

DEP 301
Collaborative Design Project

Week 3 Report

MAGANS

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Problem statement

To find creative solutions to make eating in cars a better experience and enjoyable to the users

Exploring cars

To better understand what we were working with in terms of the car's interiors, we explored a car from inside and noted down all the possible places to attach and store the desk. We took photos of a rough approximation of the table in various car positions using a cardboard sheet of 35 cm by 40 cm dimension. This would help us understand the different positions of the table relative to the user.



Brainstorming

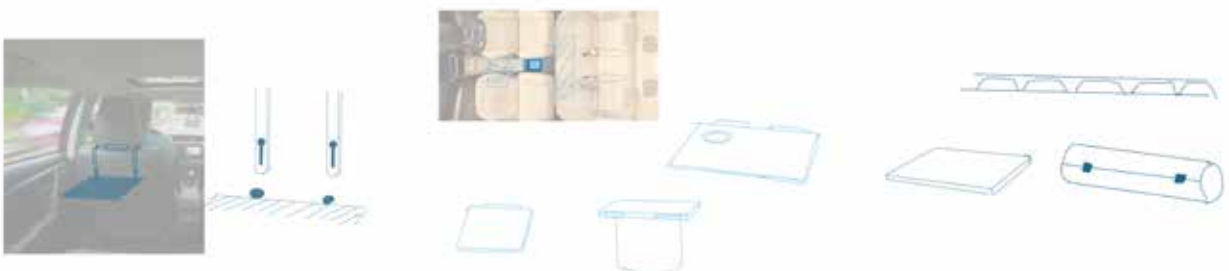
We went back to the drawing board to discuss our possible target users, materials, other uses, product placement, storage, and attachability. The target users were majorly, middle-class families. This included people who drive to work, schools and colleges, truck drivers, taxi drivers, families on trips, pilgrimage trips, workers with day and night shifts in works, etc. The product had many options to make it multipurpose, like making it a writing pad, seat cover, sunshade, boot cover, window shade, and so on, along with an eating table.

