

# Learning Management System

Guided By

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# Problem Observation

- Difficulty in sharing notes
- Difficulty in submitting assignments
- Difficulty in having a course related discussion
- There are other platforms available for sharing but there are IPR issues also so, we can't share it on social networks
- Then, How do students and Professors share their notes and slides?
- Answer is Picasa, Gmail, Webmail, drives, dropbox, moodle and so on.....



# Identification of the users

- Students: Access and share slides and notes
- Professors: Sharing of class notes, Clearing doubts
- Teaching Assistants: Updates of the classes, Clearing doubts



# Problem Observation

It was observed that not many departments in IIT Guwahati use Moodle. Out of those using Moodle, very few of them were active.

Page: 1 2 3 4 (Next)					Page: 1 2 3 (Next)				
User picture	First name / Surname	City/town	Country	Last access ↑	User picture	First name / Surname	City/town	Country	Last access ↑
😊	Prakash Shukla	Daltonganj	India	2 secs	😊	Prakash Shukla	Daltonganj	India	26 secs
😊	PANKAJ MANSION	sadri	India	1 day 6 hours	😊	nilay kumar	guwahati	India	8 days 10 hours
😊	jayant kumar pandey	deoghar	India	2 days 9 hours	😊	jitendra kumar yadav	gaya	India	8 days 11 hours
😊	Debraj B	Guwahati	India	6 days 15 hours	😊	Anurag Jhaver	indore	India	16 days
😊	yashwanth vemula	hyderabad	India	7 days 6 hours	😊	VIKAS KUMAR GUPTA	guwahati	India	16 days 1 hour
😊	SUBHAM TAYAL	GUWAHATI	India	14 days 11 hours	👤	Vishal Anand	Dhanbad	India	34 days 1 hour
😊	shubham mourya	ujjain	India	23 days 7 hours	👤	PYARIMOHAN DEHURI	BHUBANESWAR	India	45 days 7 hours
Page: 1 2 (Next)					😊	Vasu Kiran Mandava	Vijayawada	India	65 days 14 hours
😊	Prakash Shukla	Daltonganj	India	2 secs	😊	Akshay Sridhar	Guwahati	India	92 days
👤	pavan teja nagisetti	guwahati	India	1 day 21 hours	😊	pruthvi kondapalli	guwahati	India	216 days 6 hours
😊	VENKATARAMANA MANIKANTA PATNANA	srikakulam	India	2 days 7 hours	😊	prodyut dhar	guwahati	India	217 days 4 hours
😊	Sourabh Choraria	Guwahati	India	2 days 13 hours	😊	vijay laxmi meena	kota	India	235 days 4 hours
😊	nikhil kumar singh singh	fatehpur	India	7 days 3 hours	😊	Vineet Kumar	Unclaimed territory	Antarctica	260 days 14 hours
😊	kuldeep k.p.	alwar	India	22 days 3 hours	😊	jeetendra meena	GUWAHATI	India	279 days 9 hours
😊	zubin priyansh	guwahati	India	27 days 20 hours	👤	devendri	Sandwari	India	11 days 10 hours
😊	Shubham Goyal	Hindua City	India	53 days 7 hours	😊	abhishek pawar			
😊	Gyaneshwar Amar	Samastipur	India	55 days 12 hours	😊	ajay gupta	ajmer	India	14 days 13 hours
😊	Manas pratim kakati	ghy	India	96 days 5 hours	😊	lakhan singh	guwahati	India	14 days 17 hours
😊	Ajay Singh	Morena	India	108 days 11 hours	😊	md rashid ali faridi	guwahati	India	15 days
😊	Dhruv Kohli	Delhi	India	112 days 9 hours	😊	Dhanasingh.M Dhana	Guwahati, Assam	India	17 days 13 hours
😊	somveer singh	farrukhabad	India	114 days 4 hours					
😊	Suman Sarkar	Guwahati	India	114 days 6 hours					



# Problem Observation

It was observed that Moodle in IIT G is very inactive. Data was collected from 7 users about how they access and share their notes.

All of them used multiple platforms to share notes. Wanting to know a single priority as a notes sharing portal, it was found that only 1 out of 7 users used Moodle.



# State of the Art

- A Tutor: 1. Adapt to several teaching and learning scenarios.  
2. Can be useful to Visually impaired and disabled learner.  
3. Link: <http://atutor.ca/>
- Canvas: 1. Sharing of class announcement on Facebook and twitter.  
2. Video/Blog/Wikipedia  
3. Link: <https://canvas.instructure.com/login>
- Efront: 1. Interaction through icon based interface.  
2. Content creation, internal messaging, forum, chat, assignment building.  
3. Link: <http://www.efrontlearning.net/>



# State of the Art

- Ilias:
  1. Tool for collaboration and Communication
  2. Personal Desktop feature. (Notes,Groups,Blog)
  3. Link: <http://www.ilias.de>
- LAMS:
  1. Intuitive visual authoring environment for creating sequences of learning activities.
  2. Online quiz and announcement.
  3. Link: <http://lamsinternational.com/>
- Sakai:
  1. Dropbox, Presentation, News/RSS
  2. Profile and Schedule.
  3. Link: <https://sakaiproject.org/>



# Design Brief

The problem of notes sharing is common in the college. Although a learning management system (moodle) is provided but it has been found that people are not using them, instead the sharing is very random and they use webmail, drive, dropbox, Gmail, Facebook and other platforms.

