

# Portfolio - Table of Contents

Product design

Visual Design

Interaction Design

UX

Prototyping

UI design

Usability

01

Slide 2 to 17

## Artificial Intelligence – Chatbot

Platforms : Web, Desktop, Tablet

#UX #Visual Design #User Research #Usability  
#ROI #Product design #Conversion Factor

04

Slide 30 to 33

## Permission Management System

Platform : web

#UX #Visual Design #Interaction Design

02

Slide 18 to 22

## Telematics Shop

Mobile App

#Interaction Design #Visual Design

05

Slide 34 to 43

## Conversational UI

Research on Latest UX trends

#UX Research #UI Patterns #Visual Design

03

Slide 23 to 29

## Shuttle Services – Driver Perspective

Mobile App

#Interaction Design #Visual Design

06

Slide 44 to 45

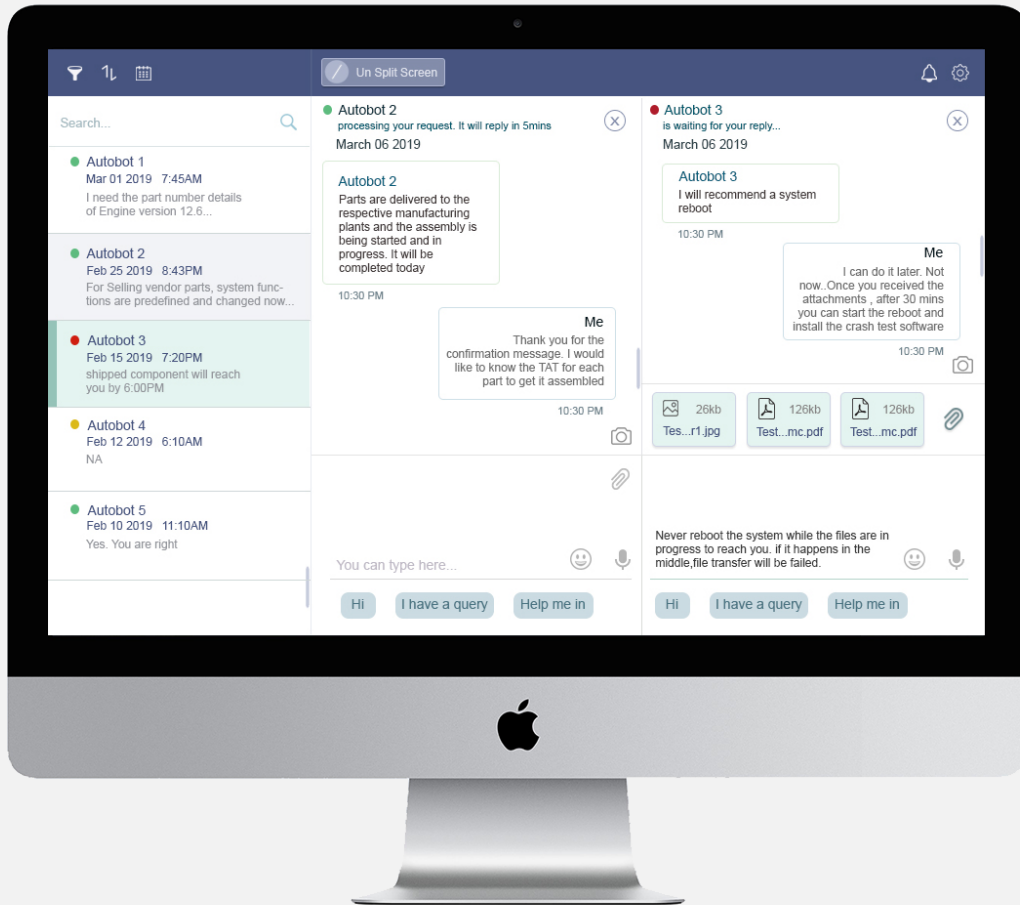
## Practical Approach to UX

Formulated the UCD Process

#UX Research

# Project 1 - Artificial Intelligence Chatbot

AI chatbot – Web. Desktop. Tablet platforms



## Synopsis

chatbot application supports in three different **platforms Desktop, Web & Tablet** which is Artificially intelligent enough to understand the user needs and immediately **solves the user problems in automobile Design Engineering Applications**. Hence we arrive to a decision to create a AI Chatbot with many good features as per the user needs.

## What I did

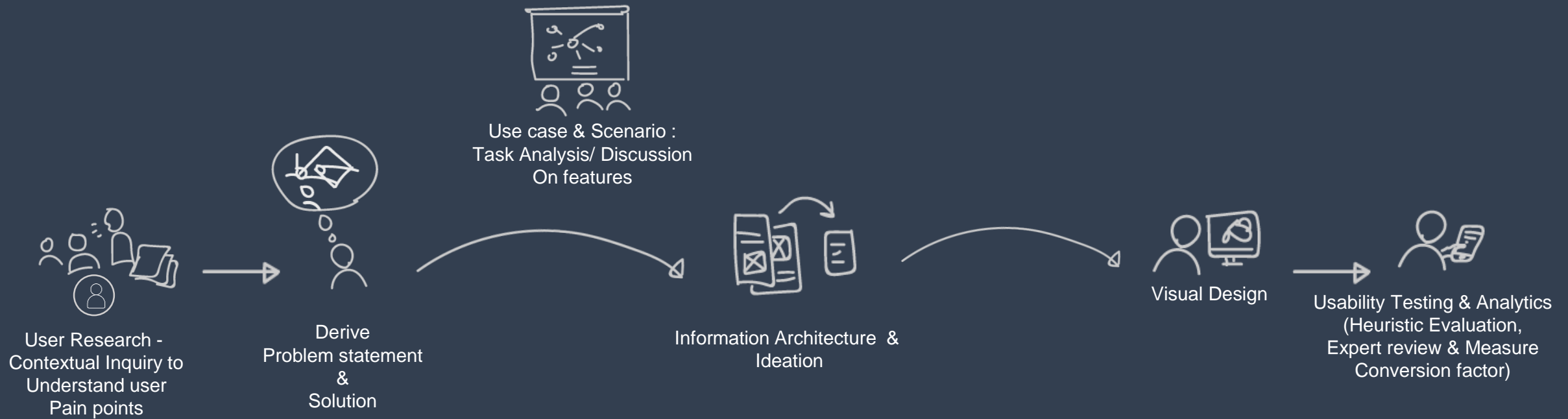
1. Collect requirement from Product Owner
2. Do User Research with Contextual Inquiry method
3. Collect User Requirements and Pain Points
4. Define Problem statement and solution
5. Follow UCD process to approach the solution. Begin with Information Architecture, Task analysis, Wireframe, Visual Design and Usability Testing
6. Measure conversion Factor



## Business Objective

Make the daily routine work easy for the employees who are the users of Design Engineering applications in Automobile Industry. so users / employees can save their time while doing their tasks, thereby improve efficiency and effectiveness of the work, this in turns Increase the productivity of the organization. which becomes the Return Of Investment (ROI). From HR Perspective, This is looking as employee engagement program by providing comfortable solution to the employee's hectic daily routine tasks.

## Addressing the Business Objective through User Centered Design (UCD) Process





## User Research Contextual Inquiry

1

### Go to user Environment & understand them

To Find out the issues of the Users who uses Design Engineering Applications in Automobile Industry in their daily work routine, I choose Contextual Inquiry method, wherein I **go to the real environment where people uses the applications and talk to them**, Observe them. Understand their daily routines and the issues they are facing everyday.

2

### Discuss with different user groups to collect their views

To do this activity, I discussed with four user groups (**Designer, Module owner, Database Administrator, Approval Manager**). Choose 3 members from Each user group and totally met 12 users and finally summarize the research findings.

3

### Define their pain points, likes, needs, Dislikes, motivation

I created personas and then extracted the user research findings from it. sample Persona creation in Next Page

# Persona

sample (Role Based)



Peter Jhonson  
Gender : Male  
Age :31  
IT Experience : 12 years  
HMI Experience: Yes  
Automobile Industry Experience : 5 yrs.  
Education : Mechanical Engineer

Role : Module Owner

## Responsibilities

1. Module owner is responsible for the parts in the modules he/she owns.
2. check the status of the parts and if the **status of any part in the module goes with issue, assign it to the concern department**
3. Whenever the **design changes** are required in the part, **Assign it** to the **designer** with the necessary description of changes to fix the changes and getting reverted back.
4. Check whether all **parts are checked in on time** or any delay has happened.

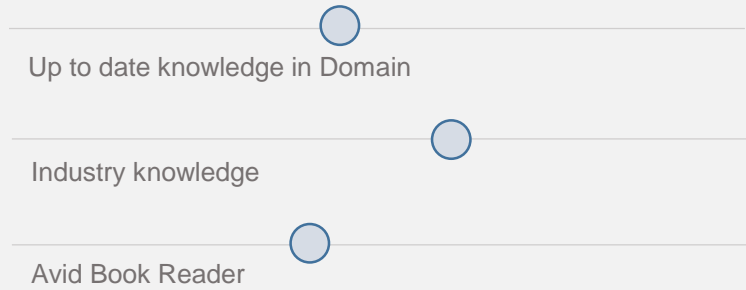
## Goals

- Keep the module error free, Bug free
- Ensure parts should be placed and designed 100% as per the description provided
- Shorter deadlines should be met without failure during release timings. Must adhere to the process while achieving the solution

## Needs

- Always wants to check the status of the parts quickly. Also wants to know specific details of two different systems at a time.
- Change the process easily and quickly, then communicate it to the system. (Change in process is nothing but adding extra steps or skipping some unnecessary steps or both)
- History of information on multiple scenarios are needed to compare at any point of time

## Tech Savvy



## Personality Traits



## Dislikes in current process

- Forced to go ahead with unnecessary steps, even it is very clear that this particular step is not necessary
- Unable to find necessary information at a shorter time
- When we were in outside office, we don't have control to execute a certain feature which needs to be done at timely manner

## Motivation

- Excitement in seeing the final look and feel of the physical car ,its module and related parts as well as the functionality of the module
- Anticipate the Feeling of first touch of the physical car Module and the related parts.
- Whenever sees a status “Release Ready is 90%”, it gives confidence to the module owner that he is going in right path

## User Research Findings

Extract User Research Findings through persona's Goals, Needs, wants, likes and dislikes

- 1) Users want to know **the status and progress of a particular task at** each approval level for specific query and precise information is required. Users don't want an excel sheet loads up with full data and can search in excel sheet about what user want.
- 2) User should be updated with the **updated dynamic data in timely manner** based on unstructured user queries.
- 3) User can able to **configure a process to execute on a scheduled time** without logging in into the particular application. Then process gets automatically executed on the specified time. Hence forth user does not have to monitor the process.
- 4) User wants to **chat with two different Chatbot's in parallel** on requesting queries about two different systems and getting replies from both chatbots. Here one chatbot answer becomes input for another chatbot. This kind of scenario will prevail.
- 5) User should be able to skip some steps in process, if user comes to know the particular step is not valid for a particular use case. **User should convey the system to skip the specific process.**
- 6) User can able to **access to a specific feature to the application without logging** in specifically which consumes more time and requires more effort.
- 7) Even if the user is **in remote, it could be easy to manage** all his requirements easily

### **Problem statement**

Due to complex process and large number of steps need to go through while doing a task in current system, Time delay is happening when there is a need to change the process, configuring a feature, get to know the status details, getting important information in timely manner, compare the scenarios occurred previously to take important decisions.

### **Derive Problem statement and design solution from the user research findings**

### **Define Solution**

We need a chatbot application supports in three different platforms Desktop, Web & Tablet which should be Artificially intelligent enough to understand the user needs and immediately solves the above mentioned user problems. Hence we arrive to a decision to create a AI Chatbot with many good features as per the user needs.



