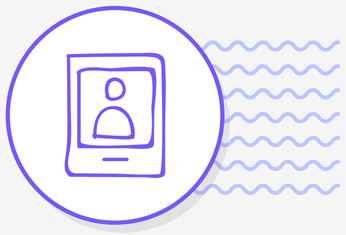
Template



Empathy map

Use this framework to develop a deep, shared understanding and empathy for other people. An empathy map helps describe the aspects of a user's experience, needs and pain points, to quickly understand your users' experience and mindset.

Share template feedback

Build empathy

The information you add here should be representative of the observations and research you've done about your users.

Says

What have we heard them say?
What can we magine them saying?

Although battery vehicles are becoming more and more popular in recent times

1. Using special on-board units it is possible to collect live dta from a vehicle's CAN bus. 2. Although the range of parameters is limited for most EVs.

1. Increasing the operating distance and in particular, the accuracy of charge state remaining range displays of electrical vehicles are the most important and challenging goals to gain market penetration and customer satisfaction. 2, Range displays currently i,stalled in electri vehicles do not reflect on the issue, predicting the remaining operating distance only based on the average total energy consumption from the past few trips.

1. At least the charge state is available for every car. 2. The OBU used for this project connect also to the NFC key cord reader used to lock/unlock the car. 3. All the recorded track data are tranferred to a secured SQL database.

Thinks

What are their wants, needs, hopes, and dreams? What other thoughts might influence their behavior?

1. In a first step, raw track data retrived from each car's on-board unit are modified and filtered in a variety of ways, based on complete tracks or selections of waypoints to filter out irrevelent tracks. 2. The sampling rate of a car's geolocation was sometimes too low in order to calculate track information with accurate precision, requiring route correction.

1. A detailed investicated of range-influencing factors is the actual focus of this work. 2. According to previous wotk and our own prelimmary analysis.

1. A detailed investigation of range-influencing factors is the actual focus of this work. 2. Various attempts have been made with diffeent success to measure range-limiting factors of electric vehicles under bot laboratory and real conditions. 3. To be able to provide this kind lof visual data exploration/analysis tool based on.

1. The coherance of outdoor temperature and battery drain might be caused by several reasons;Lower temperatures can have a nefative effect on the battery capacity of BEV's. 2. Reducing operation range and increases the average consumption. 3. We can further assume that the heating system in the passenger cabin consumes much more energy with cold outdoor temperatures as compared t the transitional season.

Give them a name and a portrait to empathize with your persona.

1. In order to increase the awerness of fleet operations and drivers on the influence of different range-influencing factors on the actual battery drain or operating distance, we presented in this work an explorative tool to analyze, visualize, and compare real-world track data from a car-sharing network. 2. As the part of this project are based on historical driving data.

1. Based on the existing work and the exploration tool, our perspective is to deploy a novel in-car dashboard to provide a more accurate range estimation based on historical data. 2. The resulting corrected, fine-grained route is exactly matching a vehicles real driving path.

1. Using these three databases, the appropriate data sets in time and space are finally merged with the correct waypoint of each track and stored in a final database queired during interactive exploration. 2. Though its interactive multi-view concept, the interface then offers multiple concurrent representations of the selected data within three different kinds of interconnected visualization.

1. Every OBU measurement is in another iteration mapped back to the right position of the corrected route using a least-distance measure approch or linear mapping for regions without deolocation measurements. 2. Each track point is finally enriched with additiona iInformation according to the enumeration.

1. Due to its nature, there is no absolute need for live-recording of these information, instead, values could be retrived via specific online services. 2. In the preselection steps, tracks of interests can be selected/filtered based on parameters such as driver ID, vehicles ID, driving duration or distance. 3. Though its interative multi-view conccept, the interface then offers multiple concurrent representations of the selected data within three different kinds of interconnected visualisation.

1. In the preprocessing phase we noticed that GPS coordinates of some waypoints were either not tracked detailed enough or completely missing. 2. Students have also shown wide differences between operating distances advertised by car manufactures and real empirical measurements.

1. Filtering tracks within the map view also affects the other view. i.e., subsequently showing only the remaining set of tracks. 2. Tracks are displayed in a tabular listing each line representing one track. 3. Information per track includes data/time, duration, overall distance, battery drain.

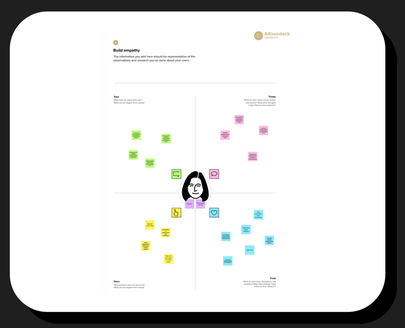
1. Dynamically adapted, threshold or involking another function call on the reduced problem size. 2. Range displays currently installed in electric vehicles do not reflect on the issue, predicting the remaining operating distance only based on the average total energy consumption from the past few trips. 3. The main goal is this work is to show and discuss the steps required to process and enhance recorded trips.

Does

What behavior have we observed?
What can we imagine them doing?

Feels

What are their fears, frustrations, and anxieties? What other feelings might influence their behavior?



Need some inspiration?

See a finished version of this template to kickstart your work.

Open example →