Our design solution will focus on enhancing the usability of the current learning management system, making it easy to use and pleasurable. Students can easily share/access notes, upload assignments and have a discussion at any time. We will start with the usability inspection of moodle to find the usability problems.



Pre Study

Study

Design

Realisation

Testing

Documentation

Celebration

# Time Line

July 30th

Pre Study

Study

Design

Realisation

Testing

Documentation

Celebration

Nov 30th



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# Studying the problem

We started with Heuristic Evaluation of moodle to find the usability bugs.

Link to [Heuristic Evaluation](#)

We found out many usability problems in moodle.  
It was inconsistent, not properly organized and categorized,  
prone to error and inefficient for the users to use.



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# Studying the problem

- Then we went to the users asked them to perform 3 tasks on Moodle, and to answer a questionnaire based on their task experience.
- The following information was noted:
  - Time for each task
  - No. of clicks for each task
  - No. of errors performed overall



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# Studying the problem

- The 3 tasks that were given to the users were:
  - Access the course 'Introduction to Psychology', enroll yourself in it. Open 'Learning Slides'
  - Add a new blog entry, which has title 'Hello World!' and body 'This is my first blog'. Also, add a smiley of your choice after the text. Post your blog.
  - Open Calendar from the 'Introduction to Pyschology' course and Export Calendar.



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# Studying the problem

- The tasks that were given, were to make the user understand and explore the different features of Moodle while perceiving and experiencing the usability of the platform
- Further, the questionnaire was based on user perceived web qualities and how users have a certain impression of a web application while they used it<sup>[1]</sup>



## Pre Study

# Studying the problem - Moodle

## Study

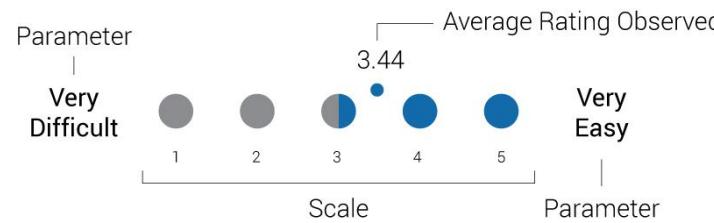
# Design

## Realisation

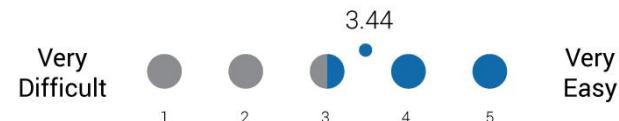
# Testing

## Documentation

## Celebration



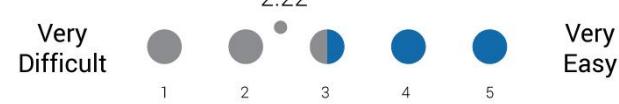
1) Accessing the course materials/ slides was:



2) Performing different tasks was:



3) Writing a new blog was:



4) The options in the blog entry were:



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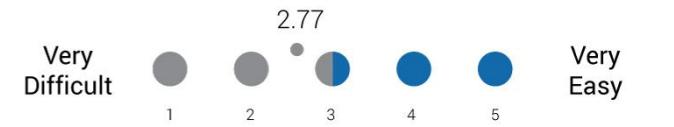
Testing

Documentation

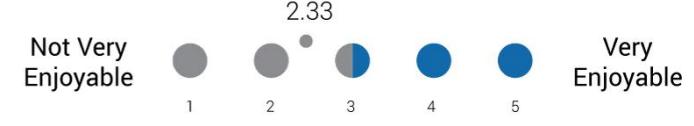
Celebration

# Studying the problem - Moodle

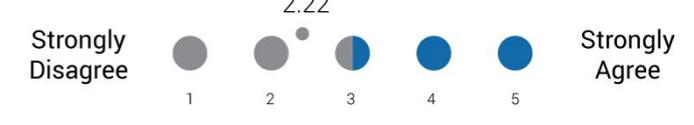
5) Finding necessary links was:



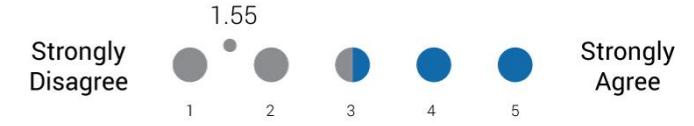
6) Using Moodle was:



7) Different types of information were clearly visible:



8) Moodle looks attractive:



9) Moodle looks organised:



# Studying the problem - Moodle

- The results were analysed and it was clearly found that Moodle had several usability issues and it failed to provide a good user experience. [scored a negative rating based on user perceived web qualities]
- It was noted that:
  - It had poor learnability [Q. (1),(2),(5),(7) of questionnaire]
  - It was not easy to use [Q. (2),(3),(5),(7)]
  - It was error prone [task observations]
  - It gave a poor user experience [Q. (2),(5),(6),(7),(8),(9)]

Data collected available in 'Moodle Task Experience.xlsx'



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# Identifying the problem

After the Heuristic Evaluation and the analysis of the task based questionnaire, we concluded that there is big problem of usability in the learning management system provided by the college. It is very dull and gives an unpleasant experience to the users, the users refrain themselves from using it and go for alternatives like webmail, Gmail, Facebook, Dropbox for sharing notes and having discussion.



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# Defining the problem

**Developing a new learning management system for IITG fraternity.**



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# Benchmarking

A benchmark is set for the design based on our interaction with users and studying the State of Art.

- Adapt to several teaching and learning scenarios.
- Notification of class announcement
- Profile
- Blog
- Instant message
- Group
- Discussion
- Schedule
- Notes



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# Finalizing the Design Brief

The problem of notes sharing is common in the college. Although a learning management system (moodle) is provided but it has been found that people are not using them, instead the sharing is very random and they use webmail, drive, dropbox, Gmail, Facebook and other platforms.

Our design solution will be providing the IITG fraternity with a new learning management system, making the sharing of notes easy and pleasurable. Students can easily access notes, upload assignments and have a discussion at any time. We will be following the user centered design process for the project, because we want to create a better experience for the users.



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# Deciding on Grids and Colour pallet

- Following a user centred design methodology, every design decision was taken with consideration of the users' preferences and visual and cognitive perceptions.
- Users were shown and asked to rank six grid patterns, which were probable design solutions for our system, and four colour pallets which could fall into our visual design.



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# Deciding on Grids and Colour pallet

- We intended to understand their perception of the context of the system and the initial psychological impact of the various designs.
- No knowledge of design was necessary to rank the visuals.
- This was undertaken not to be entirely biased by the users' preferences, but to give ourselves a bridge of safety, if at all there was a point in the design phase where we couldn't move forward.



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# Survey



1

Gross Rank: 53  
Top Choice: 3  
Lowest Choice: 2



2

Gross Rank: 57  
Top Choice: 2  
Lowest Choice: 0



3

Gross Rank: 66  
Top Choice: 1  
Lowest Choice: 3



4

Gross Rank: 67  
Top Choice: 3  
Lowest Choice: 4



5

Gross Rank: 56  
Top Choice: 3  
Lowest Choice: 3



★ 6

Gross Rank: 43  
Top Choice: 7  
Lowest Choice: 1



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# Survey



Gross Rank: 37  
Top Choice: 6  
Lowest Choice: 2



Gross Rank: 44  
Top Choice: 4  
Lowest Choice: 4



Gross Rank: 51  
Top Choice: 1  
Lowest Choice: 7



Gross Rank: 37  
Top Choice: 4  
Lowest Choice: 1



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# Attributes

- Accessible
- Intuitive
- Easy to Use
- Efficient
- Simple
- Organised
- Enjoyable



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# Design Concept - LMS

- The design could serve as an efficient Learning Management System as it is – Simple, Organised and Efficient.
- Academic networking can be made a much smoother and effective experience, using a platform which allows users to have all the necessary information at hand while being able to perform easy yet powerful functions



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# Design Phase

- Initial Concepts:

Krishna Gautham - 11020507

Prakash Shukla - 11020524



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# Wireframes and Feature detailing

Krishna Gautham –11020507 - Bookshelf

Prakash Shukla – 11020524 - Notes



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# Prototype

Krishna Gautham- 11020507- Bookshelf

Prakash Shukla – 11020524 - Notes



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# User Testing

- User testing was conducted in consistence with the testing method used initially for Moodle
- The same users who were made to perform the evaluation of Moodle were asked to perform the tasks and evaluation
- Similar tasks were performed by users, followed by a questionnaire to measure ratings for user perceived web qualities



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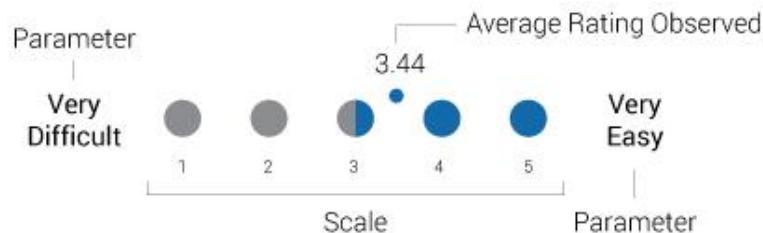
Realisation