# Information Architecture

## Information Grouping and Navigational Hierarchy

### User and chatbot chat with each other

- Username, Chatbot name, Chatbot status, previous chat content along with date and time
- Show the recent and past chat history, Filter the chat history , Sort the chat history, Calendar -select dates and see the chat history
- Search for status, chatbot, user, any data and interaction with chatbot , Provide text area to chat with chatbot
- Add Smiley, Audio, Attachments
- Provide split screen option to chat parallel with two chatbots, AI suggestions (guide Text) while with chatbot
- Notifications, Settings
- Provide a feature to record face recognition upon which chatbot can react

### Filter Feature

- User can type organically what is in their mind to filter out the content
- Exact Search parameter
- Contains specific Words
- Name of the chatbot
- From Date
- To Date
- Current Status of chat/chatbot/any information which user knows
- Button to order the system to Execute the filter

### Sort Feature

- Sort using ascending/descending order from date perspective
- Sort using often searched information or rarely searched information

### Calendar Feature

- Today's date
- Calendar panel (UI Component)
- Options to choose (Recent 10 days, Last1 Month, Last 2 months, Last 3 Months, Customize the calendar to filter out the chat history for specific dates)

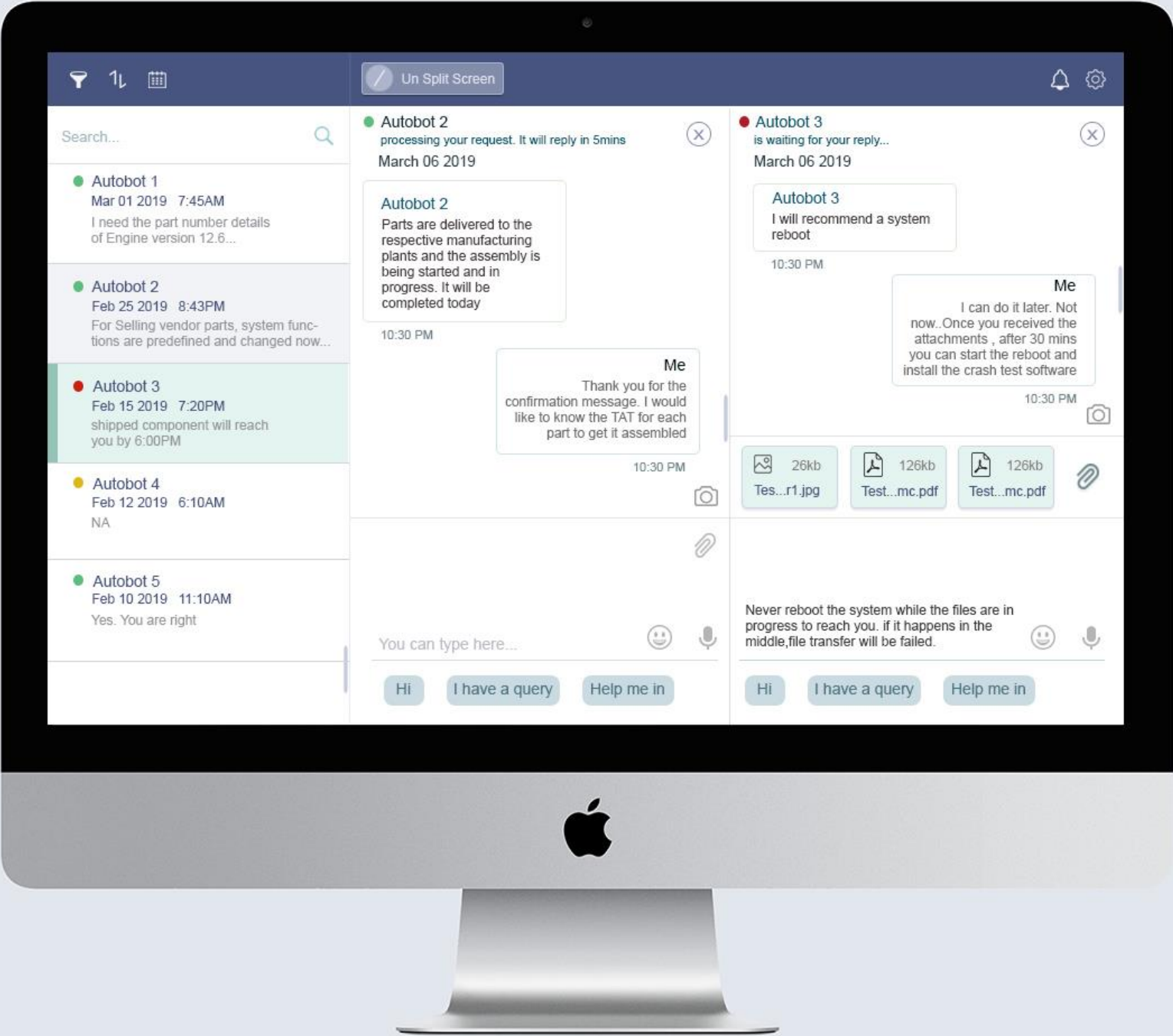
### Notifications

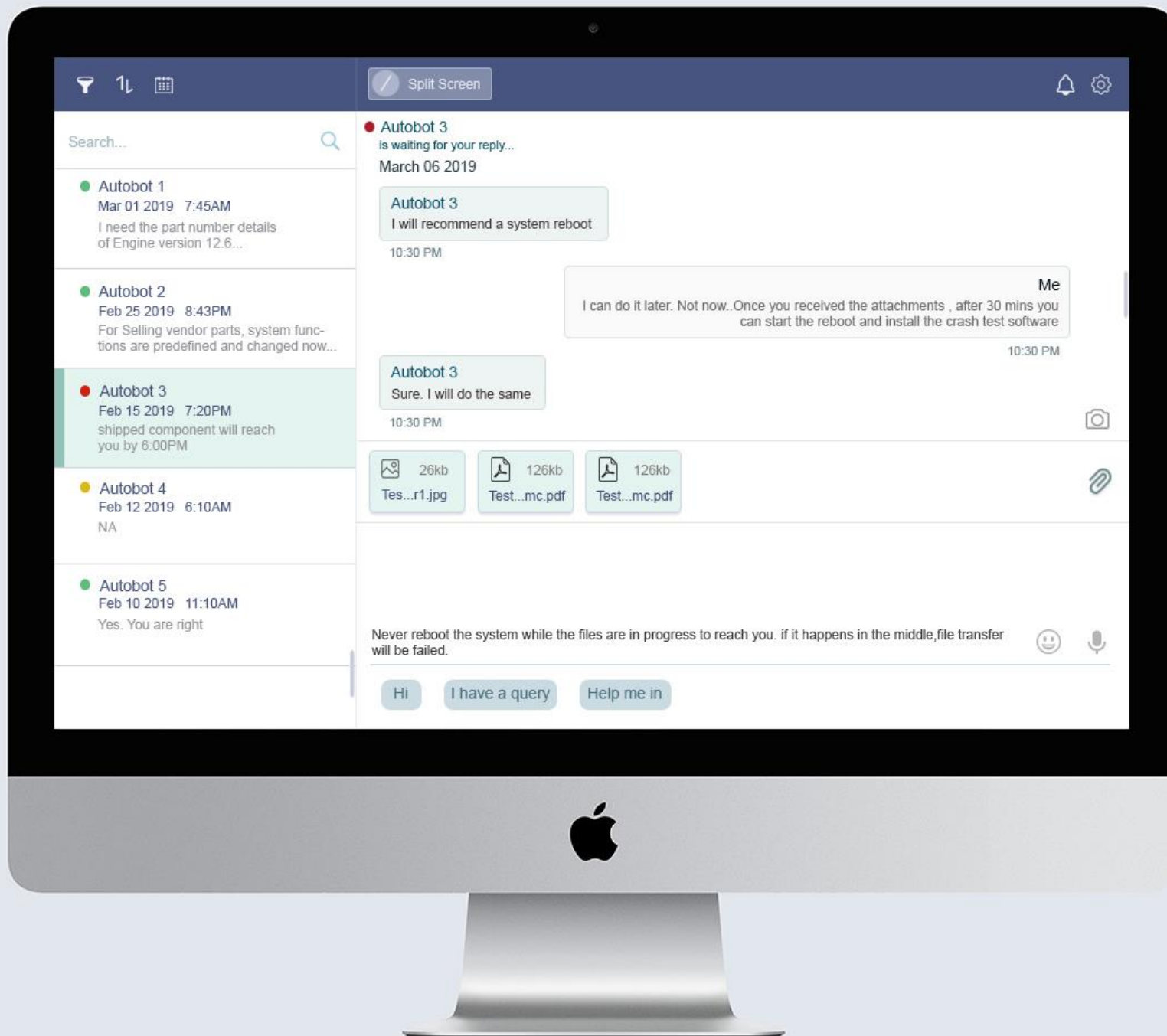
- Alert information
- To do information
- Inbox messages from chatbots are stored

### Settings

- Date and Time Format changes
- Notifications synchronization time
- AI suggestion ON/OFF
- Parallel chat with two chatbots feature ON/OFF

# Visual Design





Split Screen



Search...



- Autobot 1**  
Mar 01 2019 7:45AM  
I need the part number details of Engine version 12.6...
- Autobot 2**  
Feb 25 2019 8:43PM  
For Selling vendor parts, system functions are predefined and changed now...
- Autobot 3**  
Feb 15 2019 7:20PM  
shipped component will reach you by 6:00PM
- Autobot 4**  
Feb 12 2019 6:10AM  
NA
- Autobot 5**  
Feb 10 2019 11:10AM  
Yes. You are right

**Autobot 3**  
is waiting for your reply...  
March 06 2019

**Autobot 3**  
I will recommend a system reboot  
10:30 PM

**Me**  
I can do it later. Not now..Once you received the attachments , after 30 mins you can start the reboot and install the crash test software  
10:30 PM

**Autobot 3**  
Sure. I will do the same  
10:30 PM

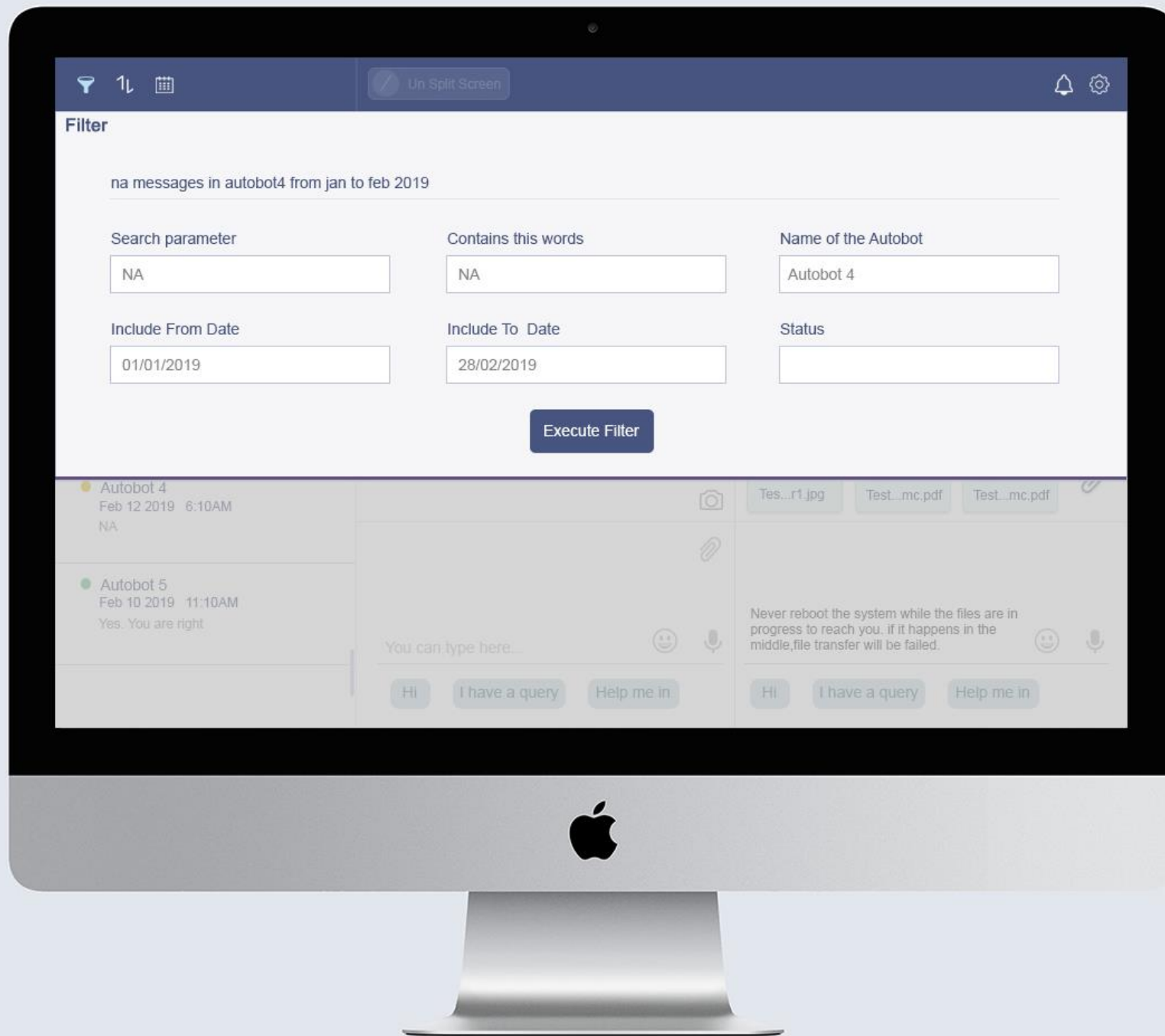
- 26kb  
Tes...r1.jpg
- 126kb  
Test...mc.pdf
- 126kb  
Test...mc.pdf

