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A Report on

"Mending and Breakdown"

Under the subject of
Design Engineering – II A (3150001)
B.E. III, Semester-V
(Computer Engineering Branch)

Submitted By

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Abstract

On Road Vehicle Breakdown Assistance (ORVBA) is going to be a good solution for the people who seek help in the remote locations with mechanical issues of their vehicle. Usersof the On-Road Vehicle Breakdown Assistance will be the registered public and they will be getting connected with the mechanic through the trustworthy On Road Vehicle Breakdown Assistance (ORVBA) system. Because only the legally licensed and approved mechanics are enlisted in the On-Road Vehicle Breakdown Assistance (ORVBA) system. Also, they are under monitoring by the ORVBA system for not charging any extra service fee from the users as every user is updating their feedback about the availed service through ORVBA system.

Contents

	Abstract		I
	Contents		II
	List of Figures		III
Chapter 1	**Introduction**		
	1.1	About Domain/Area	5
	1.2	About the Definition	5
	1.3	Users	5
	1.4	Modules and Functionalities	5
Chapter 2	**Literature Review**		
	2.1	Observation on Domain	6
	2.2	Literature review related to your definition	6
	2.3	Problem Summary	6
Chapter 3	**Design Consideration to detail design Part**		
	3.1	Functional Requirement	7
	3.2	Design for cost / Environment	7
	3.3	Tools & Technology	8
	3.4	ALL CANVAS and Rough Prototype.	8
Chapter 4	**Conclusion & Future Work**		
	4.1	Conclusion	18
	4.2	Future Work	18
Appendix A	Photo of Canvas		
	References		19

List of Figures

Figure Number	Description	Page Number
Figure 3.4.1	AEIOU	8
Figure 3.4.2	Mind Map	9
Figure 3.4.3	Empathy	10
Figure 3.4.4	Product Development Canvas	11
Figure 3.4.5	Learning Need Matrix	12
Figure 3.4.6	Ideation Canvas	13
Figure 3.4.7	Dashboard	14
Figure 3.4.8	Sign page	15
Figure3.4.9	Login page	16
Figure3.4.10	Explore job	17

Chapter 1: Introduction

1.1 About Domain/Area

This app will assist the user about nearest mechanic or towing service in the near-byarea.The user can search for list of mechanic at any location or the nearby locations which will help them in an unexpected situation raised by the mechanical issues oftheir vehicles. Only the licensed mechanics can get listed here while the search. And there is available mechanic who can come and repair the mechanical issues inthe user's vehicle.

1.2 About the definition

The main purpose of this application is to provide a good solution for the peoplewho want to seek help in the remote locations with mechanical issues of their vehicle.

1.3 Users

There are so many users likewise Client, Employee, Student, Manager, Owner of vehicle, Owner of Garage.

1.4 Modules and Functionalities

User can get help at any remote place. You can easily get to know whether mechanic is available or not. Mechanic contact with in minutes. Nearby mechanic workshop.

Chapter 2: Literature Review

2.1 Observation on Domain

There is already an application called “Go mechanic”.We obsereved some lack of communication and lack of trustness in services that’s why we are going to make application which can overcome these things.

2.2 Literature Review related to your definition

There is already application named Go mechanic.But due to less communication and more time taking for book service and getservice we are going to make and Mending and Breakdown application. We are going to give service at time.

2.3 Problem Summary

Users of the application will be the registered public and they will be gettingconnected with the mechanic through the trustworthy system. Because only the legally licensed and approved mechanics are enlisted in the system.User will also be able to give the feedback so that we can track the improvement and it will also be helpful to other users.

Chapter 3: Design consideration to detail design part

3.1 Functional Requirements

User can login in the application. User can book a service and cancel a service. They can communicate with the mechanic and resolve the issue of vehicle as soon as possible with minimal cost. User can also see the mechanic details and book for service.

3.2 Design for cost/Environment

Project effort and time will be estimated using the COCOMO estimation model (Barry Boehm). The following formula is the COCOMO model for cost estimation for organic mode projects

Effort = 3.2 * EAF * (Size) ^ 1.05

Time = 2.5 * (Effort) ^ 0.38

Where, Effort = number of staff months (PM)

EAF = effort adjustment factor

Size = number of lines of code for completed product. It is measured in KLOC

Time = total number of months.

