GUJARAT TECHNOLOGICAL UNIVERSITY

Chandkheda, Ahmedabad

Affiliated

L.D. COLLEGE OF ENGINEERING, AHMEDABAD

A Project Report on

Dashboard For Enhancing Skills

Under Subject

DESIGN ENGINEERING - 2A

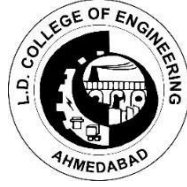B.E. III SEMESTER V

(COMPUTER ENGINEERING)

SUBMITTED BY

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CERTIFICATE

This is to clarify that the project work entitled **"Dashboard For Enhancing Skills"** has been carried out by Kartik Moradiya (220280107071) under my guidance at L.D. college of engineering for fulfillment of the project of Design Engineering-2A in Bachelor of Engineering in Computer Engineering (5th Semester) of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Name of Internal Guide   **Head of Department**

Prof. Kalpesh Patel   Prof. Chirag Thaker

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ACKNOWLEDGEMENT

We as group have taken a lot of efforts to make this project work . It wouldn't have been possible without help and support of many individuals so we would like to thank them all. Their unwavering support, invaluable guidance, and mentorship have been the cornerstone of this endeavor.

We would like to express our deepest gratitude to **Dr. Nilay Bhuptani** the Principal of L.D. college of engineering and **Prof.(Dr.) Chirag Thaker**, the HOD of **Computer Engineering Department.** Your vision and commitment to academic excellence have created an environment where students can thrive and reach their full potential. Your unwavering support for our academic pursuits is truly inspiring.

We would like to extend our sincere gratitude to our mentor, **Prof. Kalpesh Patel** for his invaluable guidance throughout this journey. Your wisdom, patience, and dedication to our growth as a researcher have been invaluable. Your constructive feedback and insightful discussions have enriched our work .

Last but not least, We want to express our gratitude to our family and friends for their unwavering support and encouragement throughout this academic endeavor. Your belief in us has been a constant source of motivation.

Abstract

- Our <u>Dashboard for Enhancing Skill</u> aims to develop a comprehensive skill enhancement dashboard that bridges the gap between instructors and learners, fostering a productive learning environment. Instructors can easily upload educational resources such as PDFs, documents, and videos, offering a wealth of knowledge for learners to explore. This setup allows learners to engage with the material at their own pace, using the provided resources to deepen their understanding of various topics, and lay a strong foundation for skill development.

- To ensure that learners are retaining the knowledge effectively, our platform includes an interactive quiz feature. Quizzes are dynamically generated from the content of the uploaded PDFs and documents, allowing learners to test their grasp of the material. Detailed performance reports help learners identify their strengths and areas for improvement. This personalized feedback system encourages continuous growth and motivates learners to track their progress.

- Instructors can monitor each learner's progress through comprehensive analytics, which showcase learning patterns and engagement levels. This datadriven approach enables instructors to adjust their teaching strategies to cater to individual needs, ultimately enhancing the overall learning experience. By understanding each learner's journey, instructors can provide tailored guidance, making learning more efficient and impactful.

- To further enrich the learning experience, the platform integrates with the YouTube API, giving learners access to a vast library of videos on topics they wish to explore. This integration allows both instructors and learners to expand their learning horizons beyond traditional resources. With these features, our project creates a supportive and adaptive ecosystem for knowledge

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1. Introduction

The primary function of the DASHBOARD FOR ENHANCING SKILLS is to serve as a comprehensive and user-friendly platform designed to track and promote skill development across various domains. By providing insights into learning progress, monitoring performance, and offering personalized resources, the dashboard aims to foster continuous growth and improvement. This platform empowers users to efficiently manage their skill acquisition journey, ensuring a more structured and effective learning experience, ultimately contributing to personal and professional development.

Key features of an DASHBOARD FOR ENHANCING SKILLS typically include:

- User-Friendly Interface: A simple and intuitive interface that allows users to track their progress and access learning materials with ease.

- Skill Tracking and Monitoring: Comprehensive tools for monitoring skill development across various domains, helping users visualize their growth over time.

- Personalized Learning Pathways: Customizable learning paths that cater to individual skill levels and goals, ensuring a tailored learning experience.

- Resource Recommendation Engine: Suggestions for relevant courses, materials, and resources based on the user's current skill level and interests.

- Analytics Dashboard: Insights and analytics on user performance, skill trends, and learning patterns to help users and administrators make datadriven decisions.

- User Authentication and Security: Secure login mechanisms to protect user data and ensure a safe learning environment.

2. AEIOU CANVAS

- A – Activity
- E – Environment
- I – Interaction
- O – Object
- U – Users

AEIOU stands for five elements to be considered: Activity, Environment, Interaction, Object, and User. Activities are goal-directed sets of actions that guide users toward their skill development objectives, while interactions occur between a person and the system, serving as the building blocks of these activities.

○ The abbreviation used here itself suggests the flow of the process which tends to take place.

○ Our role is to observe our respective domain from scratch after understanding all the given points that are obtained from the above abbreviation.

○ 1st & 2nd: Activity & Environment :- This suggests observing the overall system and the surrounding environment of our dashboard. It's essential to assess how the platform supports users in their learning journey.

○ 3rd: Interaction :- After observing various activities, the next step is to evaluate the interactivity of the current system. We ask fundamental questions like: Is the product user-friendly? Does it visually engage users, encouraging them to remain committed to learning?

○ 4th: Object :- To maintain the flexibility of the dashboard, it is necessary to place the required number of objects in the appropriate proportions and positions. A keen understanding of all objects within the system is crucial for effective organization.

○ 5th: User :- Finally, after completing all features, we conduct real-time testing. Initially, a selected group of users interacts with the product, and we collect their feedback at regular intervals. This continuous assessment is vital to address user needs and improve the platform.

