ACKNOWLEDGEMENT

With a sense of gratitude and respect, we would like to extend our heartiest thanks to all those provide help and guidance to make this project a success The successful completion of any task is accompanied by a deep emotion of fulfillment and satisfaction It was a pleasant and highly educative experience out the development of project.

From the bottom of our heart, we thank our HOD of college **Ms. Macwan Riyaben Nalinkumar**. Who gave us opportunity to undertake such kind of challenging and innovative work and also to our internal guide **Ms. Macwan Riyaben Nalinkumar** who gave us the guidance, help and motivation throughout the over project.

My sincere thanks to my batch mates, who have provided me with innumerable discussion on many technicalities and friendly tips without their cordial and friendly support, these activities would have been tougher.

Content Checked For Plagiarism

GUJARAT TECHNOLOGICAL UNIVERSITY

SWAMINARAYAN COLLEGE OF

ENGG. & TECH. SAIJ, KALOL

A Project Report On

Library Management System

Of DESIGN ENGINEERING I

B.E Semester- V

(Computer Engineering)

Submitted by

No Name of Student Enrollment Number

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Head of Department

Ms. Macwan Riyaben Nalinkumar Ms. Macwan Riyaben Nalinkumar

Academic year (2021-2022)

SWAMINARAYAN COLLEGE OF ENGG. & TECH.

(DEGREE), SAIJ, KALOL

Abstract

The Library Management System is an application for assisting a librarian in managing a book library in university. The system would provide basic set of features to add/update members, add/update books, and manage check in specifications for the systems based on the client's statement of need. Library management system is a typical management Information system (MIS), its Development include the establishment and maintenance of back-end database and front-end application development aspects. For the former require the establishment of data consistency and integrity of the strong data security and good libraries. As for the latter requires the application fully functional, easy to use and so on.

INDEX

LIST OF FIGURES

1. Introduction

Library management systems are designed to manage the movement of books and maintain records of the members in a library. The software solution is designed based on the system requirements, the people involved, the content of the operation and the activity to be performed. The system requirement in library management focuses on the possibility of search for books by title, author or subject by the member. They should be able to locate a book physically by the unique identification code and the rack number for each book. The system should provide details on the books held by the members. The system should limit the number of books that can be taken and the number of days that a book can be kept for. The system should generate fines when due from the member.

2. AEIOU CANVAS

2.1 ABOUT

AEIOU is an investigative tool to help interpret observations gathered by ethnographic practices in the field. It is an Observation tool. Its two primary functions are to code data, and to developed building blocks of models that will ultimately address the objectives and issues of a client.

2.2 ACTIVITES

- Admin Login
- Book Information Recording
- User/ Members
- View and check Information

2.3 Environment

- Happy
- Peaceful
- Full Feeling

2.4 Interaction

- User to Admin
- Member to Admin
- Admin to User
- Issue Library Card

2.5 USERS

- Students
- Staff Member
- Journalist
- People

2.6 Objects

- Computer
- Laptop
- Internet Connection

2.7 AEIOU CANVAS

AEIOU SUMMARY

GROUP ID : 389533

DATE : 30/09/2022

DOMAIN NAME : Library Munugment System

Activity :
- Admin Login
- Book St Recall
- Useres
- View and Internal

Environment :
- Happy
- Decisi
- full feeli

Interaction :
- User to Adm Aawilware
- Member to Adm Issue a book
- Admin to Ligh book Iss
- Issue library C

Objects :
- Cor
- LAB
- I

Users :
- Student
- Staff Member
- Journal
- People

3. EMPATHY CANVAS

3.1 ABOUT

An empathy map is a collaborative visualization used to articulate what we know about a particular type of user. It externalizes knowledge about users in order to 1) create a shared understanding of user needs, and 2) aid in decision making.