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# User Testing Results - BookShelf



1) Accessing the course materials/ slides was:



2) Finding and reading topics in Discussions was:



3) The instant Submissions feature was:



4) Finding necessary links was:



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# User Testing Results - BookShelf

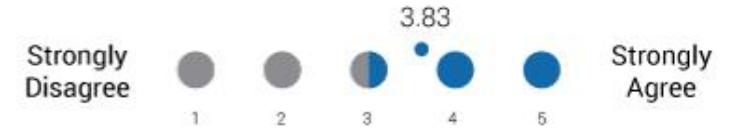
5) Performing different tasks was:



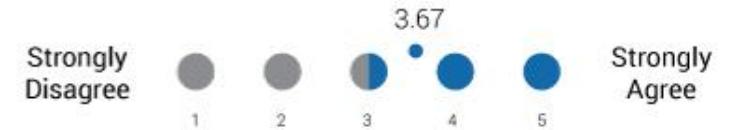
6) Using Bookshelf was:



7) Different types of information were clearly visible:



8) Bookshelf looks attractive:



9) Bookshelf looks organised:



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# User Testing Results Analysis - BookShelf

- Bookshelf secured a positive user experience rating (>3.5 on avg.) based on user perceived web qualities
- Course materials and required features were more accessible compared to earlier [Q. (1),(2),(4),(7)]
- Bookshelf was found to be easy to use [Q. (1),(2),(4),(5),(7)]
- Learnability and efficiency ratings were positive and reflected a balanced user experience system [Q. (5),(6),(8),(9)]
- Data collected available in 'Bookshelf Task Experience.xlsx'



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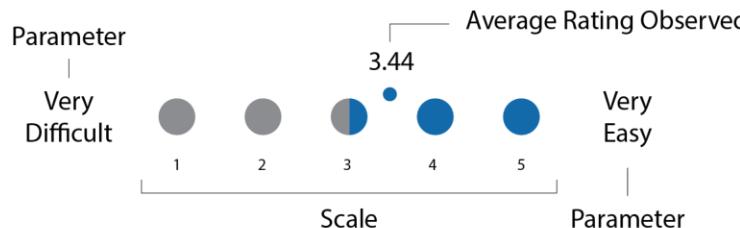
Realisation

Testing

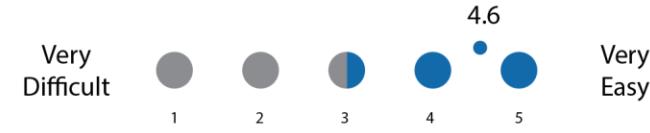
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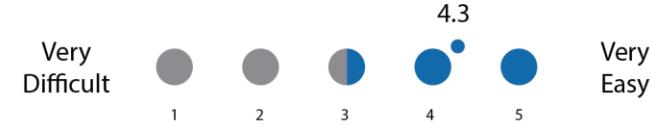
# User Testing Results - Notes



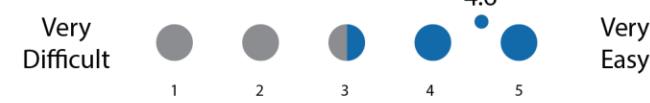
1) Accessing the course materials/ slides was:



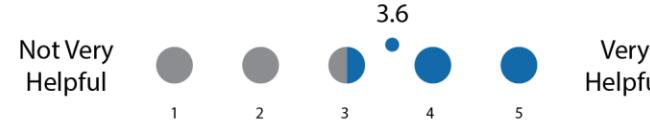
2) Finding and reading topics in Discussions was:



3) Finding blog was:



4) Finding necessary links was:



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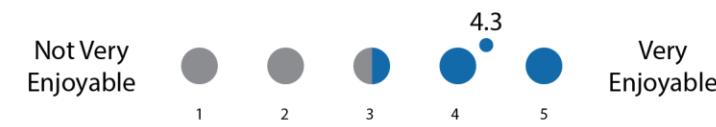
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# User Testing Results - Notes

5) Performing different tasks was:



6) Using Notes was:



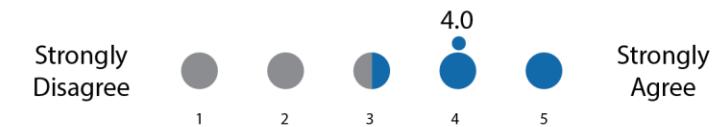
7) Different types of information were clearly visible:



8) Notes looks attractive:



9) Notes looks organised:



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# User Testing Results Analysis - Notes

- Courses materials were easily accessible which shows that the learnability Notes is very high. [Q. (1),(2),(3),(4)]
- Users were satisfied after using Notes. [Q. (6),(7),(9)]
- It was observed that they were using Notes without performing any error.
- The time take to perform the tasks was very less as compared to the moodle which shows that Notes was easy to use.