2.1 ACTIVITY
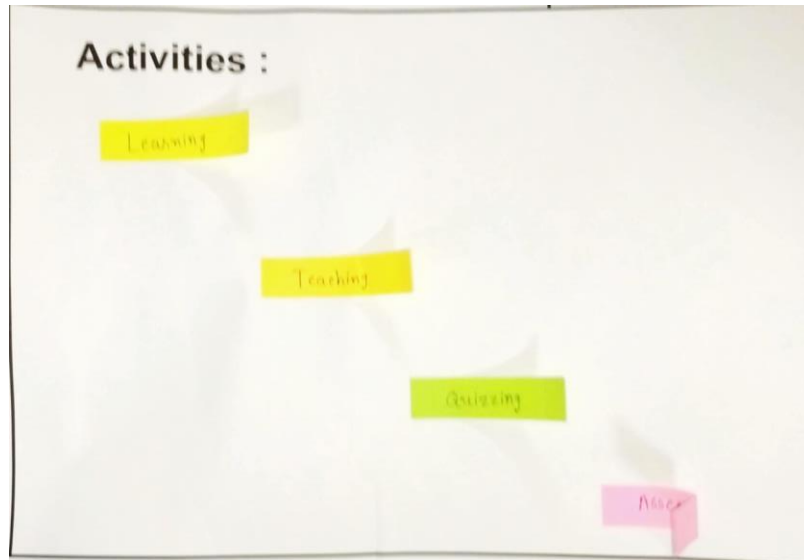
Figure 2.1: Activities

•Learning
•Teaching
•Quizzing
•Assessment
•Development

2.2 ENVIROMENT
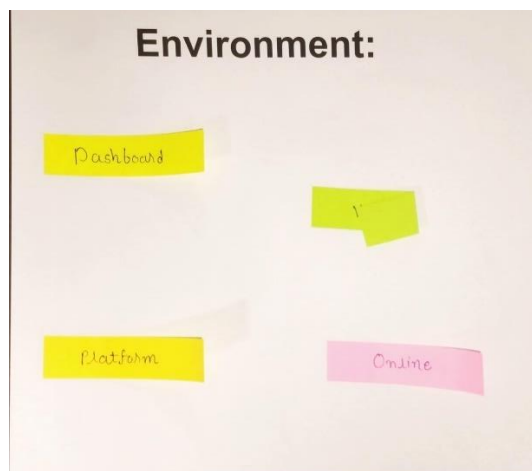
Figure 2.2: Environment

- •Dashboard
- •Platform
- •Virtual
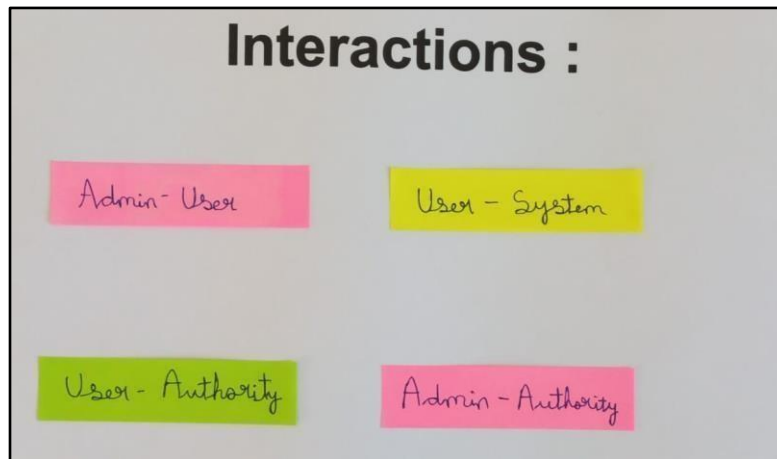- •Interface
- •Online

2.3 INTERACTION

Figure 2.3: Interaction

- •Engagement
- •Navigation
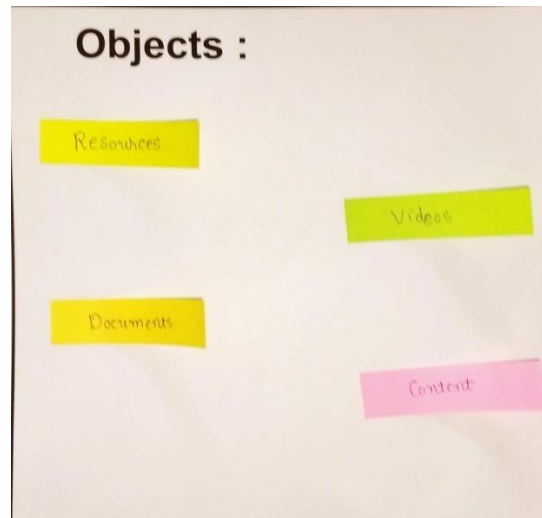- •Feedback
- •Communication
- •Participation

2.4 OBJECT

Figure 2.4: Object
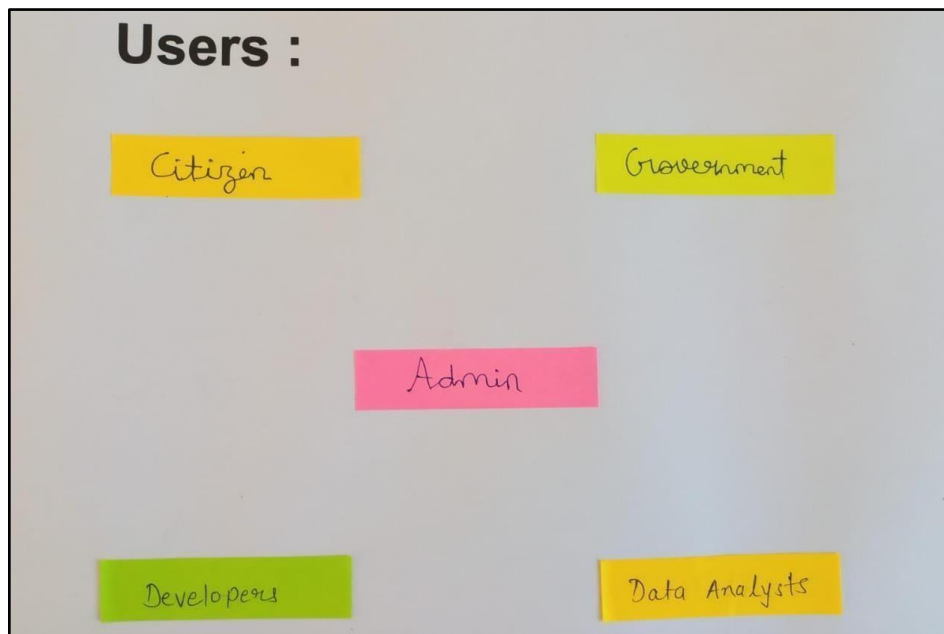
- Resources
- Documents
- Quizzes
- Videos
- Content

2.5 USERS

Figure 2.5: Users

- •Learners
- •Instructors
- •Teachers
- •Students
- • Educators

2.6 AEIOU Summary
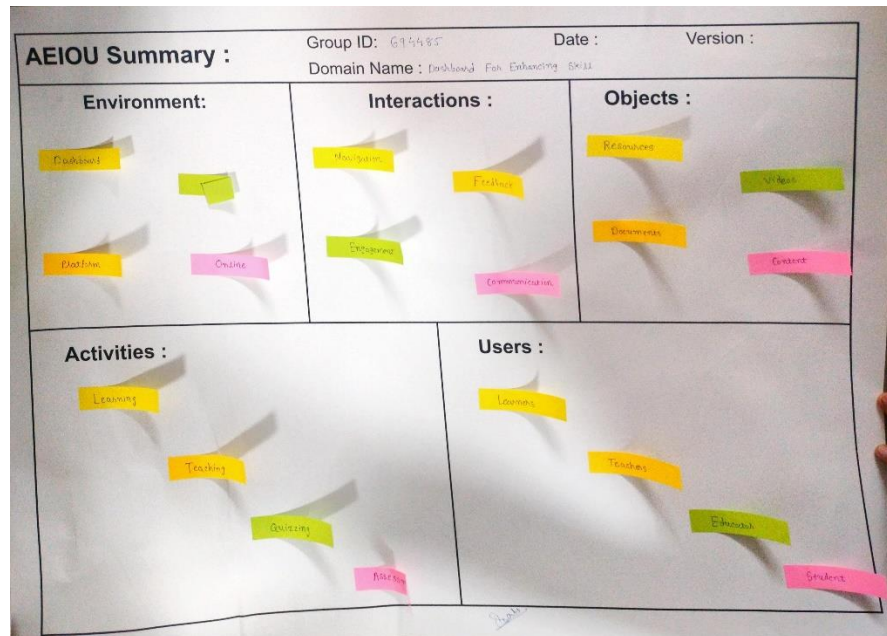
Figure 2.6: Summary

3. Mind Map

"A mind map is a visual representation of hierarchical information that includes a central idea surrounded by connected branches of associated topics."

Benefits:
- Helps brainstorm and explore any idea, concept or problem.
- Facilitate better understanding of relationships and connections between ideas and concepts.
- Make it easy to communicate new ideas and thought processes.
- Allow students to easily recall information.
- Help students take notes and plan tasks.
- Make it easy to organize ideas and concepts.

