

CS615 Project Step 3 Report

- Storyboards and Sketches -

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We have identified hierarchical descriptions of 1) the parking process on campus, 2) purchasing parking passes, and 3) Imposing/paying parking fines from project step 2.

We will present our storyboard to demonstrate how our parking management system can be used for a specific persona and a scenario using visual descriptions.

Personas

Persona #1

Alice

- An undergraduate student at UMass Boston
- Drives and parks on campus
- Has basic knowledge of using smartphones
- Just started driving, so not familiar with parking regulations
- Prefers online systems to in-person systems

Persona #2

Tom

- A manager for a parking lot at UMass Boston
- His duty includes checking parking lot availability, citing parking violations, managing parking passes, and customer services
- Has good knowledge of using smart devices

Scenario 1: "Purchasing a parking pass"

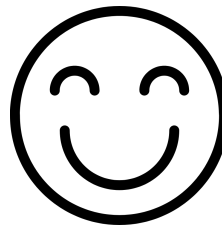


- 1. Getting a parking pass - Feeling: Annoyed, discouraged
 - Alice tries to find where to buy a parking pass.
 - He found out that he needed to apply for a parking pass and wait for approval.

- He submitted an application but was rejected because he was not eligible for the type of parking pass he applied for.
- Finally, he obtained the parking pass but now he wants to cancel it because he changed his plans.
- After the semester ended, he checked his bank account and discovered that he was still charged.
- He called the parking office and finally resolved the issue.



- 2. Switching to the parking app - Feeling: Dubious, promising
 - Alice logs into the app using her university credentials.
 - The parking app shows only the available parking pass options to Alice by checking her account status (student, faculty, full-time/part-time, ...).
 - Alice pays for the parking pass within the same app.
 - The parking app automatically authorizes Alice's parking pass, and she can freely use the parking lot from then on.
 - Parking managers can see the current list of parking pass holders in real time.



- 3. Problem solved - Feeling: Happy, Relieved
 - Alice can cancel or change her parking pass as long as the app allows.
 - The app will automatically calculate the prorated amount and issue a refund.
 - Alice can deal with her parking pass purchase without any hassles.

Scenario 2: “Parking on campus”

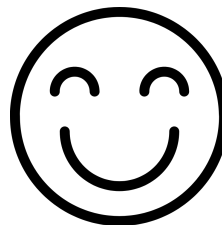


- 1. Finding a parking spot - Feeling: Annoyed, discouraged
 - Alice tries to find a parking spot on a busy morning.

- She chooses one of the parking facilities on campus and enters the lot.
- She tries to find her student ID card by tapping it on the entrance, but she doesn't remember where it is.
- She finally finds her student ID and enters the lot.
- She starts searching for parking spots, but she has no luck.
- She then leaves the parking lot and heads to a different one.
- Now, in a hurry, she drops her student ID on the passenger side and can't pick it up unless she gets out of the car and opens the passenger door.
- Finally, she taps her card again and enters another lot.
- This time, it is a multi-story parking lot, and she searches each floor.
- She finally finds a parking spot, but she has already spent 15 minutes.
- Unfortunately, she is late for her class.
- After a busy day, she tried to locate her car in the lot, but she completely forgot which floor and spot she parked in the morning.
- She searches each floor of the lot, relying on her memory.
- She ends up spending another 15 minutes locating her car.



- 2. Switching to the parking app - Feeling: Dubious, promising
 - Alice starts using our parking app.
 - Alice opens the parking app, and it shows all available parking facilities and parking spots in real-time.
 - At the entrance, she simply taps her smartphone to the machine, and the bar is activated.
 - She goes directly to the available floor and parking spot.
 - The app stores the exact location where she parked



- 3. Problem solved - Feeling: Happy, Relieved
 - She can plan her parking location in advance without roaming around parking facilities.
 - She does not need to go through the hassle of finding her student ID card every time she enters the parking lot.
 - She does not need to spend time circling the parking lot, especially when the parking facility is large to explore.
 - She can locate her car much more easily without memorizing the location.