3.2 USER

- Admin
- Student
- Staff Member
- Data Administrator

3.3 STACKHOLDERS

- Library Support Group
- Children Of all Ages
- Educational Partners
- Local Business People

3.4 ACTIVITES

- Admin Login
- Add/mood Book
- Issue/Return Book
- Book Information Regarding
- Users/Borrower

3.4 EMPATHY CANVAS

Design For Library Management System   **Design By** Ridhum Raval, Hiren Patel, Yuvanjsinh Parmar

Vinit Khambu, Jainilkumar Bhatasana

Date 30/09/2022   **Version**

USER

Admin   Student

Staff Member   Data Administrator

STAKEHOLDERS

Library support group   Children of all ages

Educational Partners   Local business People

ACTIVITIES

Admin Login

Users/Borrowers

Add/Mood book

Book Information Reading

issue/Return book

STORY BOARDING

HAPPY
→ As a librarian, I want to be able to import VIA metadata into omeka so that I can create online exhibits of Harvard Visual materials.

HAPPY
→ As a student, I want to be able to quickly build a Javascript application that can search and display library data and digital objects so that I can get an A in my course with minimal time Investment.

SAD
Library Management System is network of Computers that uses a certain Program to facilitate technical functions of the library.

SAD
Libraries must hire or train an IT support team as Library Management System becomes more Sophisticated and costly.

4. IDEATION CANVAS

4.1 ABOUT

Ideation is the process where you generate ideas and solutions through sessions such as Sketching, Prototyping, Brainstorming, Brain writing, Worst Possible Idea, and a wealth of other ideation techniques. ... "Ideation is the mode of the design process in which you concentrate on idea generation.

4.2 PEOPLE

- Librarian
- Student
- Staff Member
- Data Administrator
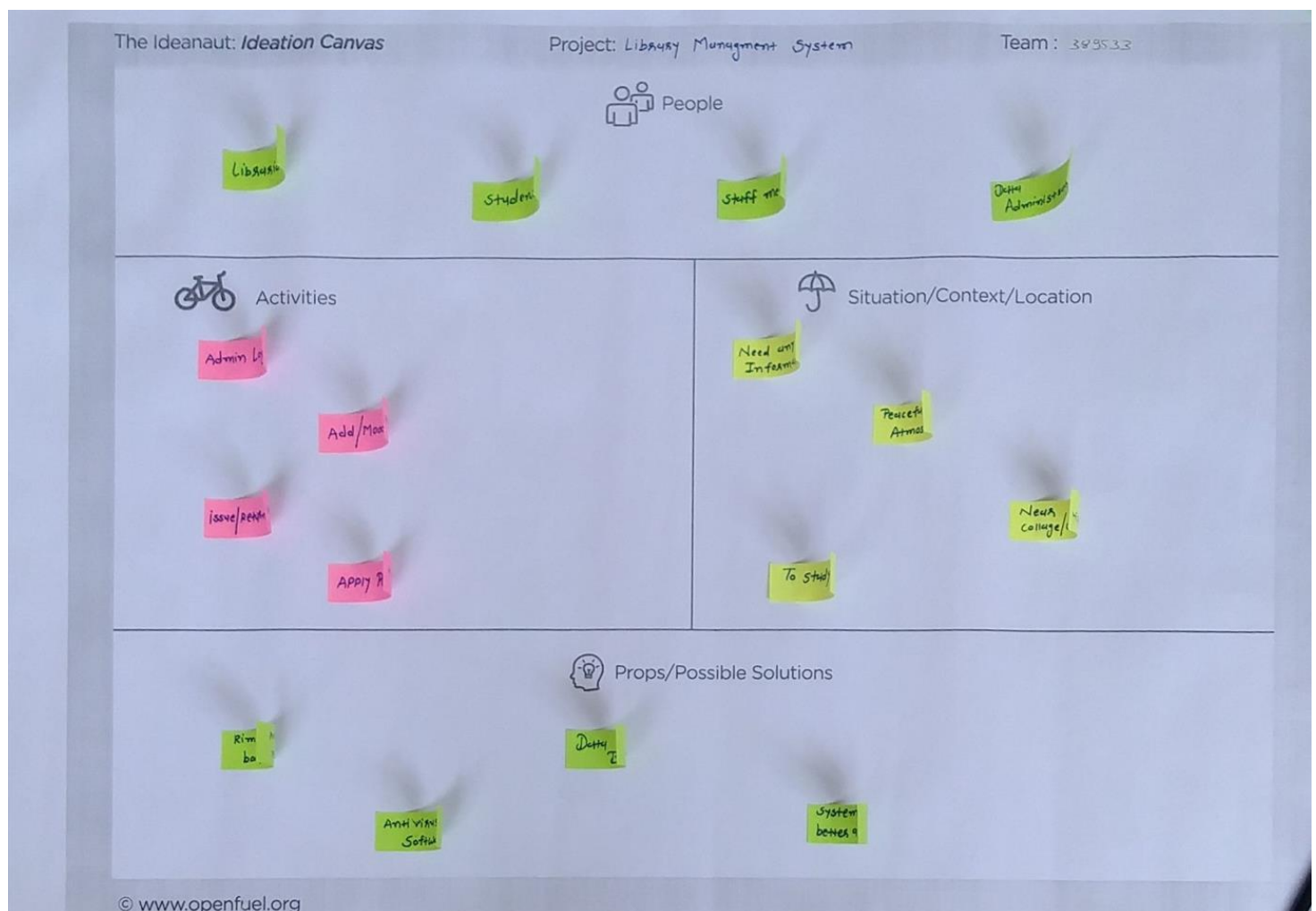
4.3 ACTIVITES