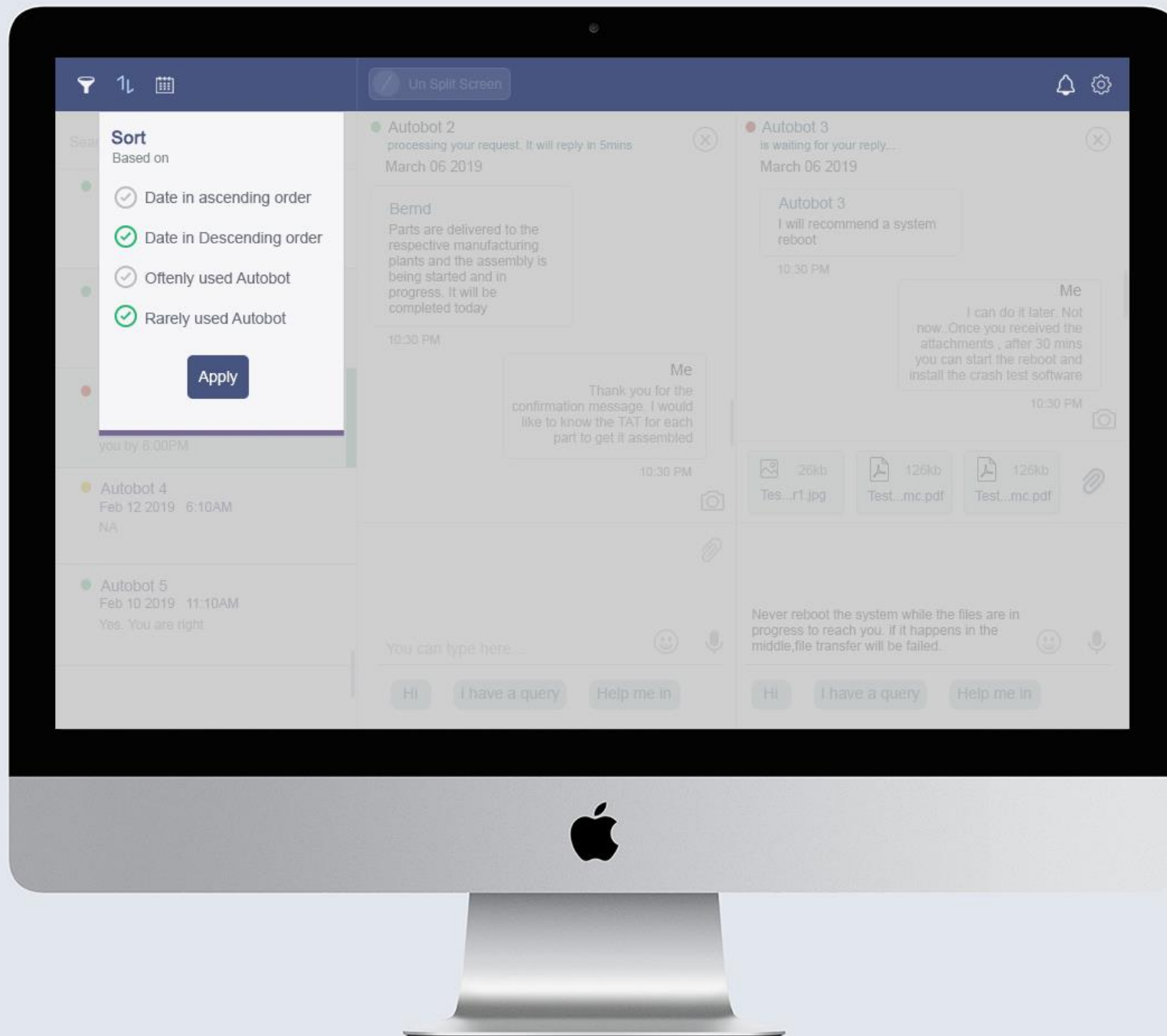


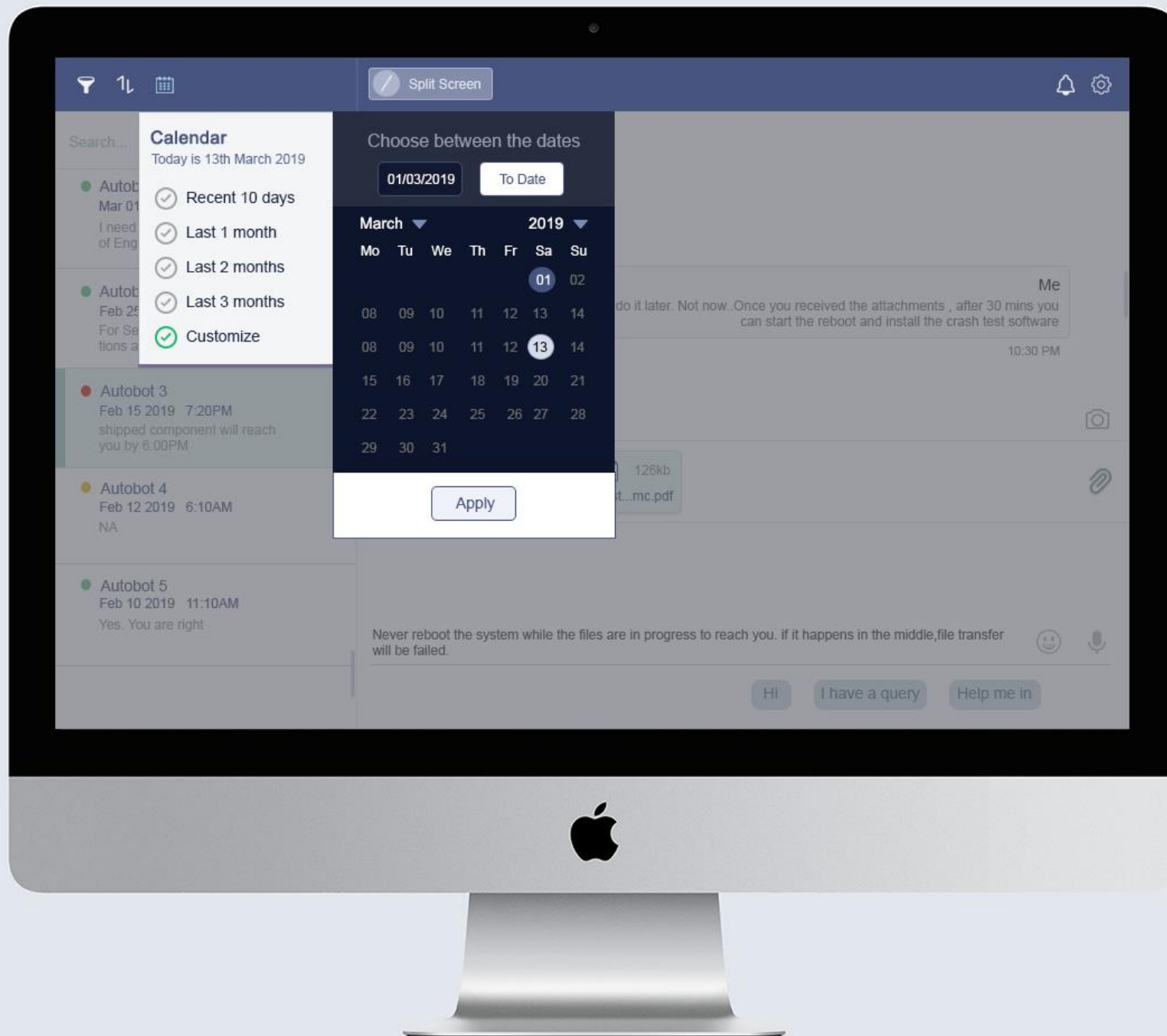
Never reboot the system while the files are in progress to reach you. if it happens in the middle, file transfer will be failed.



- Hi
- I have a query
- Help me in







Split Screen



Search...

### Calendar

Today is 13th March 2019

- ☒ Recent 10 days
- ☒ Last 1 month
- ☒ Last 2 months
- ☒ Last 3 months
- ☒ Customize

Choose between the dates

01/03/2019

To Date

March 2019						
Mo	Tu	We	Th	Fr	Sa	Su
					01	02
08	09	10	11	12	13	14
08	09	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Apply

Autobot  
Mar 01  
I need  
of Eng

Autobot  
Feb 28  
For Se  
tions a

Autobot 3  
Feb 15 2019 7:20PM  
shipped component will reach  
you by 6:00PM

Autobot 4  
Feb 12 2019 6:10AM  
NA

Autobot 5  
Feb 10 2019 11:10AM  
Yes. You are right

Me  
do it later. Not now. Once you received the attachments , after 30 mins you  
can start the reboot and install the crash test software  
10:30 PM

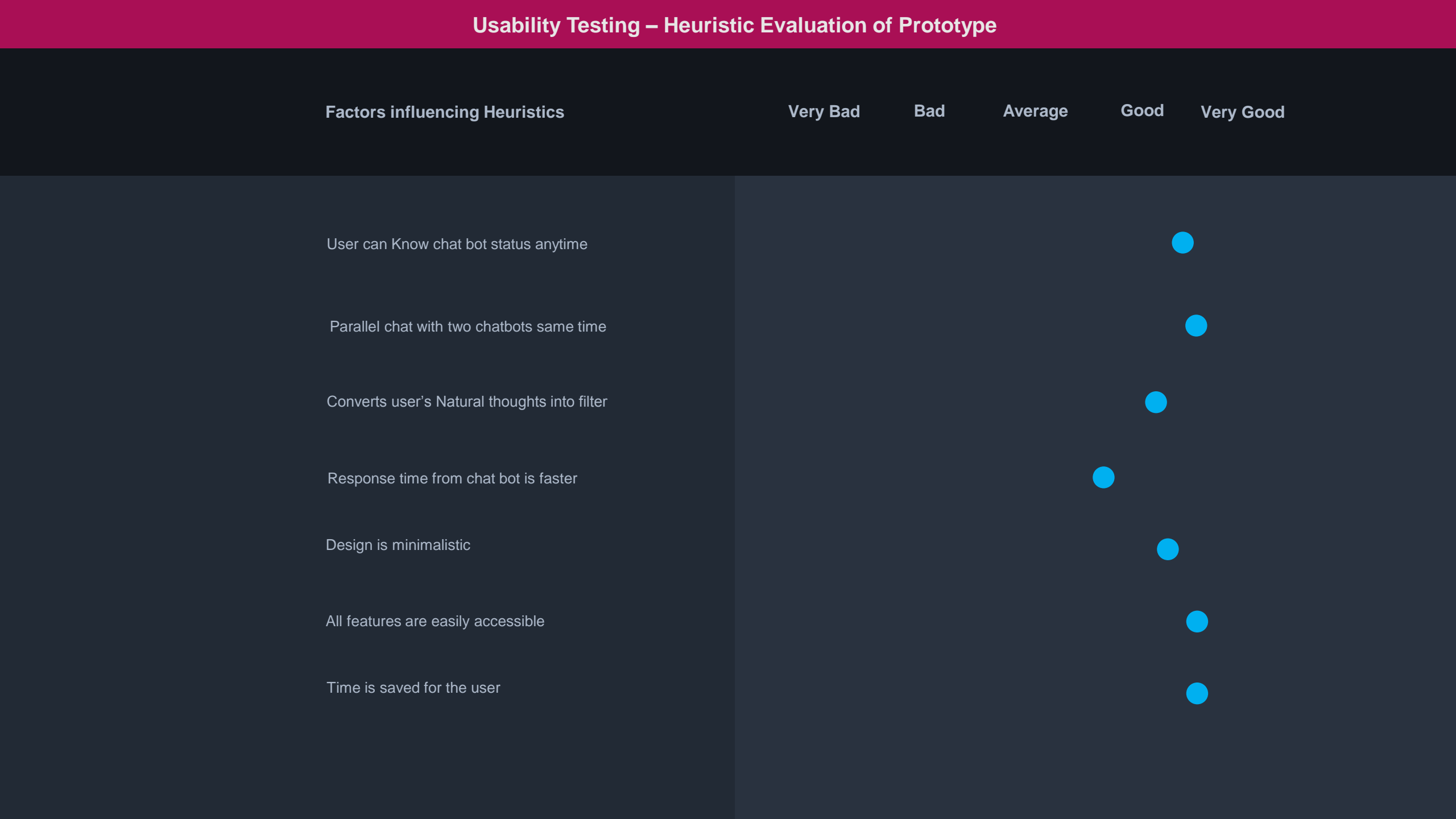
126kb  
t...mc.pdf

Never reboot the system while the files are in progress to reach you. if it happens in the middle, file transfer  
will be failed.