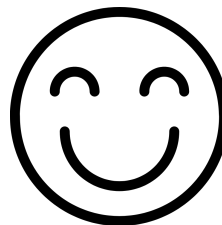
Scenario 3: “A task for a Parking manager”



- 1. Finding a parking spot - Feeling: Annoyed, discouraged
 - The parking manager, Tom, regularly checks the availability of the parking facility every morning, which interrupts his tasks.
 - Whenever a sports event occurs on campus, he needs extra time to check the availability of parking.
 - When it comes to writing a parking citation, he manually writes it and needs to keep it in a file, which is hard to manage.
 - Customers frequently ask for help in locating their car, which interrupts his work.



- 2. Switching to the parking app - Feeling: Dubious, promising
 - The parking app allows a parking manager to electronically assign a citation to a customer, and it is managed in the database with a search feature.
 - Customers do not need to ask the parking manager about the location of their car.
 - A parking manager does not need to regularly patrol the parking lot.



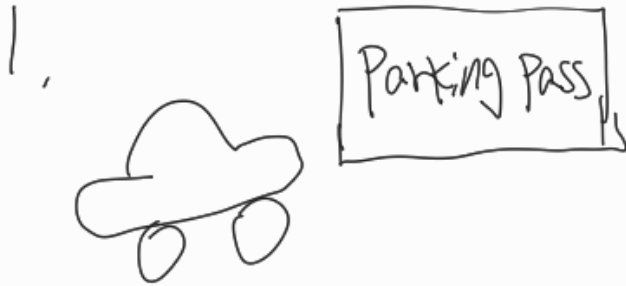
- 3. Problem solved - Feeling: Happy, Relieved
 - A parking manager no longer needs to search for parking citations manually, saving a lot of time.
 - The frequency of customers visiting the parking manager is reduced.
 - A parking manager can save time by not having to patrol the parking lot, reducing the cost of parking facility management.

Sketch #1 (by SangHyuk): Purchasing process and its user interface sketch

Discussion

We initially had a meeting among team members by exchanging the sketch draft we drew during the class. We found that Varun is good at fast prototyping general processes using his drawing skills, and SangHyuk focused on describing abstract concepts into actual descriptive statements with the conceptual working interface. As we knew each member's strength when making one integrated work, we took part in each textual description from step 2, and we made a complete sketch work as shown below.

- Purchasing a Parking Pass -



A student Alice needs to purchase a parking pass for the upcoming semester.

2. He downloads the parking app, and he logs in with his university account. The parking app pulls up his status. The app only shows the available parking pass types he can purchase.

Welcome "Alice"

You are a full-time Graduate student

Select

On-campus

Off-campus

Available spots: West Garage, Lot D, University Hall
- Bayside

Add my vehicle

Take photo

MA 1234

3. Alice pays the parking pass on the app

CARD NUMBER

XXXX-XXXX

VISA, Master, Discover, PayPal

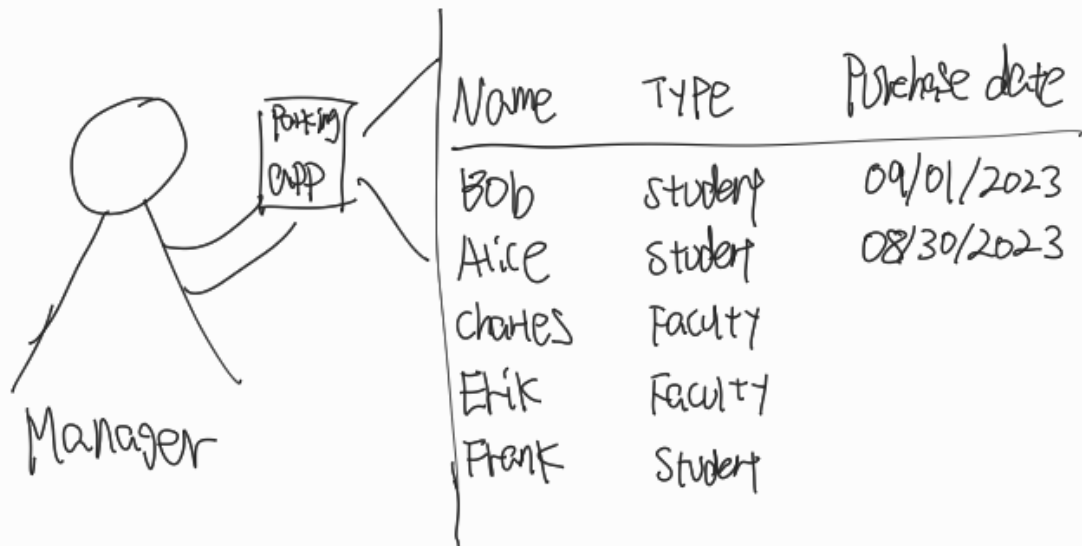
Product: Fall 2023 Semester Parking Pass

