



Design Artifacts and Insights

This presentation will showcase our key design artifacts and insights, covering the human, economic, and technical aspects of our work. We'll dive into the thought-provoking elements that make this design truly impactful.

Project Overview

We are developing a cutting-edge system to manage and optimize open parking spots. Users can easily find, reserve, and pay for parking using our intuitive app.



Design Artifacts

User Personas

Detailed profiles of our target users to guide the design.

User Journeys


Visualizations of the step-by-step user experience.

Wireframes

Low-fidelity sketches of the interface layouts and interactions.

User Personas

Basic information



Dr. Brick Ham
Faculty Member


- 52 years old
- Physics Professor
- Iowa State University
- Drives a Tesla
- Lives 40 minutes from campus

Bio

Dr. Brick Ham is a new hire at Iowa State University. He was formerly employed at Harvard, but was recently fired for undisclosed reasons. He tends to arrive to class last minute as he is unfamiliar with the campus parking.

Link 1 Link 2 Link 3

Basic information



Mark
Student


- 22
- Full time student at Iowa State
- Computer Engineer
- Ames, IA

Bio

Mark struggles with finding spaces to park that are close to his classes during the week. He wishes that there was an easy way to know where and when there is available parking on campus so he can make it to his classes on time everyday

Link 1 Link 2 Link 3

Basic information



Shannon
Alumni/Visitor

- Age: 70
- Occupation: Retired
- Location: Iowa City, IA
- Returning to Iowa State for homecoming
- Majored in Political Science

Bio

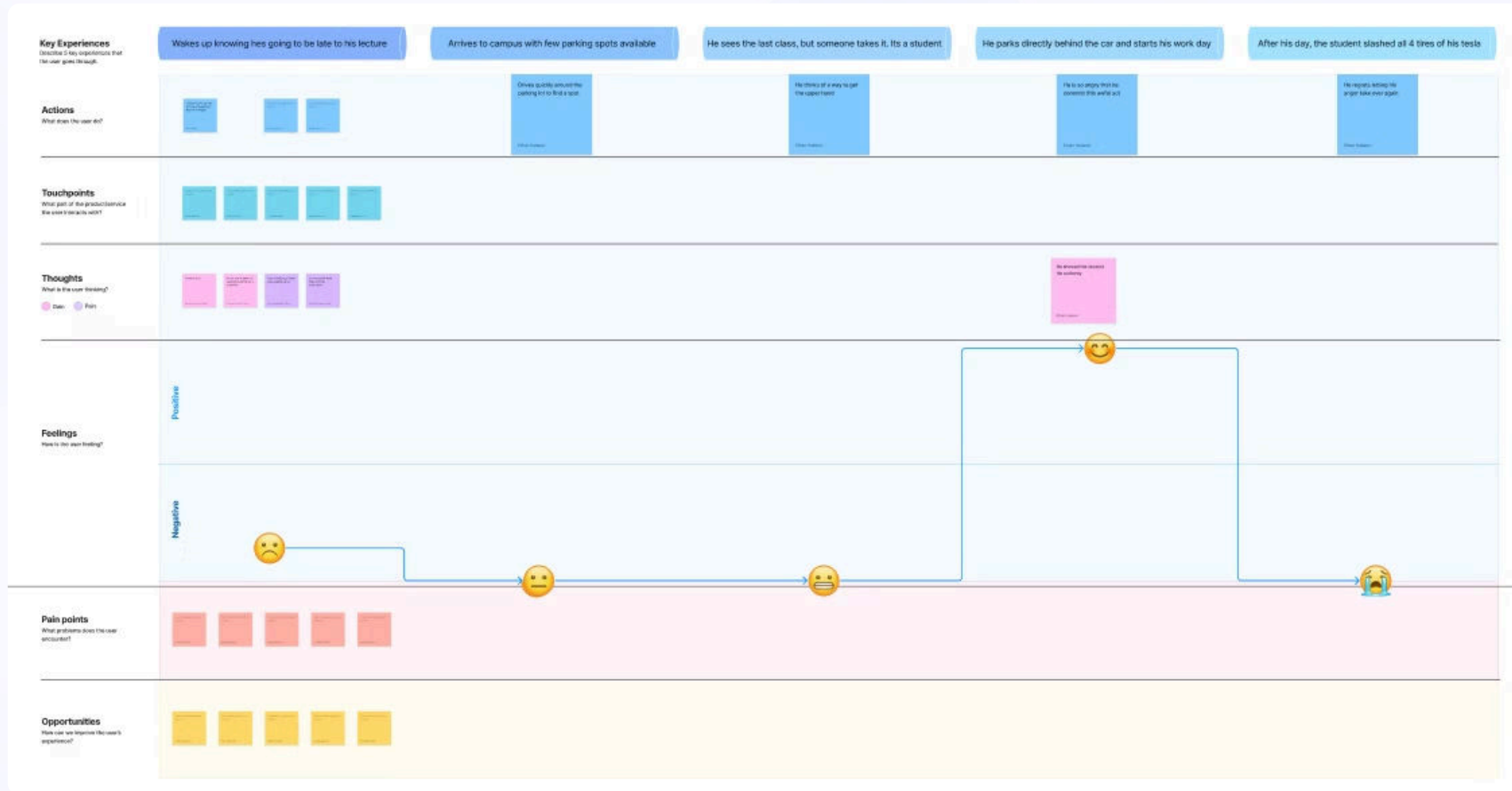
Shannon is a huge Iowa State alumni. She watches all the games and makes sure to come back for homecoming every year.