- Admin Login
- Add/Mood book
- Issue/Return book
- Apply Penalty

4.4 SITUATION/CONTEXT/LOCATION

- Need any Information
- Peaceful Atmosphere
- Near College/University
- To Study

4.4 POSSIBLE SOLUTION

- Reminder Book Return
- Antivirus Software
- Data Backup
- System With Better Quality

4.6 IDEATION CANVAS

5. PRODUCT DEVELOPMENT CANVAS

5.1 ABOUT

A product canvas is a planning tool designed to help build products that have a great user experience through a focus on feature development. It combines agile methodologies with UX principles to help validate product solutions.

5.2 PURPOSE

- Easy to Manage data
- User Friendly
- Time Saving

5.3 PEOPLE

- Librarian
- Student
- Staff Member
- Data Administrator

5.4 PRODUCTEXPERIENCE

- Easy to Use
- Cost Efficient

5.5 PRODUCT FUNCTIONS

- Reserving book
- Subdual of Library
- Mobile app for Book search

5.6 PRODUCT FEATURES

- E-book Uploading and Reading
- No duplication of work
- No limits on number of entry

5.7 COMPONENTS

- Computer System
- Software
- Networking Device
- Data base
- Server

5.8 CUSTOMER REVALIDATION

- Fast loading compare to others
- Some time system glitches

5.9 Reject, Redesign, Retain

- Update registration system
- Wi-Fi Connection
- Penalty System

5.10 PRODUCT DEVELOPMENT CANVAS

6. PROTOTYPE CANVAS

6.1 ABOUT

Prototyping can be used in many phases of the design journey, with different purposes. It can be used to find out if something is technically feasible (an 'engineering' prototype), if your design ideas look and feel good, and satisfies design criteria, or if your ideas resonate with customers (a 'validation' prototype). We focus on the validation prototype for this canvas .

