User Testing Basics

Agenda

👋 **Intros**

🤔 **Design challenge:** Unlocking shared bikes

🤷‍♀️ **Why user testing?**

👩‍🔬 **Qualitative tests**

🚀 **Breakout session**

📈 **Quantitative tests**

📝 **Takeaways**

Who we are:

Lyft's Transit, Bikes, & Scooters team

Brady Law
Staff Engineer

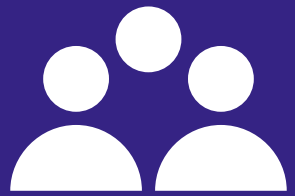
Go Team 686!
circa 2005 👶

Varna Vasudevan
UX Researcher

Nadia Eldeib
Product Manager

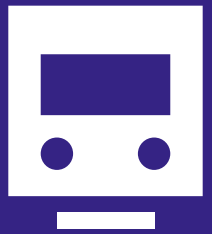
Lyft's mission:

Improve people's lives with the world's best transportation.

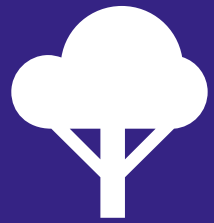


Transportation equity

Safe streets



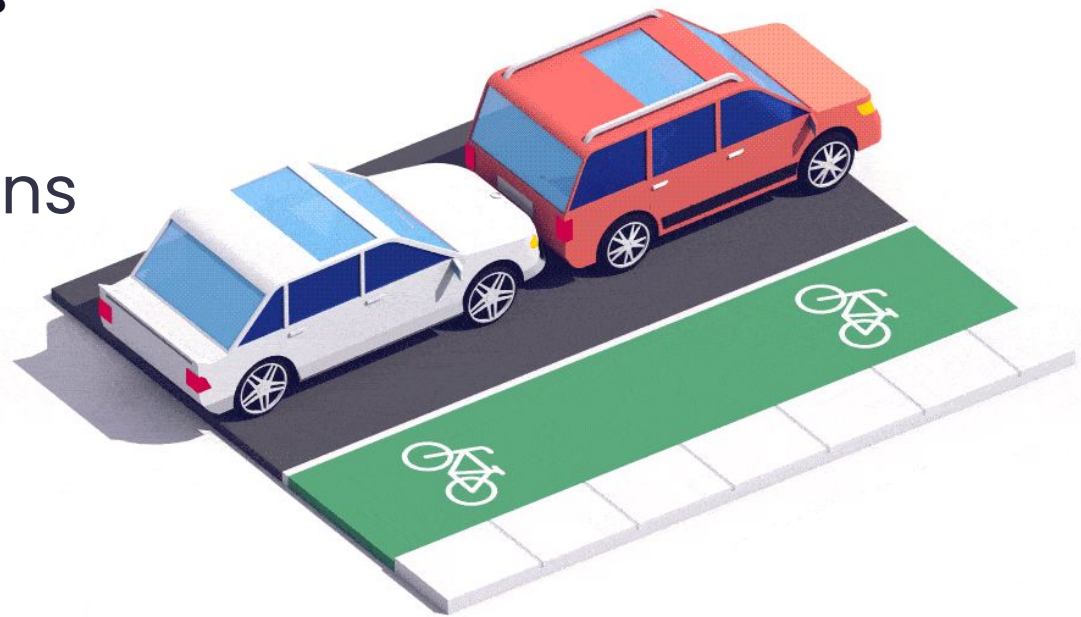
Public transit integration



Environmental sustainability

Lyft Transit, Bikes, & Scooters

Create personal transportation solutions that people love and cities need.



Design challenge

🔓 Unlocking shared bikes

The Life of a Lyft Bike Ride

Discovery of Bikes in your city

Onboarding + Set-Up

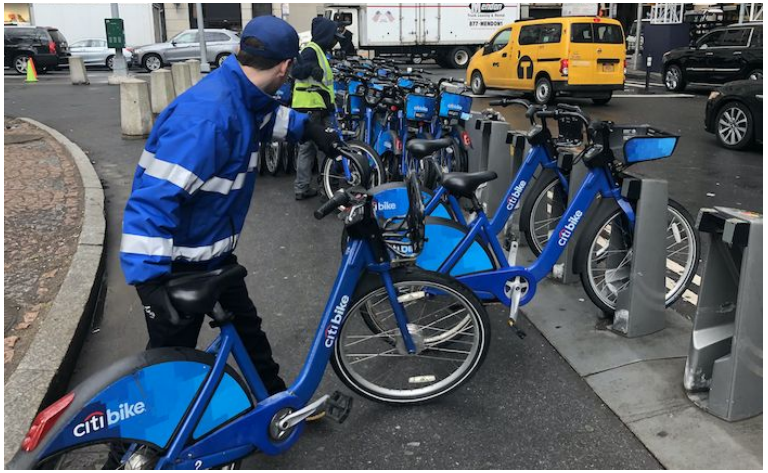
Planning your bike trip

Unlock bike from dock/station

On the ride

You've arrived / parking the bike


capital bikeshare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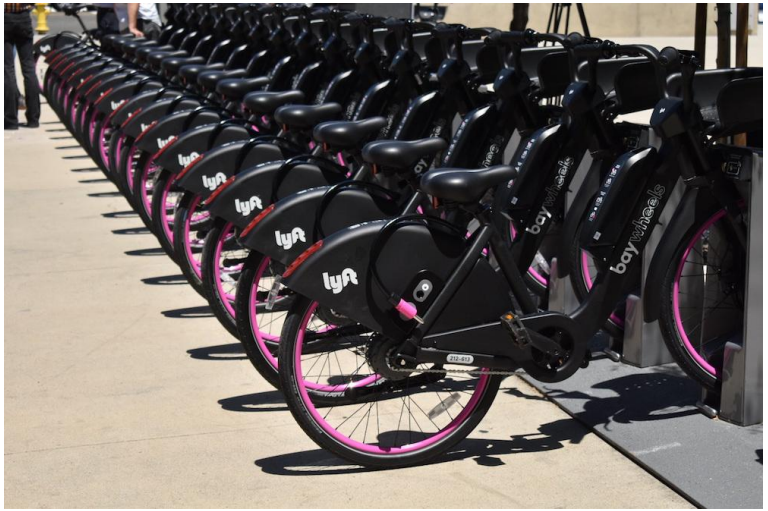
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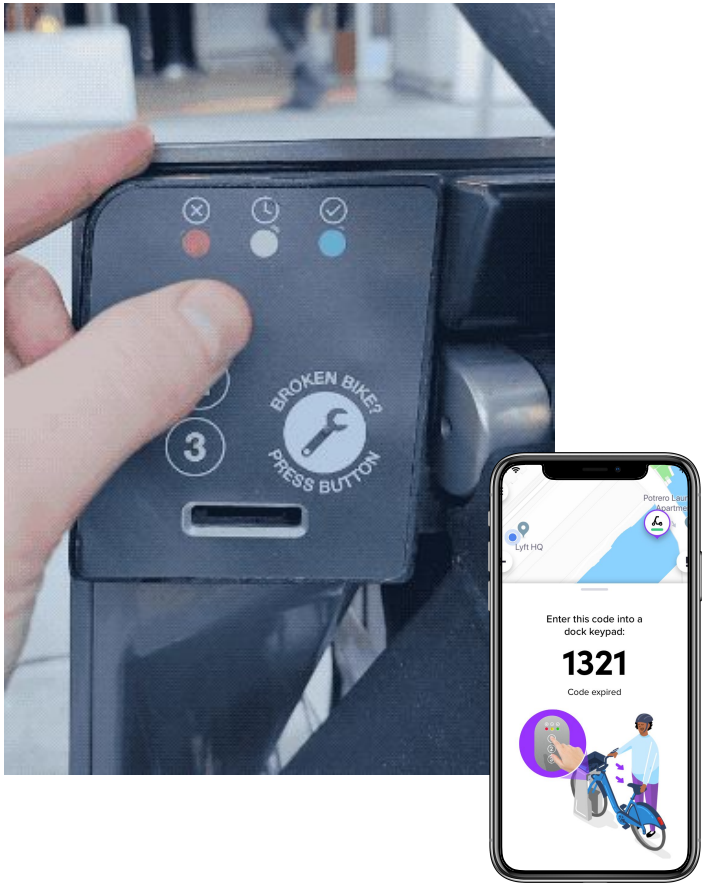
Goal:

Decide whether to change our bike unlock experience to a completely new design.



Guiding principles

To help us decide on the right experience, we set some ‘guiding principles’ for the unlocking experience. Unlocking should be:

🏃‍♀️💨 Fast

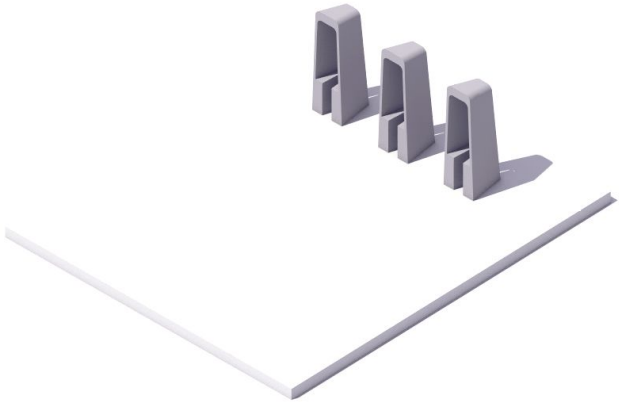
- They are taking a bike because they have somewhere to be, not get stuck in our app.

💪 Reliable

- The unlock process should work every time, even in low light conditions. Have a plan for low/lost network connectivity.

🤔 Intuitive

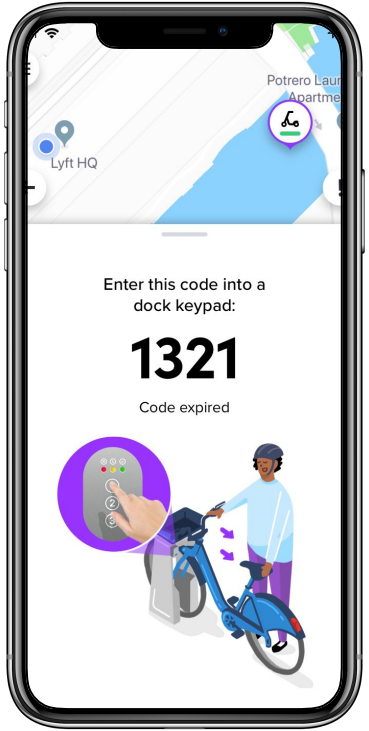
- Experience should be intuitive for regular users and users trying bikeshare for the first time. Try to support old phones as well as new.



Option A: Station PIN Code

Existing solution

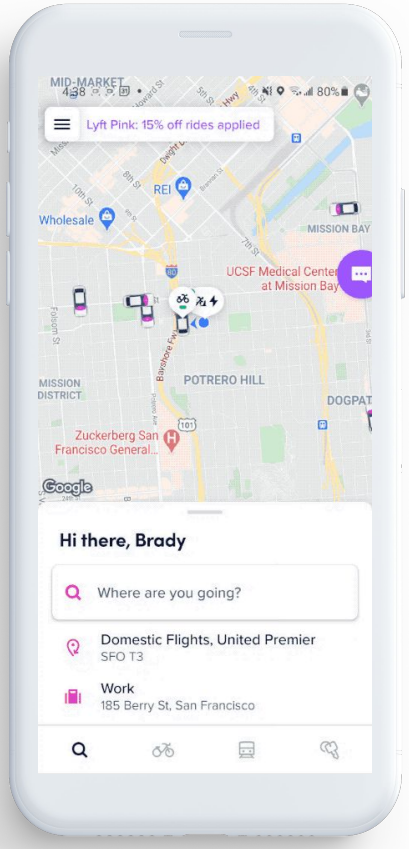
1. User walks up to dock
2. Opens app, taps "Unlock Bike"
3. Given PIN Code
4. PIN Code entered into dock
5. Bike unlocks

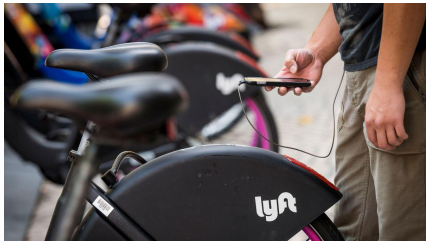


Option B: QR Code

Proposed solution

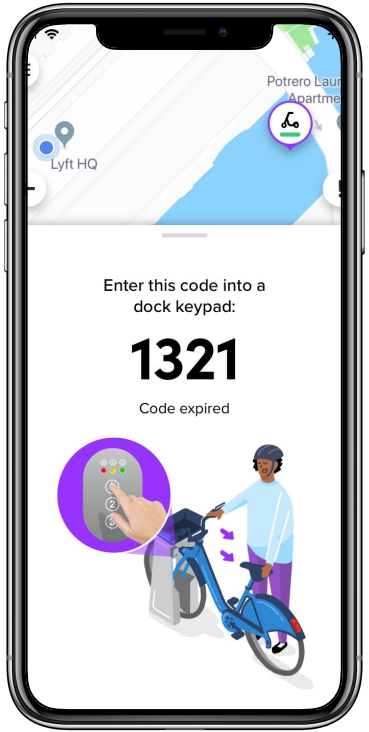
1. User walks up to dock
2. Opens app, taps "Unlock Bike"
3. Camera permission requested, prompted to scan QR code
4. Bike unlocks





Imagine you're a Lyft Product Manager.

Do you decide to keep the Station Pin Code (Option A) or change to the QR code (Option B) for bike unlocks?



Station Pin Code (Option A)

QR code (Option B)

Role of user testing

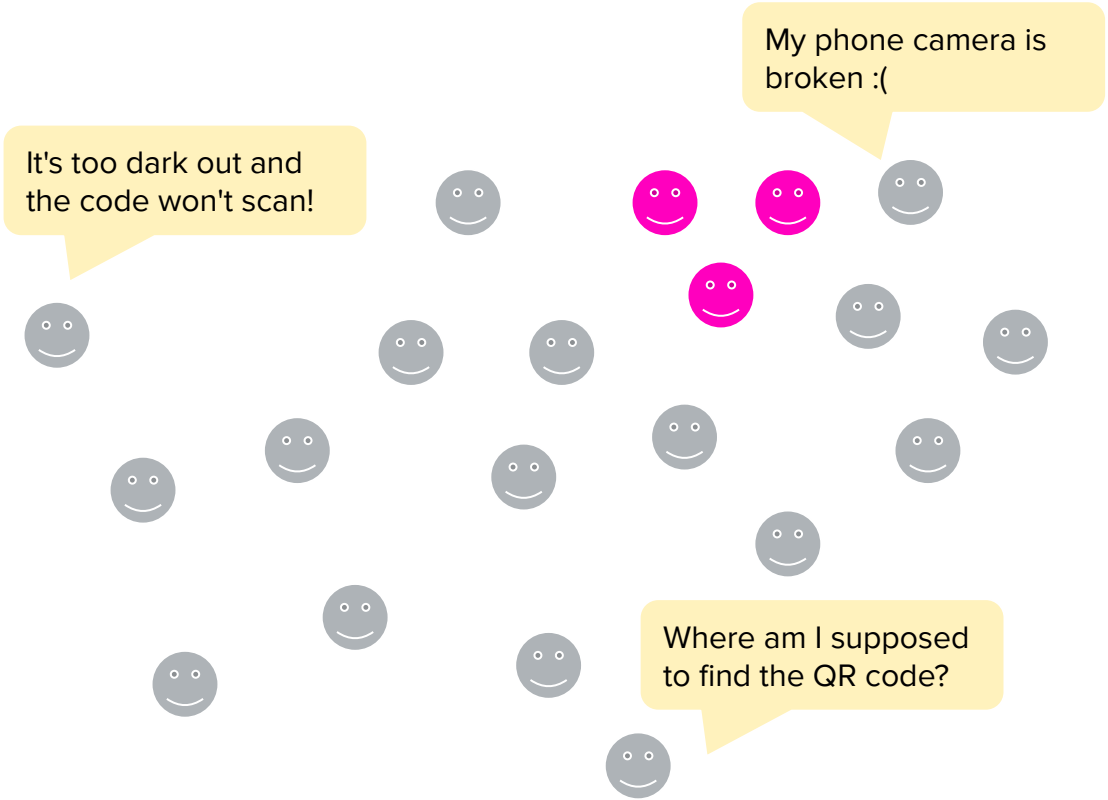
Team feedback is important...

Unlocking with a QR code is so much faster!

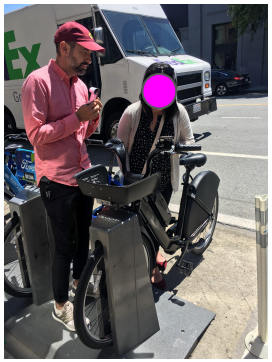
Let's ship it!

But so is user feedback

We’re building products for our riders, not ourselves.

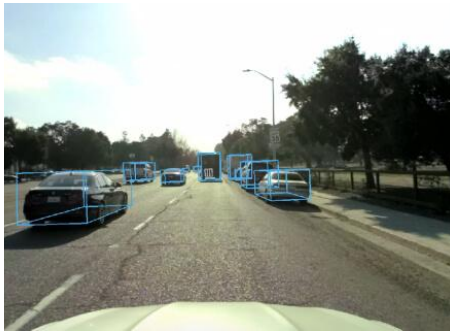


Test, Iterate, Test



User variation

Every user is different!

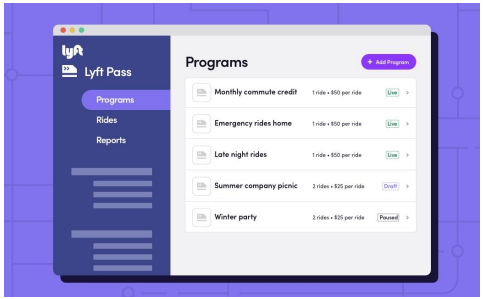


Environmental variation

User testing enables realistic testing

Fresh perspectives

Engineering teams become experts in their own products, but this can hurt objectivity.



Hard data

By gathering data as you can test, you can make decisions that will more confidently meet your goals.

Qualitative tests

Getting feedback directly from users

Qualitative Research Process at Lyft

Identify research questions & hypotheses

Prepare Prototypes & Draft Test Plan

Conduct Testing: Interviews, Observations

Capture your data: Notes and Videos

Synthesize your Learnings

Identify research questions & hypotheses

Developing a research plan

OBJECTIVE:

Help simplify the bike undocking experience for our riders.

RESEARCH QUESTIONS

What are the pain points associated with the current PIN CODE unlocking experience?

- Hypothesis: Pin code unlocks require too many steps - a rider must open the app, obtain a pin code, and then physically type the code in the dock.

What are the barriers and benefits to introducing a new QR SCAN unlocking experience?

- Hypothesis: The QR code location on the back fender is hard for new users to discover

Identify research questions & hypotheses

Prepare Prototypes & Draft Test Plan

Scrappy Testing with a Quick Prototype

CURRENT SOLUTION:
Station observation for Pin Code unlocks

PROPOSED SOLUTION:
Low-fidelity QR Scan prototype

Recruiting Participants

IDENTIFY YOUR PARTICIPANT CRITERIA

Which users do I want to target for this research recruit?

There's a lot to consider to make sure your product is serving all of your users...

Diverse mix of participants: income, ethnicity, race, gender, language, location/region, etc.

Bike Example: Mix of heights, weights, age, and physical ability to make sure the bike experience works for all body types

CRAFT A SCREENER SURVEY

How do I determine if a participant is a good fit for my study?

Craft a "screener survey" to capture specific criteria and select your study participants.

Ex: In the past 1 month, which of the following modes of transportation have you used in NYC?

A. Public Transit
B. Shared Bikes **[Must Select]**
C. Rideshare
D. Personal Car
E. Other

Identify research questions & hypotheses

Prepare Prototypes & Draft Test Plan

Conduct Testing: Interviews, Observations

Make the most of your session by adopting these interview moderator best practices:

1. Make them feel comfortable
2. Ask open-ended and non-leading questions
3. Seek concrete examples
4. Use their words
5. Ask *“what”*, *“how”*, and *“why”*.

lyft research

When stuck, here are some handy phrases to memorize...

“What do you mean by that?”

*“That’s interesting. Can you **tell me more**?”*

“What is the best thing about that?”

“What happens next?”

“That’s interesting. Can you describe that to me in another way? How would you describe it to a friend?”

~~*“What do you like?”*~~ *“What do you think about this?”*

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Identify research questions & hypotheses

Prepare Prototypes & Draft Test Plan

Conduct Testing: Interviews, Observations

Capture your data: Notes and Videos

It’s important to capture the qualitative data from your interviews:

Ask participants to ‘talk out loud’ or ‘write it out.’

There’s easy ways to capture feedback from participants apart from an interview - quick surveys or worksheets can help users document their thoughts.

Use direct quotes and verbatims in your notes!

Make sure your notes from interviews and observations are detailed and objective.

Video, Photos, Audio - capture it all!

It’s powerful to share clips and highlight reels with your team after user testing sessions - it builds deep user empathy!

Identify research questions & hypotheses

Prepare Prototypes & Draft Test Plan

Conduct Testing: Interviews, Observations

Capture your data: Notes and Videos

Synthesize your Learnings

EXAMPLE PIN CODE FINDING

The dock unlock “click sound” is the confirmation of Pin Code success for many riders.

The sound is helpful, but often difficult to hear against the noise of city streets.

💡 **Fresh perspective:** Checking for the “click” sound was a *new* behavior we observed from riders. We didn’t explicitly design for this use case - this was a surprising moment of inspiration to use sound/light interaction as signals in future hardware. designs.

EXAMPLE QR SCAN FINDING

Although participants were familiar with QR codes and the action of scanning, half of participants did not immediately locate the QR code decals and spent time searching for it.

Of these participants, the most common place they looked first was on the stem cap or around the handlebars.

💡 **Fresh perspective:** What felt obvious to the team was not obvious to a new user.

Breakout - Analyze Qualitative Research Data

📝 **Objective**:

Analyze notes and quotes from a set of qualitative research interviews.
Synthesize the data into actionable themes and next steps.

🎒**User Problem**:

Heavy backpacks are uncomfortable for students commuting to college.

🚀 **Proposed Solution**:

Backpack with multiple adjustable straps.

Collaborative Breakout Sessions

Breakout sessions are NOT recorded.

Don’t be shy to show your friendly smile and participate!

Join back into the main room after to share and learn more.

Breakout - Analyze Qualitative Research Data

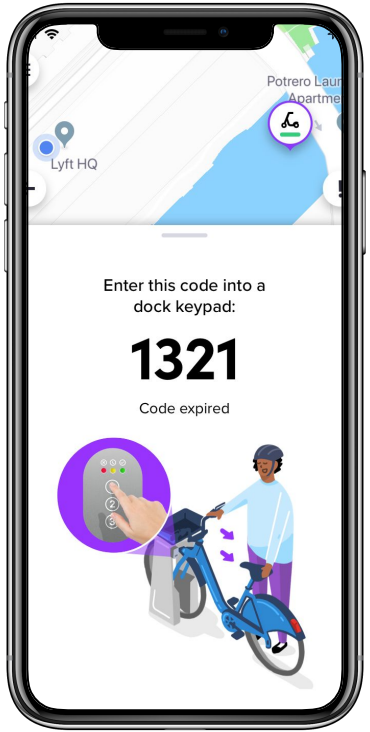
What were some key themes you learned from users?

What are the next steps or action items?

Quantitative tests

Making data-driven design decisions

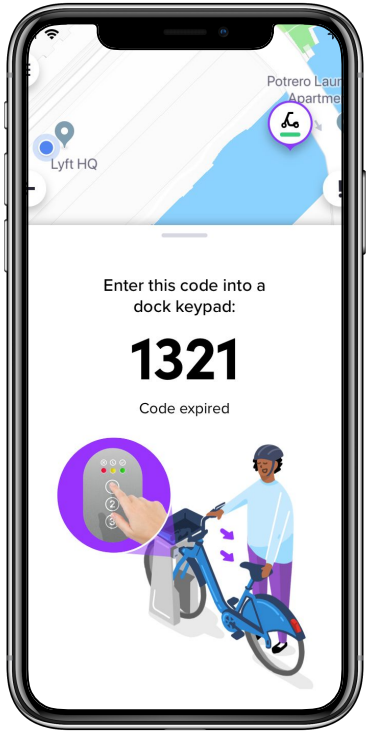
Which product experience is best?



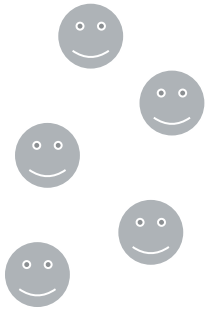
I prefer PIN code unlock, it was more familiar

QR unlock felt faster for me!

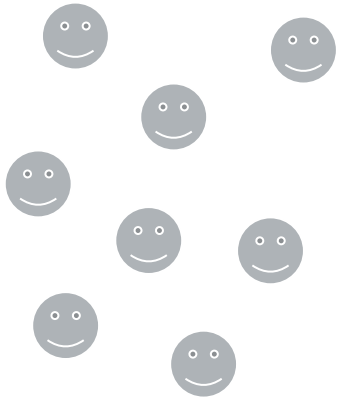
A simple (quantitative) test



"What is your preferred unlock experience?"



5 votes



8 votes

Quantitative vs. qualitative

Collect precise, comparable metrics

- Detect subtle differences that user might not bring up in an interview format. Would users notice a 1 second unlock difference?

VS.

User	Time to unlock
1	5s
2	4s

Project product performance

1% improvement in unlock reliability

x

100,000 unlock attempts / day

=

+1,000 rides/day

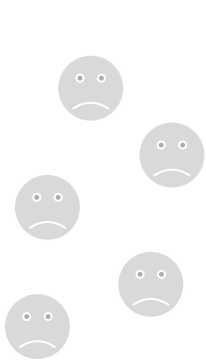
🚴🚴🚴🚴🚴🚴

Quantitative test steps

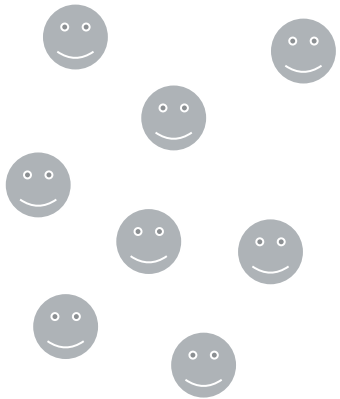
Pick Metrics	Design Test	Test, Analyze, Iterate
"Seconds to unlock" "% of unlock attempts successful" **Numeric** so they are comparable	**A/B Test** **Variant A:** QR code **Variant B:** PIN code **Benchmark test** Can we unlock in under a second?	Modify product based on learnings Re-test if necessary

What should metric be?

"What is your preferred unlock experience?"
***Metric:** % of users who prefer QR unlock*



🤔 I'm unable to unlock the bike...



QR unlock is so much faster! 🏃‍♀️💨

SHIPPED

We can do better

"What is your preferred unlock experience?"
***Metric:** % of users who prefer QR unlock*

- 🤔 What does "prefer" actually mean to the user?
  - Fast? Reliable? Intuitive? Some combination?

- Will the user report subtle differences in speed/reliability?

- Binary choice reduces likelihood of conclusive results

Tips for high quality metrics

- Find metrics that tie ***directly*** to what you want to observe
  - **Indirect:** "QR unlock was preferred"
  - **Direct:** "QR unlock was faster"

- Collect ***precise*** measurements
  - **Imprecise:** "QR unlock was faster"
  - **Precise:** "QR unlock took 3.15 seconds"

Proposed metrics

🏃‍♀️ Fast

- Average seconds from app open to bike unlock

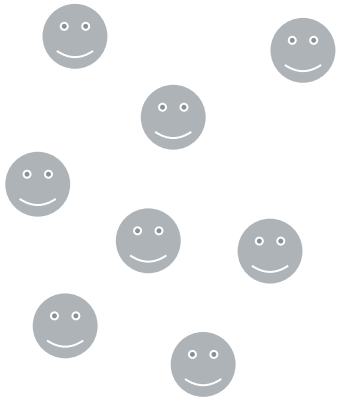
💪 Reliable

- % of attempts who tap "Unlock Bike" who successfully unlock

🤔 Intuitive

- % of users who tap "Unlock Bike" who successfully unlock

Test setup (A/B)



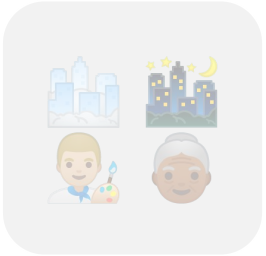
Ask tester,
"please unlock a bike"

Tester	PIN unlock time
1	3.1s
2	4.2s
3	FAIL
4	3.9s

Tester	QR unlock time
1	3.1s
2	4.2s
3	FAIL
4	3.9s

Best practices

Measure as precisely as possible



Test across user, environmental variations

More data, more accuracy

Measure as precisely as possible

100m Rio 2016 Men's Final

Measure as precisely as possible

100m Rio 2016 Men's Final

Runner	Time
🥇 Usain Bolt JAM	9 sec
🥇 Justin Gatlin USA	9 sec
🥇 Andre De Grasse CAN	9 sec
🥇 Yohan Blake JAM	9 sec

Measure as precisely as possible

Not great:

- ❓ Ask user which product was faster

QR unlock real time: 3.1s .7s observation error

Better:

- ⌚ Have a teammate time with a stopwatch

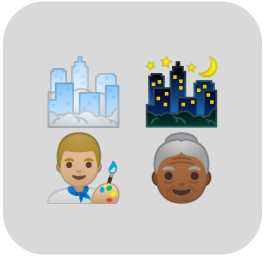
PIN unlock real time: 3.6s .1s observation error

Best!

- 👩‍💻 Write code to measure time between "Unlock" button tap and bike release

Best practices

Measure as precisely as possible



Test across user, environmental variations

More data, more accuracy

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Test across user, environmental variations

Test across user, environmental variations

Test across user, environmental variations

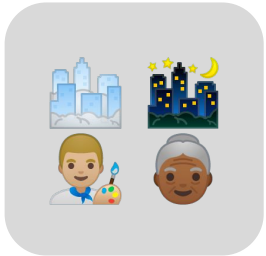
Test user, environmental variations

User

- Height, weight, age, gender
- Expensive new phone, broken old phone
- Regular user vs. new user

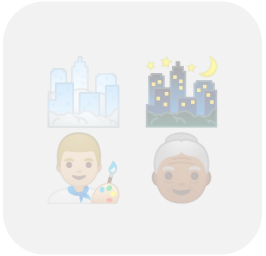
Environmental

- Indoor vs. outdoor
- Day vs. night
- Cold vs. hot
- Dry vs. wet



Best practices

Measure as precisely as possible



Test across user, environmental variations

More data, more accuracy

Interpreting results

Disclaimer: Data used in this deck is example only and not indicative of realistic unlock times. Conclusions are also example only and may differ from real Lyft conclusions.

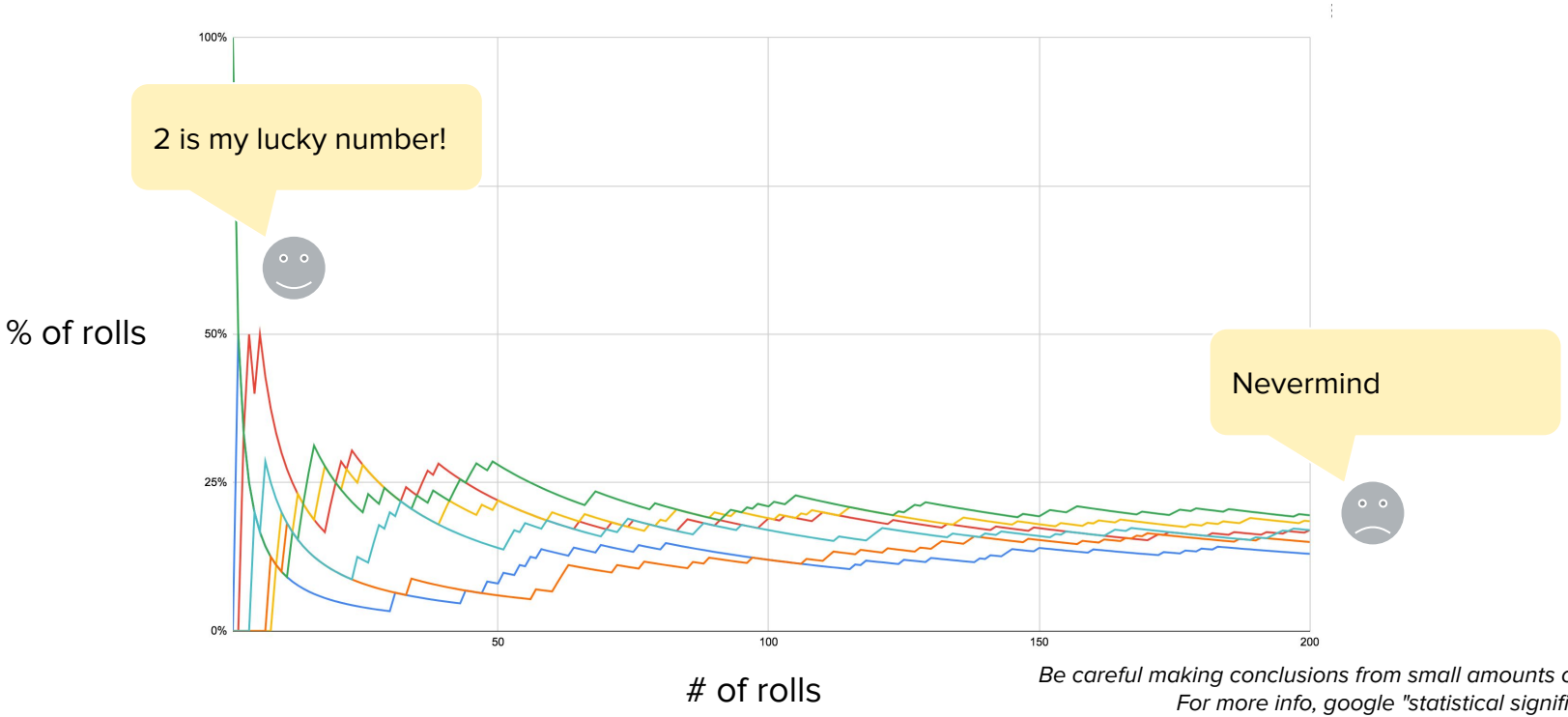
Tester	QR unlock time	PIN unlock time
1 - Mon, 9:00am	3.1s	4.1s
2 - Mon, 9:20am	2.9s	3.7s
3 - Mon, 10:00am	3.5s	3.0s

Is this enough data?

Average unlock seconds	3.16s **(.44 second faster!)**	3.6
% of users successful	100%	100%

More data, more accuracy

"What number am I most likely to roll?"



Be careful making conclusions from small amounts of data!
For more info, google "statistical significance"

Interpreting results

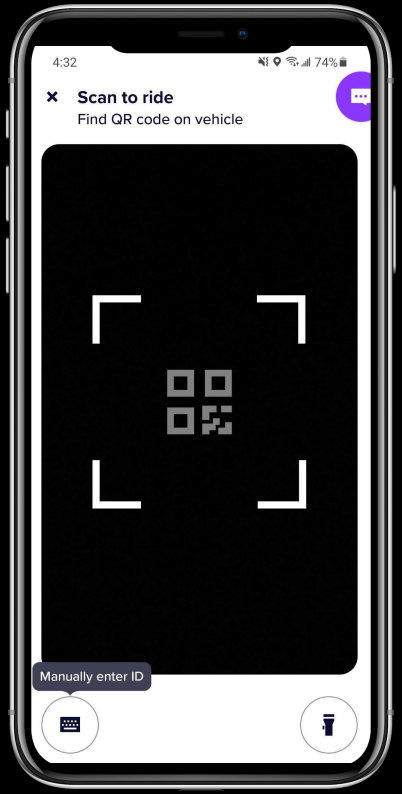
Disclaimer: Data used in this deck is example only and not indicative of realistic unlock times. Conclusions are also example only and may differ from real Lyft conclusions.

Tester	QR unlock time	PIN unlock time
1 - Mon, 9:00am	3.1s	4.1s
2 - Mon, 9:20am	2.9s	3.7
3 - Mon, 10:00am	3.5s	3.0s
4 - Mon, 7:00pm	FAIL	3.0s
...		
100 - Mon, 11:00am	2.7s	4.1s

Average unlock seconds	2.9s **(1 second faster!)**	3.9s
% of users successful	90% **(10% worse???)**	100%

Interpreting results

Time of day	QR unlock % of users successful	PIN unlock % of users successful
Night	50%	100%
Day	100%	100%



Suggested outcomes from quantitative tests

Environment: Add 💡 flash option for low light conditions

Users reported difficulty unlocking at night on some phones.

We're on the right track! QR unlocks are faster + more reliable, except at night

Consider re-testing once flash is introduced.

Key takeaways

Key takeaways

User testing can help you build a better product
Learn earlier in the process to have the best product at launch

Interview and observe your users through qualitative tests
Users may experience your product differently than you expect

Measure and project performance using quantitative tests
Launch with confidence knowing your product will meet your goals

User	Time to unlock
1	5s
2	4s

Thank you

02-20-2021