Price: \$550

Payment option:

Pay in full Installment

4. The app automatically validates the parking pass that a parking manager will not need to do any manual validations.

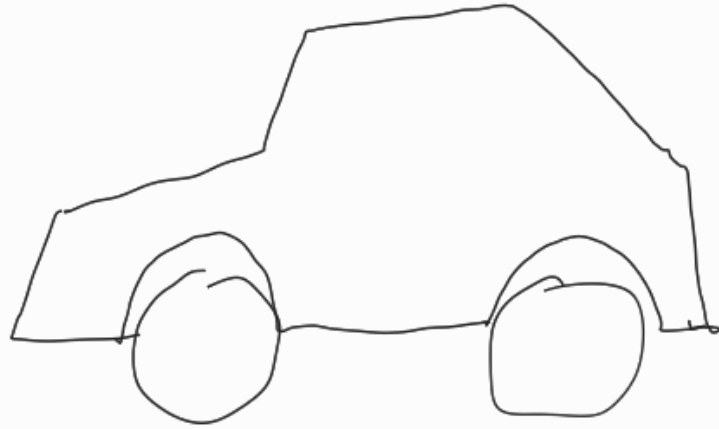
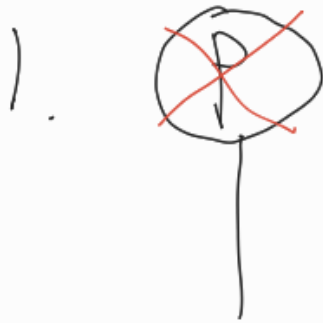


5. Alice can check his current & past Parking Passes in the app anytime

				until
Fall 2023	on-campus	\$550	Active	12/31/23

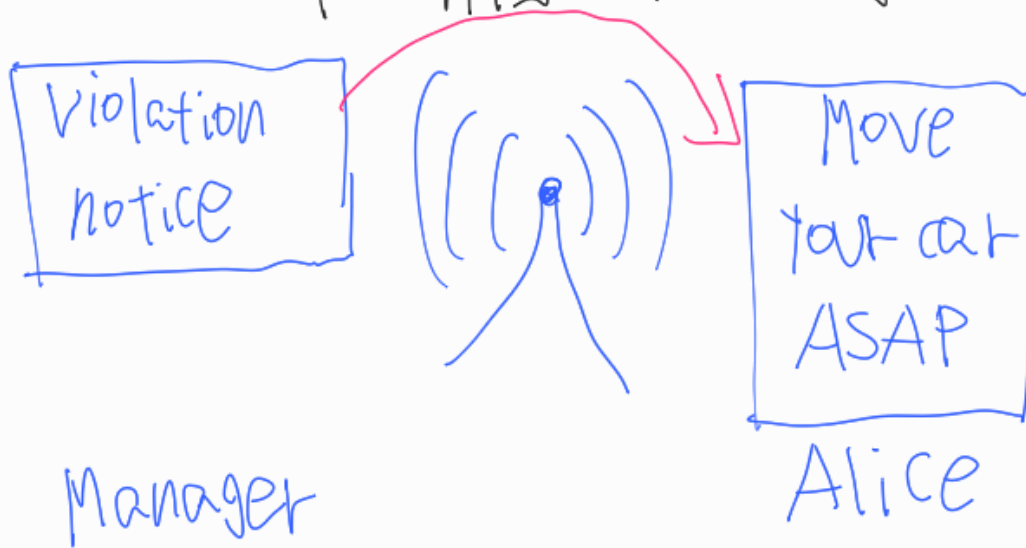
				until
Fall 2022	off-campus	\$500	Expired	12/31/23