6.2 Prototype canvas
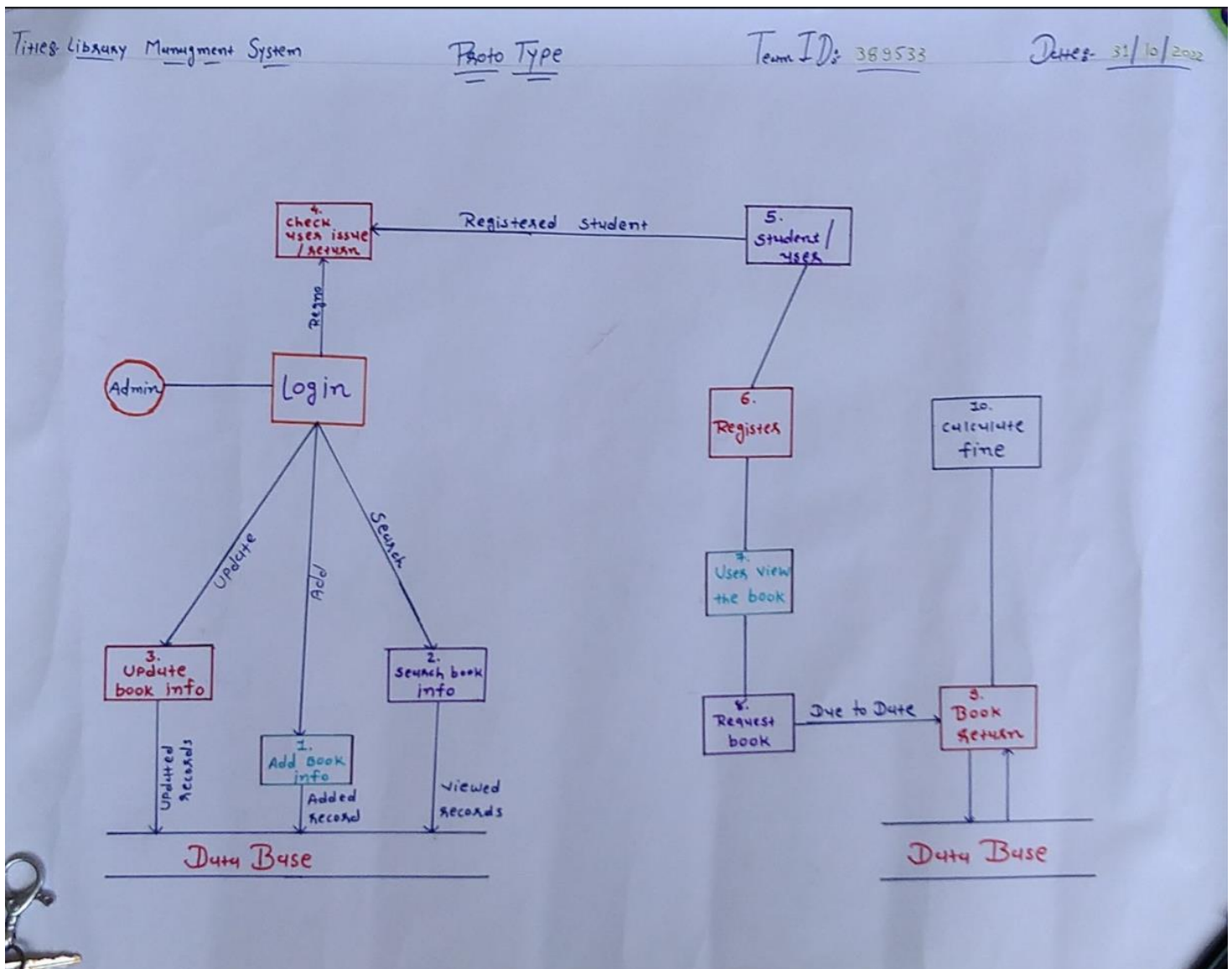
7. MIND MAP

7.1 ABOUT

Mind mapping is a way of linking key concepts using images, lines and links. A central concepts linked via lines to other concepts which in turn are linked with other associated ideas. It is similar as a technique to concept mapping and spider diagrams, the difference being that true mind mapping involves constructing a hierarchy of ideas instead of pure random as societies