Hi

I have a query

Help me in



Extract data from Analytics – Keep it in UX Metrics

Karthikivkr@live.com

## Goals

Number of request and responses shared between user and Chatbot should be more

User should request the chatbot with minimal text

Request goes to multiple servers from a single user at a time

## Signals

Logged In users are more at any point of time

Split screen users are more

## Metrics

Number of users who uses AI chatbot on daily basis to do their daily routine tasks are more

No. of hrs. each user spends with this app

Np. Of users who uses upgraded version of this app

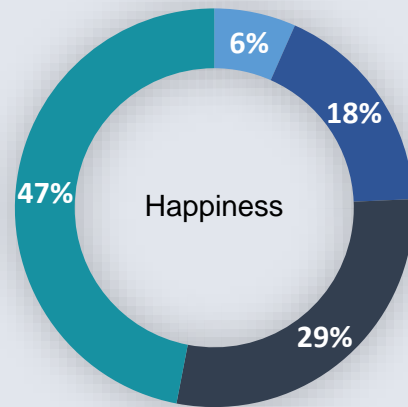
No. of users who uses microphone to send the voice signals to chatbot and achieving their daily activities are more



# Determine Conversion Factor with these following parameters

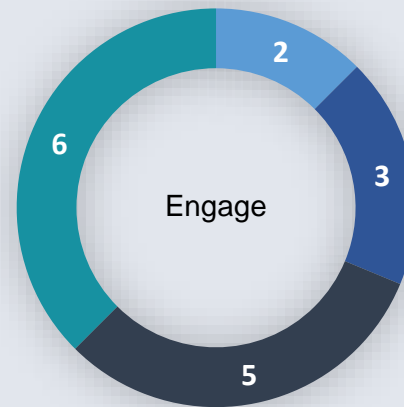
Happiness, Engagement, Adoption, Retention & Task Success

Application Usage across Timelines.  
Year : 2018



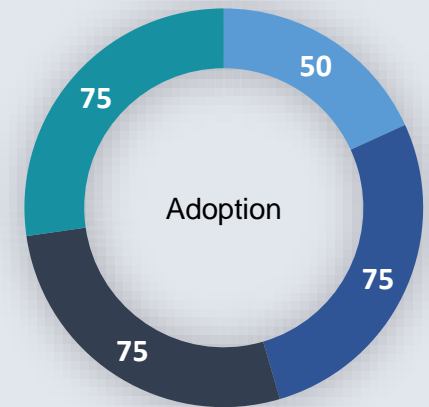
■ 1st Qtr ■ 2nd Qtr ■ 3rd Qtr ■ 4th Qtr

Number of hrs. application used per day  
per person in 2018



■ 1st Qtr ■ 2nd Qtr ■ 3rd Qtr ■ 4th Qtr

% of Users using latest version of the  
app in each quarter



■ 1st Qtr ■ 2nd Qtr ■ 3rd Qtr ■ 4th Qtr

- No need to calculate Retention, as it is in-house app and using for official purposes only. Users are asked by management to use this tool. Hence Users does not have any choice to move on. Obviously retention is there.
- Task success is always 100%, as the application went live only after tested the task completion ratio.

# Project 2 - Telematics Shop

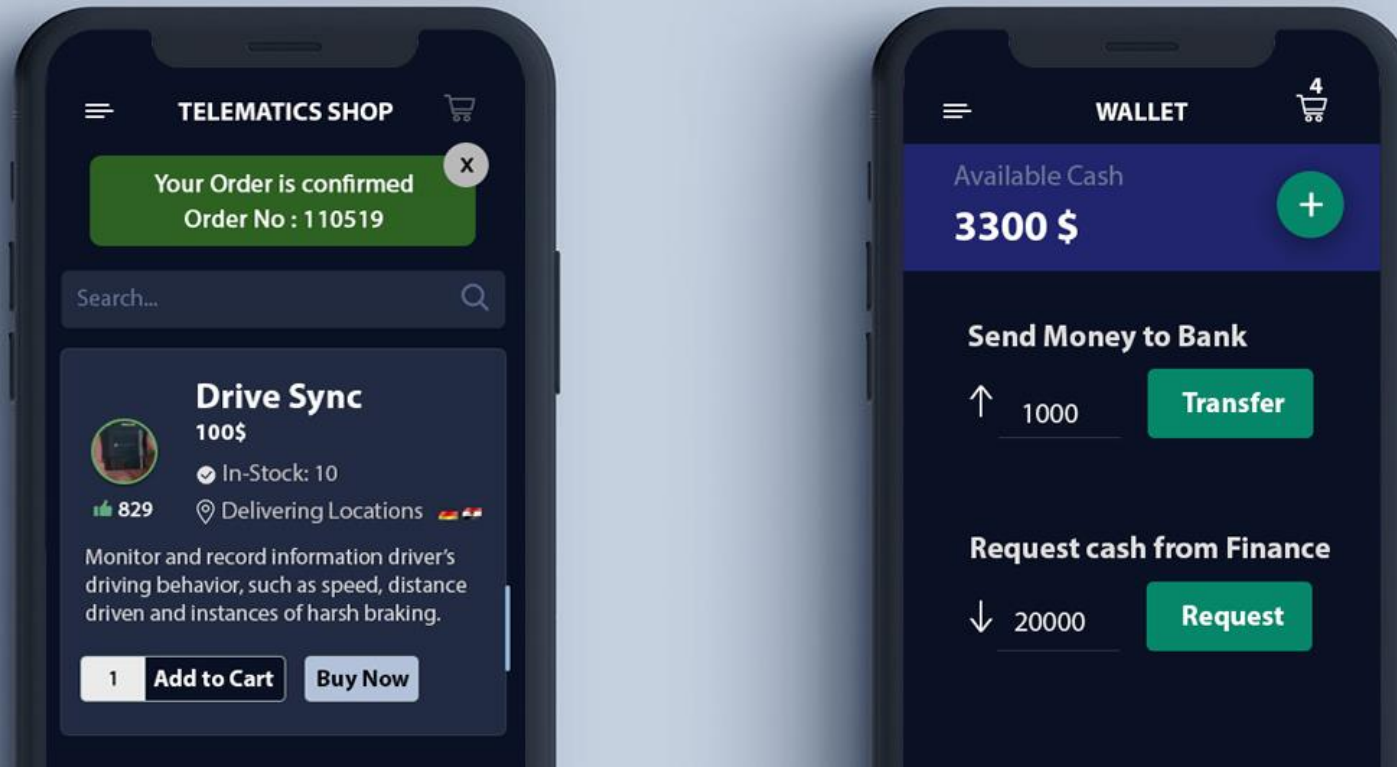
Telematics Shop – Mobile App – Ecommerce Platform

## Description

An Automobile manufacturer needs a mobile ecommerce app selling telematics components in-house, but delivering across different countries where the branches are located.

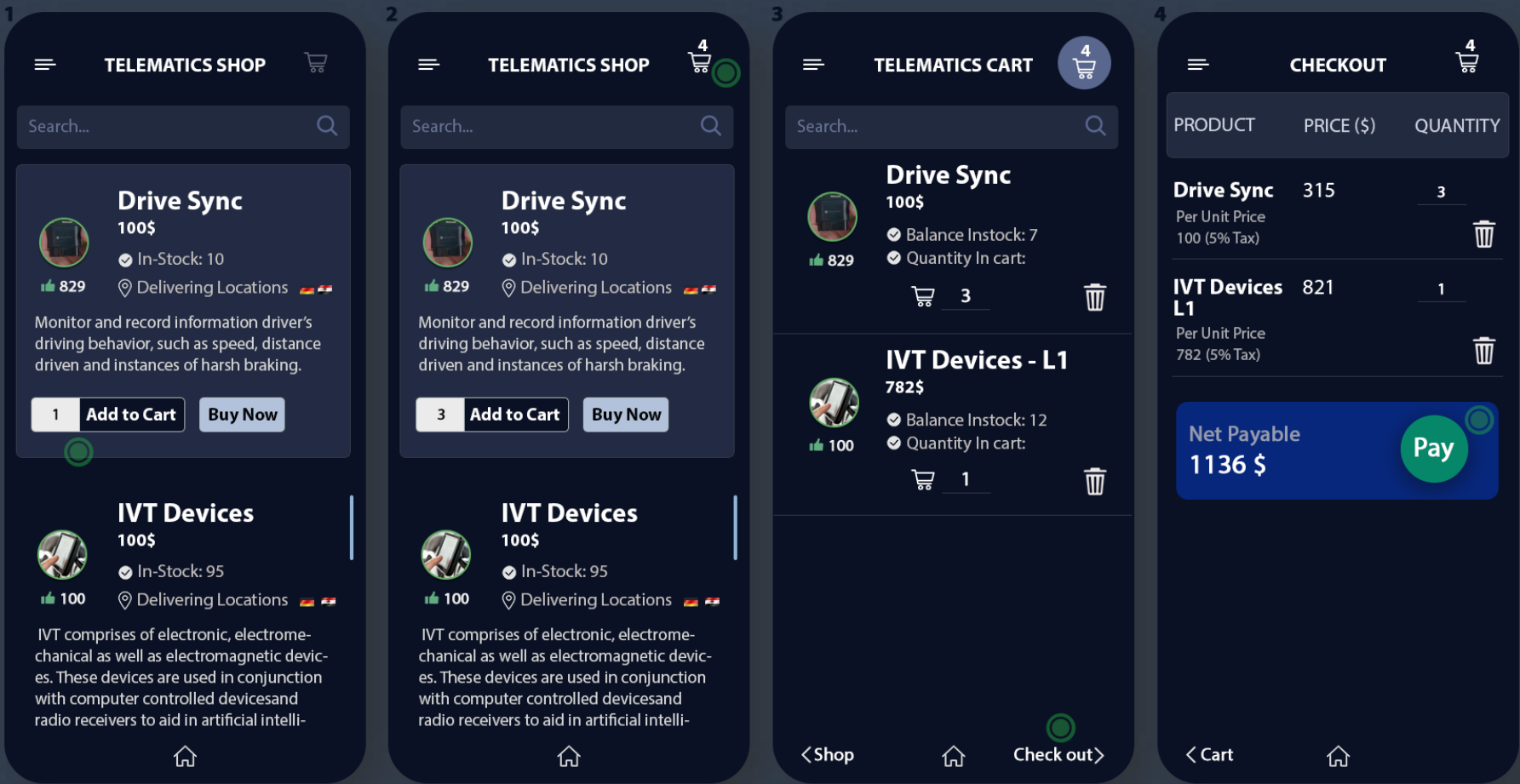
## What I did

1. Write BRD while discuss with Requirement Owner
2. Define UX Strategy – Apply Gamification principles
3. Information Architecture – Card sorting based on user priorities
4. Use case based Task Analysis
5. Interaction Design – Material UI