- Paying Parking fines -



A student Alice violated
a parking regulation

2. A Parking manager notifies Alice of his parking violation



3. If Alice does not move his vehicle, Parking fines will be automatically incurred in his account

UMB Parking app

☒ Alice fine \$50 ^{Due} 10/11/2024

4. Alice can directly pay in the app, and his citation will be revoked.

CARD NUMBER

VISA, Master, Discover, PayPal

Product: Fall 2023 Semester Parking Pass

Price: \$550

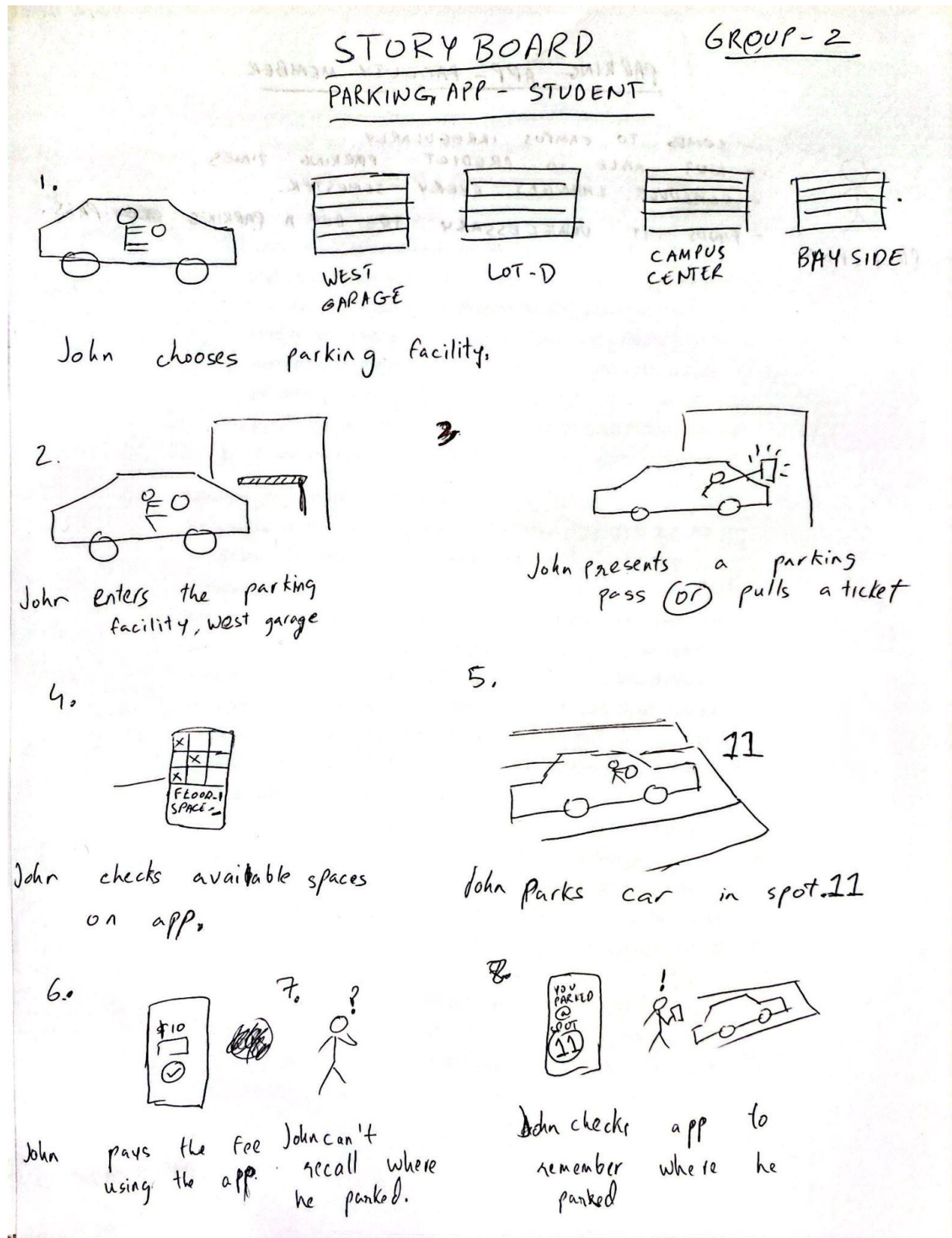
Payment option:

UMB Parking app

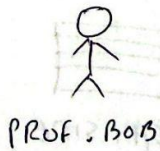
Alice fine \$50 PAID

- No data below -

Sketch #2 (by Varun): Improved parking process with our system



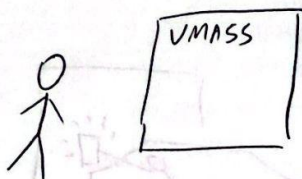
PARKING APP - FACULTY MEMBER



PROF. BOB

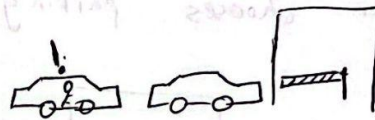
- COMES TO CAMPUS IRREGULARLY
- NOT ABLE TO PREDICT PARKING TIMES.
- SCHEDULE CHANGES EVERY SEMESTER.
- FINDS IT UNNECESSARY TO BUY A PARKING ~~PASS~~. PASS.

①



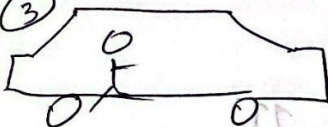
BOB COMES
TO COLLEGE
IRREGULARLY

②



BOB IS UNABLE
TO PREDICT PARKING
TIMES

③

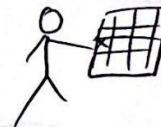


BOB ENDS
UP WASTING TIME
LOOKING FOR A PARKING
SPOT



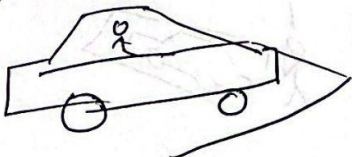
~~OFTEN ENDING UP~~
OFTEN
SHOWING UP
LATE

⑤



WITH THE
PARKING APP,
BOB IS ABLE
TO LOCATE VACANT
SPOTS

⑥



BOB DIRECTLY
PARKS AT THE VACANT
SPOT

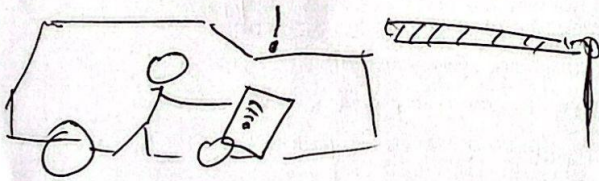
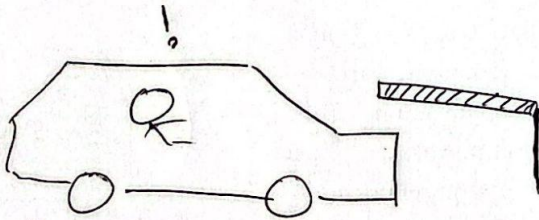
⑧

⑦



EFFECTIVELY
SAVING TIME
~~ENDING UP~~

- ALEX OFTEN FORGETS TO BRING
HIS PARKING PASS TO SCHOOL



WITH THE PARKING
APP, HE CAN USE
THE NFC ON HIS
PHONE TO PARK
WITH EASE

References

Emoticons:

<https://thenounproject.com/icon/mad-540789/>

<https://thenounproject.com/browse/icons/term/skeptical/>

<https://www.svgrepo.com/svg/10551/happy>