7.2 Mind map
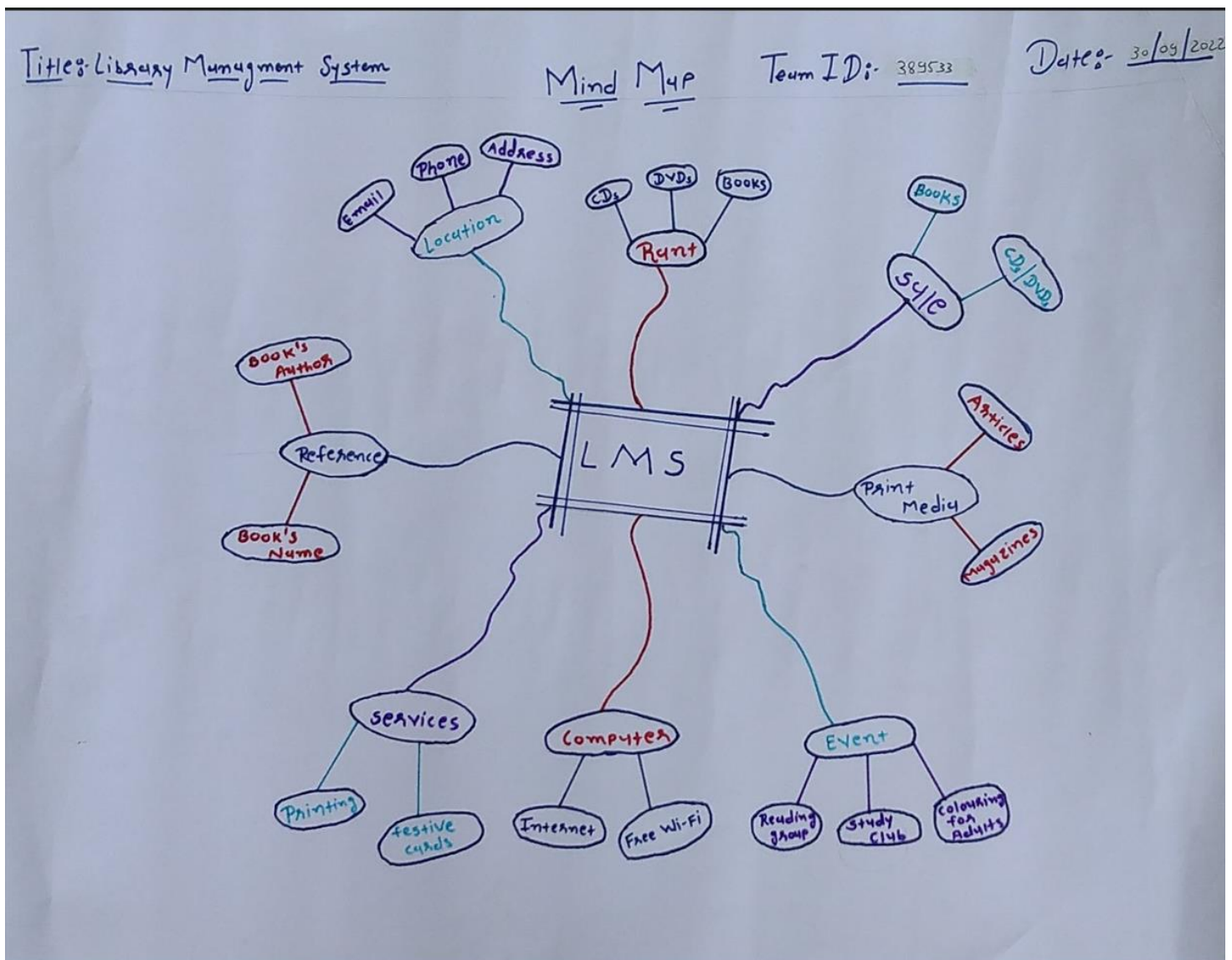
8. LEARNIN NEED METRIX

8.1 ABOUT
The purpose of LNM is to identify there quirements of learning among the team members. While a new product/process is under development based on a unique idea(to reduce the level of difficulty faced bay user), the team members need to learn and explore allot of new skills and documents, methods and guidelines.