    In addition to these principles, you should consider:
- Using images and symbols to demonstrate your ideas.
- Highlighting keywords with capitals, boldness or colour Using multiple colours in the map.
-
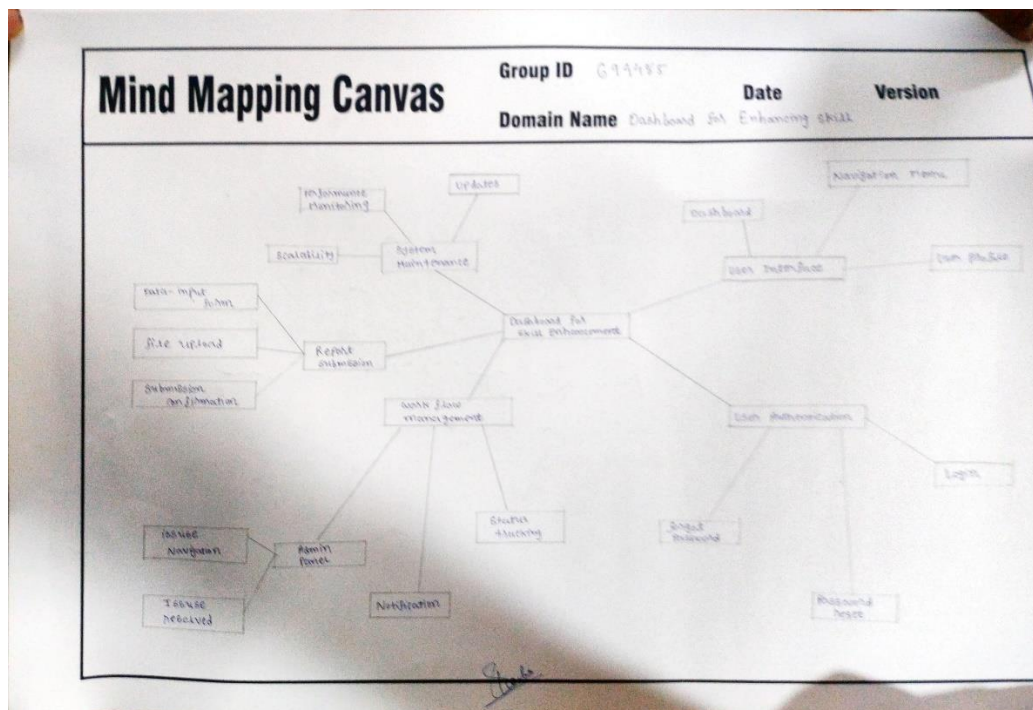
Figure 3.1: Mind Map

4. Empathy Canvas

○ Empathy is the capacity to understand or feel what another person is experiencing from within their frame of reference, i.e., the capacity to place oneself in another's position.

○ In empathy sheet, we cover the users, stakeholders, activities, and some of the empathized stories from the users.

- **Users:** The person who use transport or comes to explore the station are known as the users.

- **Stakeholders:** The people who are engaged in the maintenance or working in that particular domain are known as the stakeholders.

- **Activities:** The people involved with the domain perform different activities such as exploring website, searching for a product, filtering the search, ordering etc.

- **Empathizing:** To empathize the people we have taken many feedbacks from some of the users and felt many happy stories as well as the sad stories. Mostly there were happy stories the most. But there are some sad incidents happened with the users which they were not expected earlier.

Figure 4.1: User
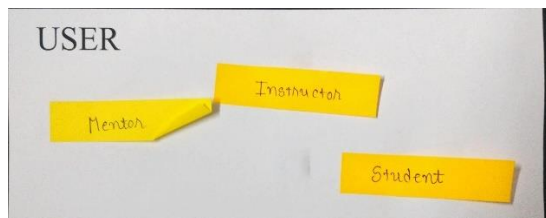
Figure 4.2: Stakeholders

Users

- Learners
- Students
- Instructors
- Mentors
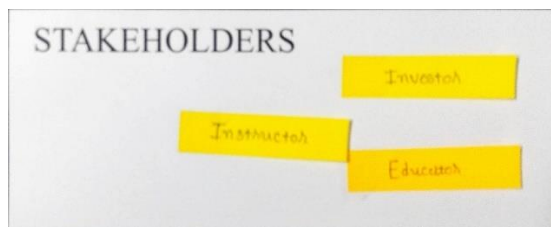
StakeHolders