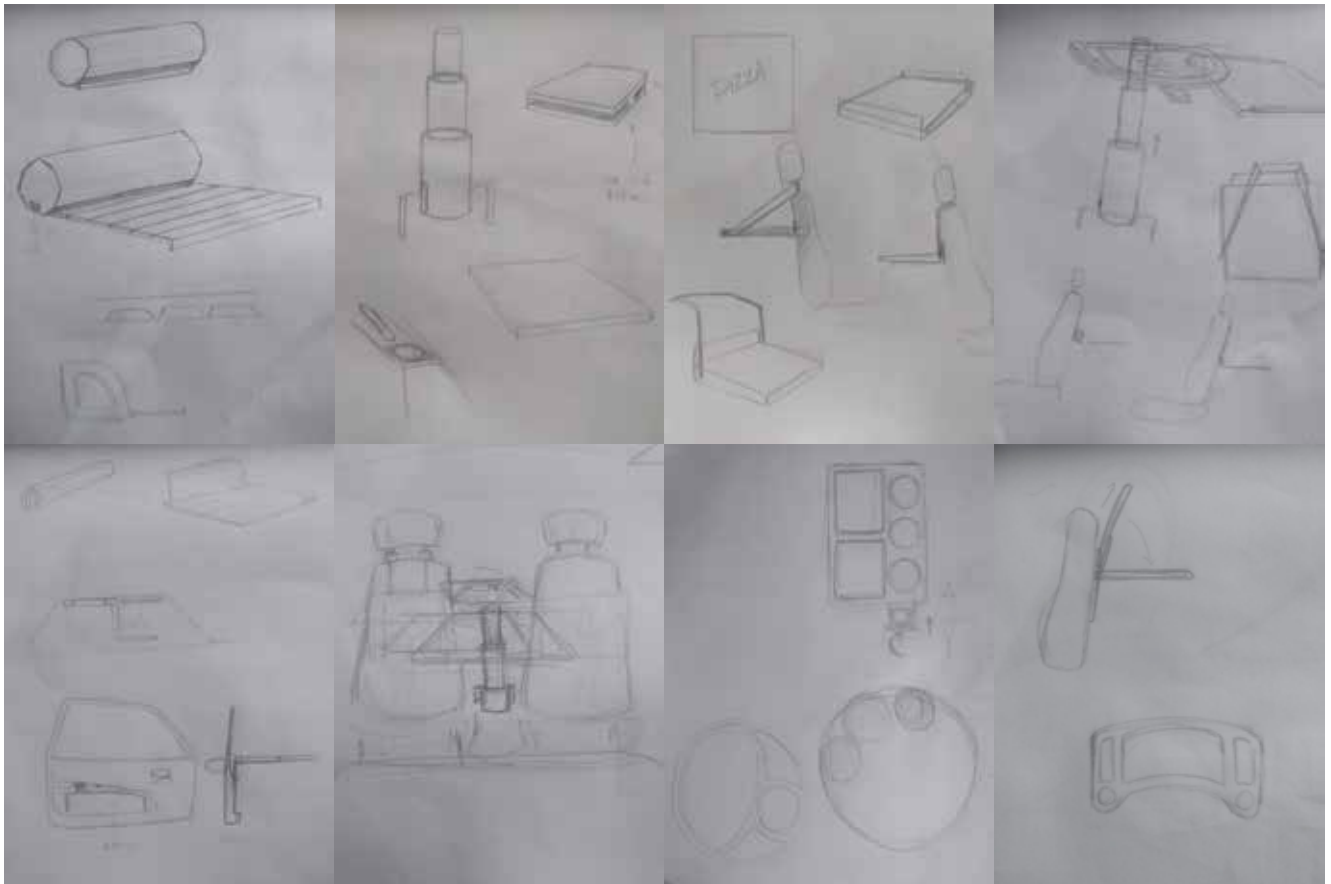


Ideation 2

Based on the insights we got from our study of the interiors of the car and our brainstorming, we ideated afresh.

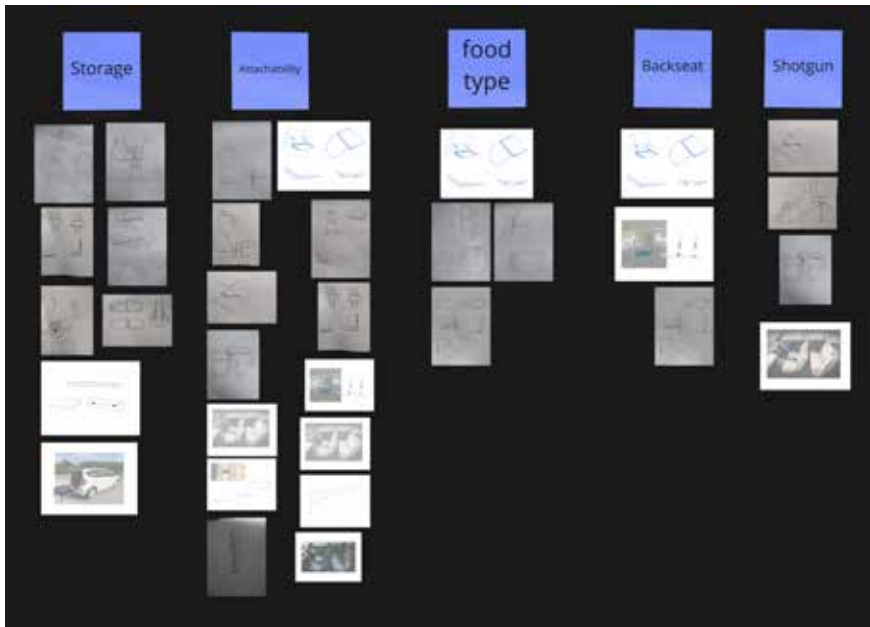
A method of rolling the table to store, a central attachment to attach tables of desired dimensions on front and back, food packaging converted into light load holding desks, a table to attach on the car doors with the help of a separate holder to attach on the car doors, and a simple wall clock like attachment behind the seat were all the ideas we explored.





Making clusters

We divided all our ideas into clusters based on factors like, storage , attachability, food type, and the seat they are meant for to help combine some of the ideas.



Analysis 1

Next we grouped similar ideas and listed all the unique ones from each cluster to discuss major pros and cons for each. We were looking at things like storage and compatibility for a large number of cars during this. After analysing each group, we chose the ones whose pros outweighed the cons and ones with cons that were of minimal concern.