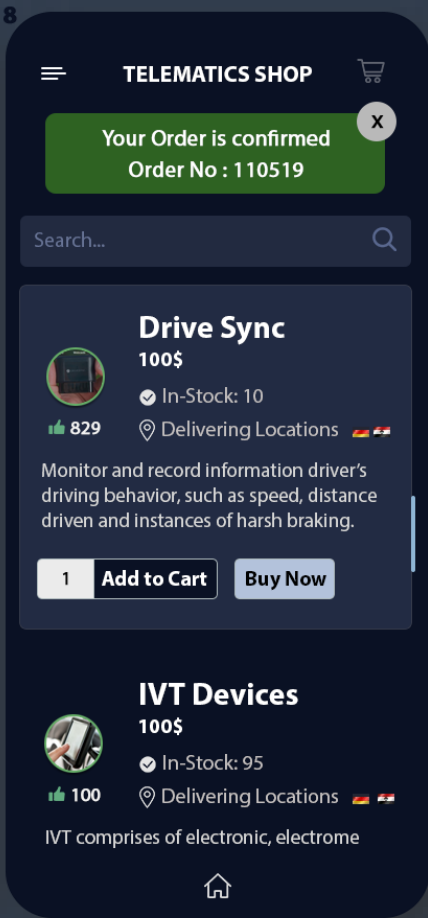
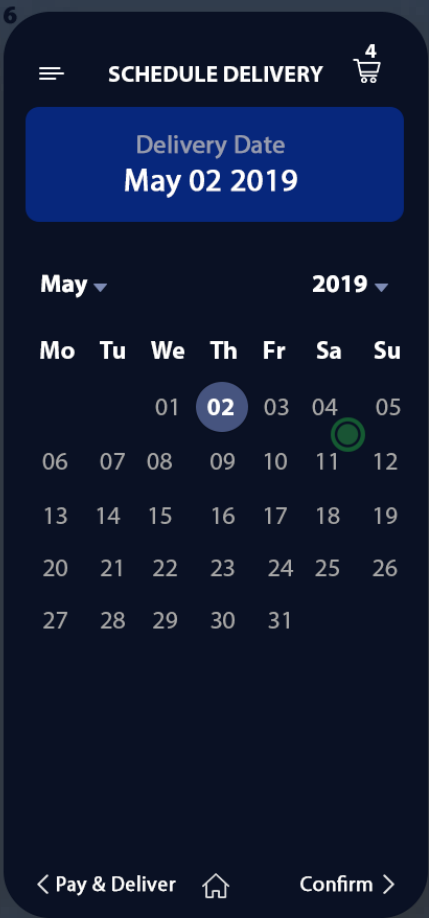
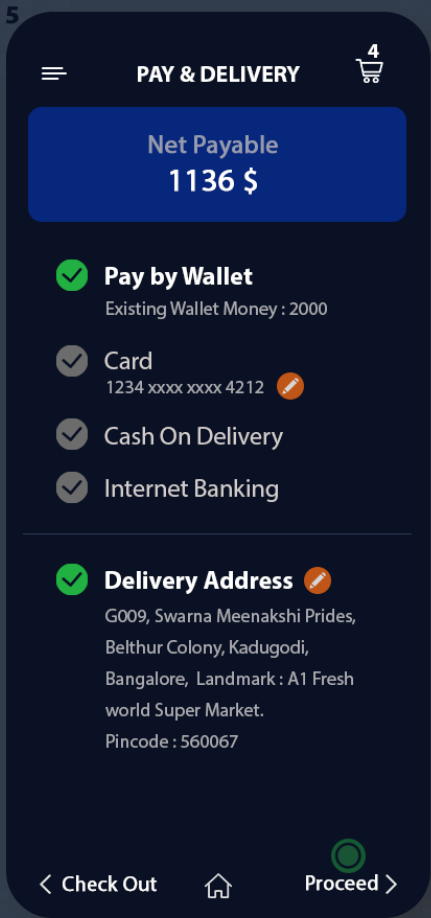
# Interaction Design

