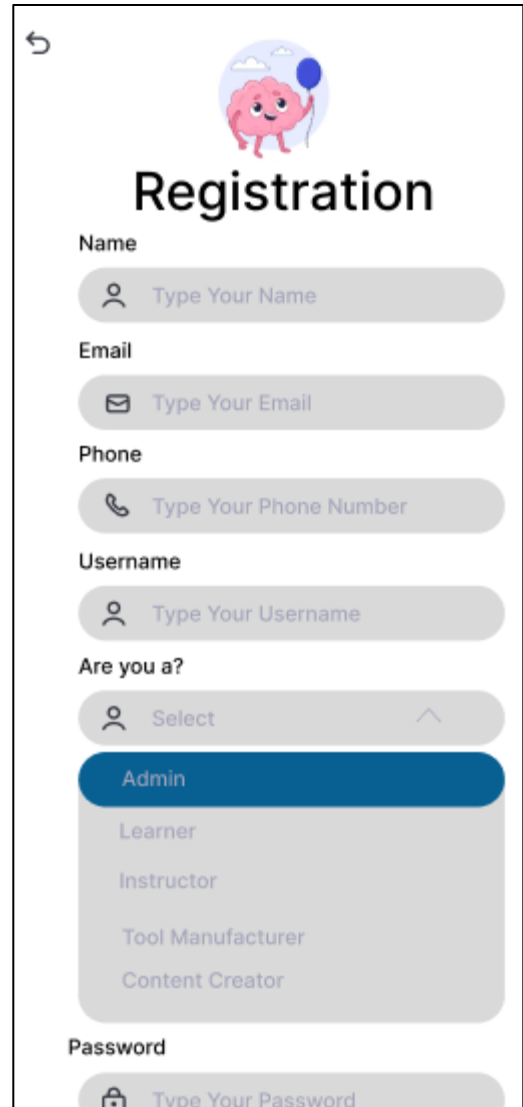
Type Your Password

Confirm Password

Re-type Your Password

SUBMIT

Figure-9: UI of Registration page-1



Registration

Name

Type Your Name

Email

Type Your Email

Phone

Type Your Phone Number

Username

Type Your Username

Are you a?