The Effort Adjustment Factor is the product of the 15 adjustment parameters. Each adjustment parameter is categorized as very low, low, nominal, high, or very high. All the adjustment parameters are listed below:

- RELY required reliability 0.75 – 1.40
- DATA Database size 0.94 – 1.16
- CPLX Product complexity 0.70 – 1.65
- TIME Execution time constraint 1.00 – 1.66
- STOR Main storage constraint 1.00 – 1.56
- VIRT Virtual machine volatility 0.87 – 1.30
- TURN Computer turnaround time 0.87 – 1.15
- ACAP Analyst capability 1.46 – 0.71
- AEXP Applications experience 1.29 – 0.82
- PCAP Programmer capability 1.42 – 0.70
- VEXP Virtual machine experience 1.21 – 0.90
- LEXP Language experience 1.14 – 0.95
- MODP Use of modern practices 1.24 – 0.82
- TOOL Use of software tools 1.24 – 0.83
- SCED required development schedule 1.23 – 1.10

Adjustment factors for the Online Book Store are listed below:

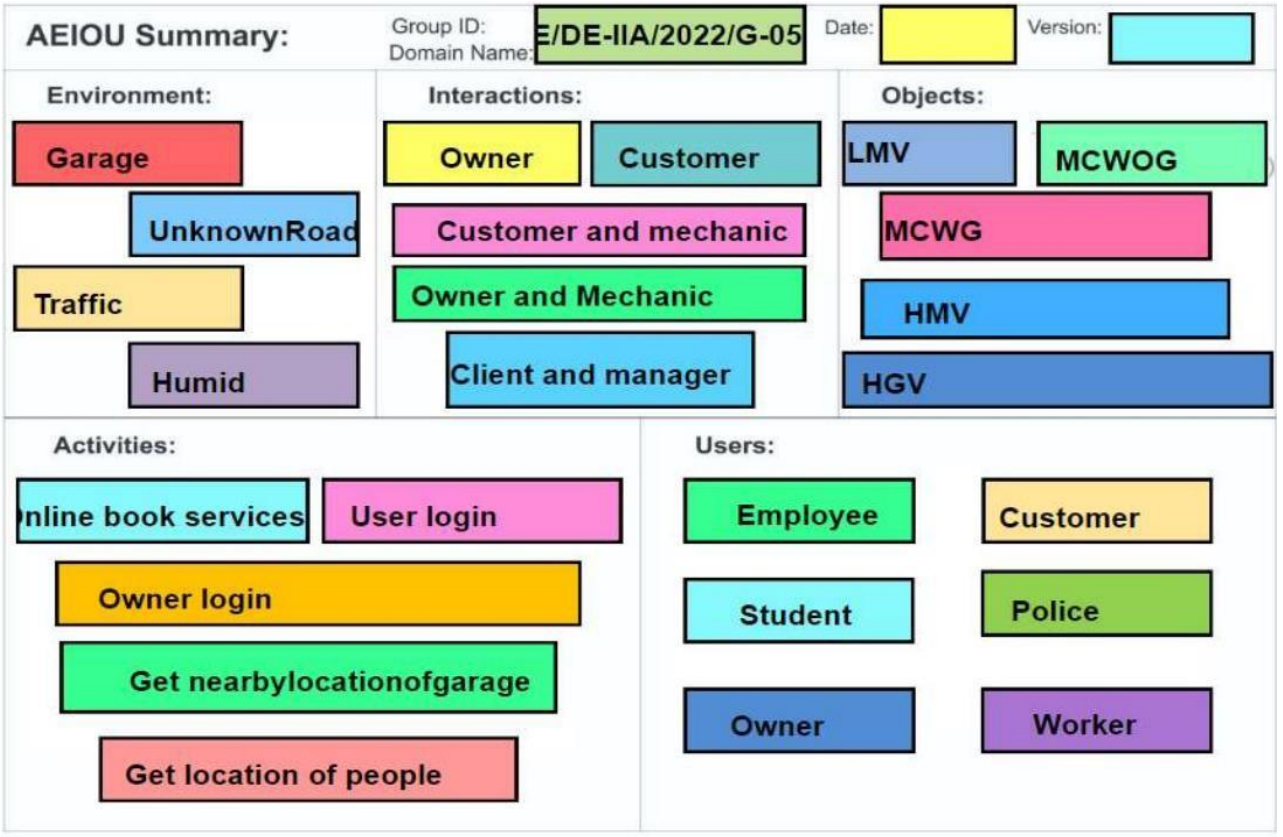
- RELY 1.00 Nominal
- DATA 1.00 Nominal
- CPLX 0.85 Low
- TIME 1.00Nominal
- STOR 1.00 Nominal
- VIRT 0.87 Low
- TURN 0.87 Low
- ACAP 1.00 Nominal
- AEXP 1.13 Low
- PCAP 1.00 Nominal
- VEXP 1.00 Nominal
- LEXP 1.00 Nominal
- SCED 1.00 Nominal The EAF value evaluated to 0.60.

I have estimated the size to be around 3.00. From the calculation I got EFFORT = 6.08.

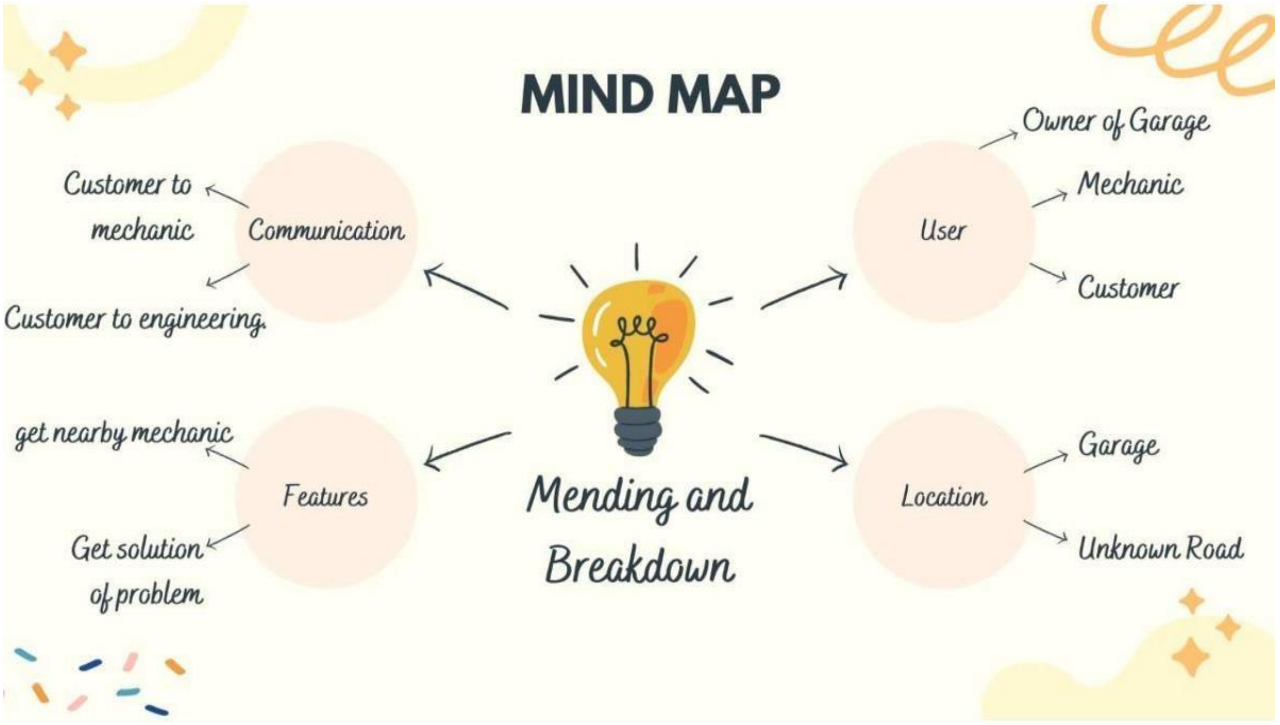
3.3 Tools and Technology

We are going to Android studio for design for frontend .For backend we are going to use Firebase.

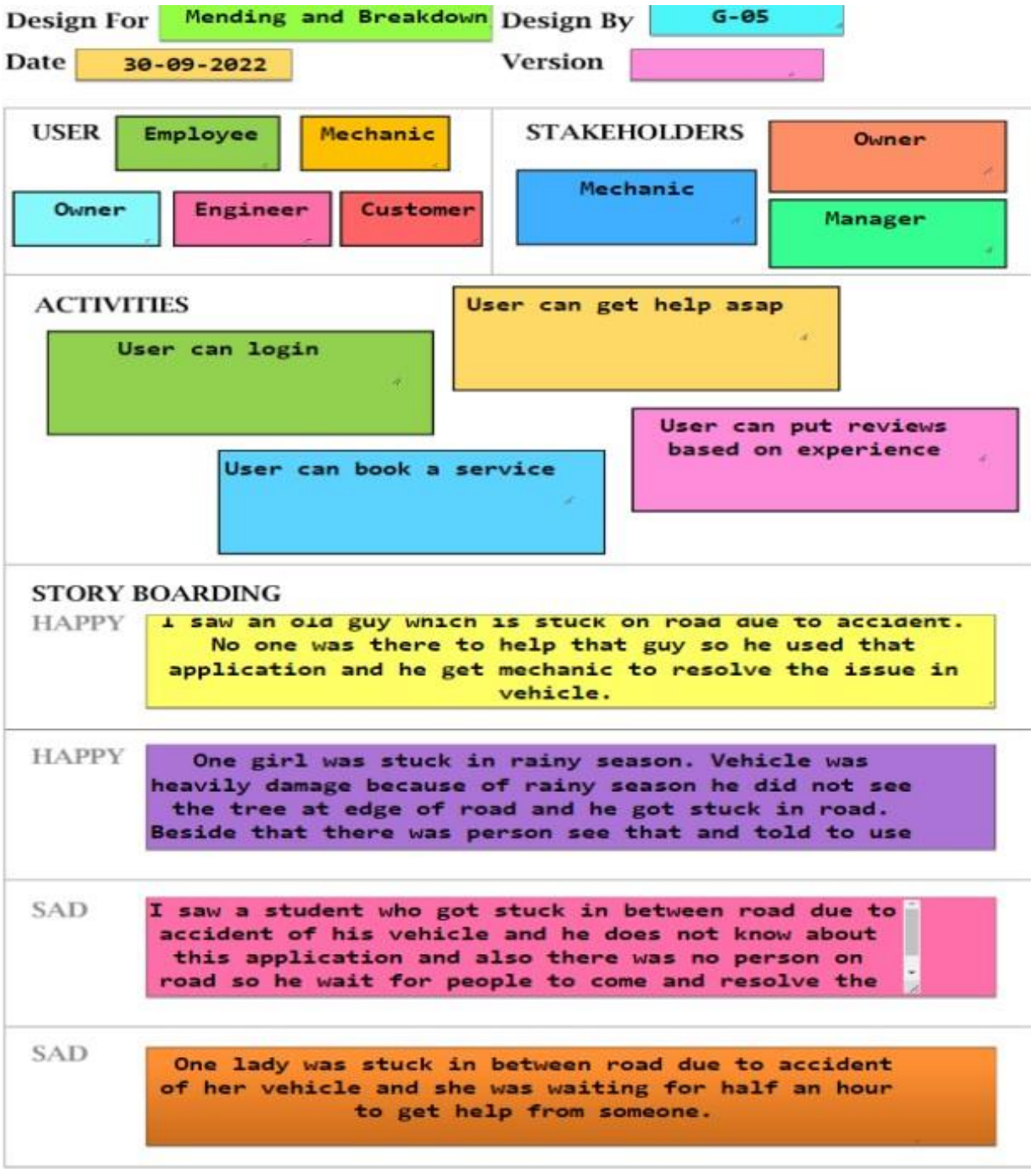
3.4 All Canvas and Rough Prototype



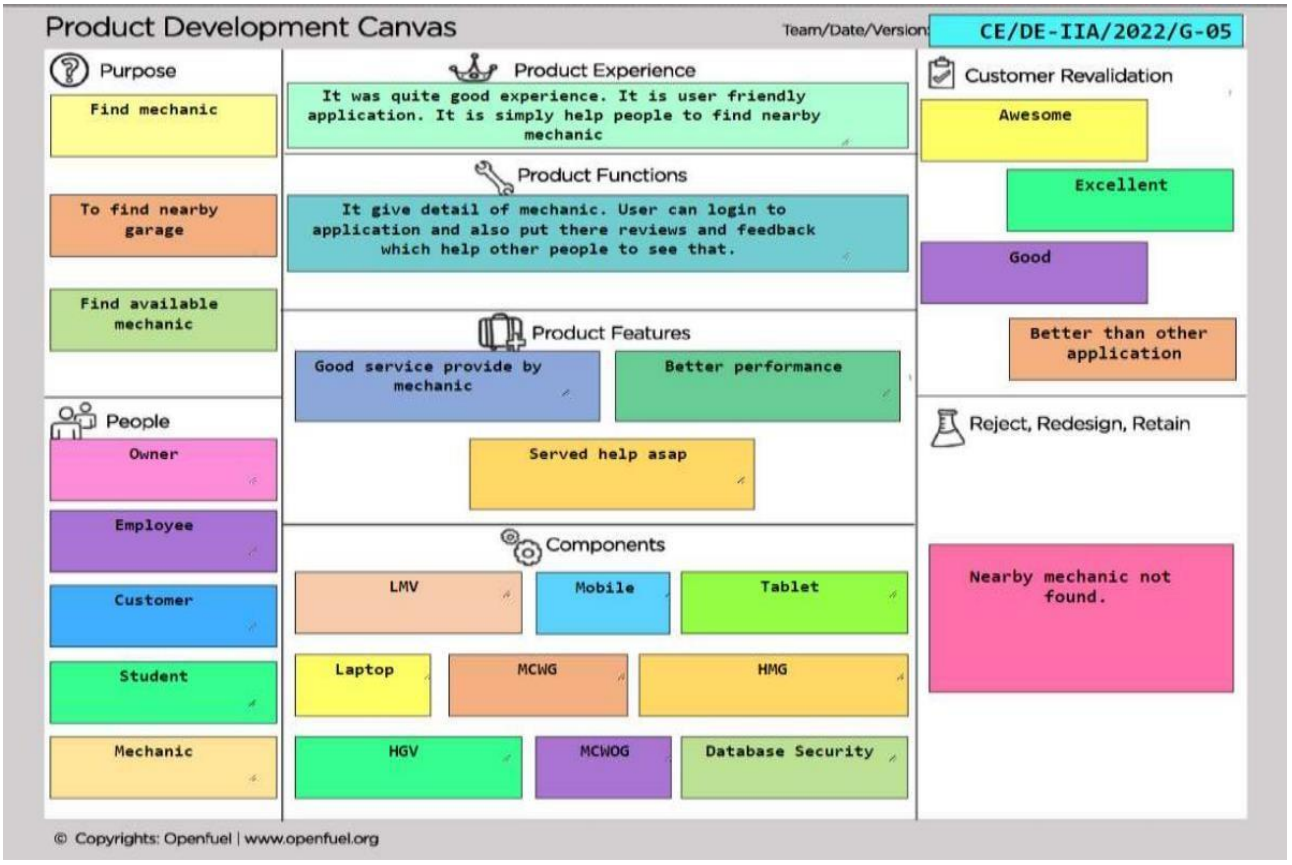
3.4.1 Aeiou Canvas


MIND MAP
Customer to mechanic
Communication
Customer to engineering
Owner of Garage
User
Mechanic
Customer
get nearby mechanic
Features
Get solution of problem
Mending and Breakdown
Location
Garage
Unknown Road

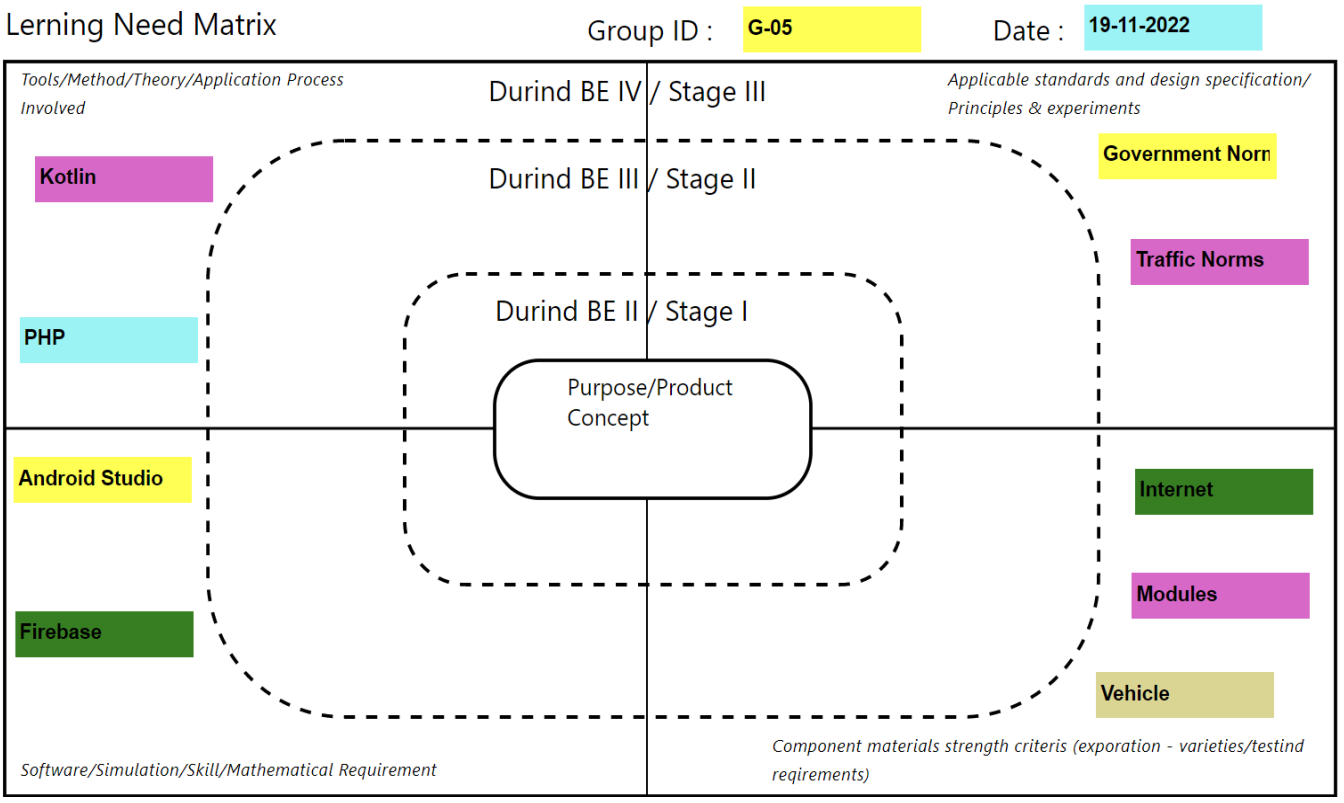
3.4.2 Mind map



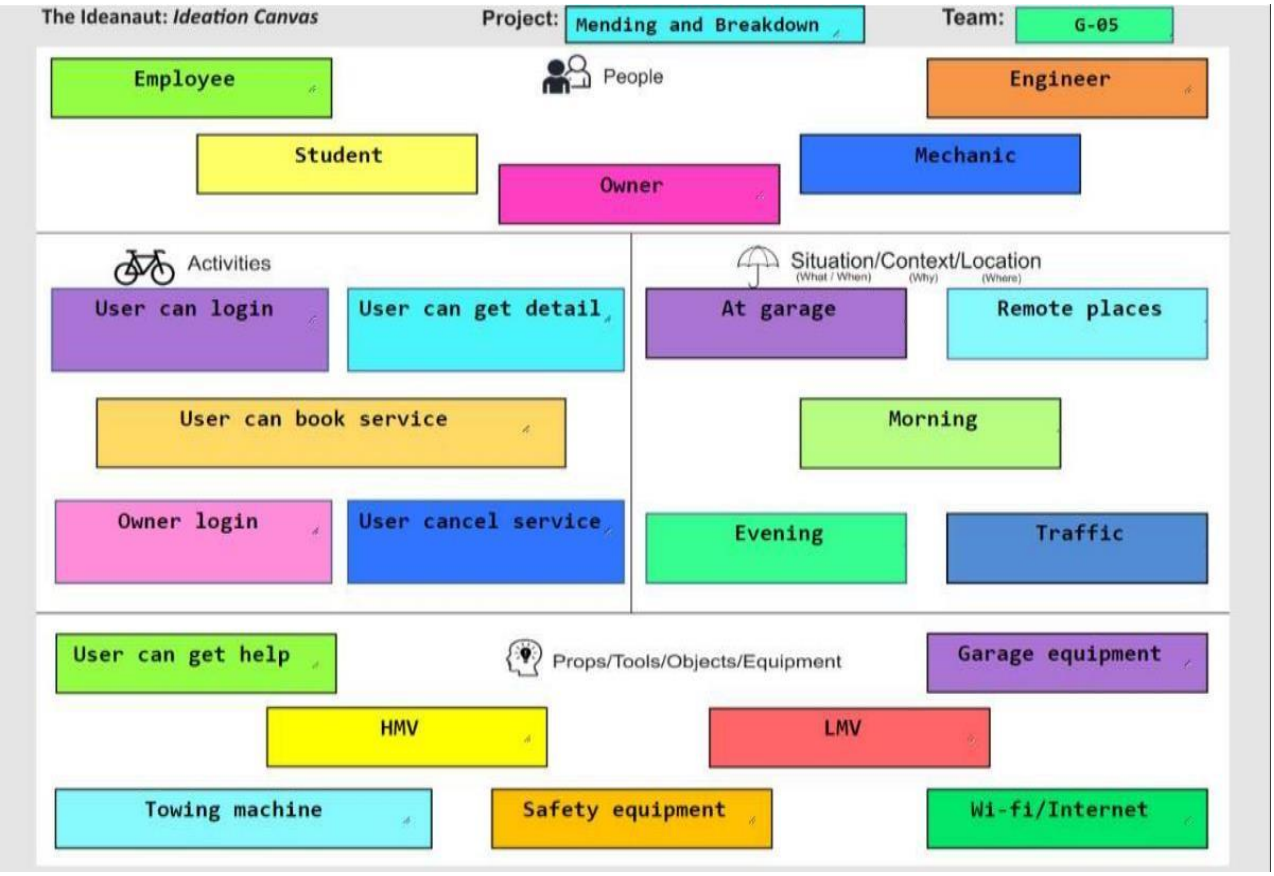
3.4.3 Empathy canvas



3.4.4 Product development canvas

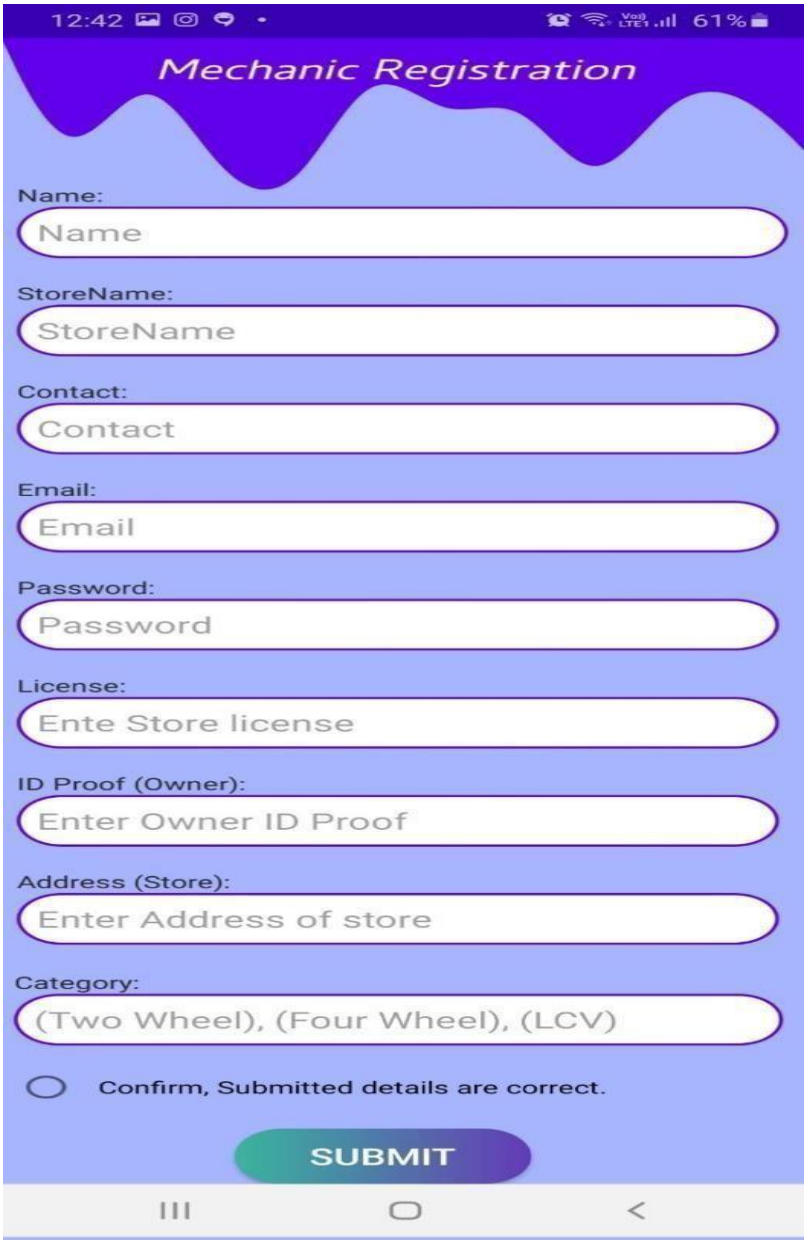


3.4.5 Learning Need Matrix

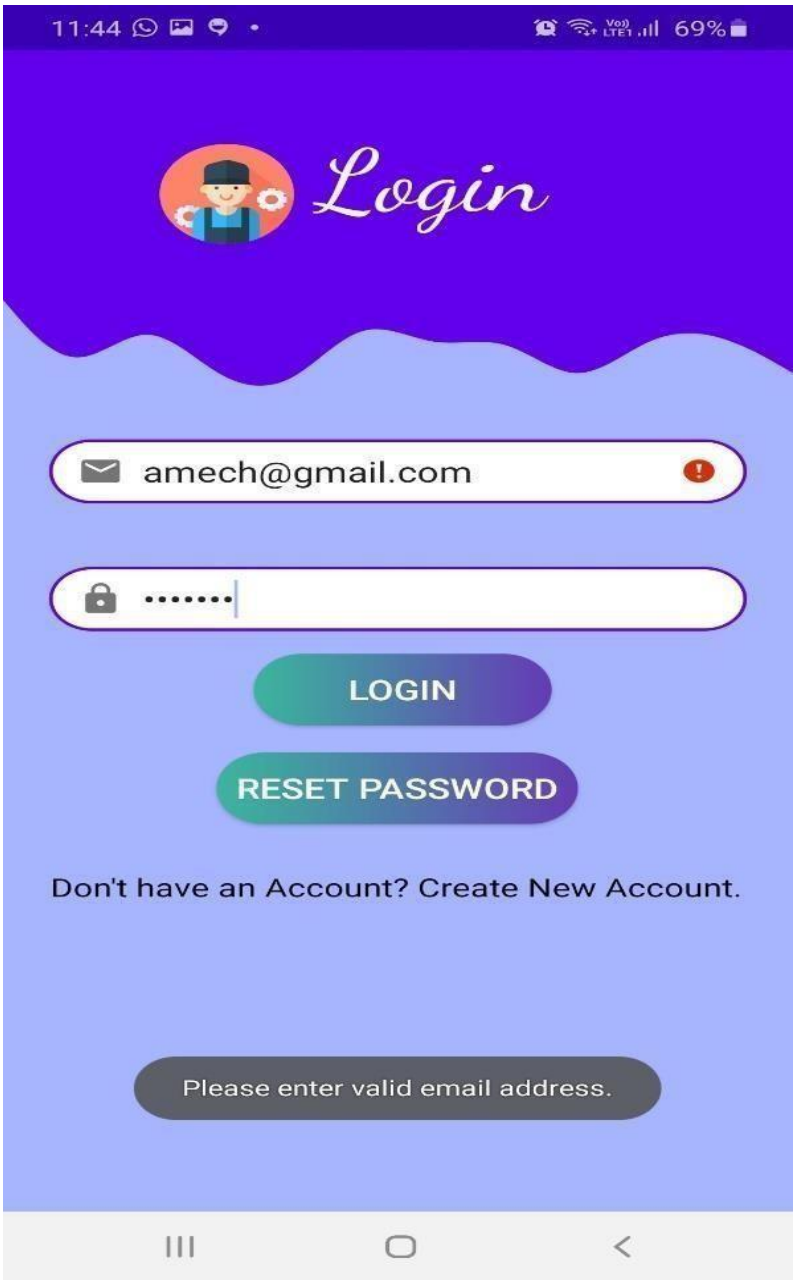


3.4.6 Ideation canvas

3.4.7 Dashboard



3.4.8 Sign page



3.4.9 Login page

3.4.10 Explore jobs

Chapter 4: Conclusion and Future work

4.1 Conclusion

Till now, we conclude that we complete our documentation and also implementation of our application. We also conclude that till now the implementation we had done in our application was the best experience of all things, because, we had somewhat kind of advanced Android by using new types of designing and coding style. We also conclude that we have learnt so many new concepts of testing methods and strategies and different types of waterfall models and many more things while doing the whole documentation.

4.2 Future Work

Will try to make it nation-wide usable. With help of map will try to as much as user friendly.
Will try to cover more services.And there will be automated filtering according to user's criteria.
Try to preview only the near-by mechanic to users.

References

1. _https://gomechanic.in/car-enquiry/ahmedabad?utm_source=brand&utm_medium=cpc&utm_campaign=Brands-Ahmedabad&utm_adgroup=Brands&utm_term=b&utm_content=%2Bgo%20%2Bmechanic&gclid=Cj0KCQiA99ybBhD9ARIsALvZavWNsx0QsjPKsGdN0ZZv2QQf24jjZcfO-S5Mhdf4MfJKkYBYP6sbsWwaAlmaEALw_wcB
2. https://www.amazon.in/stores/GoMechanic/Homepage/page/6982A8AF-4745-4CC8-971D-135129EA9C74
3. https://twitter.com/gomechanicindia
4. https://gobumpr.com/ahmedabad/offers/ahmedabad-bike-repair-service?utm_source=Google&utm_medium=CPC&utm_campaign=myTVS_Search_Google_Ahmedabad_AlwaysOn_2W_Generic_Broad_Detail_All_All_Oct-22_to_Lifetime&utm_adgroup=Mechanic_Broad&utm_term=mechanics%20garage&gclid=Cj0KCQiA99ybBhD9ARIsALvZavX-2ITd9qFXmWJZlmchAey8eYx-63-LWfR-2igtWBZdR8EXYejF9t0aAuYFEALw_wcB
5. https://www.valvoline.com/en-in?utm_source=google&utm_medium=search_ads&utm_campaign=SEM
6. https://gomechanic.in/ahmedabad/car-repair
7. https://gomechanic.in/about-us
8. https://golden.com/wiki/GoMechanic-ZXXXZKR
9. https://en.wikipedia.org/wiki/YourMechanic
10. https://in.linkedin.com/company/gomechanic
11. https://www.quora.com/Are-Go-Mechanic-services-reliable-and-trustworthy-for-car-services-and-repairs
12. https://www.forbesindia.com/article/30-under-30-2020/gomechanic-the-newage-handymen/57579/1
13. https://www.livemint.com/companies/start-ups/tiger-in-talks-to-invest-100-mn-in-gomechanic-11618857950597.html
14. https://www.visily.ai/?utm_source=google&utm_medium=search&utm_campaign=paid&utm_content=website%20wireframe&utm_term=610858871414
15. https://www.lucidchart.com/pages/landing/wireframe-software?utm_source=google&utm_medium=cpc&utm_campaign=_chart_en_tier3_desktop_search_nb_exact_&km_CPC_CampaignId=2083826535&km_CPC_AdGroupID=76733735197&km_CPC_Keyword=wireframe&km_CPC_MatchType=e&km_CPC_ExtensionID=&km_CPC_Network=g&km_CPC_AdPosition=&km_CPC_Creative=416945965915&km_CPC_TargetID=kwd-143286579&km_CPC_Country=9061737&km_CPC_Device=c&km_CPC_placement=&km_CPC_target=&gclid=Cj0KCQiA99ybBhD9ARIsALvZavXC1oBIx0E7FFakn1q-XgtkDahQ1G1YE-nAQcISOGFYx7w_GAecLfgaAprXEALw_wcB