Analysis 2

This focused the concepts down to four. We discussed about these four in depth trying to narrow down further or possible combine the ideas. We had already decided on a few factors to consider from our user research that the concept needs to include, these were, a simple connecting mechanism, suitability for indian food, modular design, cost, maintenance and storage. we had also decided that we shouldn't need permanent altering to the car for the concept to work.

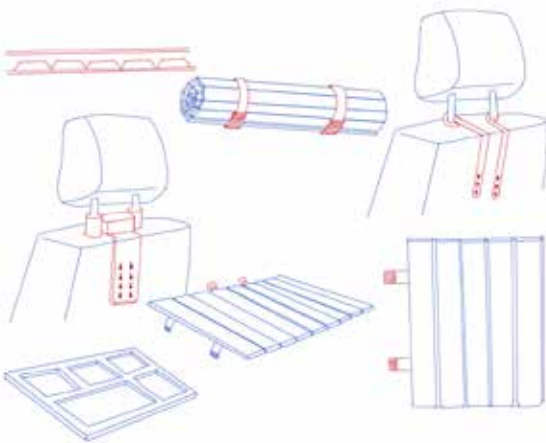
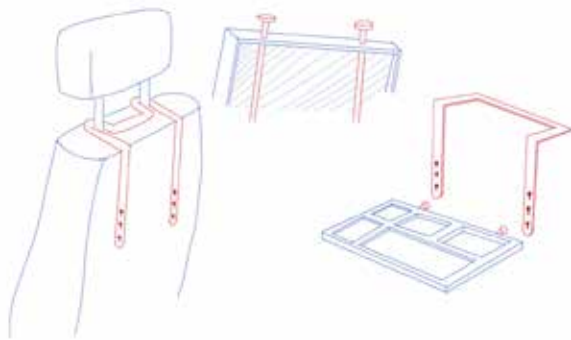


Here we have listed the important points that we came up with during our discussions for each of the concepts. We were able to eliminate two of the ideas after discussing. The sidwinder concept needed a way to attach itself to the door, we didnt want to screw it in since that leaves permanent damage, and glue might not work as intended since there would be a lot of force being attached sideways. It also seemed like a hassle to connect and remove. The capitol concept required a central cup holder which not all cars have, moreover during research we had found that the trend of having a handrest in the center was growing to the budget cars as well which would pose compatibility issues for future cars.

Out of the remaining two, one was a rolling mechanism and the other was a connecting mechanism, we decided to combine these to provide more choice and modularity for the product.

Final Concept

Our final concept revolves around this connecting mechanism which uses the conventional screw head connector that is used for hanging clocks and painting, we will have a part that hangs from the seats permanently to which a table can be attached when needed, this allows us to have various types of tables that the user can use depending on their need. like a tray with compartments for side dishes, a flat table to keep laptops or play games, which can be rollable for easier storage.



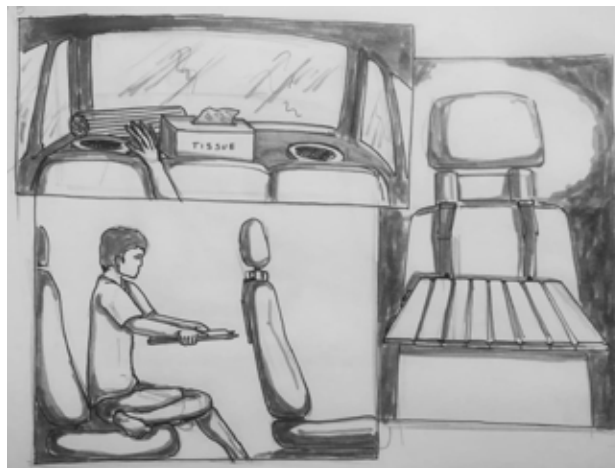
This can also work in tandem with a restaurant where if the user has the product, the restaurant can just bring their food in a tray which can be attached to this mechanism or if the user doesn't have this the restaurant can provide one while they are eating. We have not fully finalized the connections for the front seats, at the moment we are looking into strong adhesives for the passenger side and an attachment to the steering wheel, we plan to meet with Prof. Chakravarthy to discuss more possibilities.

Scenario 1

Raghu aged 40 is an employee at the bank, his wife Seema is a house wife and he has two children. It is Saturday and his children Ajith aged 5 and Vijay aged 7 want to go see the newest Marvel Film, So he books tickets for the evening show at the nearby mall. The movie ends at 8 pm and the children are hungry. Ajith wants to eat at McDonalds to get the toy he saw on an ad on TV. So they buy the food there but raghu doesn't want to eat the food there because he is afraid for the safety of his family owing to the pandemic. So he decides to get it as takeaway to eat it in the car, his Ajith and Vijay both get their favourite burgers. They reach the car and they both can't wait to eat their burgers. They start unwrapping it and Ajith has already managed to spill some of the sauce in the car he gets scolded by his mother. And as they continue to finish it both of them spill a lot of veggies which are stuffed inside into the car. He'll have to clean the whole car later, reminding himself to never let them eat in the car again he drives home grumbling.

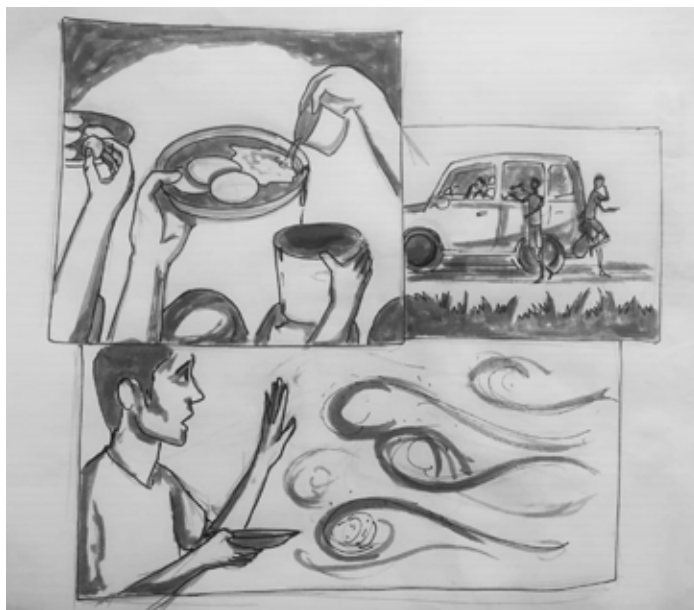


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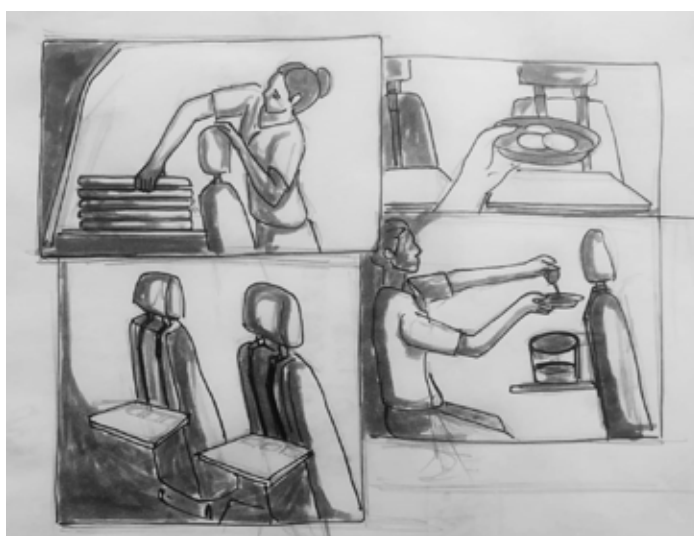


Scenario 2

Raghu decides to go on a temple trip in his SUV with his family, and cousins, they leave after eating breakfast at home and pack lunch because there are no restaurants in the route. They have packed idli and chutney for the whole family to eat. They stop the car and take out the areca leaves plate for all of them to eat. There isn't enough space and half of them get out to eat in the hot sun. a breeze blows dust into their face. They finish eating with some difficulty and then go on their way.



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Future Steps

Consult Prof.Chakku for further detailing

Physical Mockup/ working rig

Make a cardboard version and unit for restaurant use

User feedback (Friends/ Relatives/ Hotel Owners)

Try to add more Value (hooks, cup holder..)

3D Model