Use case – Place Order – Page1



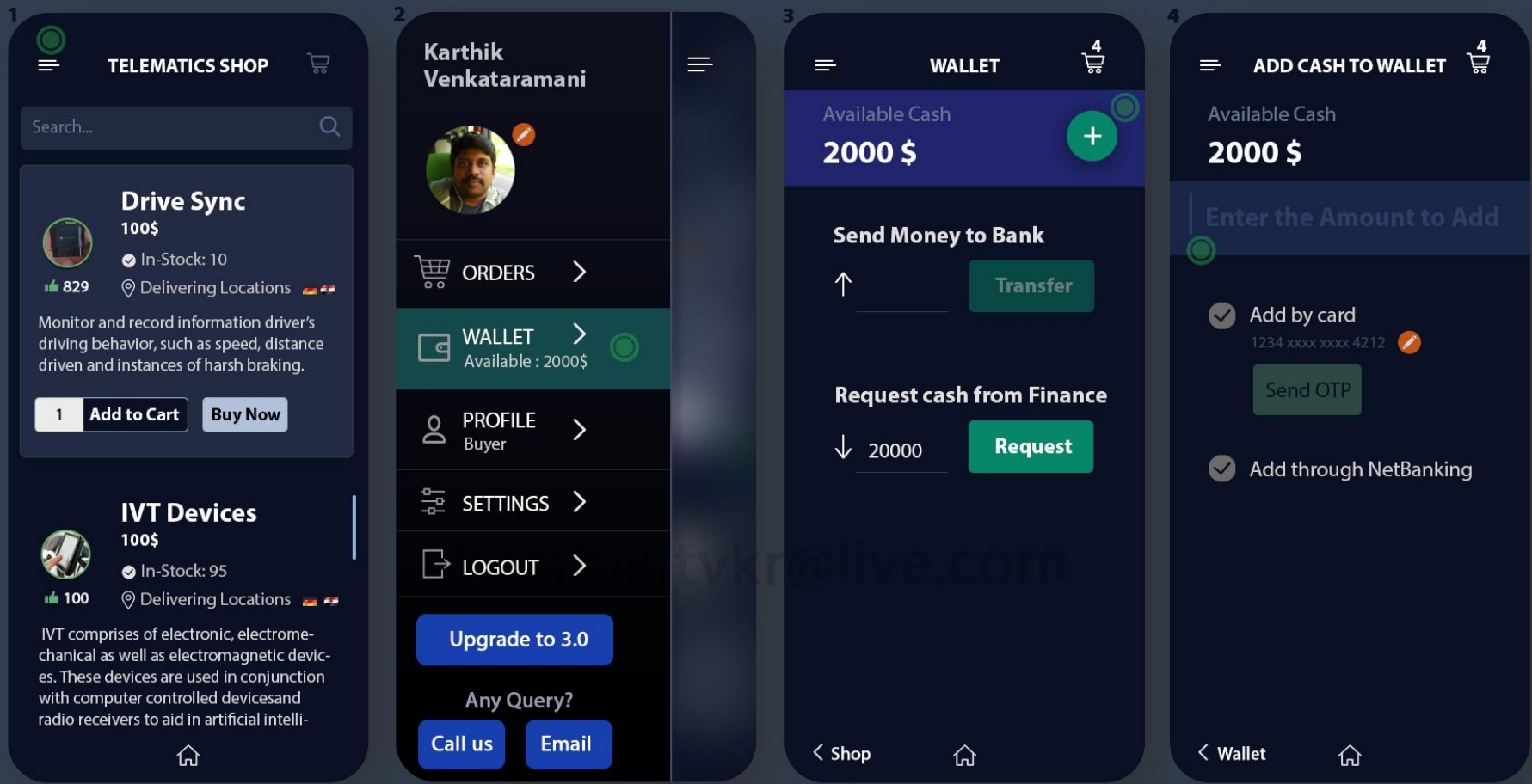
# Interaction Design

Use case – Place Order – Page 2



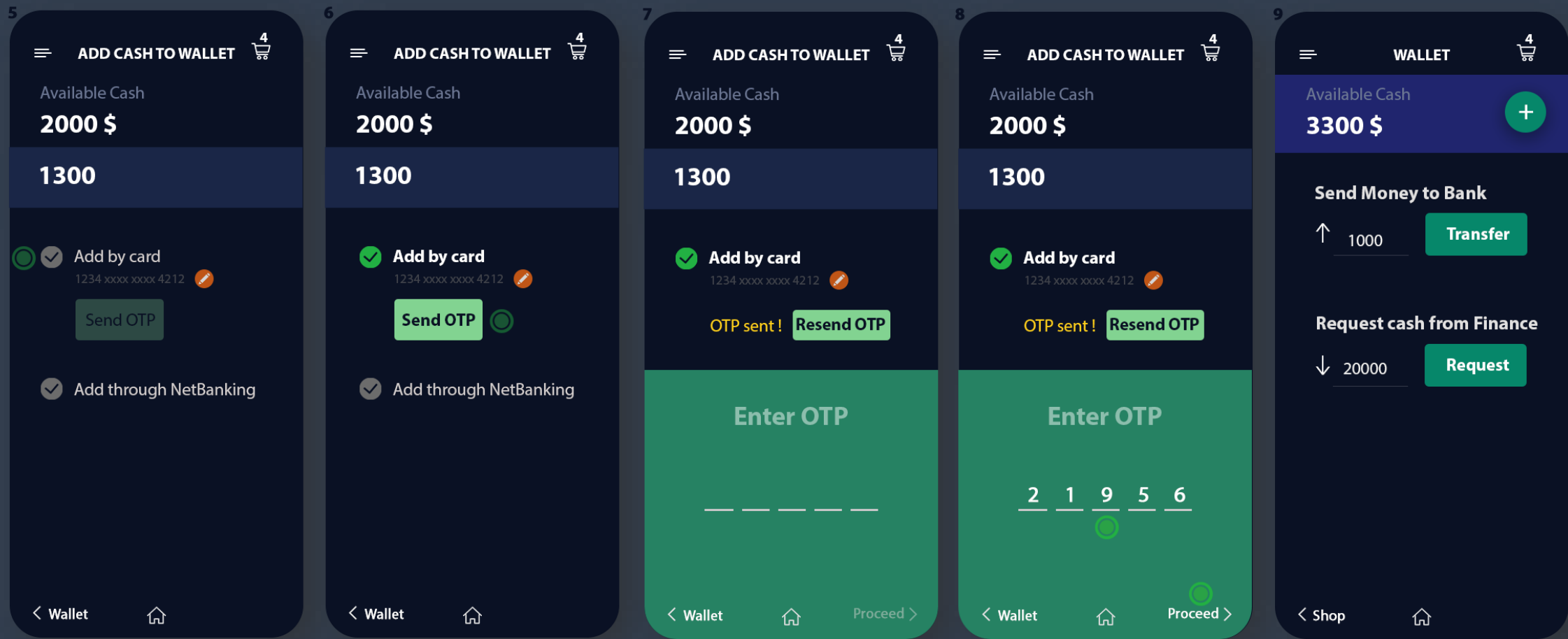
# Interaction Design

Use case – Wallet – Page 1



# Interaction Design

Use case – Wallet – Page 2



# Project 3 - Shuttle Services

Shuttle Services from Driver Perspective - Mobile App

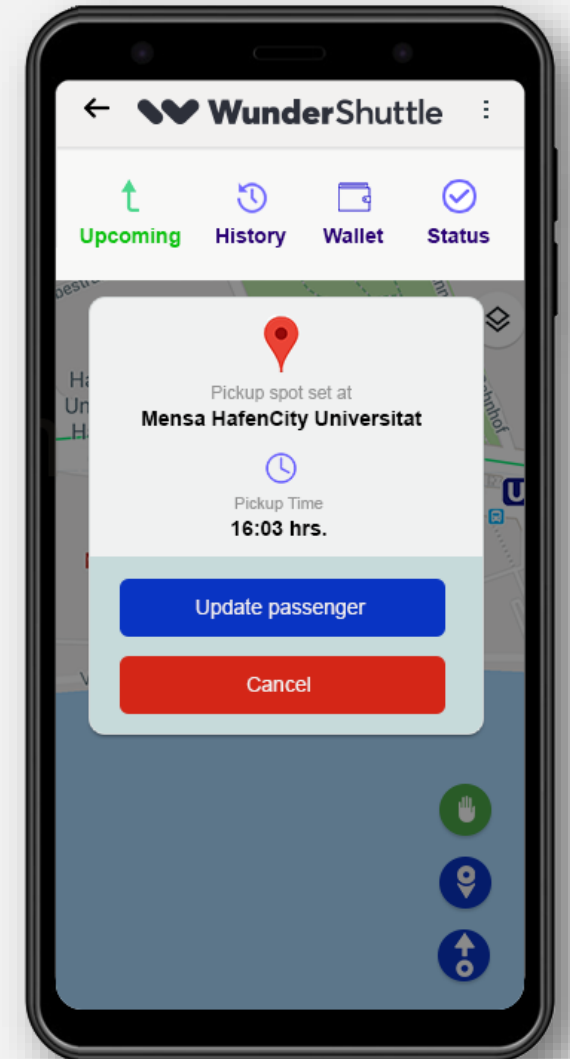
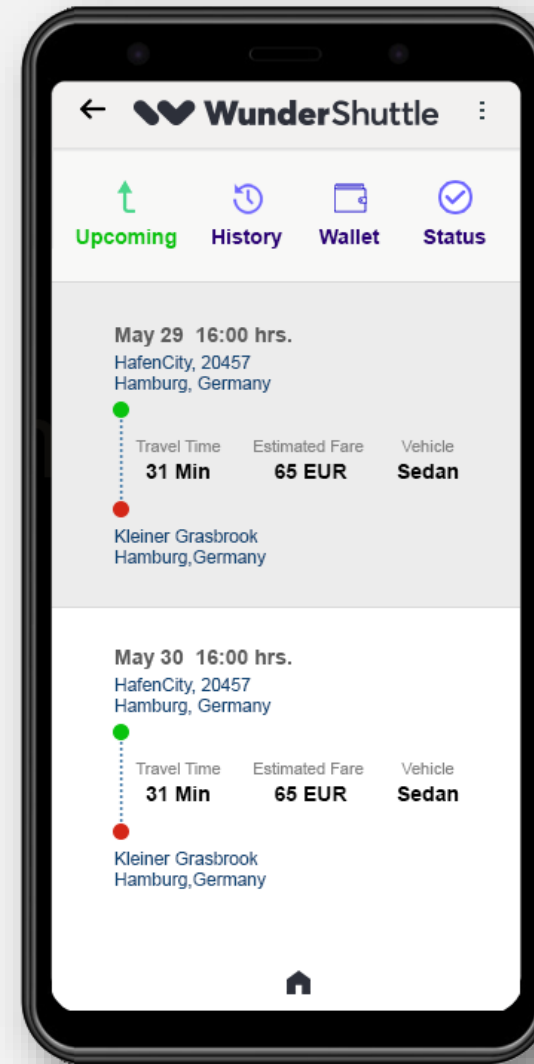
## Description

Drivers are facing certain issues in locating the customer and knowing the details of the trip. Drivers have some additional expectations.

Hence we can create a mobile app for drivers solves their problems

## What I did

1. Ethnographic studies – Conduct user Interview with Drivers
2. Understand Driver needs and pain points in existing design
3. Prioritize their issues
4. Information Architecture – Open Card sorting based on Driver priorities.
5. Interaction Design
6. Usability Testing with Drivers to test whether their problems are solved.



# UX Strategy / Approach

## Shuttle Services - Driver Perspective

1. **Collect the feedback From drivers** through a survey to understand what kind of issues they are going through in their daily routines
2. **Categorize the Feedbacks** into Several groups based on similarities. This will help us to prioritize the feedback. With this feedback, conduct user Interviews with drivers to find out their pain points
3. Once Pain points are identified, **Suggest Design solution** for the driver problems



## User Research – User Interviews With Drivers

### Pain Points of Drivers

- 1) Driver faces **difficulty in locating the customer pickup spot**
- 2) **Driver unable to inform the passenger easily to specify a pickup point for the customer.** Most of the time customer is not aware of the location what driver says (OR) driver is not aware of the location what customer specify. Driver is unable to locate the spot even with map. It is bit difficult. Hence drivers want to assign a pickup spot which can be common to driver and passenger and request the user to be arrive to the spot.
- 3) **Drivers are not getting all the details of the ride during the time of ride request.** The minimum mandatory details driver expects to be displayed to them while the time of ride request which includes passenger contact name and mobile number, no. of passengers travel in that specific ride, source and destination location, type of vehicle required, estimation fare for the ride & Date and Time of the ride. Vehicle type is selected based on no. of passengers travel in that ride.
- 4) **At the time of ride request, Driver is not getting the Traffic information of the route** traverse from current driver location to pickup spot of the passenger. This detail helps driver in decision making, whether driver wants to take this ride or not. Suppose if the traffic is high, driver may not accept the ride. After accept the ride, if the driver rejects it , it affects driver rating provided by the customer. It impact the earnings

# Information Architecture

## Information Grouping and Navigational Hierarchy

### Driver Perspective

#### Ride Details

- Passenger contact name
- Phone number
- No. of passengers
- Date and time of ride
- Source
- Destination
- Pickup Spot defined by driver
- Estimation fare
- Actual fare
- Payment mode
- Type of vehicle.
- No., of upcoming rides
- Ride history includes ratings provided for each ride

#### Wallet

- Amount of money collected for each ride. Few ride details includes Date and time of ride, source and destination of rides.
- Amount of Money transferred to bank
- Date of transaction
- Current Available cash

#### Driver Availability

- Driver availability status values includes (Available, In Driving, Not Available)
- Driver can specify custom defined status also

#### Profile

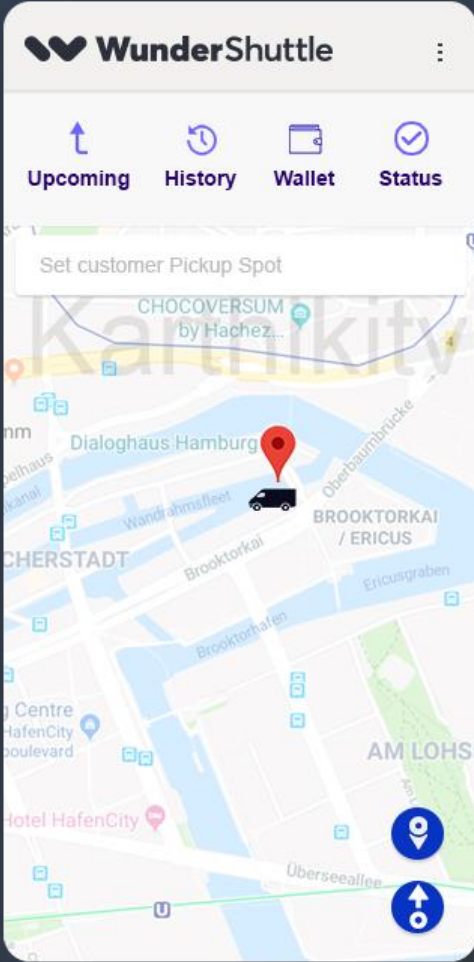
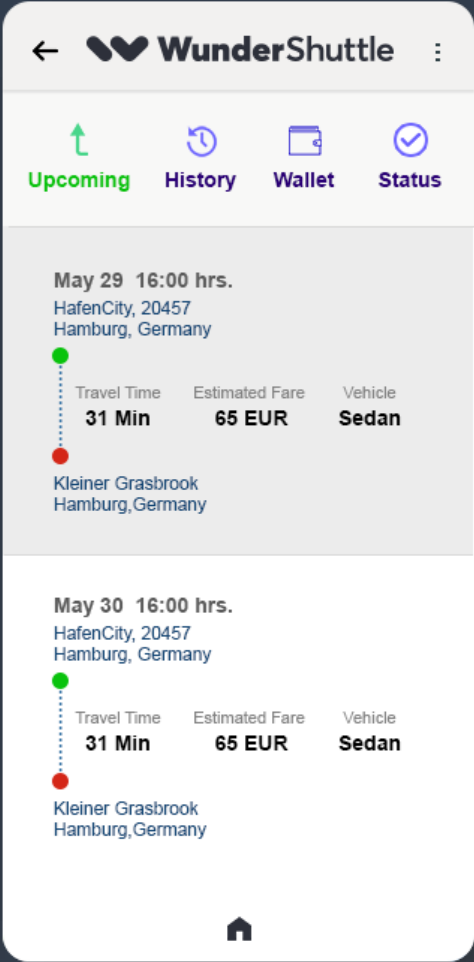
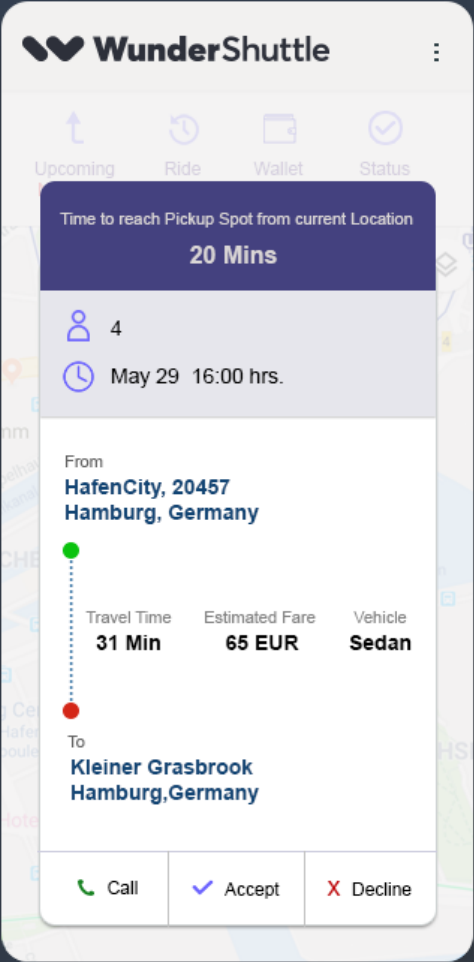
- Driver Details
- Driver Name
  - Mobile Number
  - Address
  - Overall rating
  - Driver Photo

#### Settings

- Vehicle Details Includes Type of vehicle the driver owns. Any time driver can change this while change the vehicle
- Payment Mode – Cash/ Card/ Wallet transfer. Any mode driver can specify on this.
- Profile Photo viewable to all passengers or not. this personalized settings can be chosen by driver.