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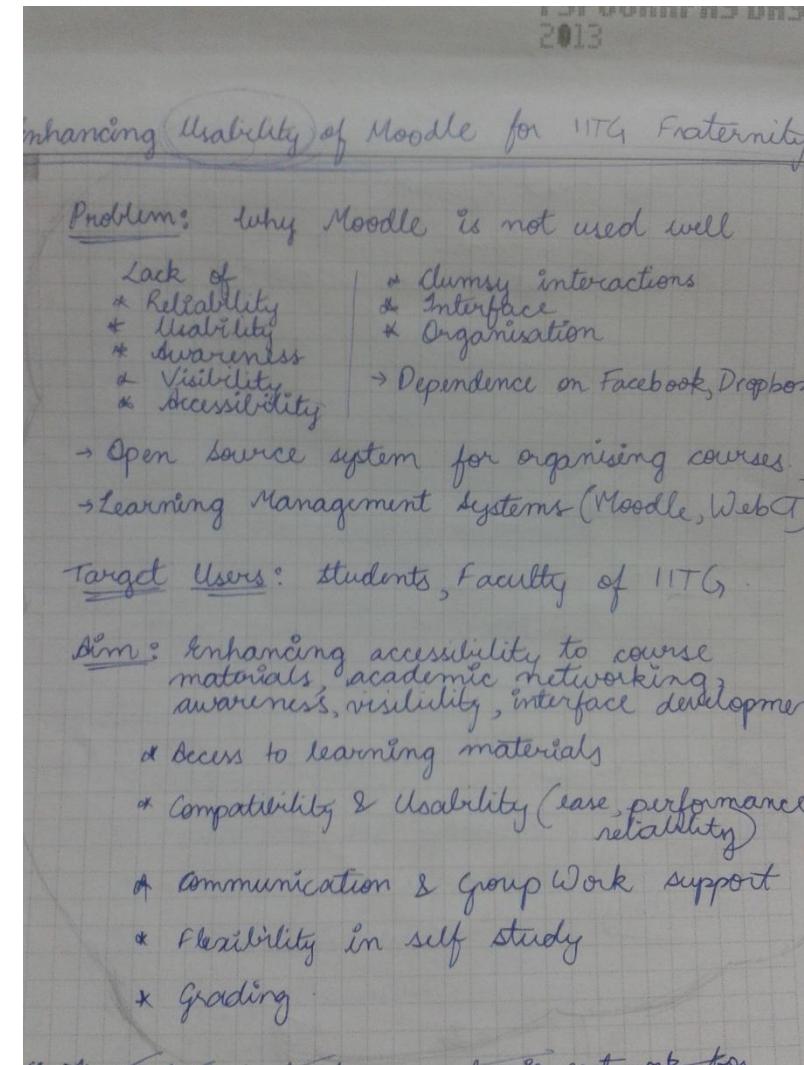
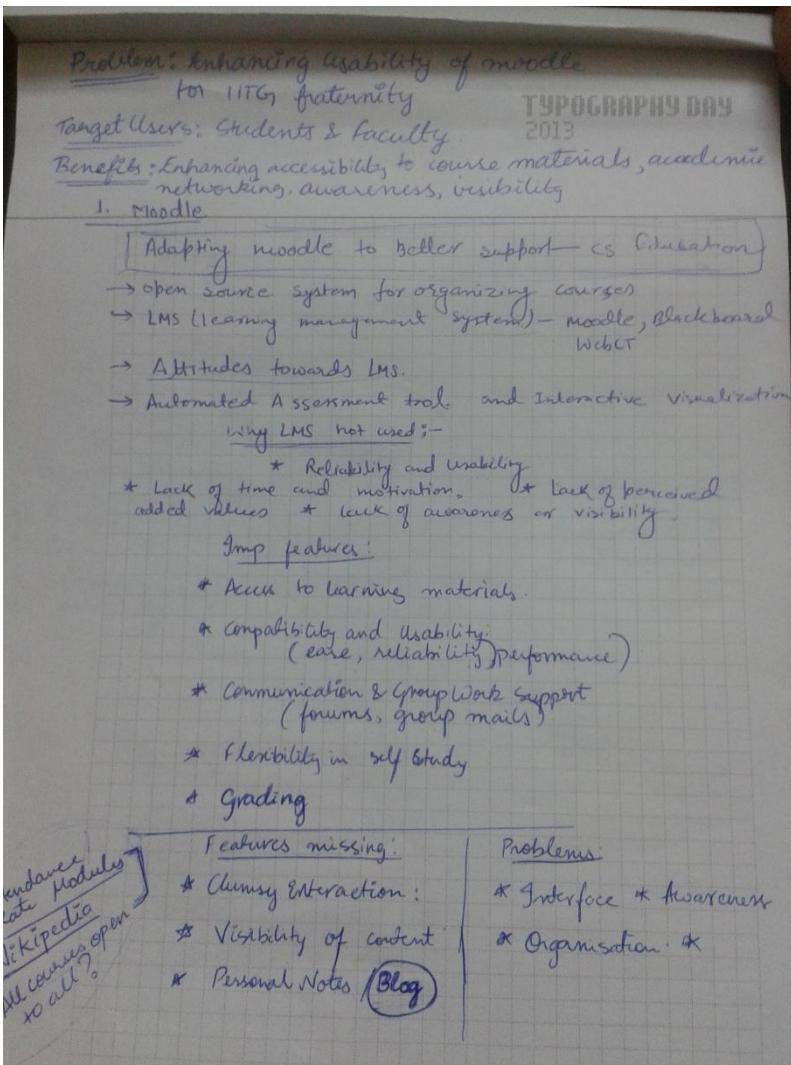
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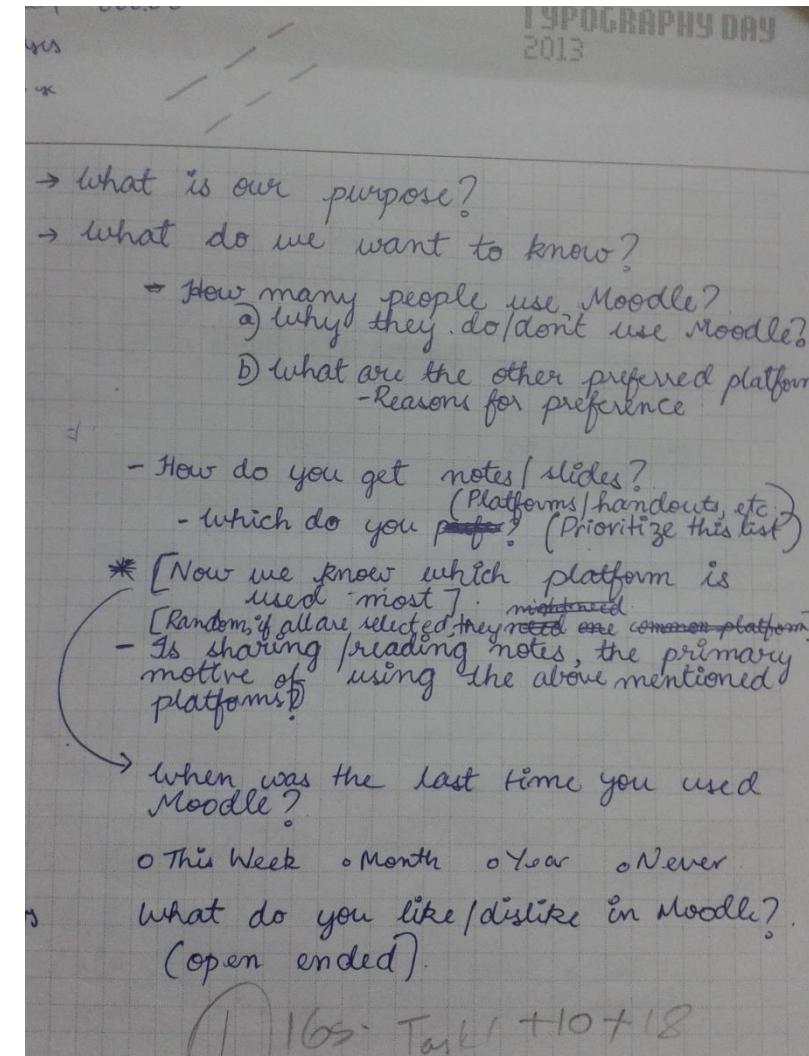
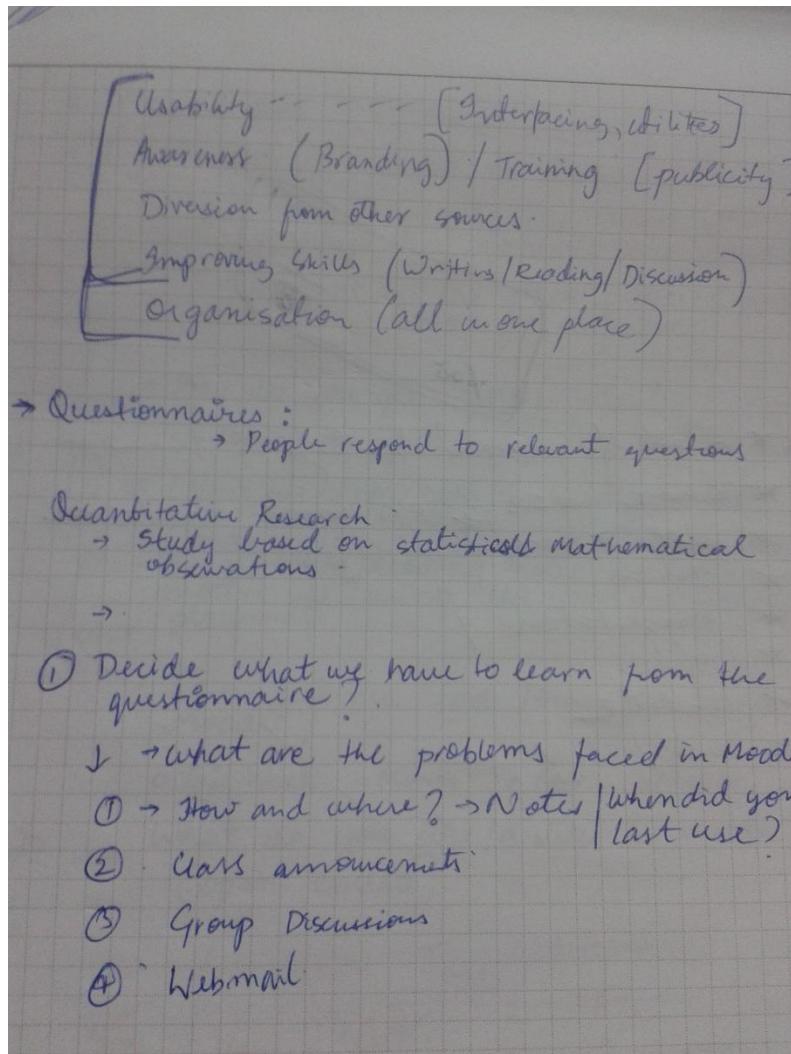
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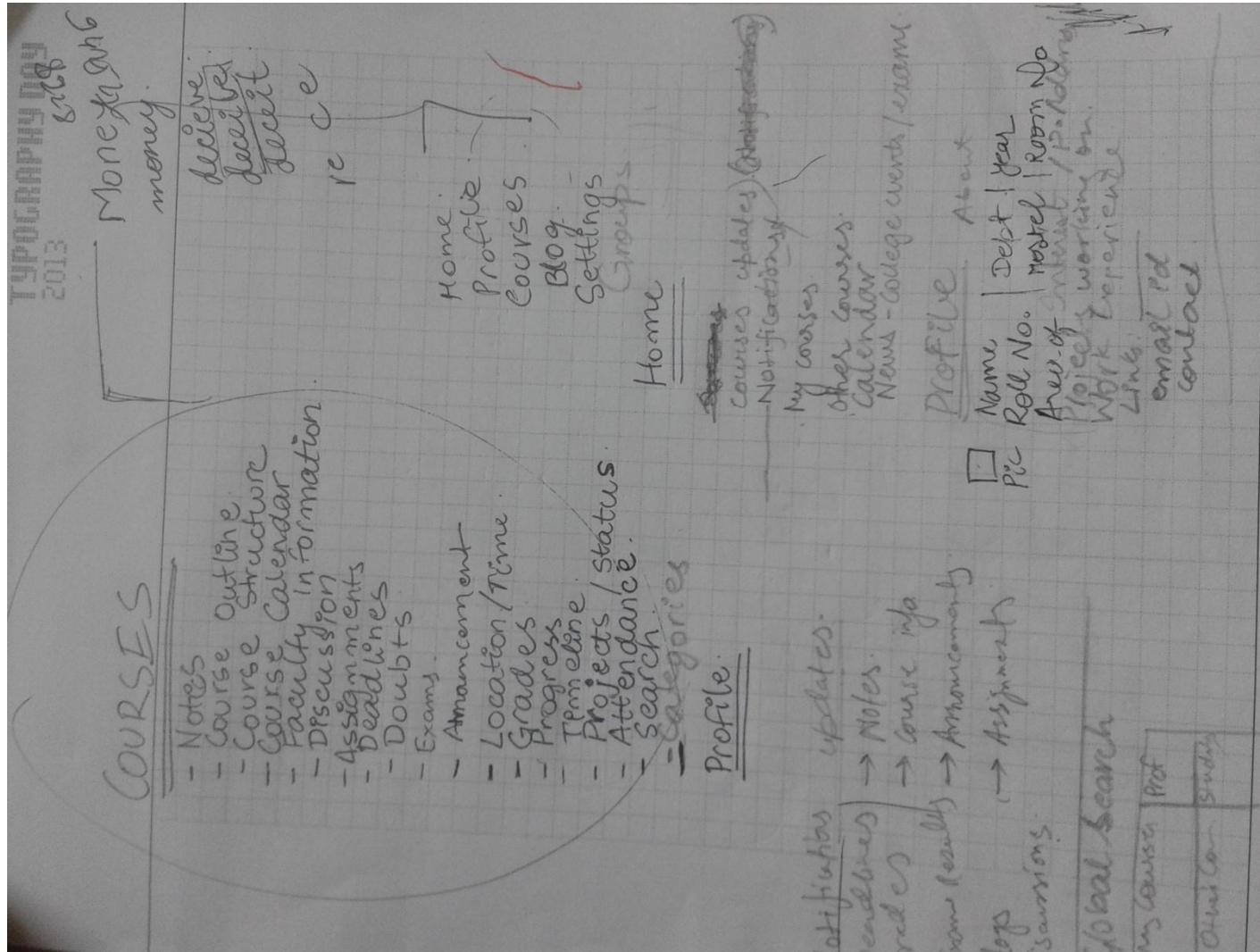
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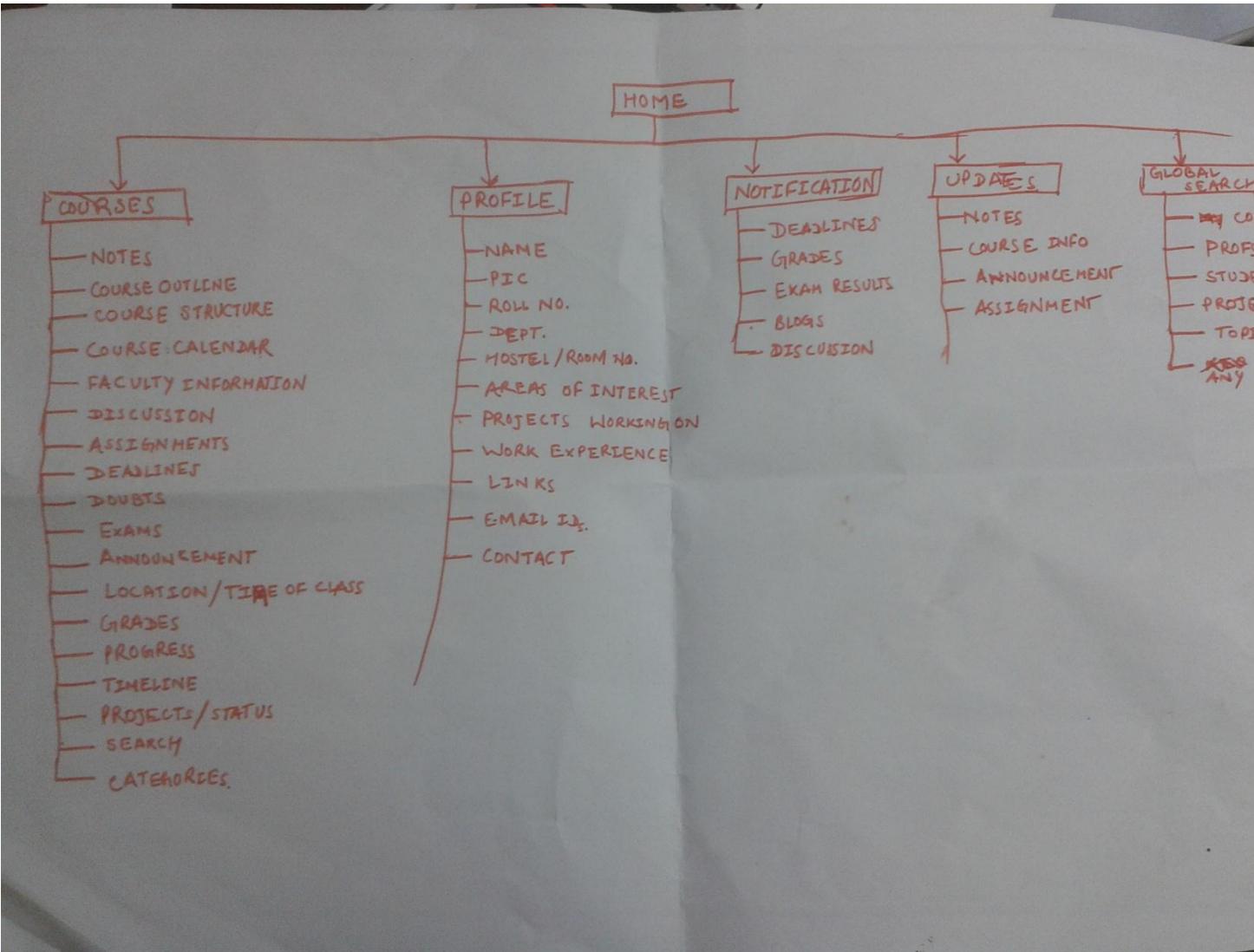
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Lots of work, Lots of frustration but...  
Now its celebration time 😊