Select

Admin

Learner

Instructor

Tool Manufacturer

Content Creator

Password

Type Your Password

Figure-10: UI of Registration page-2



Figure-11: UI of Admin dashboard



Figure-12: UI of Learner dashboard



Figure-13: UI of Course Instructor dashboard

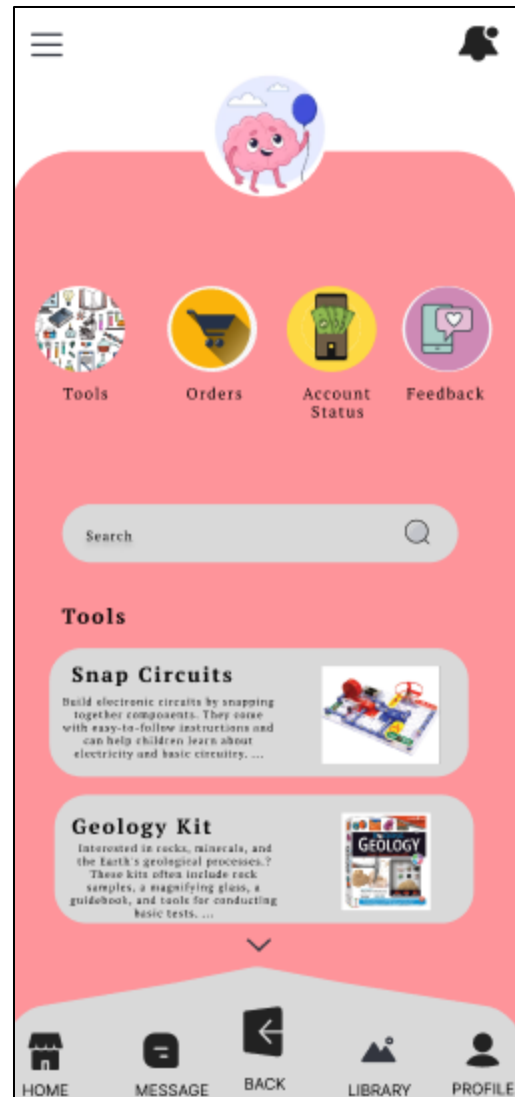


Figure-14: UI of Educational Tool manufacture dashboard

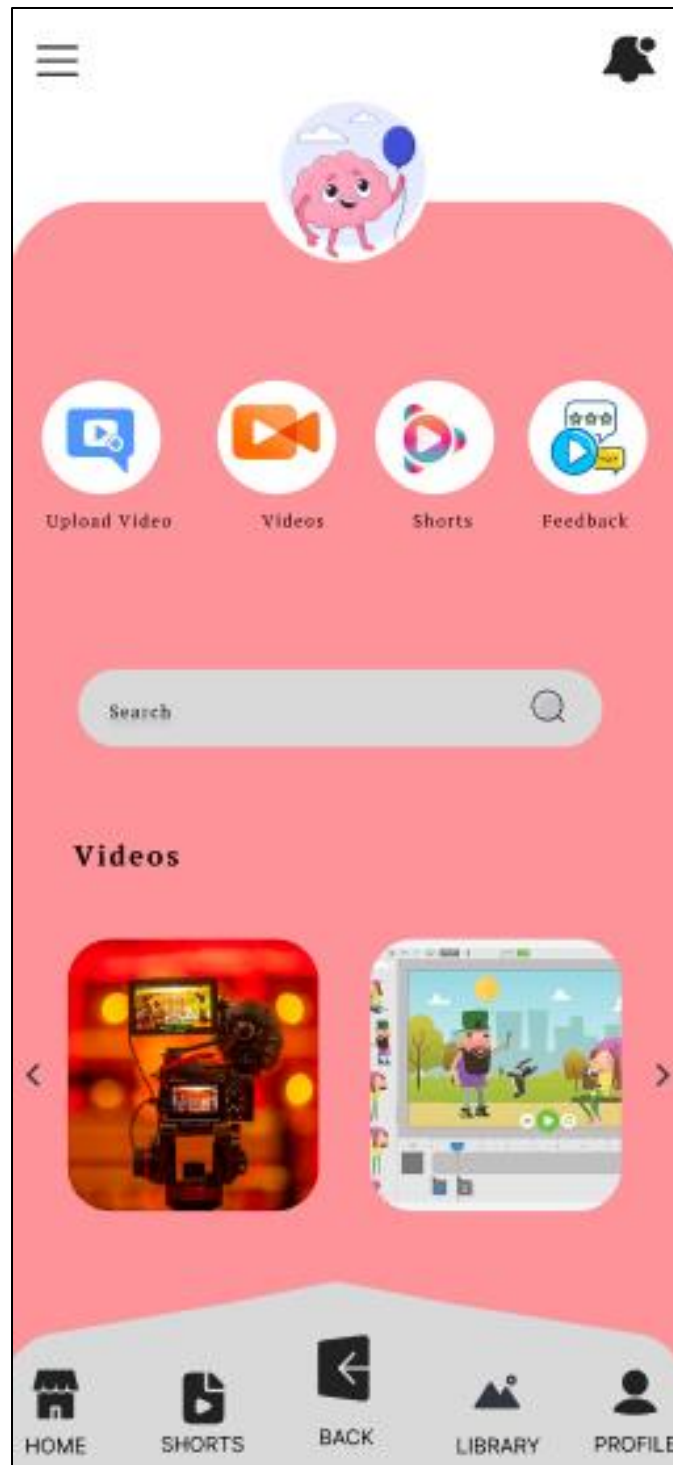


Figure-15: UI of Content Creator dashboard

5. COST Analysis:

$$\boxed{\blacktriangleright} \text{ Effort} = \text{PM} = \text{Coefficient} * (\text{SLOC}/1000) ^P$$

$$= 2.4(15000/1000) ^{1.05}$$

$$= 41$$

$$\boxed{\blacktriangleright} \text{ Development time} = \text{DM} = 2.50 * (\text{PM}) ^T$$

$$= 2.50 * (41) ^{.38}$$

$$= 10 \text{ Month}$$

$$\boxed{\blacktriangleright} \text{ Required number of people} = \text{ST} = \text{PM}/\text{DM}$$

$$= 41/10$$

$$= 4$$

$$\boxed{\blacktriangleright} \text{ Designing \& Coding} = 10 * 22 * 8 \text{ [10 months, 22 days, 8h]}$$

$$= 1760 \text{ h}$$

$$\boxed{\blacktriangleright} \text{ Total salary (developing and testing team)} = 1760 * 1100 \text{ [1h salary = 1100 Taka]}$$

$$= 1936000 \text{ Taka [For 2 developer and 2 tester salary]}$$

$$(1 \text{ developer and 1 tester salary} = 484000 \text{ Taka})$$

$$\boxed{\blacktriangleright} \text{ Per month salary} = (484000/10) \text{ Taka}$$

$$= 48400 \text{ Taka (For 1 developer)}$$

$$\boxed{\blacktriangleright} \text{ Requirement Analysis} = 15 * 8 * 600 \text{ [15 days, 600 per hour salary]}$$

$$= 72000 \text{ Taka}$$

$$\boxed{\blacktriangleright} \text{Maintenance} = 2*4*6*2500 \text{ [per week 2h, 6 months]}$$

$$= 120000 \text{ Taka}$$

$$\boxed{\blacktriangleright} \text{Testing tool online subscription} = 10*5000 \text{ Taka}$$

$$= 50000 \text{ Taka}$$

$$\boxed{\blacktriangleright} \text{Testing Cost} = 20000*10 = 200000 \text{ Taka [Per month 20000 Taka]}$$

$$\boxed{\blacktriangleright} \text{Utilities Expenses} = 3500*10 = 35000 \text{ Taka}$$

$$\boxed{\blacktriangleright} \text{Training/Hardware} = 3000*10 \text{ Taka}$$

$$= 30000 \text{ Taka}$$

$$\boxed{\blacktriangleright} \text{Total Cost} = (1936000+72000+120000+50000+200000+35000+3000) \text{ Taka}$$

$$= 2416000 \text{ Taka}$$

$$\boxed{\blacktriangleright} \text{Profit margin} = 2416000*15\% = 362400 \text{ Taka}$$

$$\boxed{\blacktriangleright} \text{Pay bill (client)} = (2416000+ 362400) = 2778400 \text{ Taka}$$