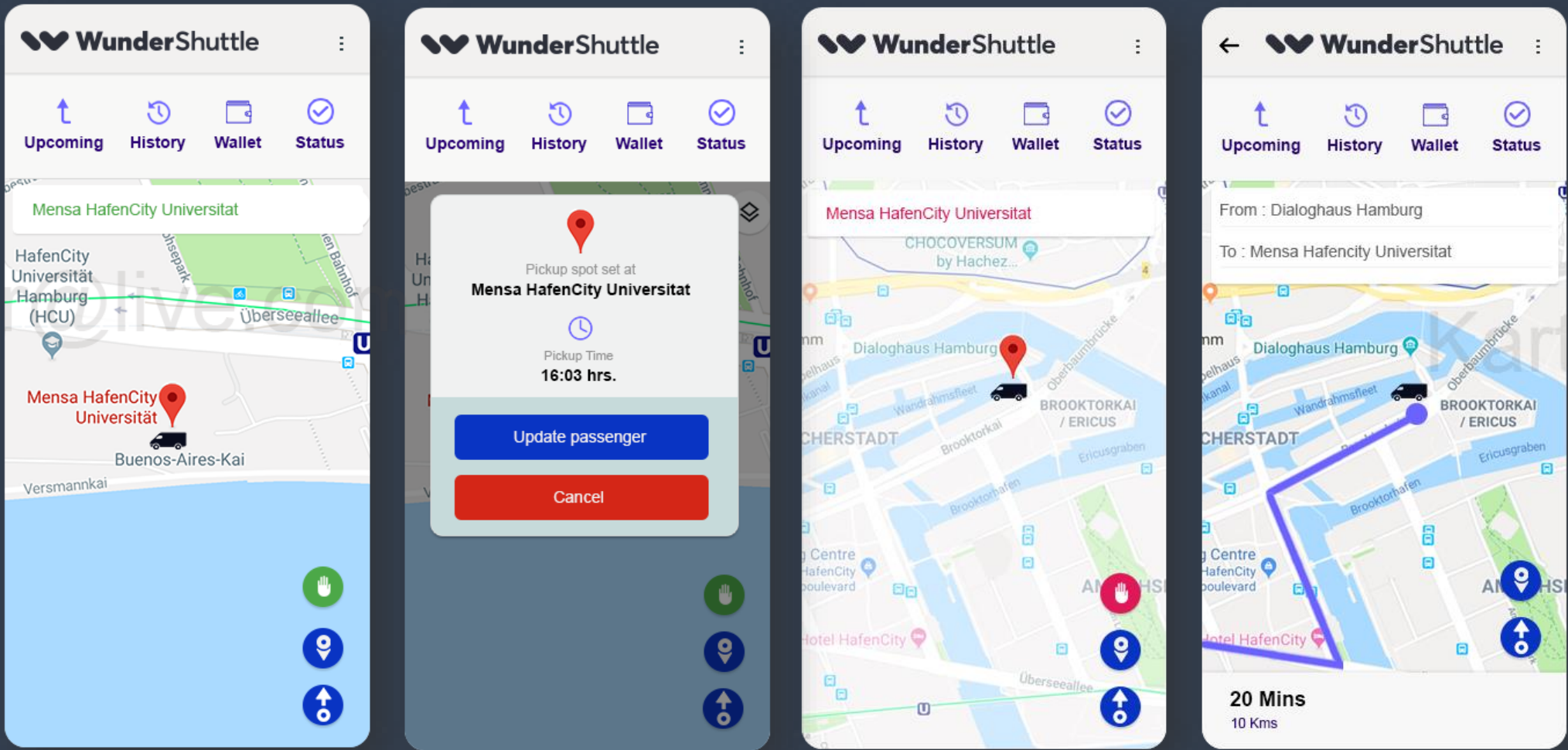
# Interaction Design

Use case : Driver receive ride request and pickup the passenger – Page 1



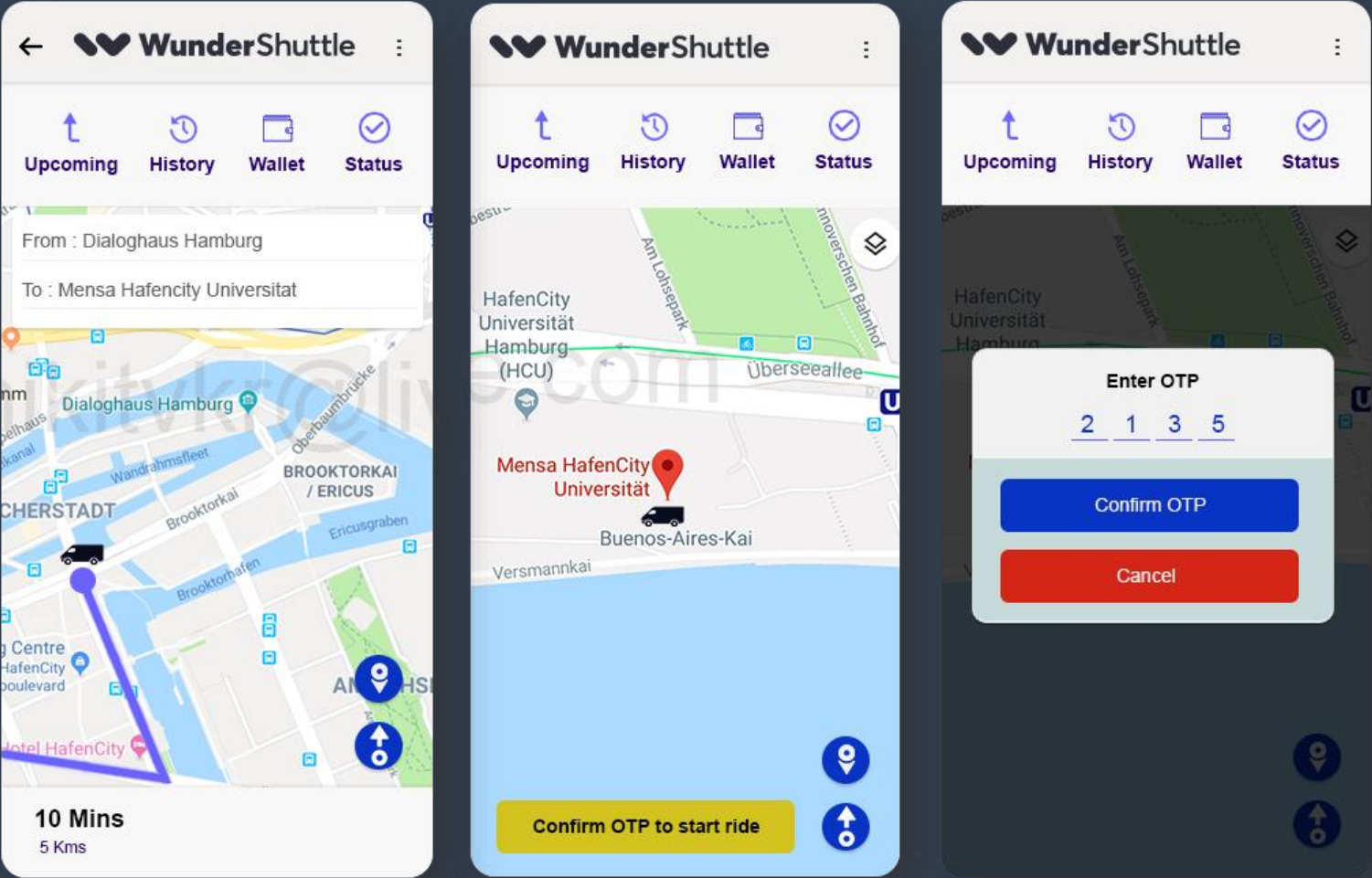
# Interaction Design

Use case : Driver receive ride request and pickup the passenger – Page 2



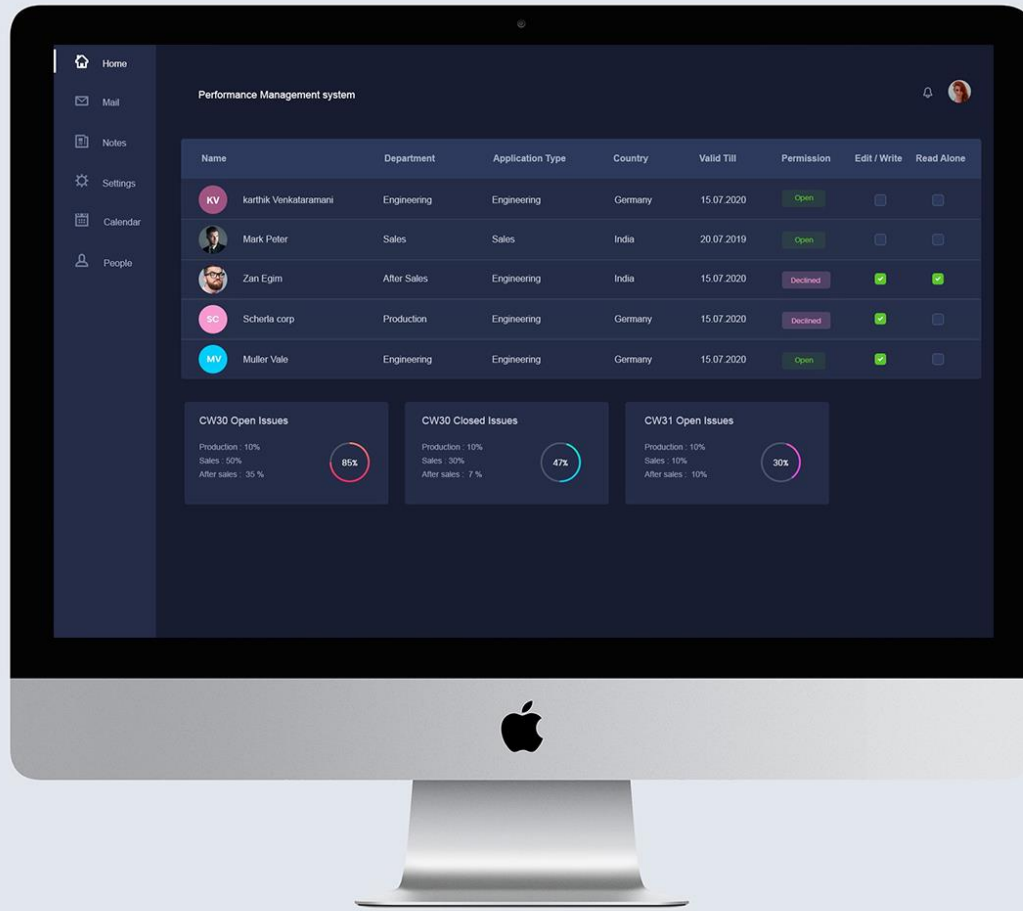
Interaction Design

Use case : Driver receive ride request and pickup the passenger – Page 3



# Project 4 – Permission Management system

Platform : Web



## Synopsis

Admin wants to assign permission to the employees who are the users of Engineering Systems of an organization across departments. Various types of permissions for various types of users based on department wise.



## What I did

1. Task Analysis
2. Information Architecture - Group the necessary information
3. Visual Design | UX Design



Performance Management system



Name	Department	Application Type	Country	Valid Till	Permission	Edit / Write	Read Alone
 karthik Venkataramani	Engineering	Engineering	Germany	15.07.2020	Open	<input type="checkbox"/>	<input type="checkbox"/>
 Mark Peter	Sales	Sales	India	20.07.2019	Open	<input type="checkbox"/>	<input type="checkbox"/>
 Zan Egim	After Sales	Engineering	India	15.07.2020	Declined	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 Scherla corp	Production	Engineering	Germany	15.07.2020	Declined	<input checked="" type="checkbox"/>	<input type="checkbox"/>
 Muller Vale	Engineering	Engineering	Germany	15.07.2020	Open	<input checked="" type="checkbox"/>	<input type="checkbox"/>

CW30 Open Issues

Production : 10%  
Sales : 50%  
After sales : 35 %



CW30 Closed Issues

Production : 10%  
Sales : 30%  
After sales : 7 %



CW31 Open Issues

Production : 10%  
Sales : 10%  
After sales : 10%



CW31 Closed Issues

Production : 10%  
Sales : 10%  
After sales : 5 %





Home



Mail



Notes



Settings



Calendar



People

## Performance Management system



Inbox

Sent Items

Drafts

Archive



Show 1 to 5

Select	Name	Date & Time	Subject	Description	Quick Reply
<input type="checkbox"/>	<div>KV</div> karthik Venkataramani	04.04.2019 17:50 hrs.	Engineering	I need access to Design Engineering Applications. Only Read access is also enough. but need asap	<input type="checkbox"/> Read <input type="checkbox"/> Edit/Write <button>Send</button>
<input type="checkbox"/>	<div></div> Mark Peter	04.04.2019 18:50 hrs.	Sales	I need access to sales app. as I want to see the profit details for each month of 2019 till now for a particular model	<input type="checkbox"/> Read <input type="checkbox"/> Edit/Write <button>Send</button>
<input type="checkbox"/>	<div></div> Zan Egim	04.03.2019 07:00 hrs.	Engineering	I need access to Design Engineering Applications. Both read and write access are required.	<input checked="" type="checkbox"/> Read <input checked="" type="checkbox"/> Edit/Write <button>Send</button>
<input type="checkbox"/>	<div>SC</div> Scherla corp	04.03.2019 08:00 hrs.	Engineering	Just need access to all Eng apps	<input type="checkbox"/> Read <input type="checkbox"/> Edit/Write <button>Send</button>
<input type="checkbox"/>	<div>MV</div> Muller Vale	04.03.2019 09:00 hrs.	Engineering	-	<input type="checkbox"/> Read <input type="checkbox"/> Edit/Write <button>Send</button>





Home



Mail



Notes



Settings



Calendar



People

Performance Management system



Size

Numbers related settings

Number of Emails shown in single page

1 to 5



If Open issues are greater than 10 at the end of every day, raise alarm

Yes



At End of every day, Open issues should not be greater than

10



Switch

Optional Settings

Quick Reply Option



Open and closed issues are shown separately in charts



Show people list only to admin



Deadline date is shown in emails for admin



## Project 5 - UX Research on upcoming UI trend – Conversational UI

I have undergone a research on how Conversational UI can be used. How it can add value to the user and the business. How the UI behaves in such UI design trend.



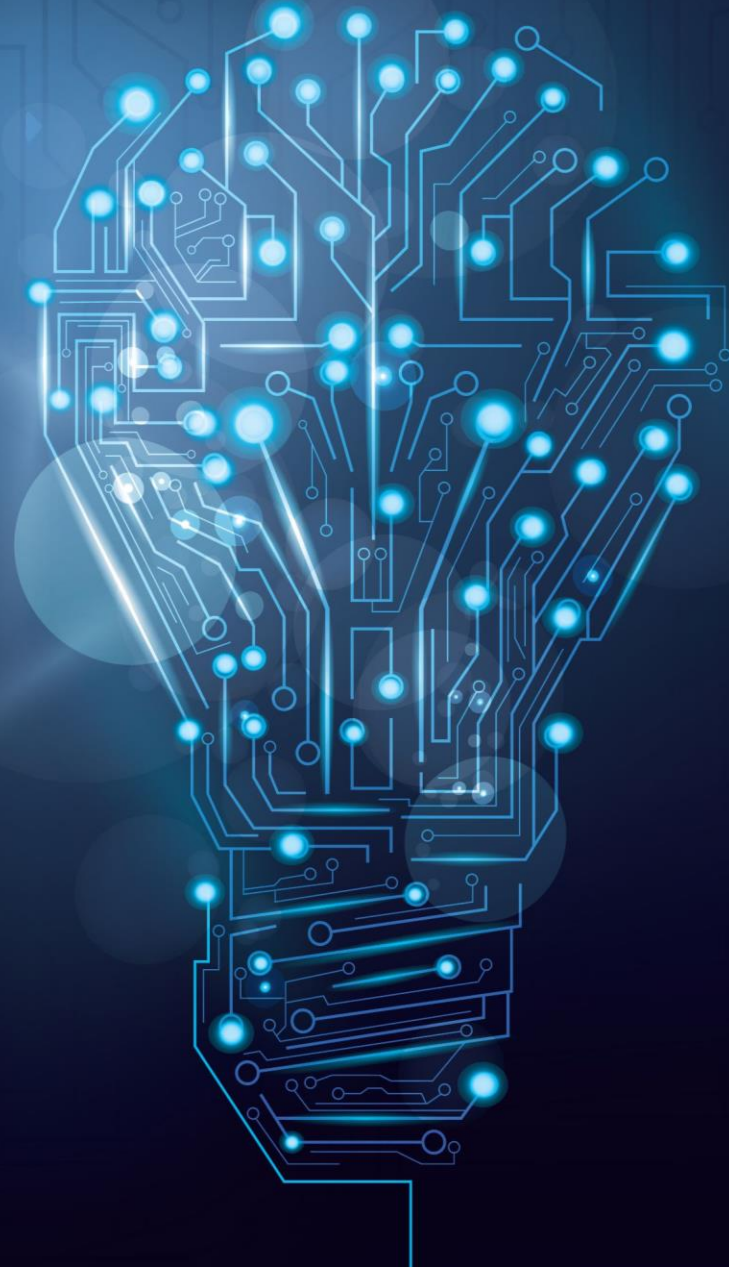
### What I did

1. Research on How UI patterns are communicating with users
2. How it can be better designed to make it to feel more with conversational instead of just communicate to user.
3. I Picked up a use case and start research. Research findings are provided from next slide as follows ....

# Conversational UI

emerging UI trend

I can explain this by taking a use case for example “Users wants to buy and sell movie tickets between them” . This is not an buy/sell between theatre and movie viewer. It’s between users.



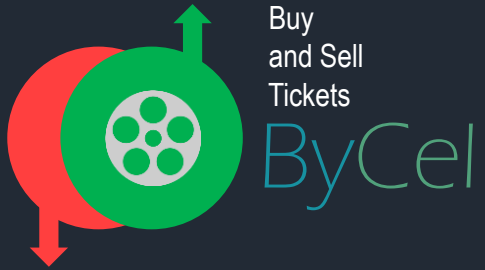


Bycel

Wallet

Notifications

Settings

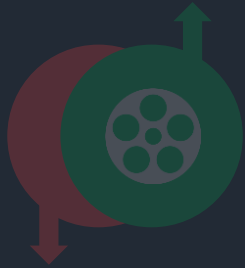


if you are unable to find the  
tickets for your favorite movie,  
Here you can



, If you have any extra  
Ticket, you can give it  
to the needy one.





Buy  
and Sell  
Tickets

ByCel



Bycel

Wallet

Notifications

Settings



if you are unable to find the  
tickets for your favorite movie,  
Here you can



, If you have any extra  
Ticket, you can give it  
to the needy one.


Buttons are not separated from the text. Last  
word of the sentence is buy, I make it as button

For sell, Make first word of the sentence is sell  
and Make it as button.

Available  
6 seats

Buy

Hood



Available  
10 seats

Buy

Star Wars




NA

Rogue Won



Sell


Avatar



Available  
10 seats

Buy

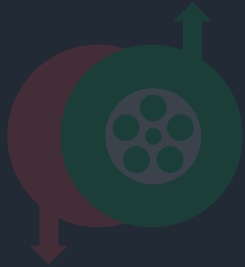
Avengers



Sell

Hood





Buy  
and Sell  
Tickets  
ByCel



Bycel

Wallet

Notifications


Settings

Card style starts with button on left top, which communicate to the user “buy this movie ticket” / “sell this movie ticket” . It’s like a sentence.

Available  
6 seats

Buy


Hood



Available  
10 seats


Buy

Star Wars




NA

Rogue Won



Sell


Avatar



Available  
10 seats


Buy

Avengers



Sell

Hood








Available  
6 seats


Buy

Hood



Available  
10 seats


Star Wars



Now 6:30 PM  
Phoenix Mall  
Seat : L6, L7


NA

Rogue Won



Sell


Avatar



Available  
10 seats


Buy

Avengers




Sell

Hood

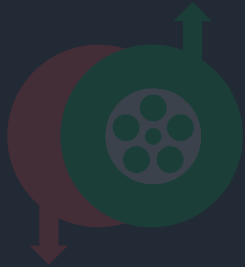


I want  Tickets

Buy







Buy  
and Sell  
Tickets  
ByCel



Bycel

Wallet

Notifications

Settings

Available  
6 seats

Buy

Hood

Available  
10 seats

Star Wars

Now 6:30 PM  
Phoenix Mall  
Seat : L6, L7

NA

Rogue Won

Sell

Avatar

Available  
10 seats

Buy

Avengers

Sell

Hood



I want  Tickets

Buy

CTA moves to bottom while user starts conversation with the UI. UI elements are serving to the user. Not just be accessible to the user.



Up  
coming

2 Tickets

Bycel

Wallet


Notifications

Settings

Available  
6 seats

Buy

Hood



Available  
8 seats

Buy

Star Wars



Upcoming 2  
tickets


NA

Rogue Won



Sell


Avatar



Available  
10 seats


Buy

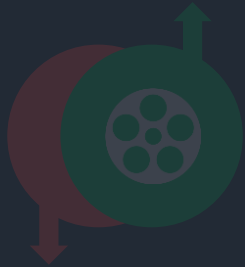
Avengers



Sell

Hood





Buy  
and Sell  
Tickets  
ByCel



Up  
coming

2 Tickets

Bycel

Wallet

Notifications

Settings

New Button is formed in the main menu. Scalability is important for conversational UI. Instead of any existing button labelled with “upcoming events” switch over from disabled to enabled state upon a ticket booking, a new button is formed.

Available  
6 seats

Buy

Hood

Available  
8 seats

Buy

Star Wars

NA

Rogue Won

Sell

Avatar

Available  
10 seats

Buy

Avengers

Sell

Hood



Upcoming 2  
tickets

## Project 6 - UX Research on Practical Approach to UX – Formulated the UCD method

I have undergone a UX research to formulate the UCD process with a process flow.

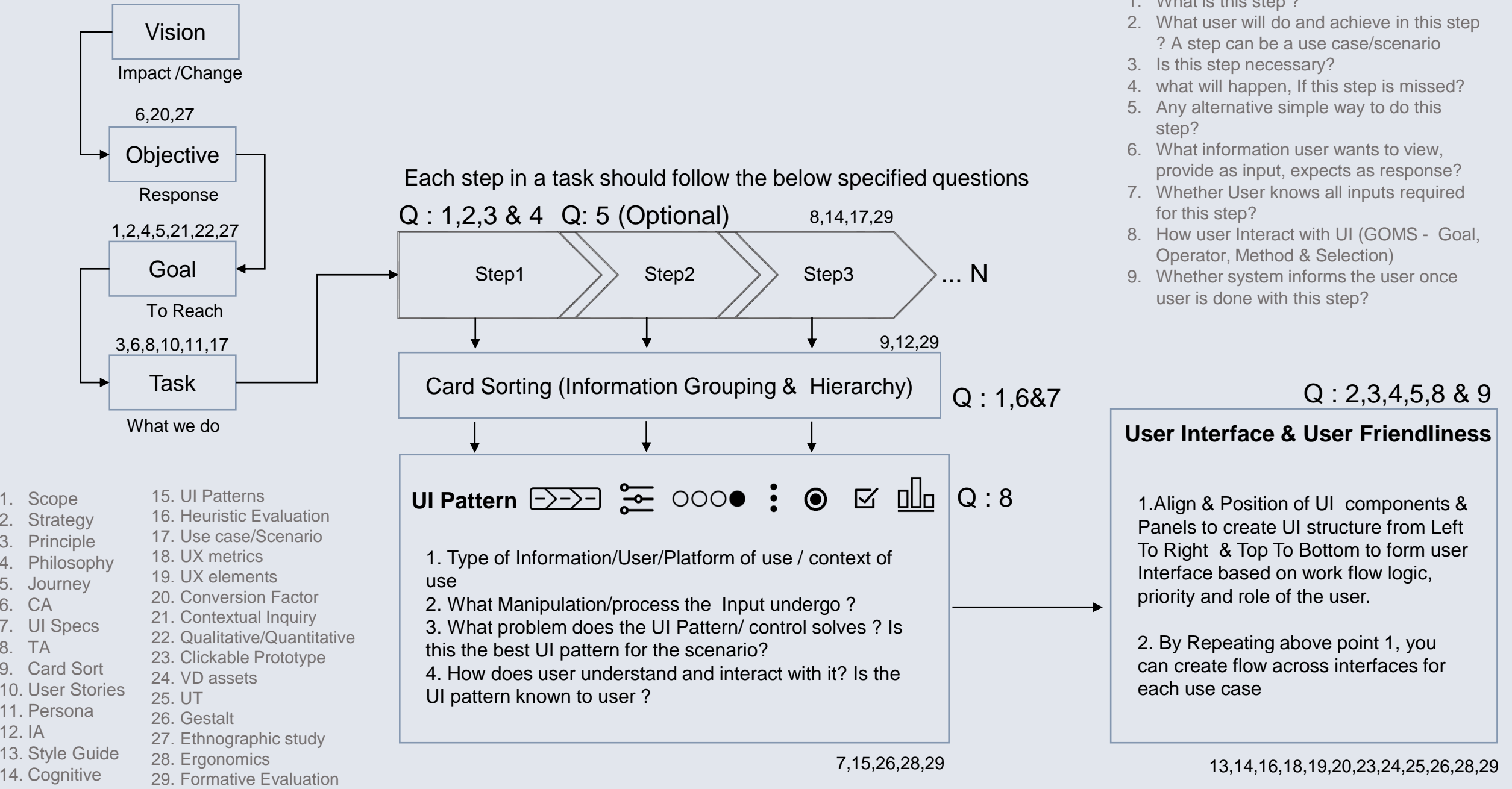


### What I did

1. Analyze the complexities in UCD method to maintain consistency in applying the process
2. Deep dive into scenarios where there is a dilemma to make decisions
3. How to approach each step of UCD process in a more practical way
4. Write step by step process in approaching each step in UCD process.
5. Scrutinize it . Precisely preparing questions. Formulate it.
6. Create a Process Flow Diagram

# Practical Approach to UX – Formulated the UCD process

Questions and process derived by Karthik Venkataramani



Thank You 😊

Designed by Karthik Venkataramani | Mobile : +91 – 9994730349 | Mail : [Karthikvkr@live.com](mailto:Karthikvkr@live.com) | Location :Bangalore, India | LinkedIn : <https://www.linkedin.com/in/karthikvkr/>