Instructor

Investors

Educator

4.3 Activities:
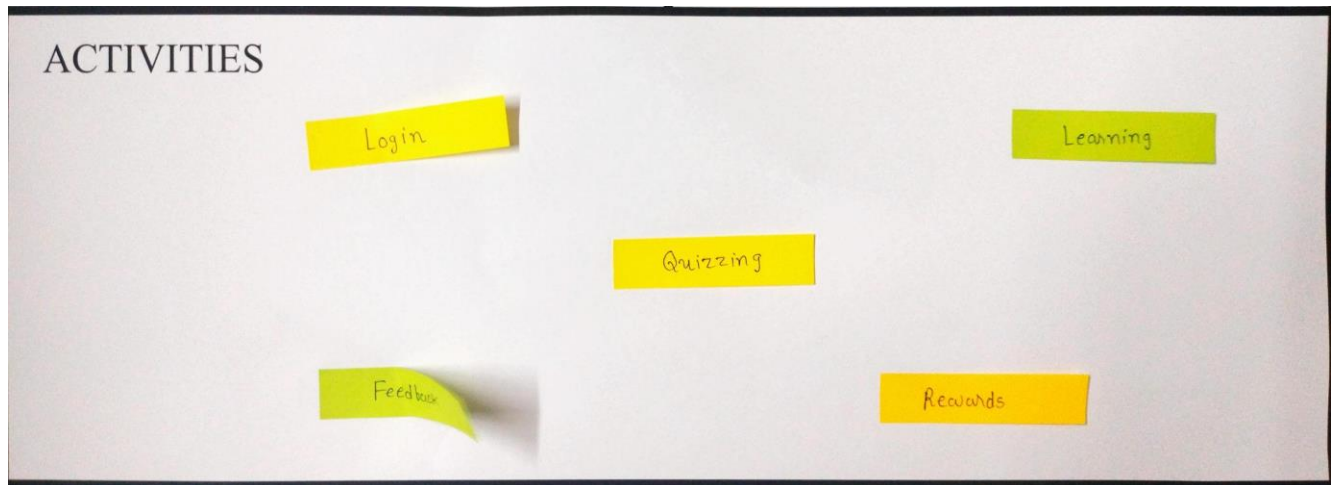
Figure 4.3: Activities

- Login / Registration
- Learning
- Quizzing
- Monitoring
- Feedback Collection

4.4 Happy Story:
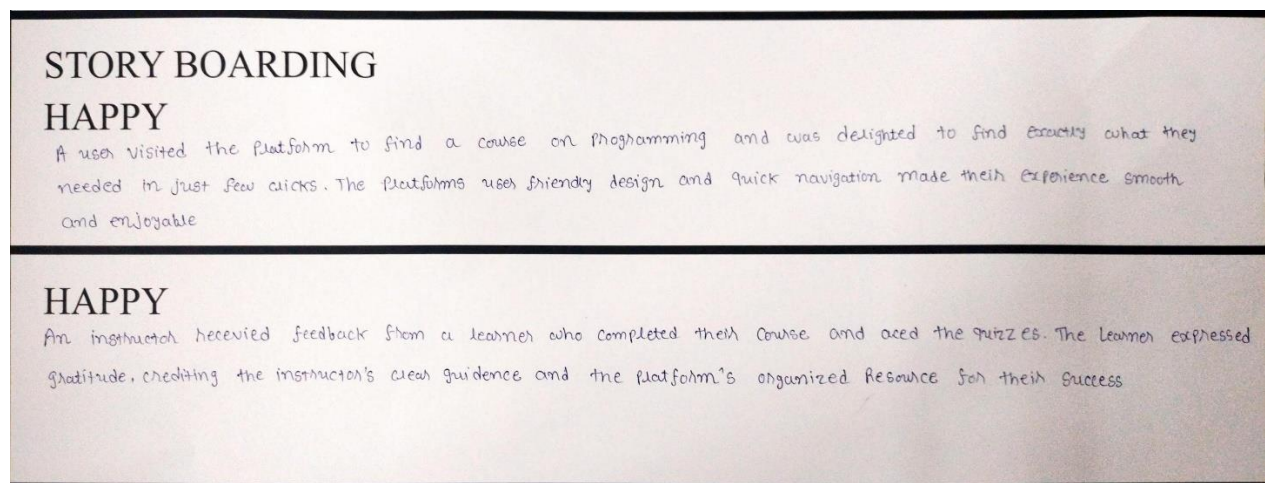
Figure 4.4: Happy Story

1. A user visited the platform to find a course on programming and was delighted to find exactly what they needed in just a few clicks. The platform's user-friendly design and quick navigation made their experience smooth and enjoyable.

2. An instructor received feedback from a learner who completed their course and aced the quizzes. The learner expressed gratitude, crediting the instructor's clear guidance and the platform's organized resources for their success.

4.5 Sad Story:
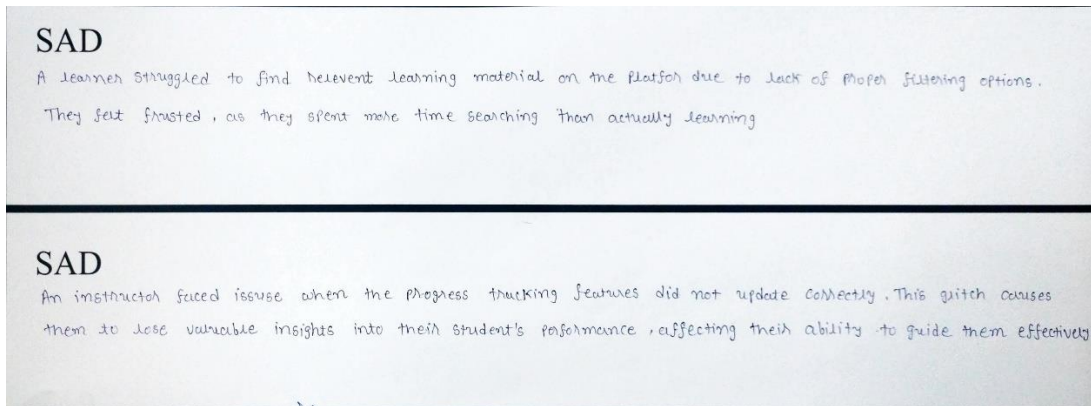
Figure 4.5: Sad Story

1. A learner struggled to find relevant learning material on the platform due to a lack of proper filtering options. They felt frustrated, as they spent more time searching than actually learning.

2. An instructor faced issues when the progress tracking feature did not update correctly. This glitch caused them to lose valuable insights into their students' performance, affecting their ability to guide them effectively.

4.6 EMPATHY Summary

Figu re 4.6: Empathy Summary

5. Ideation Canvas

Ideation is the process where you generate ideas and solutions through sessions such as Sketching, Prototyping, Brainstorming, Brainwriting, Worst Possible Idea, and a wealth of other ideation techniques. Ideation is also the third stage in the Design Thinking process.

"Ideation is the mode of the design process in which you concentrate on idea generation. Mentally it represents a process of'going wide' in terms of concepts and outcomes. Ideation provides both the fuel and also the source material for building prototypes and getting innovative solutions into the hands of your users."

- ⊙ An Introduction to design thinking process guide: Ideation Canvas

- We create Ideation Canvas to ideate.

- It consists of 4 parts: people, activities, situations-problems and possible-solutions.

- By filling this canvas properly, we may find some problems faced by users and find their possible solutions and then we can work on the solution..