8.2 LNM canvas
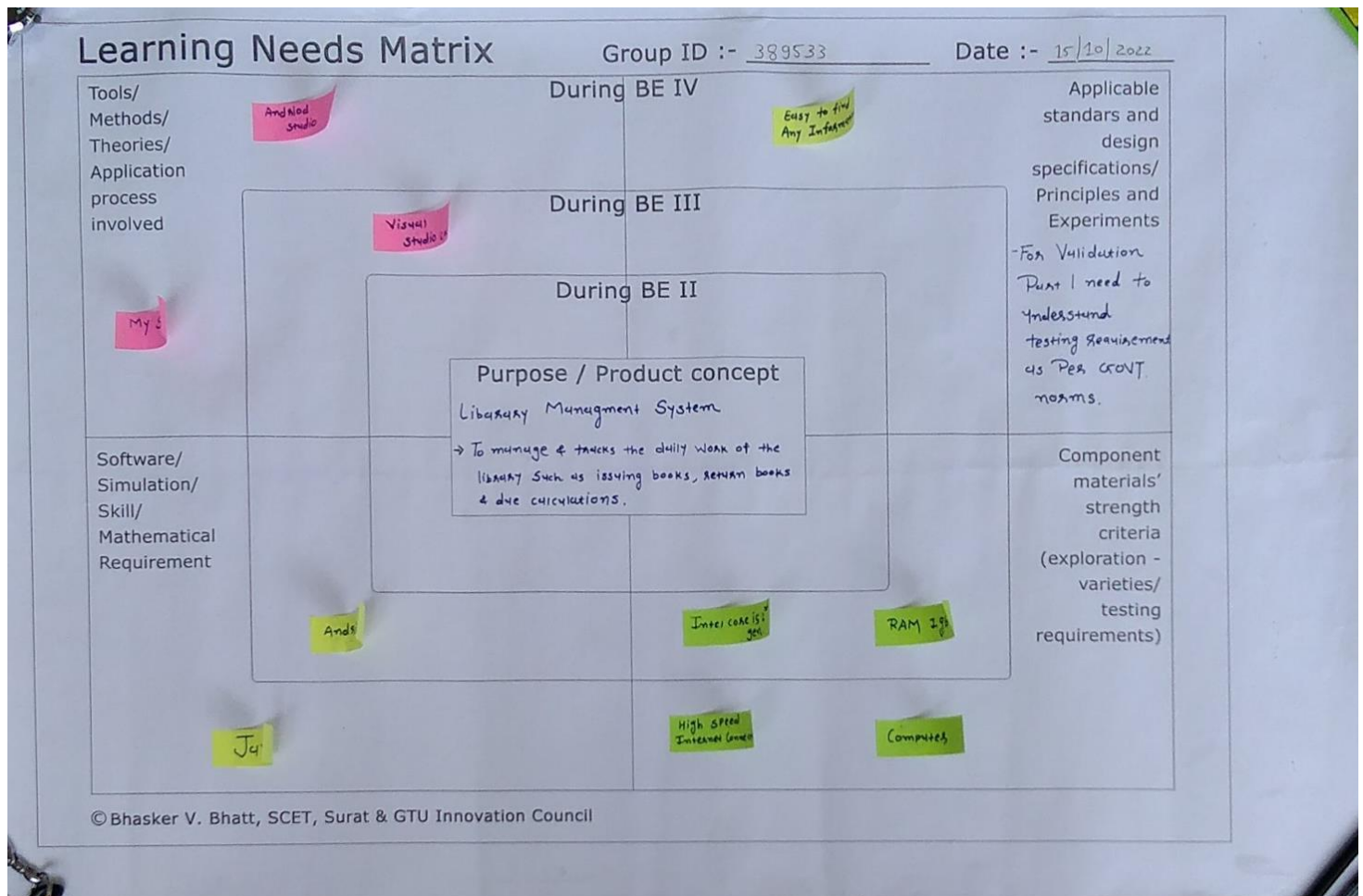
CONCLUSION

Finally in student attendance portal system, the outcome of all the hard work done for attendance management system is hear. It is a software which helps the user to work with the attendance, fees update coerce update and messages etc. This software reduces the amount of manual data entry and gives greater efficiency. The User Interface of it is very friendly and can be easily used by anyone. It also decreases the amount of time taken to write details and other modules. All the details about students, teachers and their other task can only seen by the verified users. This Attendance Management System is a solution to all the problems related to the attendance, message, fee status, courses taken by the teachers and the students