She needs a cane to walk and has a handicap parking pass.

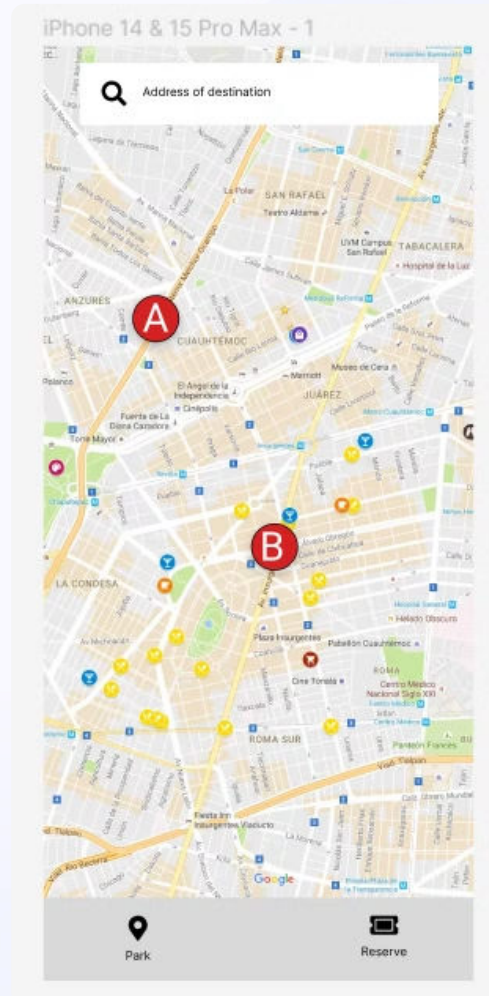
Does not enjoy driving because she doesn't trust other drivers to follow the rule. Which makes her anxious.

Link 1 Link 2 Link 3



User Journeys



Wireframe



Pros and Cons

 Pros What are the advantages?				 Cons What are the disadvantages?			
Easy to see which spots are open <small>William Clemmons</small>	Tension free operation <small>Mubassir Serneabat Sudipto</small>	Easy to remember the parking spot <small>Mubassir Serneabat Sudipto</small>	Easy to pay and navigate <small>Mubassir Serneabat Sudipto</small>	Adds extra steps to the parking process <small>Ethan Haberer</small>	Has to deal with both app and non-app users <small>William Clemmons</small>	First time users will be confused <small>Brian Witherspoon</small>	Relies on the accessibility of technology <small>Ethan Haberer</small>
Parking navigation <small>Brian Witherspoon</small>	Live data on parking lot availability <small>Kennedy Reiling</small>	Reliable way to park <small>Mubassir Serneabat Sudipto</small>	Automatic maintenance of vacant and filled up parking spots <small>Mubassir Serneabat Sudipto</small>	Needs to be somewhat good at navigation <small>Mubassir Serneabat Sudipto</small>	No hard prevention of inappropriate parking <small>William Clemmons</small>	No back up if technology fails <small>Ethan Haberer</small>	Technology could be damaged by wreckless drivers <small>Ethan Haberer</small>
Able to reserve a parking spot <small>Ethan Haberer</small>	Adds extra layer of security in terms of payment system and processing <small>Mubassir Serneabat Sudipto</small>	User friendly UI of the app which makes parking easier ever than before <small>Mubassir Serneabat Sudipto</small>	Overall user satisfaction on the whole parking management system <small>Mubassir Serneabat Sudipto</small>	Needs to know about how to pay and use the app firsthand <small>Mubassir Serneabat Sudipto</small>	Hardware maintenance <small>Kennedy Reiling</small>		

Human Aspects

1 Stress-Relief

By creating a reservation system, our users will no longer stress over getting a spot

3 Accessibility

Even without the app, parkers can still easily pay through our system

2 Conveniency

Our app user interface directs our users to the spot from their home with a simple design

4 Overall Experience

Our process will transform the parking experience

Economic Considerations



Improves existing solutions

- Check the availability of a parking lot
- Reserve a parking space from their home.
- Guides the user to reserved spot



Drawbacks

- Encourages users to use their phone while driving
- Requires users to have mobile device
- Doesn't prevent invalid parking



Improving on our drawbacks

- Our app directs the user directly to the spot to minimize phone time
- We will stress the penalties of invalid parking on site and on the application

Technical Justifications

1

Hardware

Arduino based detection system that will utilize ultrasonic sensors and speaks with the server and app

2

Server

Leveraging the latest tools and frameworks for efficiency.

3

Application

An easy to use UI with convenient processes to direct the users to spots and allow them to pay