5.1 People:
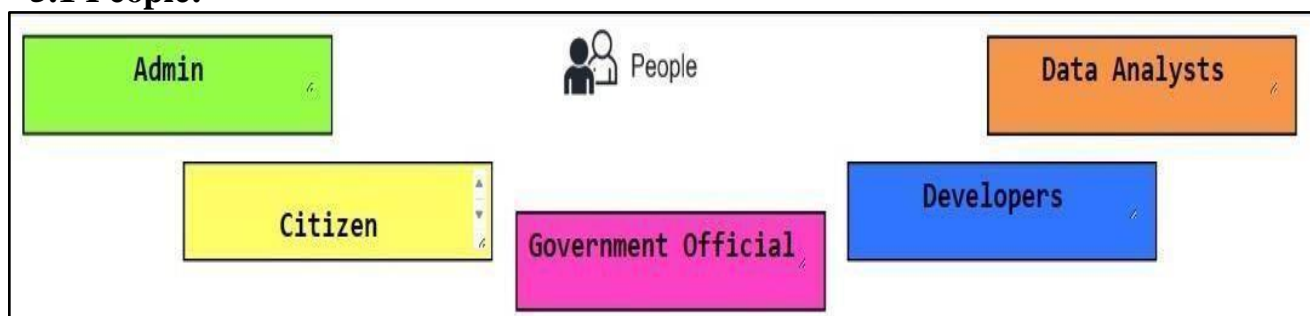
Figure 5.1: People

- Admin
- Data Analysts
-
- Student
- Developers

5.2 Activities:
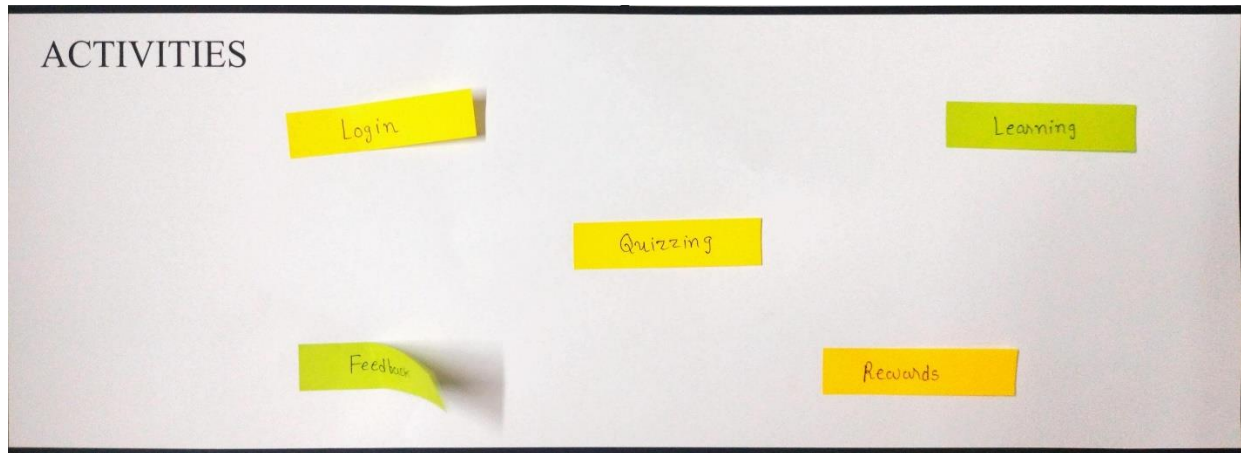
Figure 5.2: Activities

- Instructor Login
- Learner Login
- Learning and Skill Enhancement
- quizzing
- reward for motivation
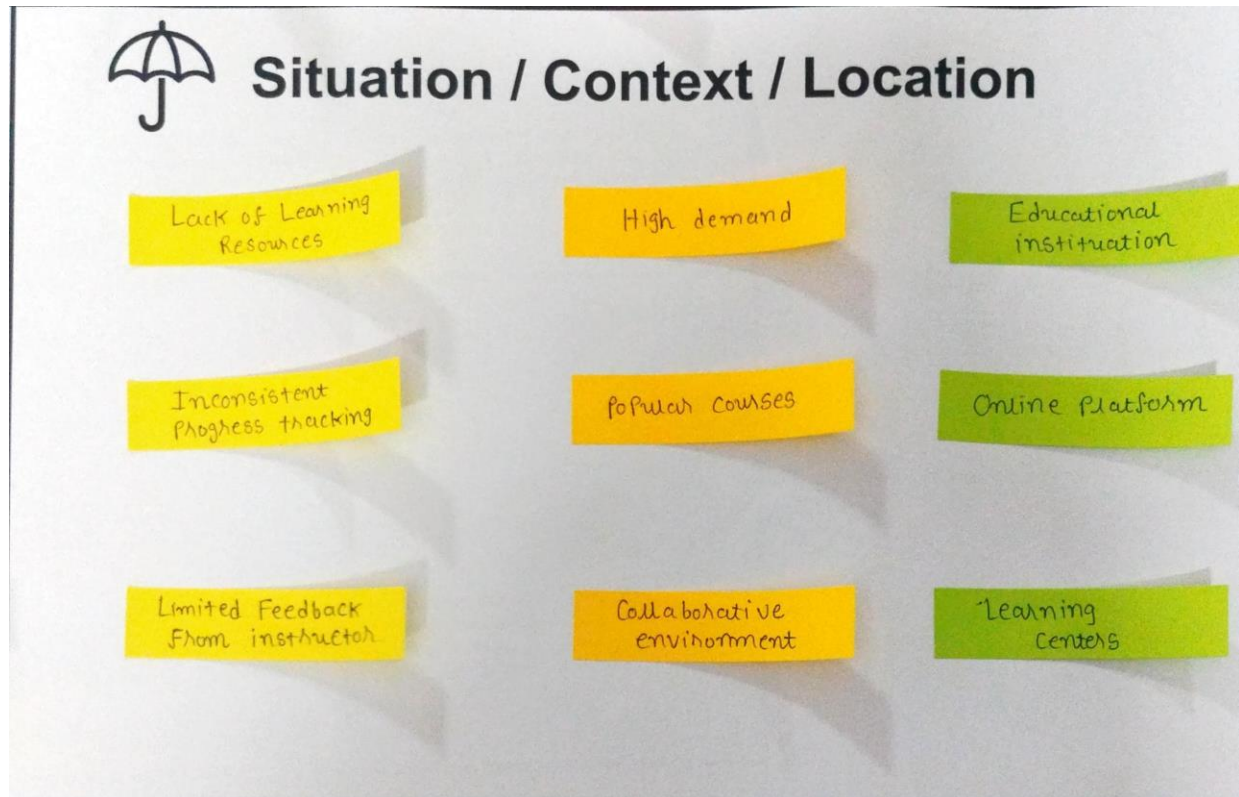
5.3 Situation/Context/Location :

Figure 5.3: Situation/Context/Location

Situation :	Context :	Location :
• Lack of engaging learning resources • Inconsistent progress tracking for learners • Limited feedback from instructors	• High demand for skill development • Popular courses with high enrollment • Collaborative learning environments	• Educational institutions • Online learning platform • Community learning centers

5.4 Ideation Summmery :
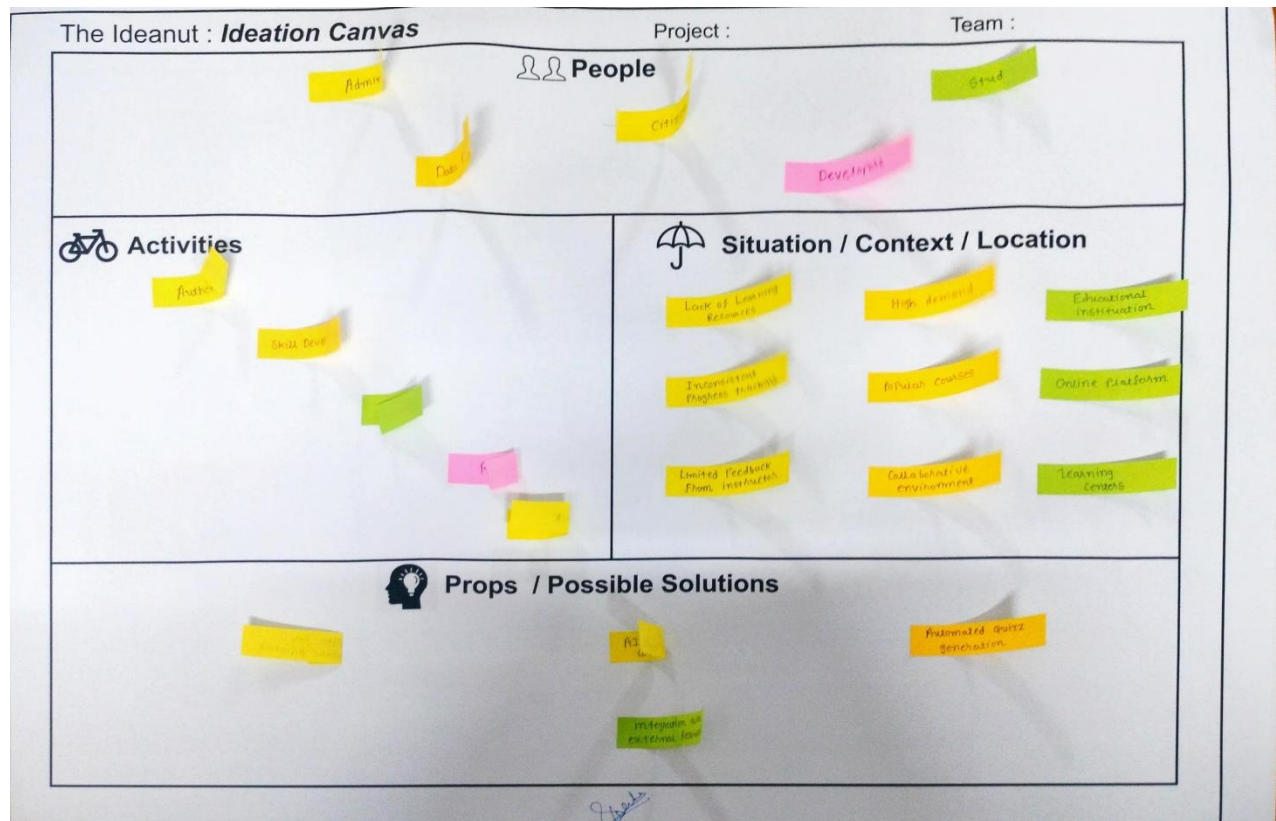
Figure 5.4: Ideation Summary

6. Product Development Canvas

Product development canvas meaning Design engineering is the most useful subject for as a student or in **making future bright** with a better result.

From suitable combination they converted it in to product. They fill up product development canvas for new product. It is divided into five parts. Such as (1) Purpose (2) People (3) Product Experience (4) Product Functions (5) Product Features (6) Components (7) Customer revalidation (8) Reject,Redesign, Retain

6.1 Purpose
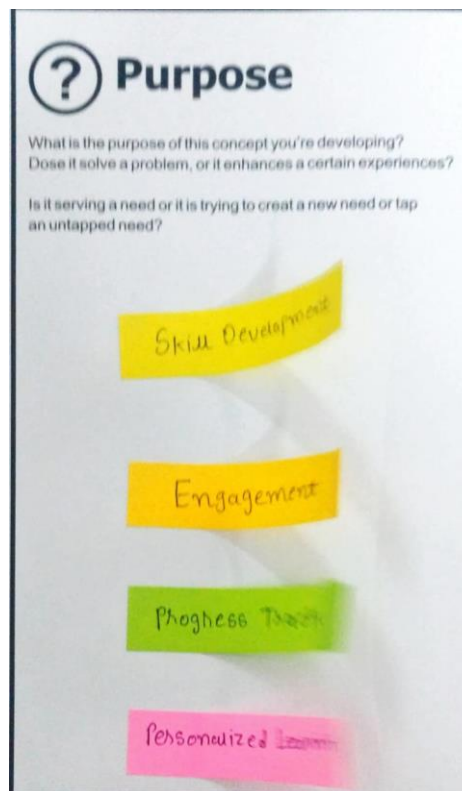
Figure 6.1: Purpose

- skill development
- Engagement
- Personalized Learning
- Progress Tracking

6.2 People
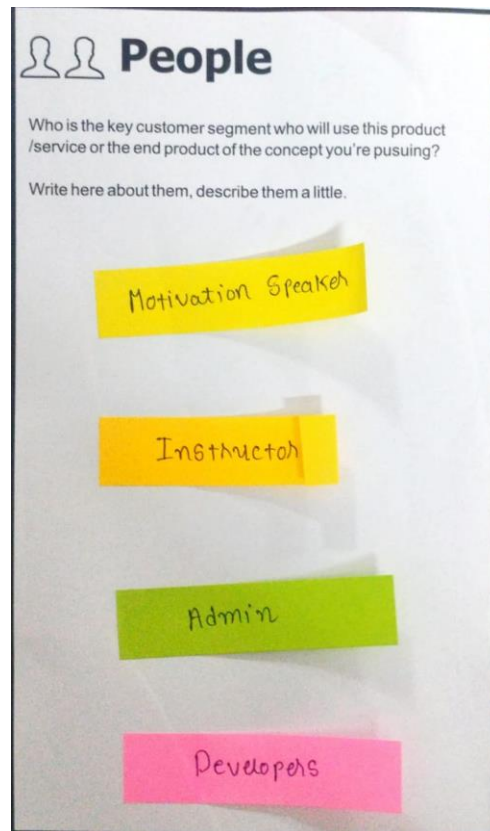
Figure 6.2: People

Motivation speaker instructor

Admin

learner

Developers

6.3 Product Experience
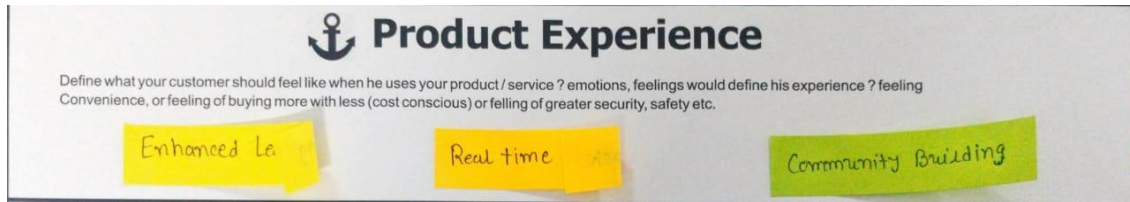
Figure 6.3: Product Experience

- Enhanced Learning Journey
- Real-Time Feedback
- Community Building

6.4 Product Functions
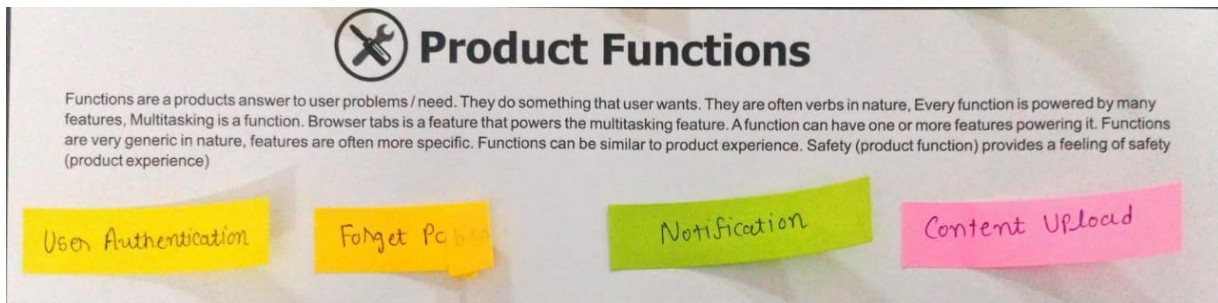
Figure 6.4: Product Functions

- User Authentication
- Forgot password
- Notification
- Content Upload

6.5 Product Features
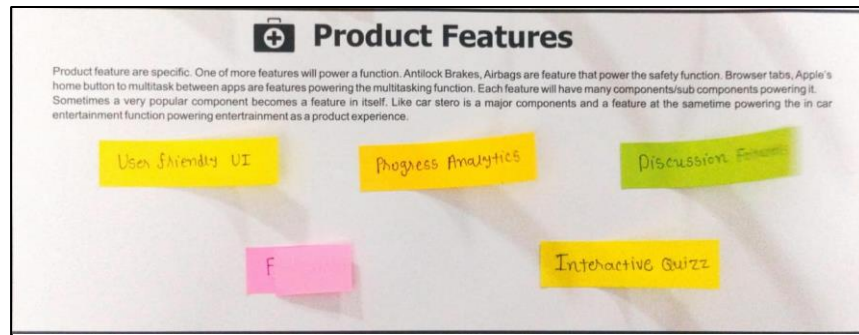
Figure 6.5: Product Features

- User friendly interface
- Progress Analytics
- Discussion Forums • Feedback
  Form
- Interactive Quizzes

6.6 Components
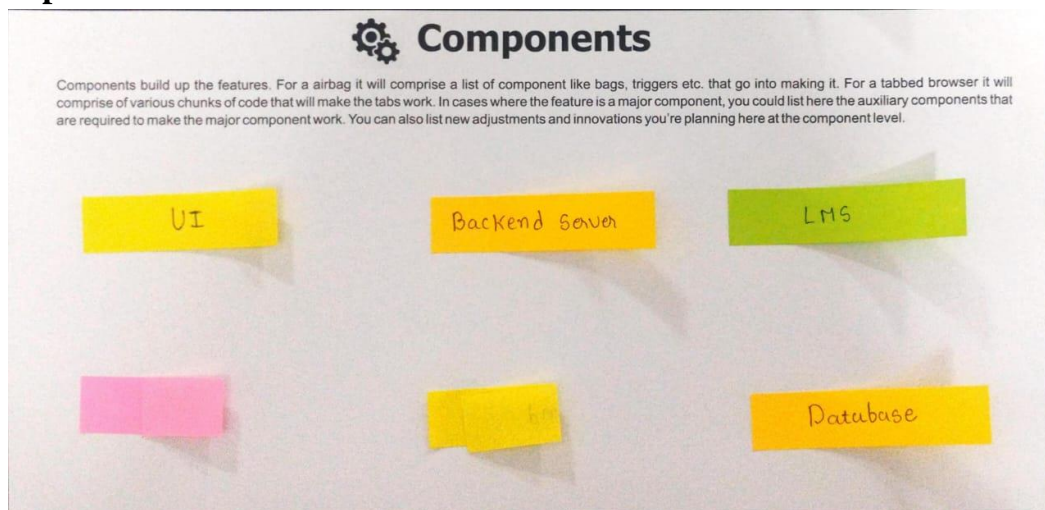
Figure 6.6: Components

- UI
- Backend server
- Learning Management System
- Security and authentication
- Database
- Content Management System
- Frontend