GUJARAT TECHNOLOGICAL UNIVERSITY

Centre for Industrial Design (Open Design School)

<u>DESIGN ENGINEERING</u>

CONTINUOUS ASSESSMENT CARD

COLLEGE NAME: Shree Swaminarayan Engineering College, Kalol	
COLLEGE CODE: 115	
SUBJECT NAME: Design Engineering	
SUBJECT CODE: 3140005	SEMESTER: 5th
BRANCH: Computer Engineering	ACADEMIC YEAR: 2021-2022

TEAM NAME:	TEAM ID: 389533
PROJECT TITLE/DOMAIN: Library Management System	

SR. NO.	TEAM MEMBER'S NAME	ENROLLMENT NO.
01	Ridham Bipinkumar Raval	201150107001
02	Vinit Amrutbhai Khuman	201150107002
03	Jainil Hiteshbhai Bhatasana	201150107007
04	Yuvrajsinh Arvindsinh Parmar	201150107010
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INTERNAL GUIDE NAME: Ms.MACWAN RIYABEN NALINKUMAR

INTERNAL GUIDE SIGN:

Head of Department   College Seal

Ms.MACWAN RIYABEN NALINKUMAR

1
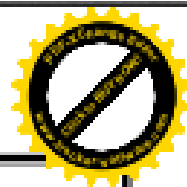
MONTHLY ASSESSMENT - I (Observation, Empathy and Define Phase)
(DATE : 30 / 09 / 22)

1. Why students/team have taken above mentioned domain? (Please specify the reason)
   (Note: For more content or information, one may attach additional pages to this card.)

   Student have choosen above mentioned domain because it is very time
   consuming and hectic to manage all the book manually. It also demands more
   labour to maintain the offline library system.

2. How frequently student team has gone for observation on field, mention with date, place, time etc.? Which are the key observations that they have noticed?

   Every Sunday at 10 am went for a quick observation in to the local public library.
   Team noticed that it took more time to find any book, also there is no internet
   connection.

3. A. How many interactions/interviews team members have done?

   3 Interaction, 4 Public interview

   B. Who are the user and various stakeholders on domain? Describe their persona (Name, age, occupation/education, roles and responsibility etc.)

   I. System manager - Ridham, Age - 21, II. Technician - Yuvraj, Age - 21,
   III. Administrator - Hiren, Age - 21, IV. Librarian - Mr. Shah, Age - 45
   V. Student/adults - Age - (16 to 60)

   C. List out the questions asked by team while having observation and interview?

   1. Is it hard to store the data offline ?
   2. Users opinion about e-library and normal library ?

4. What is something special/random/unusual (i.e. activity, environment, interaction, object or user) team have observed at the domain? Please elaborate the conditions with photographs if available.

Activity :- Admin login, Book information recording, User/borrower

Enviroment :- Technical, Clam & Composed, Happy

Interaction :- User to Admin, Admin to User, Issue livrary card

Object :- Computer, Laptop, Internet Connection

User :- Students, Staff, Member, People

5. Enlist any five major problems observed by your team in the respective domain. Mention any one for which you have empathize user the most and which might become your problem statement. Give reasons of selection of particular problem/issue based on empathy.

1. Remind for book retum

2. It's hard to store data manually

3. It's hard share data any ware

4. Issue related book availability

5. Location is quite unreachable for some people

Most of the librarian had one common problem which was sharing data.

We worked on that particular problem in our program

6. Define your "PROBLEM DEFINITION" for the project as per below format. Which might be refine till end of Ideation phase if you wish.

