

Unblocking the System: Automations and Chatbots

March 14, 2022

UNLOCK NYC

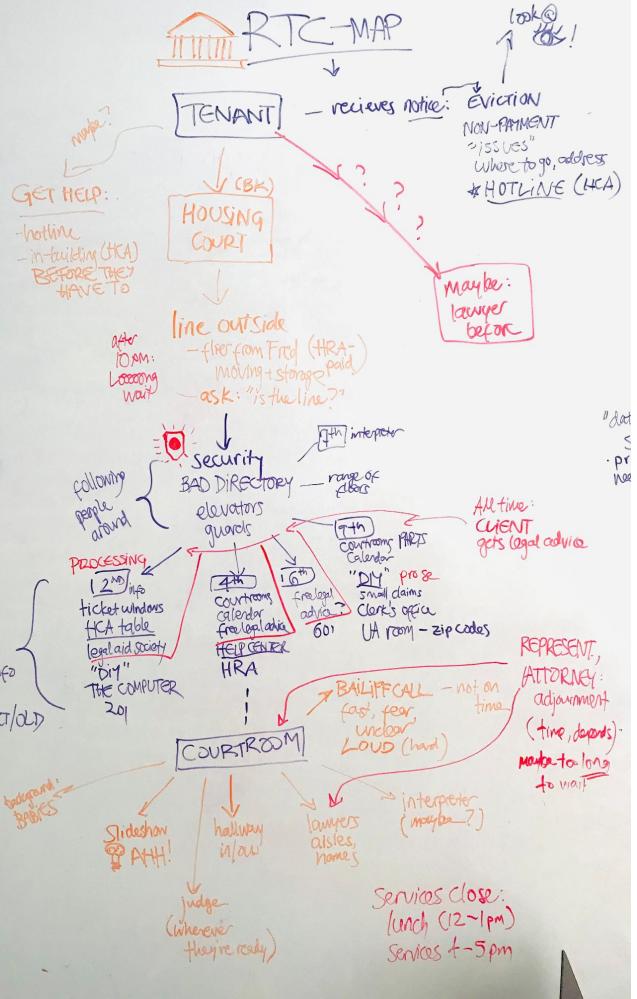
case study

 chatbot examples first - good/bad?

system: **AFFORDABLE HOUSING, NYC**

- Many potential avenues: NYCHA; community land trusts; better brokers; scams on Craigslist; housing court; lawyer match; anti-eviction ...
- INTERVIEW process to determine scope of problem





Housing court example, rough draft of "user journey" and system diagram

Ethnography: actually went to housing court, as participant/observer

Sometimes user research does not only involve Q&A interview ...

- **Guided by user interviews:** VOUCHERS
- Housing subsidies, like Section 8; CityFHEPS; HASA - very **complicated** system, **poverty tax**
- Landlords are illegally denying these vouchers, usually over the phone (source of income discrimination)
- How are people already dealing with the issue? **What tactics are communities already using**, and how could we automate/amplify them?

DSS-7x (E) 08/20/2019 (page 1 of 2)



Human Resources
Administration
Department of
Homeless Services

CityFHEPS to Stay Housing Checklist

HOMEBASE DOCUMENTS

- DSS 7q (Apt/SRO) or DSS-7o (Rooms) Application for CityFHEPS
- DSS-8e Verification of Eligibility
- Arrears commitment from Homebase or another party if amount exceeds \$10,000 (except for APS cases)
- Agreement for repayment or recoupment of arrears (W-147KK or W-147H)
- HRA-146p Domestic Violence Action Form – Provider Information (if applicable)

TENANT DOCUMENTS

- W-137a Request for Emergency Assistance *
- Paystubs or other proof of income or available resources
- DSS-7p Program Participant Agreement
- DSS-8b Tenant Contact Information

TENANT CASH ASSISTANCE STATUS

- Unsanctioned Cash Assistance (CA) case if eligible with all household members on CA other than those not required to be on case, or if no CA eligibility, single issuance.

COURT, ARREARS, AND LANDLORD DOCUMENTS

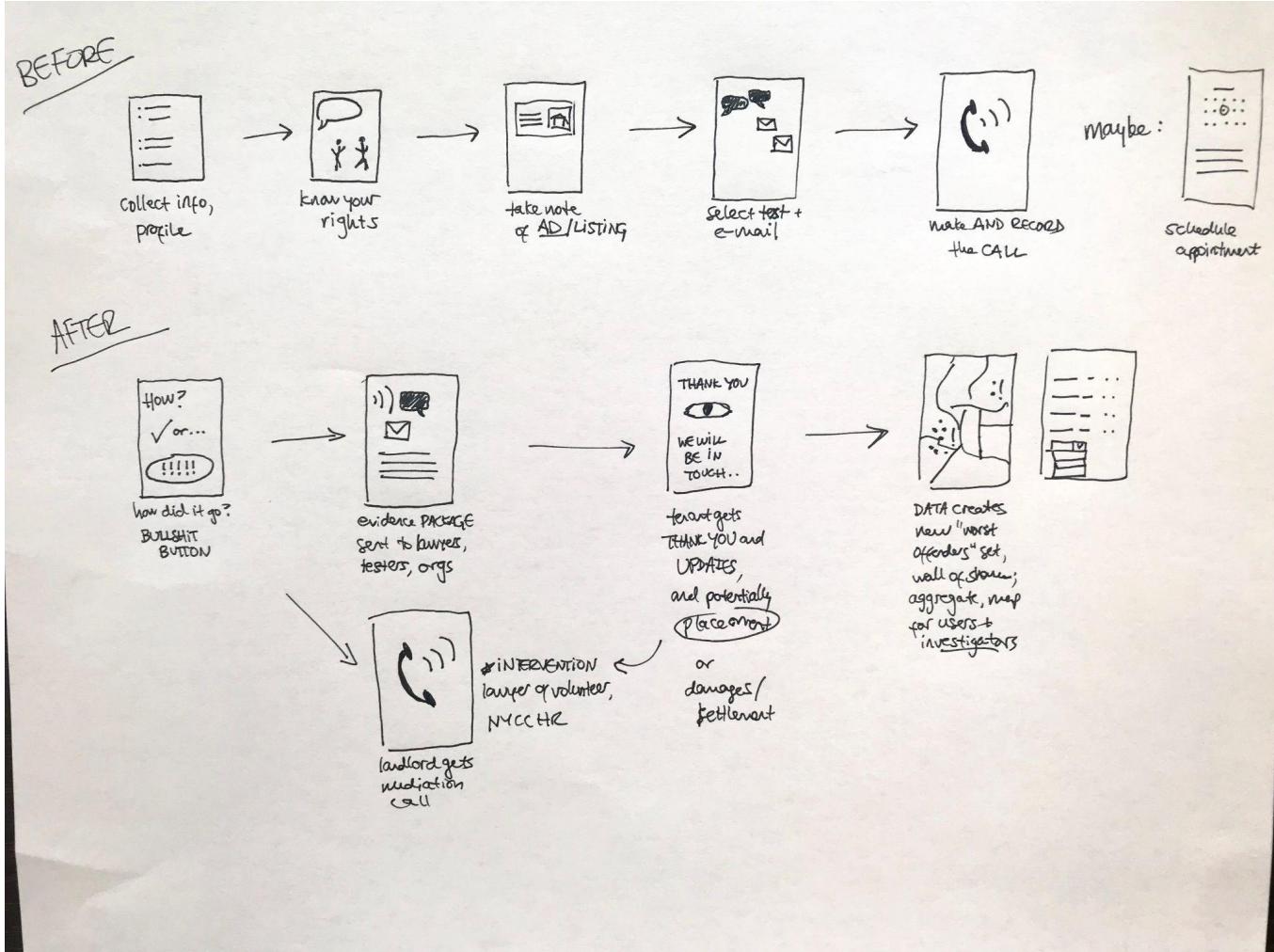
- Lease, rental agreement, or court stipulation
- DSS-8f/DSS-8g (Apt/Room or SRO) Landlord Information Form
- W-147N Security Voucher (if applicable)
- Arrears documentation (landlord breakdown plus stipulation, decision or order – including court approval or order for legal and marshal fees, if applicable)
- Landlord W9 (must match the deed)
- Proof of ownership such as the deed

WHEN MAKING A HOMEBASE REFERRAL:

- Try to refer at a month or more before payment is due

v1 -

"Landlord Watch"



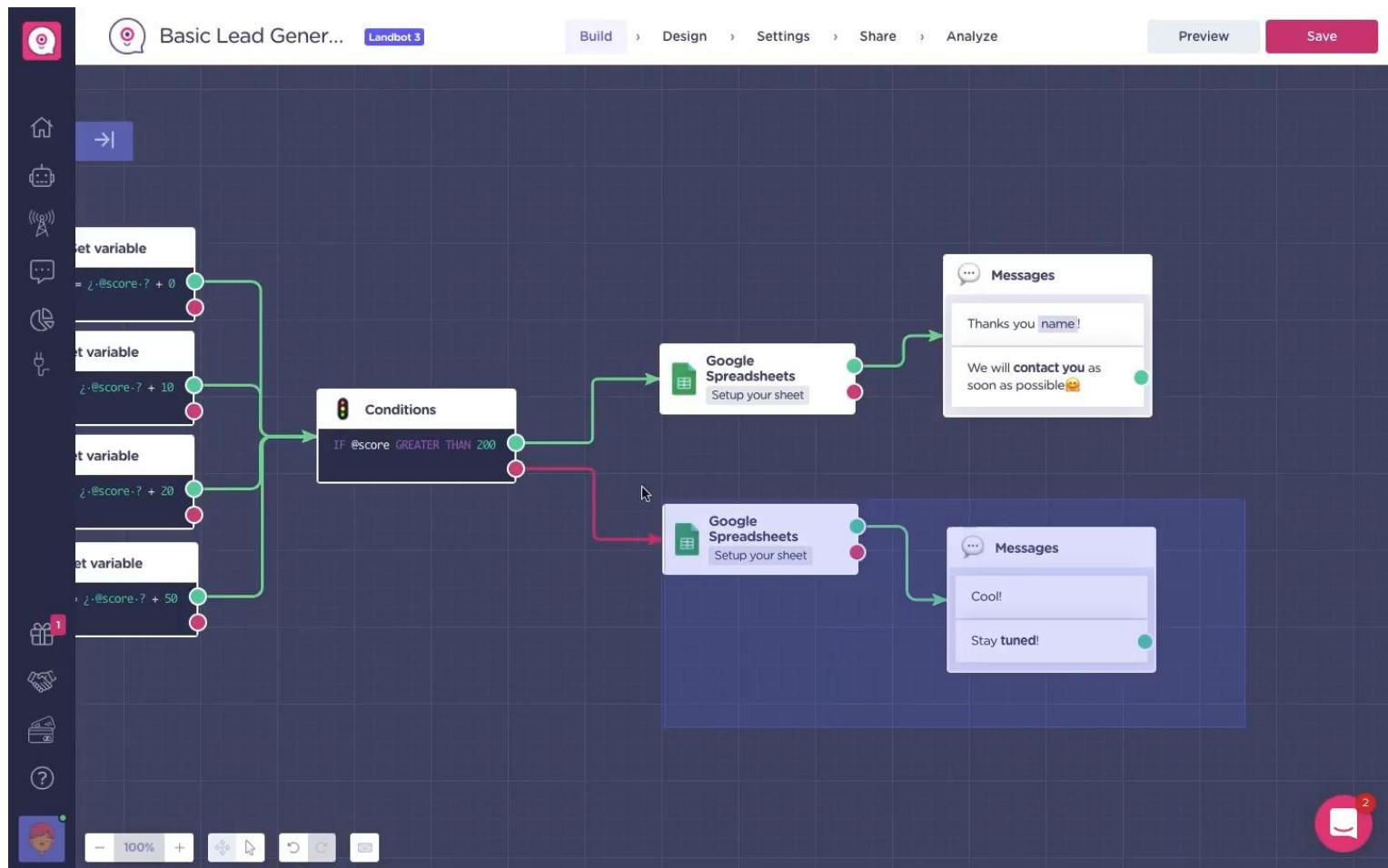
Further user testing:
Landbot

No-code?

PROS:

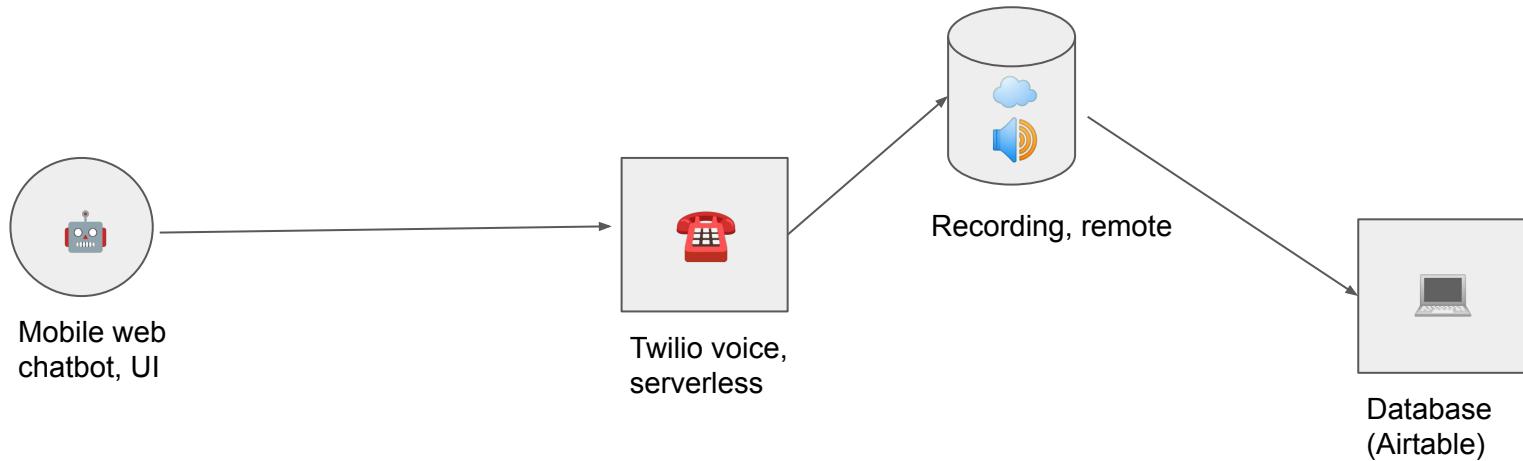
- Rapid prototypes
- non-coder participation
- different focus
(phase of project)

Conversation design

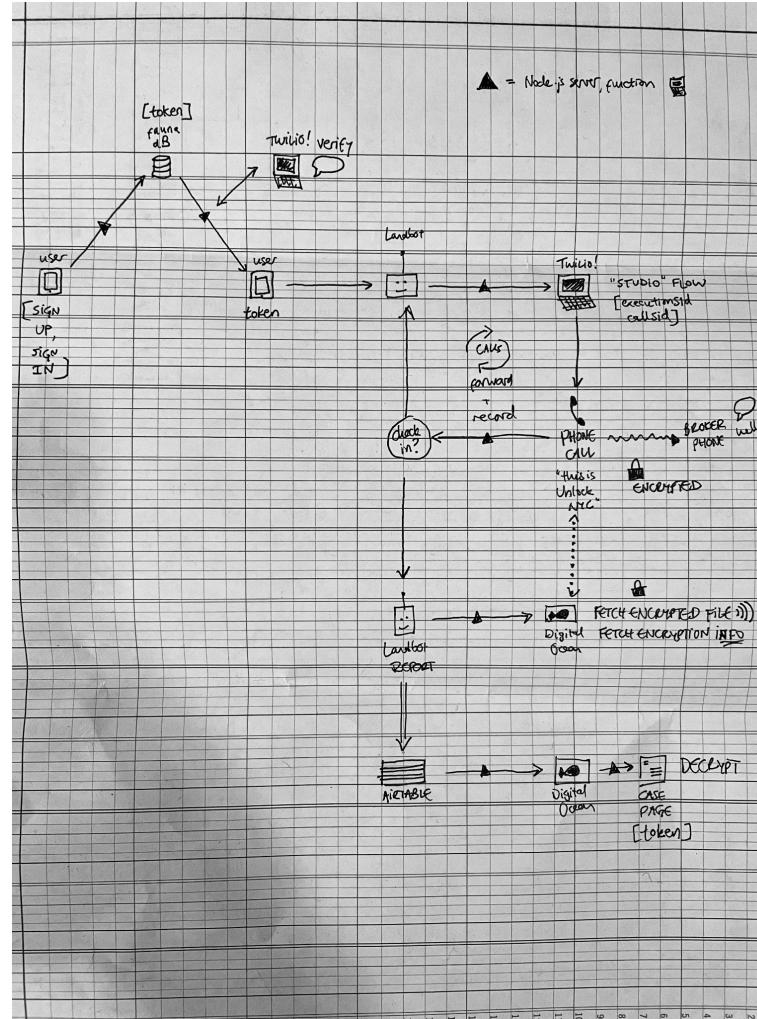


participatory design - designing with vs. designing for





- Simplest, automating 1 feature: recording
- Still 🙌 manual: looking @ listings; gathering evidence and sending it, sending copy to user; no log-in, etc.
- Slowly; SCALE and BOTTLENECK, careful!



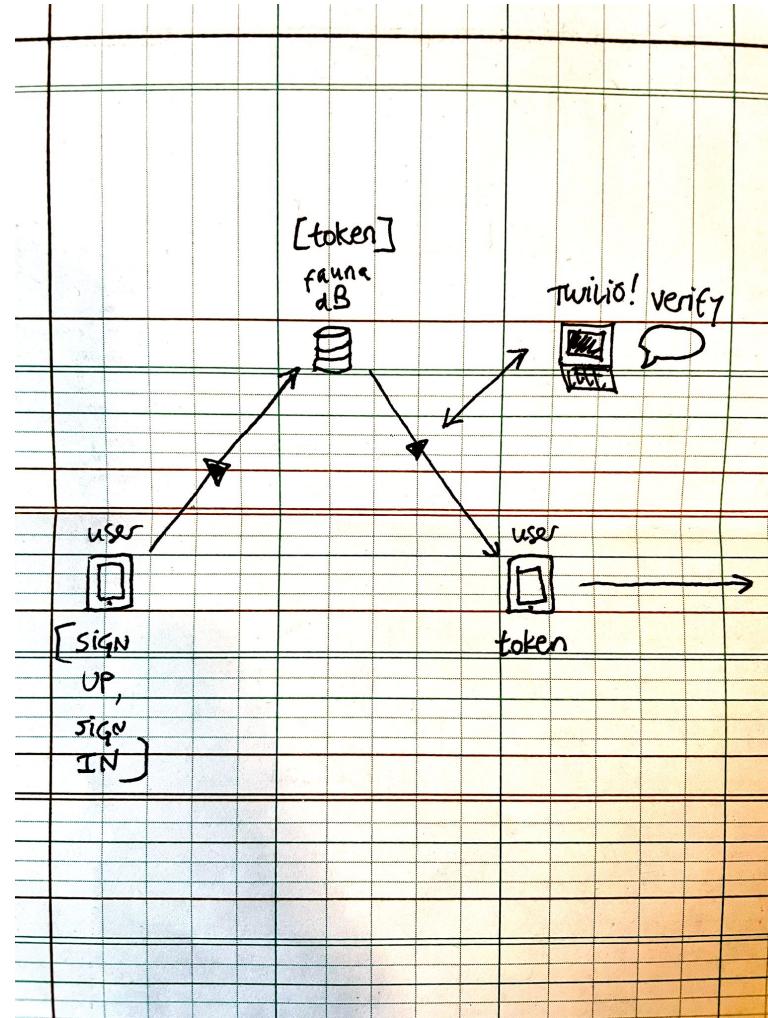
- Node.js: API PROXY SERVER
<https://glitch.com/edit/#!/unlock-auth-server?path=server.js>
- Authentication steps

```
call-user:{  
  "phone":xxx,  
  "name": xxx,  
  "created": unix  
}
```

faunaDB

Twilio verify (serverless)

JWT! (JSON Web Token)



Encoded

PASTE A TOKEN HERE

```
eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJzdWIiOiIxMjM0NTY3ODkwIiwibmFtZSI6IkpvaG4gRG9lIiwiaWF0IjoxNTE2MjM5MDIyfQ.SflKxwRJSMeKKF2QT4fwpMeJf36P0k6yJV_adQssw5c
```

Decoded

EDIT THE PAYLOAD AND SECRET

HEADER: ALGORITHM & TOKEN TYPE

```
{  
  "alg": "HS256",  
  "typ": "JWT"  
}
```

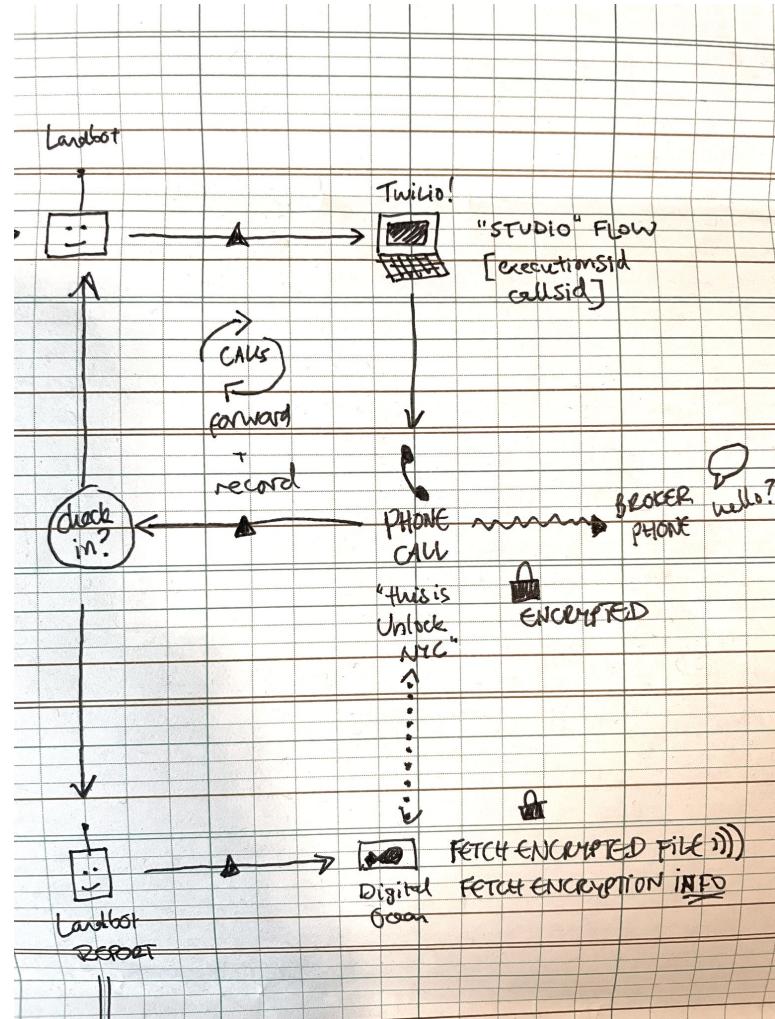
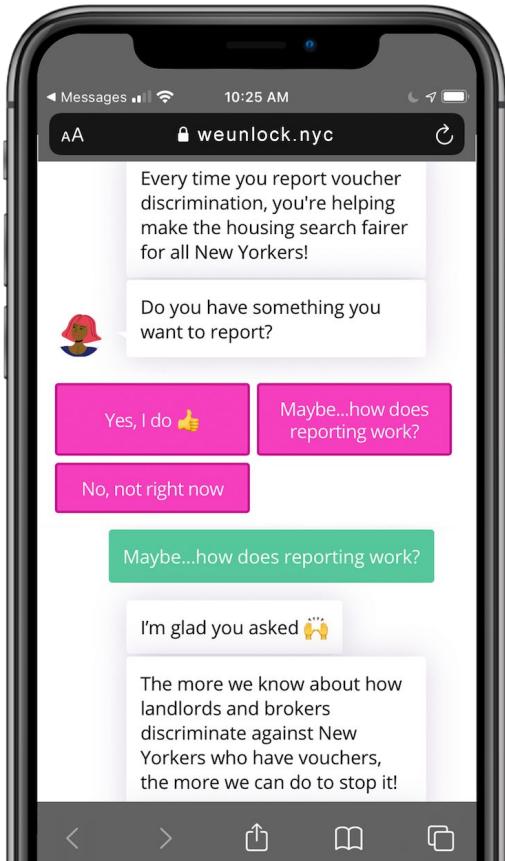
PAYOUT: DATA

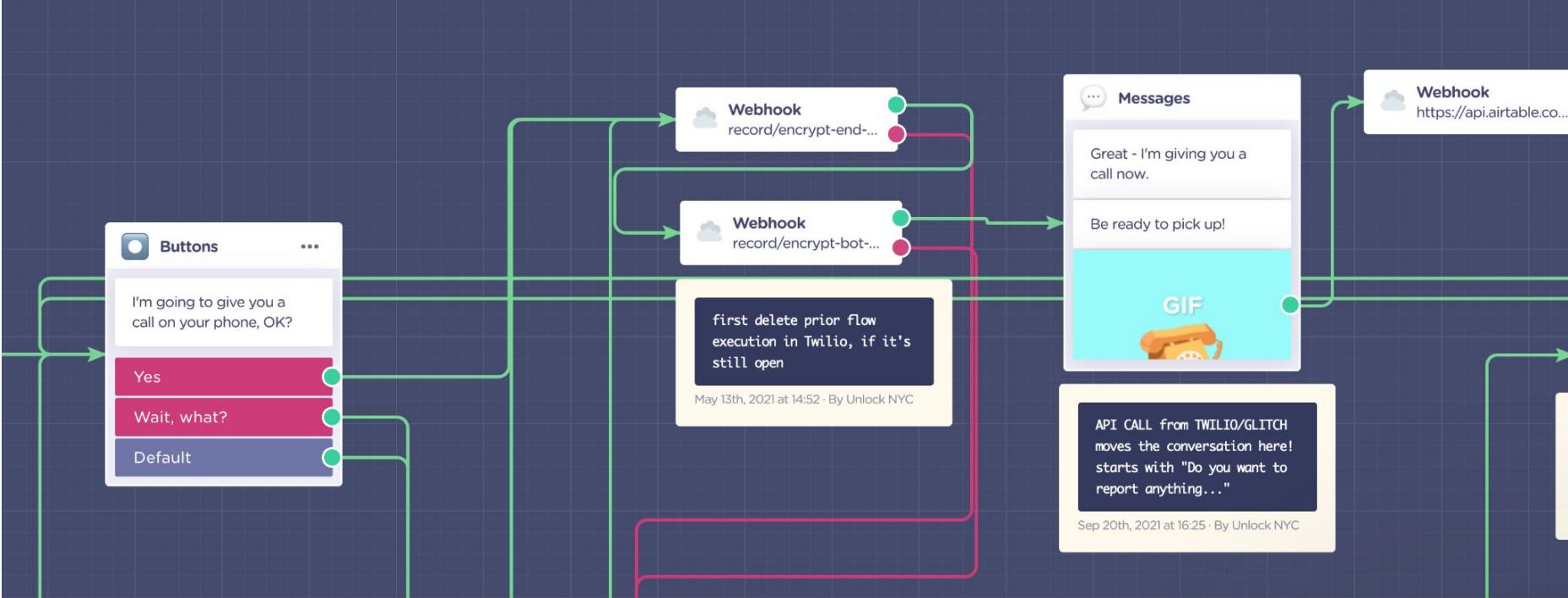
```
{  
  "sub": "1234567890",  
  "name": "John Doe",  
  "iat": 1516239022  
}
```

- Can store information; can also store in browser session

-

chatbot flow

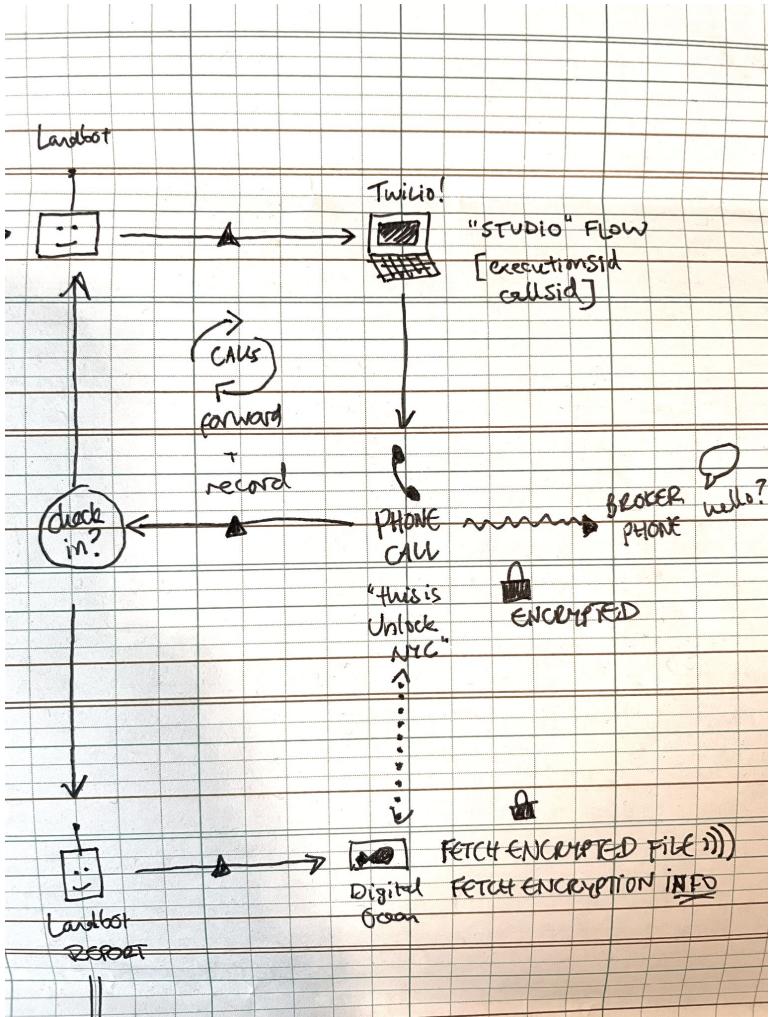
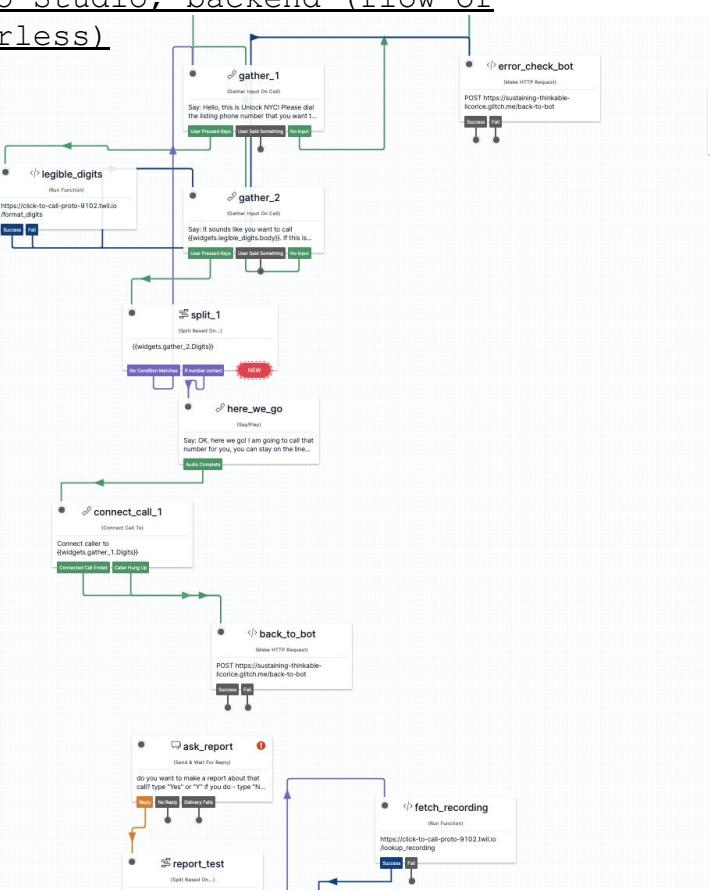




- Webhook blocks call proxy server, turning “no-code” into CODE
<https://glitch.com/edit/#!/unlock-nyc-servers?path=src%2Frecording%2Fbot-start.js%3A37%3A0>

● chatbot flow

Twilio Studio, backend (flow of serverless)



-  chatbot flow

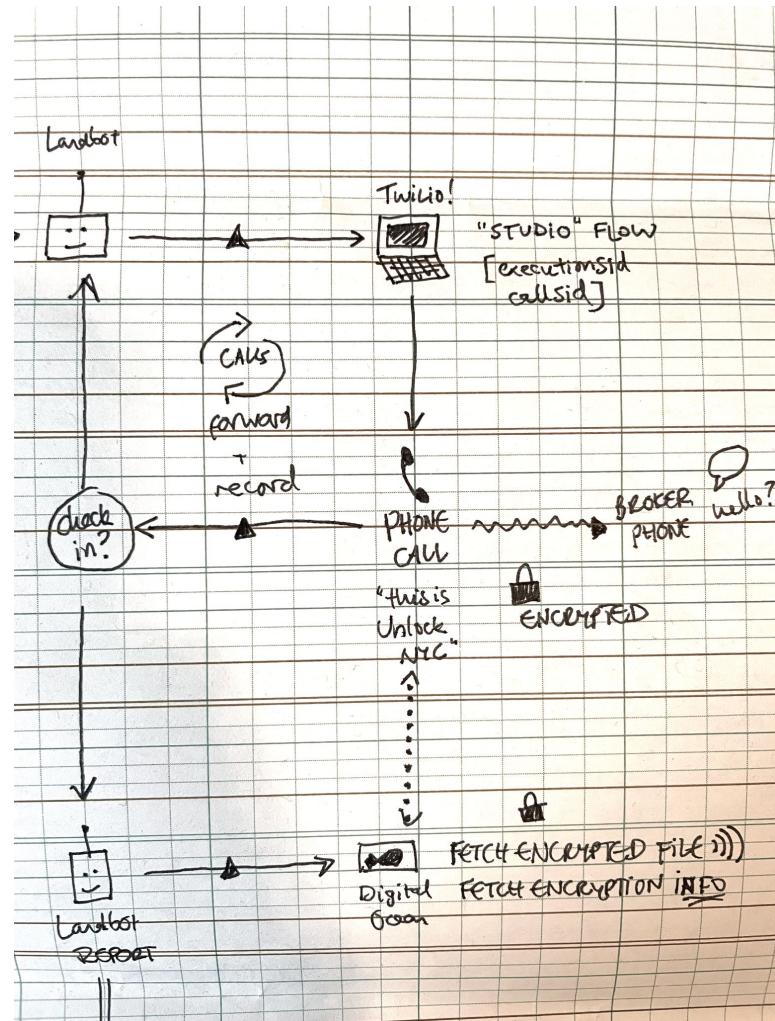
Node.js proxy server connects all services ↔

Code on proxy server also
decrypts audio

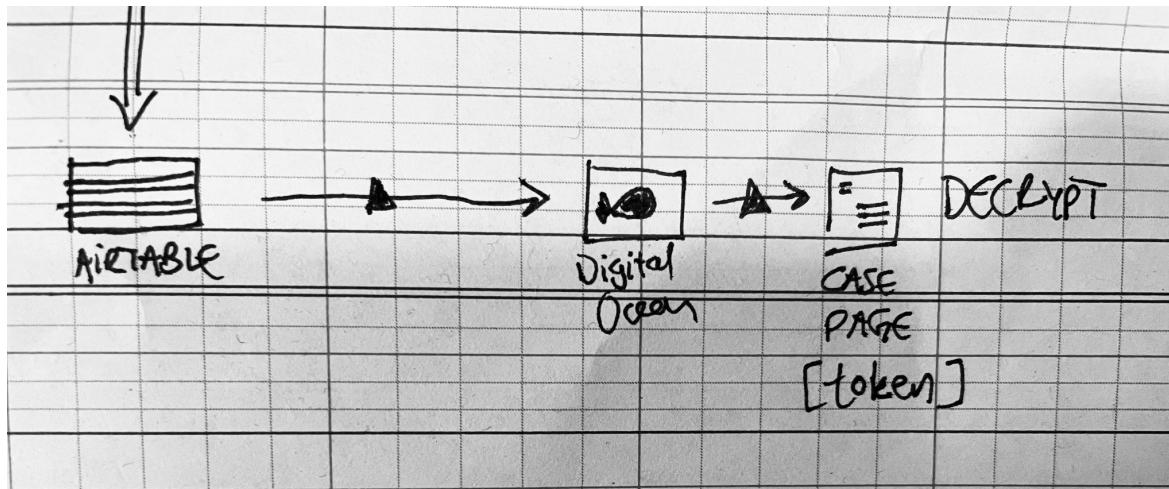
<https://glitch.com/edit/#!/unlock-nyc-servers?path=src%2Fdecrypt-call.js%3A1%3A0>

Decrypted audio sent back as
base64 string, temporary “blob”!
To browser/Landbot

Encrypted file sent to Digital
Ocean, database (media storage)



-  database & analysis steps



- Requirements: editable data; read decrypted audio; send to enforcement agency, in format (PDF) they want; send also to user; no passwords
- Solution: Airtable database, creates temporary web pages, JWTs(tokens), sends links out

-  database & analysis steps

STATUS ▼ (Empty)	Count 5				
1 #264: "No vouchers" ()		Create Case Page	https://unlock-staging.glitch.me/report/reports-check? token=eyJhbGciOiJIUzI1NilsInR5cCl6IkpxXVCJ9eyJyZXBvcnQiOjYzWNwNUhuaEplcDc1Zjh6aSls...	Add to Case	Send 📎 to CCHR
2 #263: Ghosting ()		Create Case Page	https://unlock-staging.glitch.me/report/reports-check? token=eyJhbGciOiJIUzI1NilsInR5cCl6IkpxXVCJ9eyJyZXBvcnQiOjYzWNjR1M2aW9xcmF6UTA3SSI...	Add to Case	Send 📎 to CCHR
3 #262: Ghosting ()		Create Case Page	https://unlock-staging.glitch.me/report/reports-check? token=eyJhbGciOiJIUzI1NilsInR5cCl6IkpxXVCJ9eyJyZXBvcnQiOjYzWNsS3JMY1pPWkFiaExpOsIs...	Add to Case	Send 📎 to CCHR
4 #261: "No vouchers" ()		Create Case Page	https://unlock-staging.glitch.me/report/reports-check? token=eyJhbGciOiJIUzI1NilsInR5cCl6IkpxXVCJ9eyJyZXBvcnQiOjYzWNkdIRNFZQXliTHlpVylslm...	Add to Case	Send 📎 to CCHR
5 #260: Ghosting ()		Create Case Page	https://unlock-staging.glitch.me/report/reports-check? token=eyJhbGciOiJIUzI1NilsInR5cCl6IkpxXVCJ9eyJyZXBvcnQiOjYzWNsSERRU0Y0YKxJMHRKWS...	Add to Case	Send 📎 to CCHR
+					

- Buttons call the Node.js proxy server

-  database & analysis steps

UNLOCK NYC

[Report PDF: Intake Form](#) [no address listed]

1.  Listen to Recorded Call 12/11/2021 01:45:48
-

Temporary website; event-driven audio decrypting

-  extensions:
- Collecting data on issue; creating data reports for elected officials, maps
- Looking for trends in data, brokers, "worst offenders"
- Leadership Collective of users and community
- Simple Q&A website on vouchers (new needs)
- Can report SMS chain, illegal ad screenshot, etc.

User experience **not only** the aesthetics of your software on the front-end;
system-wide consideration, for engineers as well

BREAK

Project Validation

(due 5pm, March 21st)

- user research interview!
- Choose a person that would potentially use your tool, IRL.
- FOR REAL.
- Lightly structured interview - *listen*. Take notes.
- Zoom out first, then zoom in: broad, then more specific
- This conversation should be at least 30 minutes.
- Be upfront and honest! (What is this for, how are they helping, etc?) Be yourself.
- Thank them!

Project Validation

Sample questions: Unlock NYC example

- What has been your experience looking for housing in New York?
- What are the most difficult parts of looking for housing?
- What do you wish would be better about finding housing?
- Where do you start when you look for apartments? What tools do you currently use?
- I have an idea of something I'm working on that might improve this process - [show prototype]. What do you think?
- Would you use this tool? Why or why not?
- How might you improve this idea?

Project Validation

- NOTE: different than user testing!
- Empathy - again, *listen listen listen.*
- Explicitly **qualitative**
- For yourself: is this project a solid idea?
Do the people who would use this tool think so?
- What else do I need to learn about, in order to make my project proposal the best it can be?
- Can be remote or in-person

Project Ideas Feedback Workshop: in-class, March 21st

“Pitch” us your idea!

Tell us the story of what you have learned so far

Prepare 5-7 minutes:

- Start by explaining the context of your software idea - what have you learned about the other societal systems, the people involved, the users' needs, etc.?
- Tell us about your proposed project, and walk us through your current prototype.
- Tell us some insights from your project validation interview - how did it go? Who are your users?

Project Ideas Feedback Workshop: in-class, March 21st

“Pitch” us your idea!

Prepare 5-7 minutes:

- Address some of the issues of scale, "do no harm" - what are your potential red flags for this tool/project? How have you thought about avoiding these problems? What are potential alternative uses?
- What are you excited about learning, in terms of this project?
- Tell us if you are interested in collaborators.