6.7 Customer Revalidation
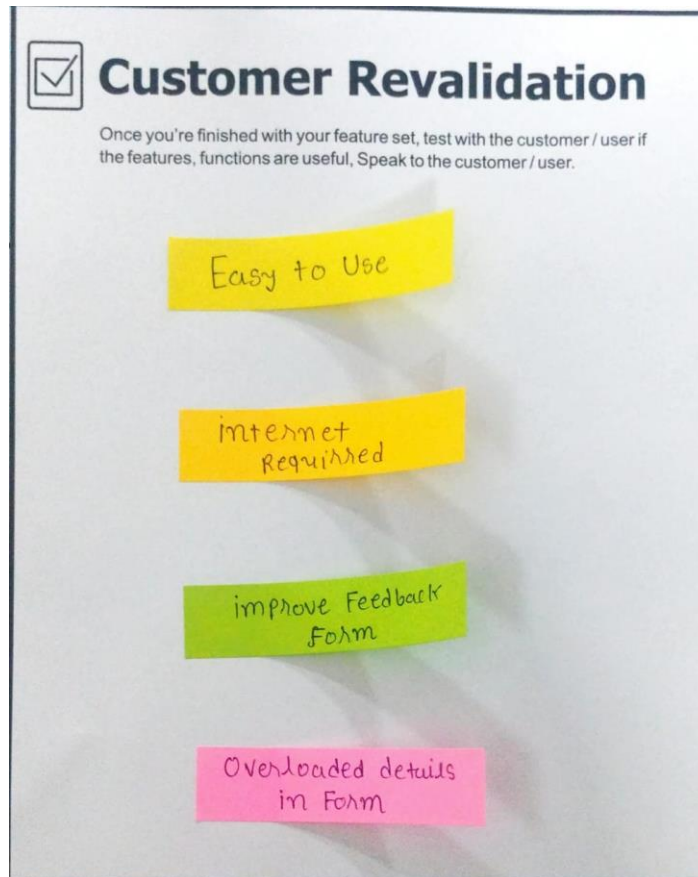
Figure 6.4: Customer Revalidation

- Easy to use and better UI

- Without internet it is not accessible

- Overloaded details in filling in form

- Need to improve feedback form

6.8 Reject Redesign Retain
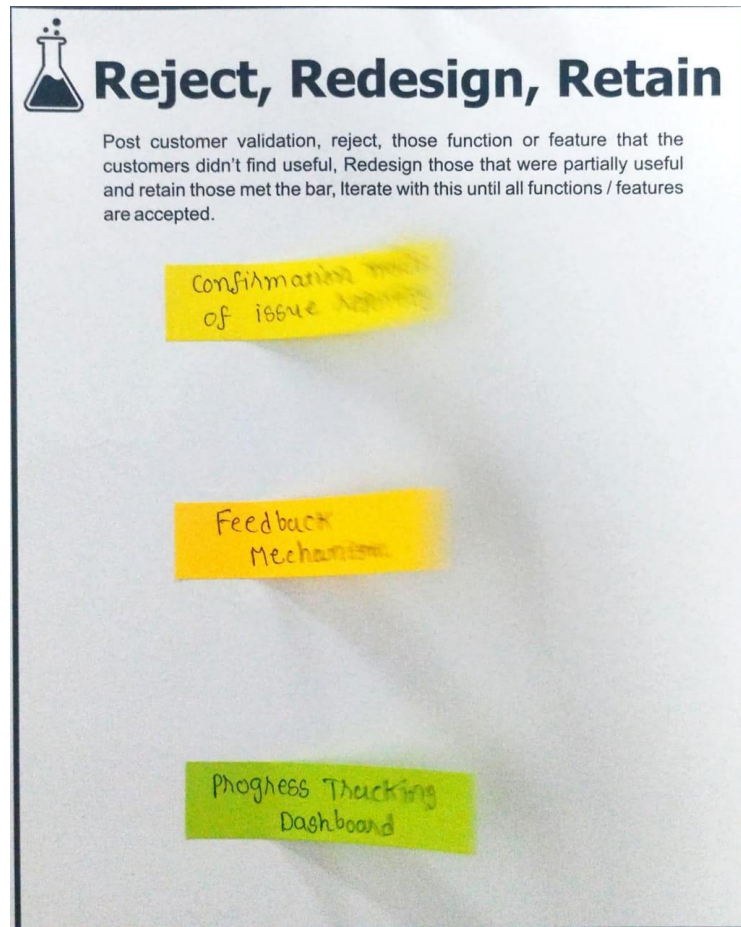
Figure 6.8: Reject , Redesign, Retain

REJECT:

- Confirmation mails of issue reporting

REDESIGN:

- Feedback Mechanism Redesign

RETAIN:

- Progress Tracking Dashboard

6.9 : Production Development Summary
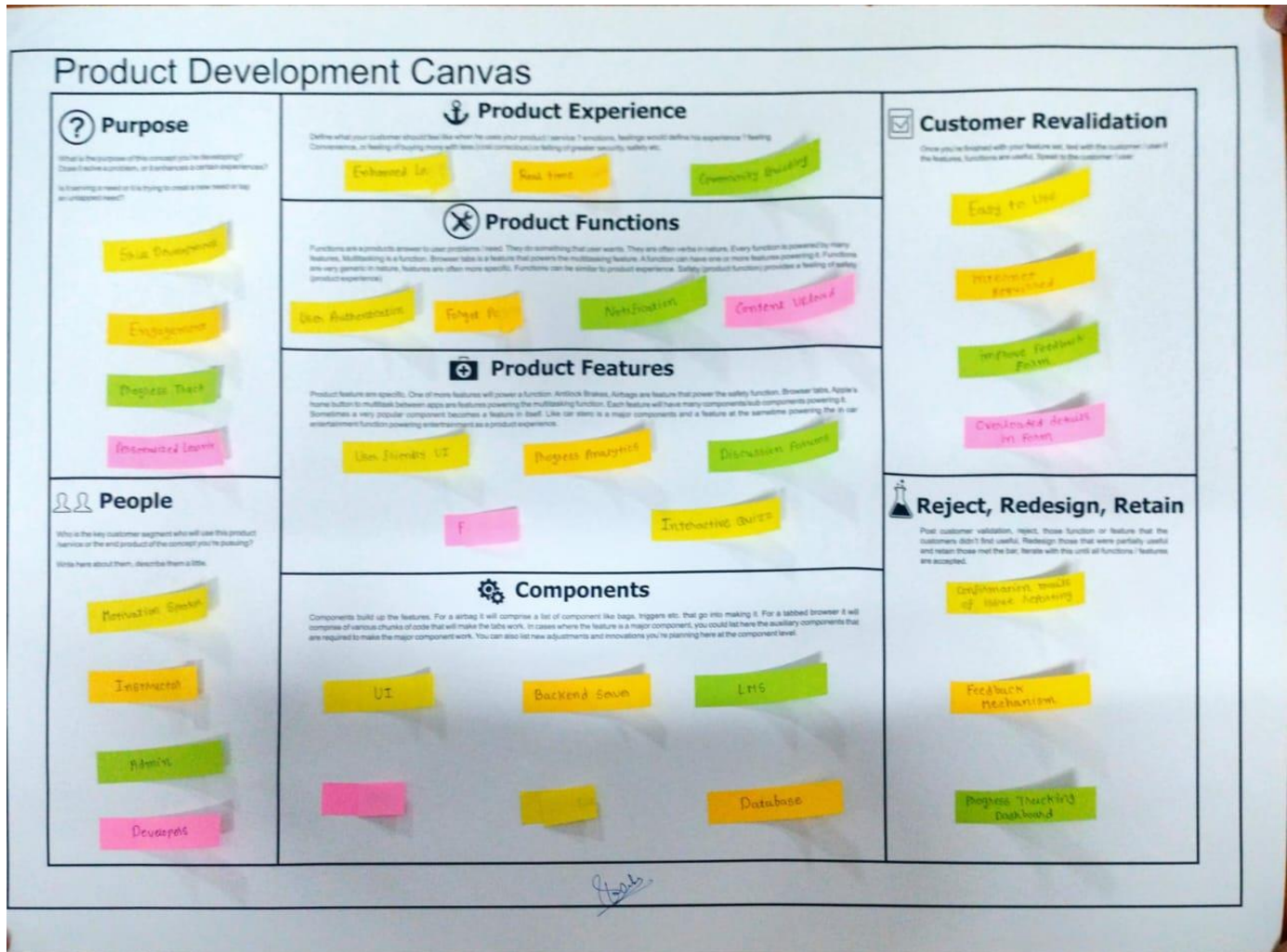
Figure 6.9: Product Development Summary

7. Prototype

A Prototype is an early sample, model, or release of a product built to test a concept or a process. It is a term used in a variety of contexts, including semantics, design, electronics, and software programming. A prototype is generally used to evaluate a new design to enhance precision by system analysts and users. Prototyping serves to provide specifications for a real, system rather than a theoretical one. In some design workflow models, creating a prototype (a process sometimes called materialization) is the step between the formalization and the evaluation of an idea.

7.1 Website Overview:
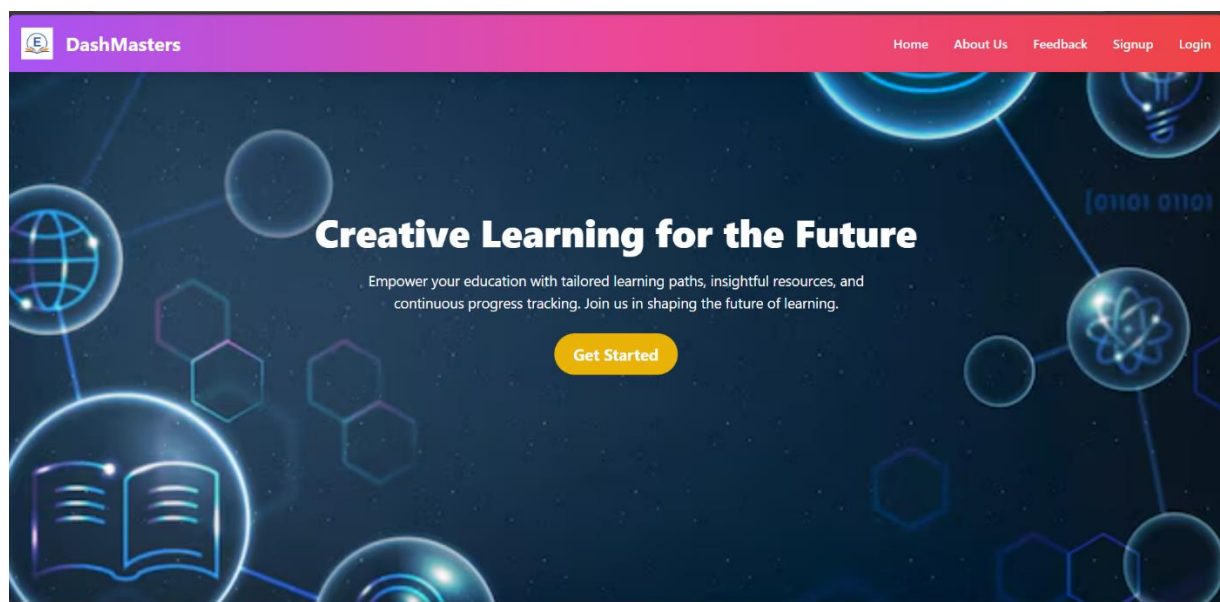
Figure 8.1: Home Page
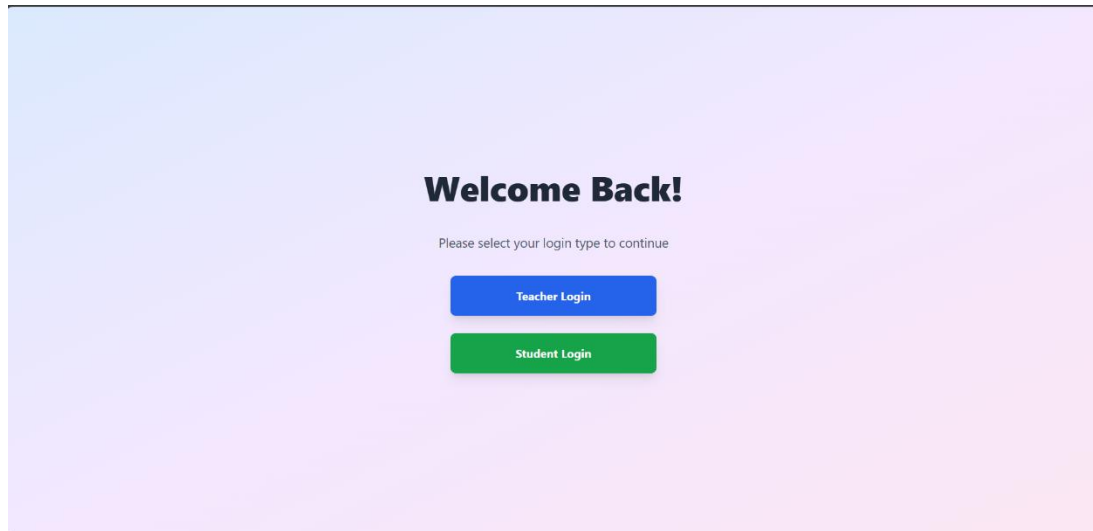
Figure 8.2: Login Page

Figure 8.3: PDF Upload (Teacher)

Figure 8.4 : Subject Overview

Figure 8.5 : Chapter Overview

Figure 8.6 : Quiz

Figure 8.7 : Create PDF(Teacher)

8. Conclusion

- Our skill enhancement dashboard is designed to create a seamless learning experience by connecting instructors and learners on a unified platform. Instructors can easily upload educational materials like PDFs, documents, and videos, providing learners with valuable resources to master various topics. Learners benefit from flexible access to this content, empowering them to learn at their own pace and develop new skills efficiently.

- To reinforce the learning process, the platform features an innovative quiz system that generates multiple-choice questions directly from the study materials. This enables learners to test their knowledge and receive immediate feedback on their performance. Detailed progress reports offer insights into strengths and areas for improvement, motivating learners to enhance their understanding and track their growth over time.

- In conclusion, our skill enhancement dashboard offers a holistic educational experience by combining personalized learning resources, interactive quizzes, and advanced progress tracking. The platform's ability to adapt to each learner's needs encourages continuous growth, making it a powerful tool for both learners and instructors seeking to achieve their educational goals.

9.   References

10.1 WEB References

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[2] For Learning HTML,CSS, Javascript- https://www.w3schools.com/php/php_forms.asp

10.2 Research Papers

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    on_Learning_Skills_Scalability_and_Usefulness

[4] https://educationaltechnologyjournal.springeropen.com/articles/10.1186/s41239-021-00313-7