User/ Stakeholder	Needs a way to	Problem/Needs	Because	Insights

SUGESTIONS BY INTERNAL GUIDE:

AEIOU CANVAS SUGGESTIONS:
EMPATHY CANVAS SUGGESTIONS:
MIND MAPPING SUGGESTIONS:
GENERAL SUGESTIONS:
Overall Mark (Out of 05):

GUIDE SIGNATURE:
Date:

MONTHLY ASSESSMENT – II (Ideation and Product Development Phase)
(DATE : 15 / 10 / 22)

1. Explain briefly Ideation thought process and efforts of your team to reach ideas for listed problems.

   First of all our team asked question to the local people and gather the data then the analyses data to find major problems. After that we worked on that problems.

2. Enlist any five effective ideas to address the probable listed problems with reason.

   1. Automatic remainder notification

   2. More storage ability compare to manual

   3. It is easy to share data digitally

   4. It will send a notification if any shortage of book occur

   5. User dose not have to go any ware for reading

3. Explain the most effective possible solution proposed for the problem.

   The most convincing possible solution was the reminder notification about the book returning. Now it's easy for librarian to not to remember everything.

4. Explain the features, functions and working principles/technology/pattern of your proposed solution.

   It's a very efficient system, user can reserve any book if he/she wants to borrow. It's works on the latest and user friendly technology.
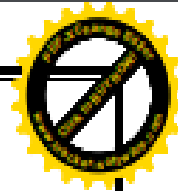
5. Enlist major advantages and disadvantages (atleast three) of the proposed solution.

Advantage :- 1) User friendly software, 2) Increase librarian's efficiencies

3) Search, add, update, and view library materials online

Disadvantage :- 1) Risk of computer virus ,

2) Requires high-speed connectivity for web-based system

3) Sometimes it is complicated to operate for some first time user

6. Briefly mention refinement on PDC based on User/Stakeholder's feedback on your concept.

We have got complain about occasional system glitch and our technician find

some bug and solved it, now user is satisfy with upgrade .

SUGESTIONS BY GUIDE:

IDEATION CANVAS SUGGESTIONS:
PRODUCT DEVELOPMENT CANVAS SUGGESTIONS:
LEARNING NEEDS MATRIX SUGGESTIONS (in case of 4th sem and onwards):
GENERAL SUGGESTIONS:
Overall Mark, considering assessment I (Out of 05):

GUIDE SIGNATURE:
Date:

MONTHLY ASSESSMENT -III (Detail Design, Prototype and Test phase)
(This assessment shall be done by another guide of department or interdepartmentally along with guide)   **(DATE : 31 / 10 / 22)**

1. Which theoretical subjects/concepts are involved with your project? How it is useful to your project?

   Interaction and communication with local people helps us understands what are the problems and how it can be evolved.

2. Which software/design tool/Skills you have learned/applied during the project? Explain the features of it.

   We used Android as a software which was new for us. We learned it from online material, we also apply Visual Studio Code and My SQL as a tool which is part of our system's base.

3. Explain the prototype/model prepared by the student/team.

   This product is a basic and understandable model of our project. It gives perfect visualization how website is going to work also how different components are connect with each other.

4. What are the materials, technology, things have utilized to make the prototype/model?

There is no technology involved in this prototype since it's not digital, but we use some website for reference which are mention below

1) Researchget.net

2) Education.io

5. How many Iterations have you done to reach final solution? Explain modification/revise parameters/characteristics for each iteration.

Our team is done 4 to 6 interaction to get the final solution. First two meeting or interview were in public at super market, other were at the local library with librarian and member of the library.

6. What is the scope of the project? How you are planning to implement it in future?

Our scope is to make things is easy to people who work in library and people who use library. We are hoping to implements this system in 5 to 7 years.

SUGESTIONS BY EVALUATOR:

PROTOTYPE/MODEL SUGGESTIONS:
GENERAL SUGESTIONS:
Overall Mark, considering assessment I & II (Out of 10):

Department/Interdepartmental Evaluator name and sign:
Guide sign:
Date: