

# Aadhaar Hackathon 2021

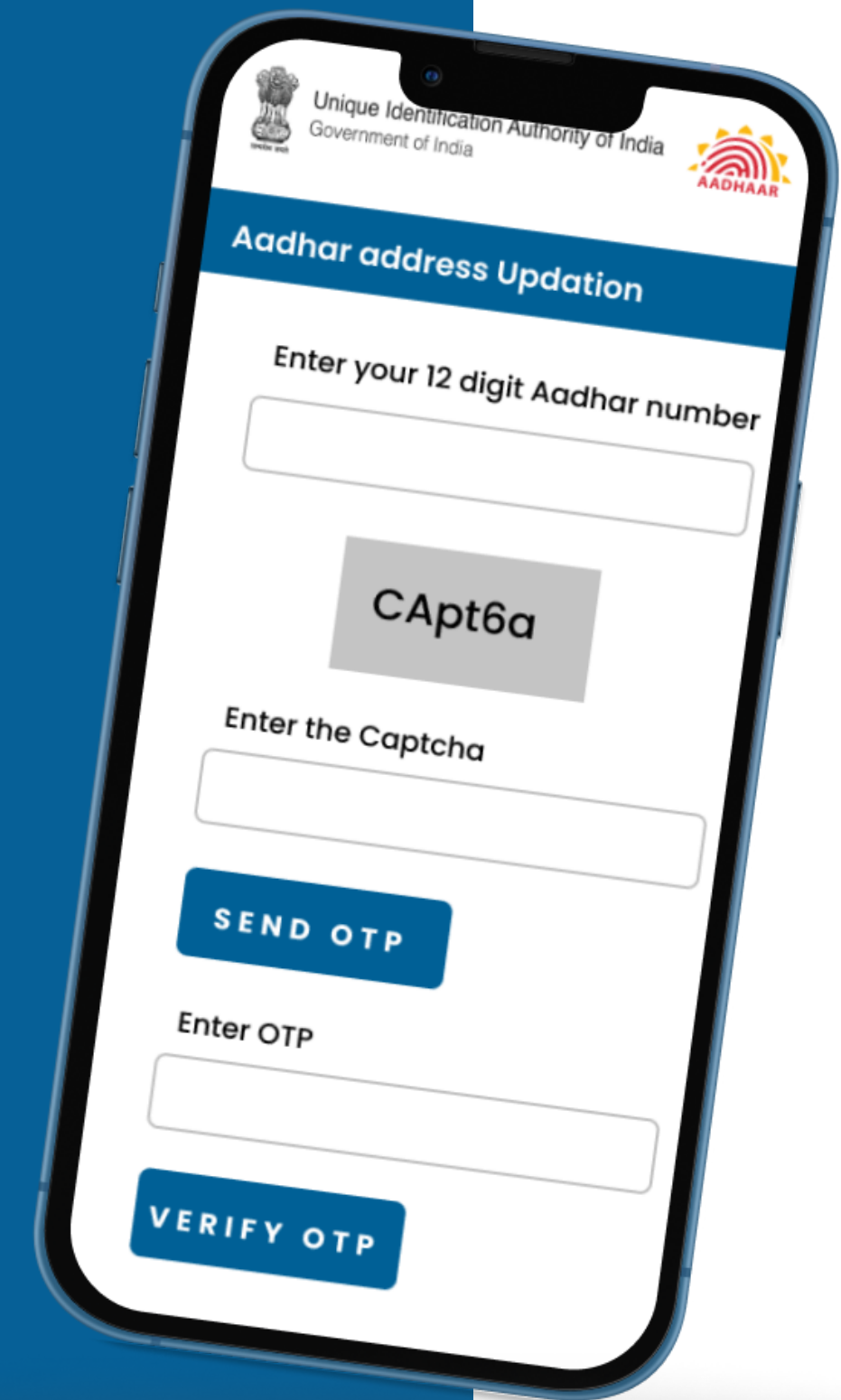
## Theme 1 -> Problem 1

### Address Update Challenge in Urban Areas

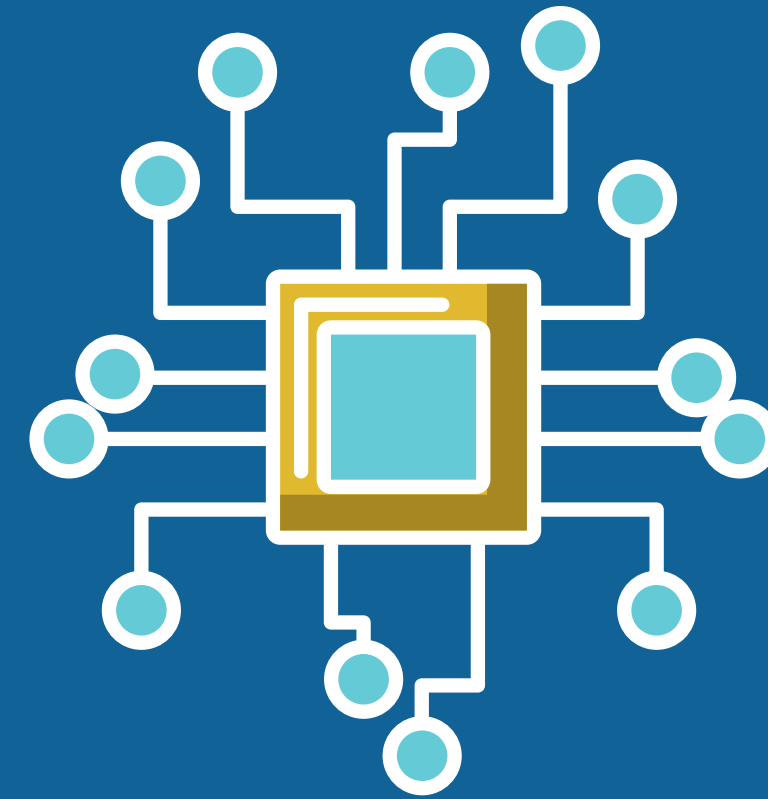
#### Team We\_r\_TitanicX

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# IMPORTANT POINTS



## Landlord and Neighbour are the same

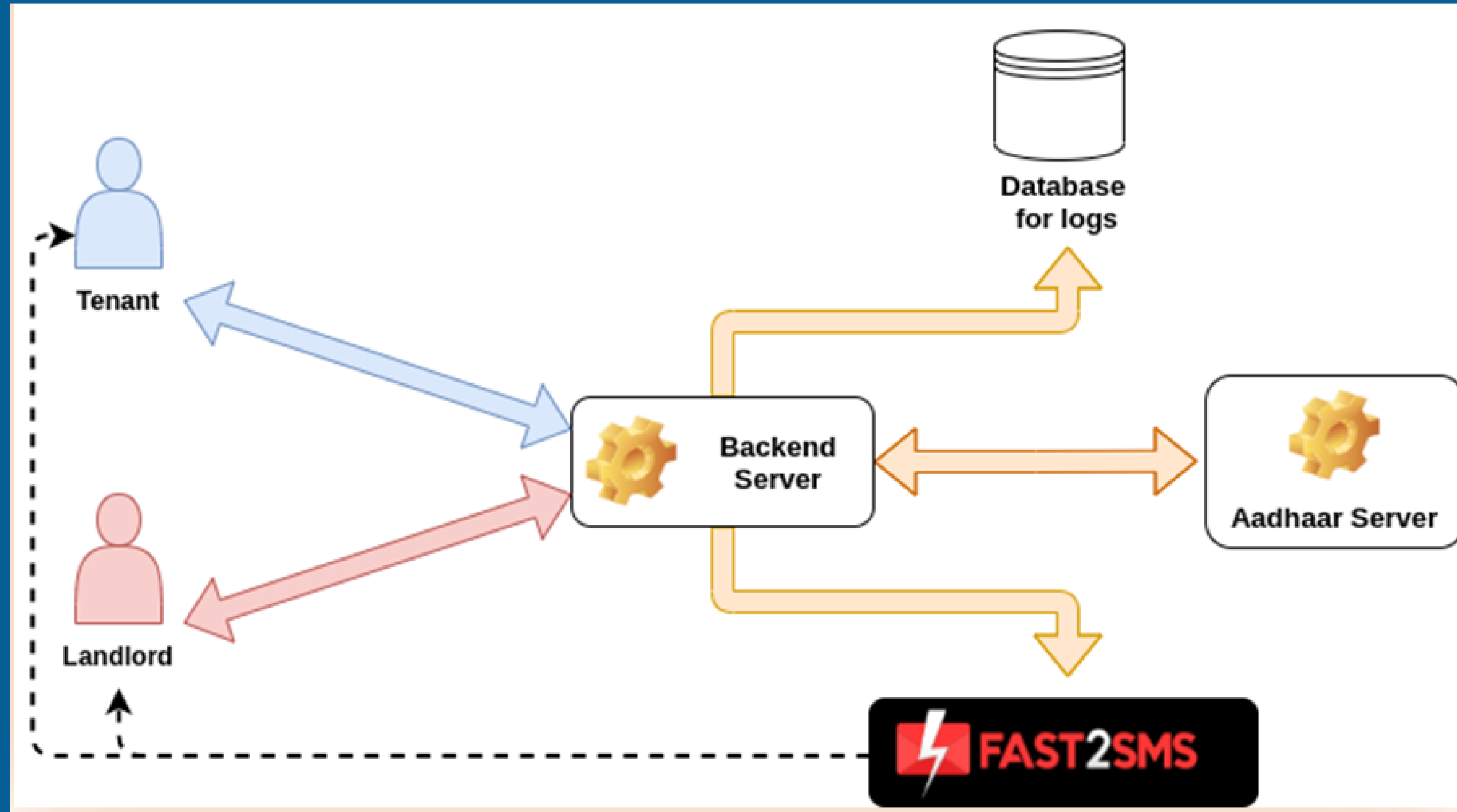
In the slides, everywhere we refer to Landlord, it is also applicable for Neighbour or the entity who is sharing the address.

## Every step is in electronic form

There is no exchange of **Aadhaar letters** at any point in time. Also, the only Aadhar related data which is shared is the name and photo of the tenant and address of the landlord, which is also done after proper consent digitally.

**\*AADHAAR NUMBER IS NOT SHARED AT  
ANY POINT OF TIME**


# ARCHITECTURAL DESIGN





# DATABASE SCHEMA


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RequestRecord		
 id	integer	
txn_id	integer	
mobile_number	integer	
uid_hash	text	
eKYC_data	text	
landlord_mobile_no	integer	
landlord_uid_hash	text	
landlord_ekyc_data	text	
status	text	
initiated_on	timestamp	
updated_on	timestamp	

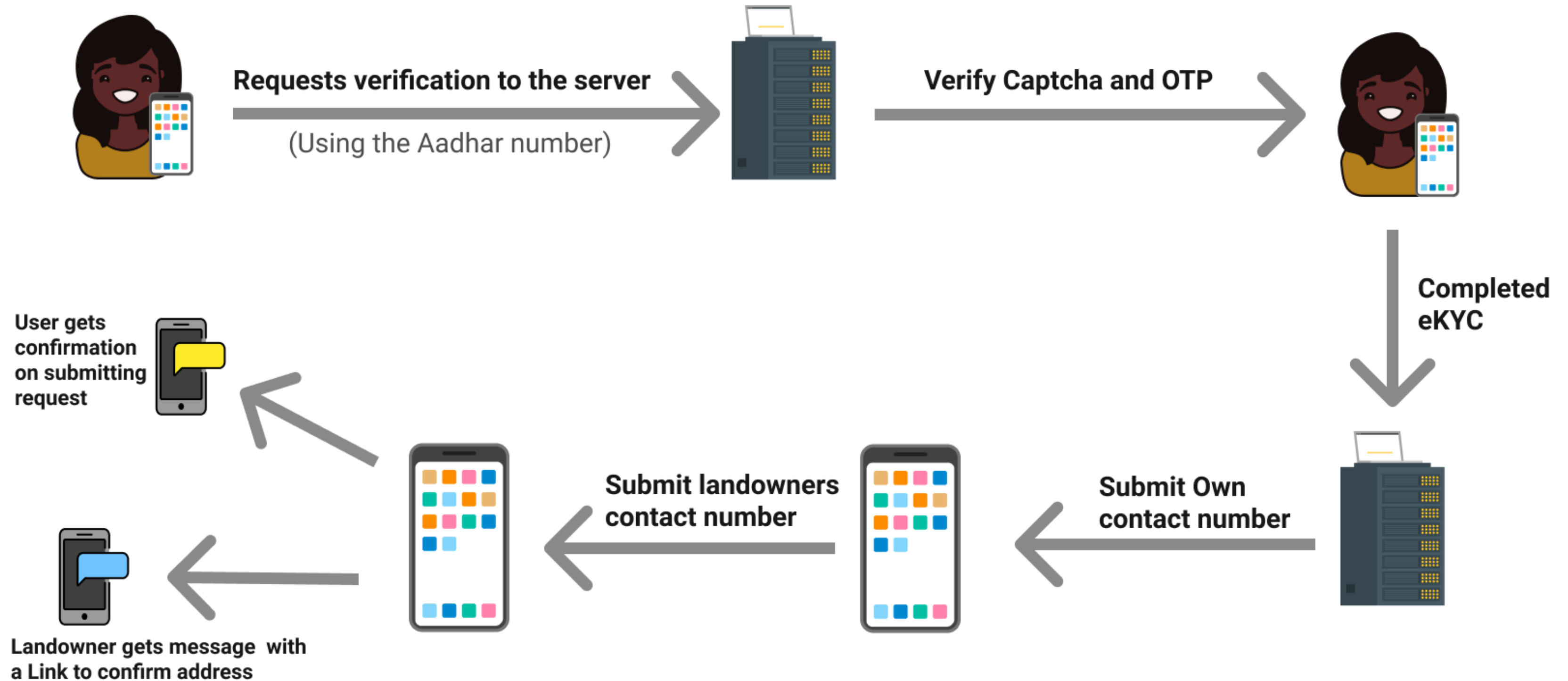
AuditLog		
 id	integer	
request_id	integer	
request_status_current	text	
ip	text	
ip_details	text	
is_requester	boolean	
message	text	
error	text	
is_error	boolean	

AddressUpdateLog		
 id	integer	
request_record	binary	
uid	text	
previous_address	text	
updated_address	text	
created_on	timestamp	

ConsentCountLog		
 id	integer	
uid_hash	text	
consent_count	integer	
consent_limit	integer	

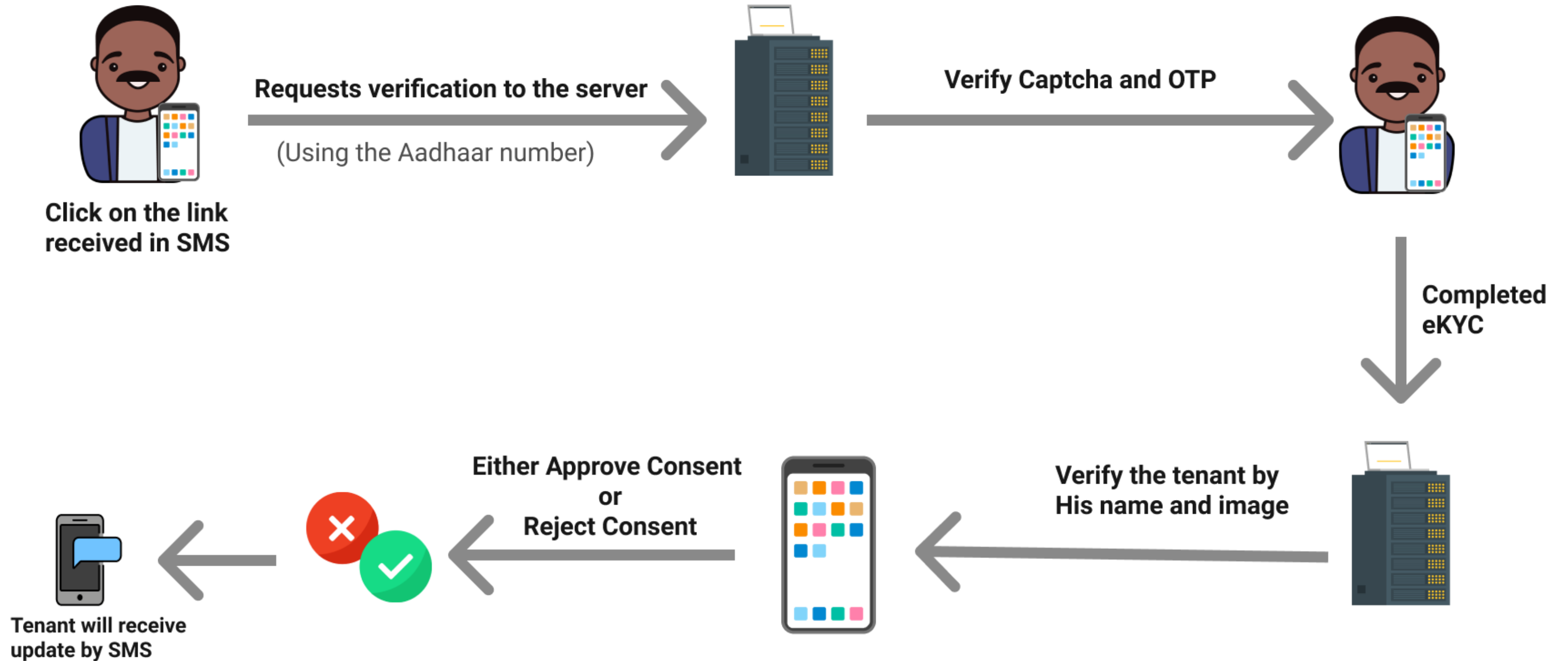
# FLOWCHART PART 1

Verification of the tenant and generation of request by the tenant to change the address



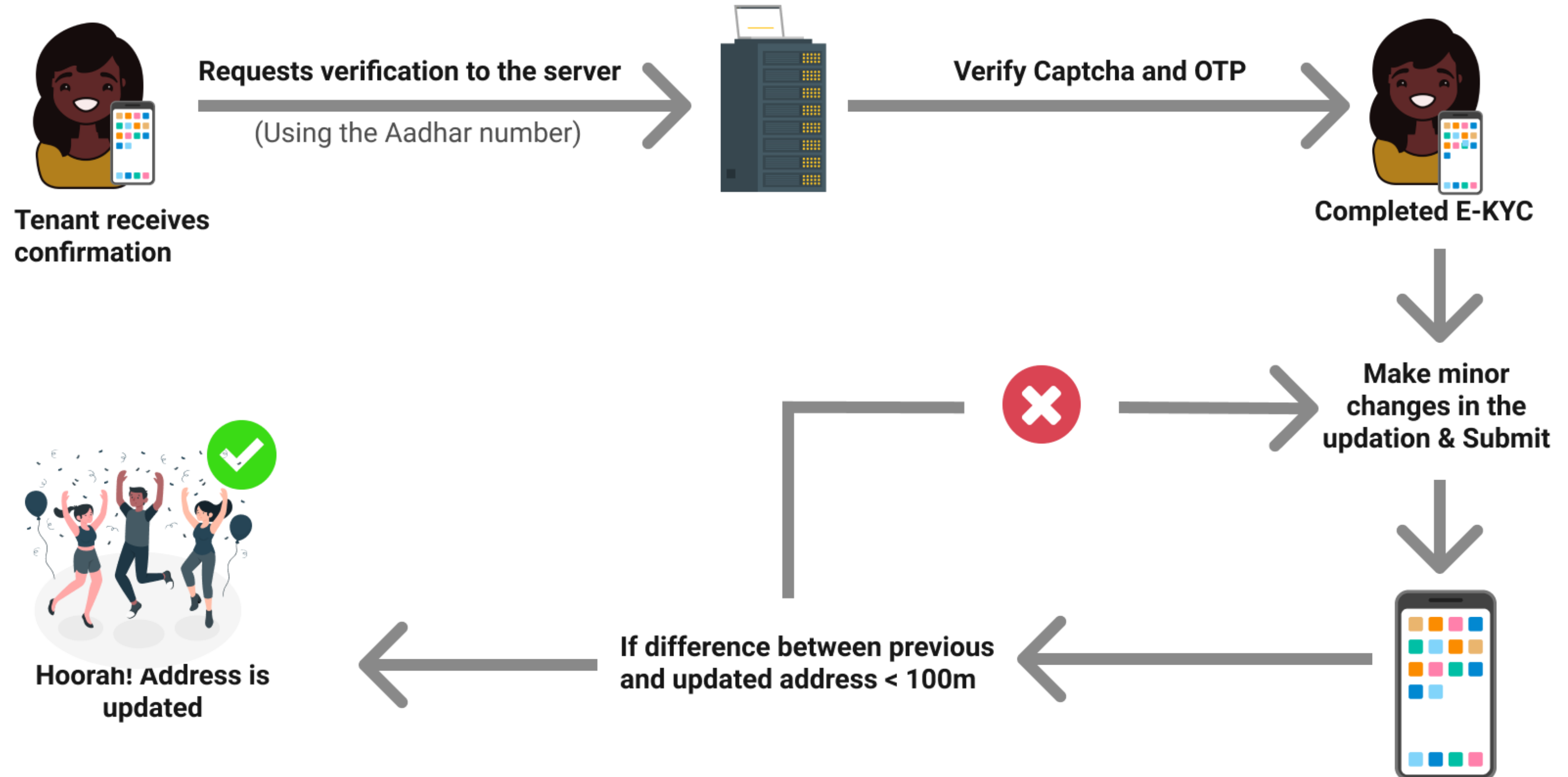
# FLOWCHART PART 2

Landlord receives request, completes eKYC, verifies the tenant and approves/rejects consent

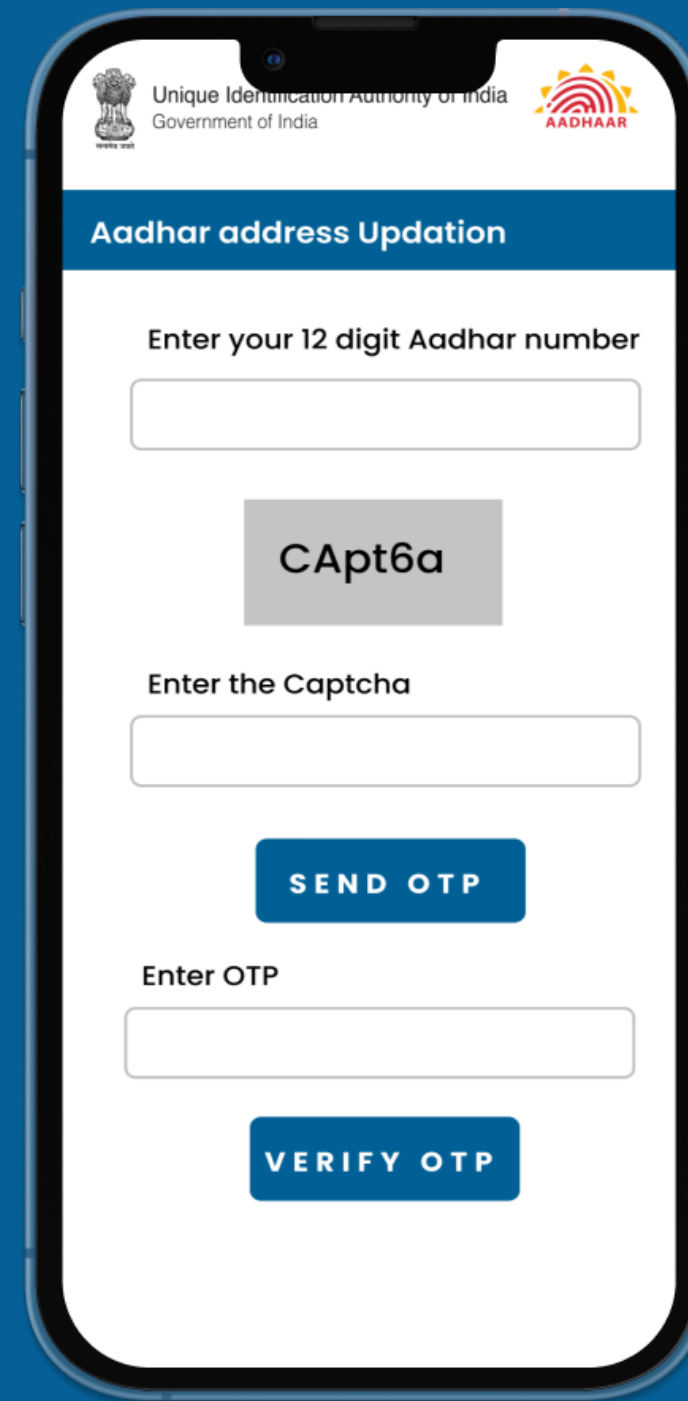


# FLOWCHART PART 3

Tenant verifies themselves again, makes minor changes in address if needed, and gets his/her address updated.



**Tenant will first  
authorize himself  
in the portal and  
fillup landlord's  
number**

The image shows a smartphone screen displaying the 'Aadhaar address Updation' portal. At the top, there are logos for the 'Unique Identification Authority of India' and 'Government of India', along with the 'AADHAAR' logo. The title 'Aadhaar address Updation' is prominently displayed. Below the title, the user is prompted to 'Enter your 12 digit Aadhar number' with an adjacent input field. This is followed by a 'CAPt6a' captcha image and a prompt to 'Enter the Captcha' with another input field. A blue button labeled 'SEND OTP' is positioned below the captcha. Then, there is a prompt to 'Enter OTP' with a third input field, and a final blue button labeled 'VERIFY OTP' at the bottom.

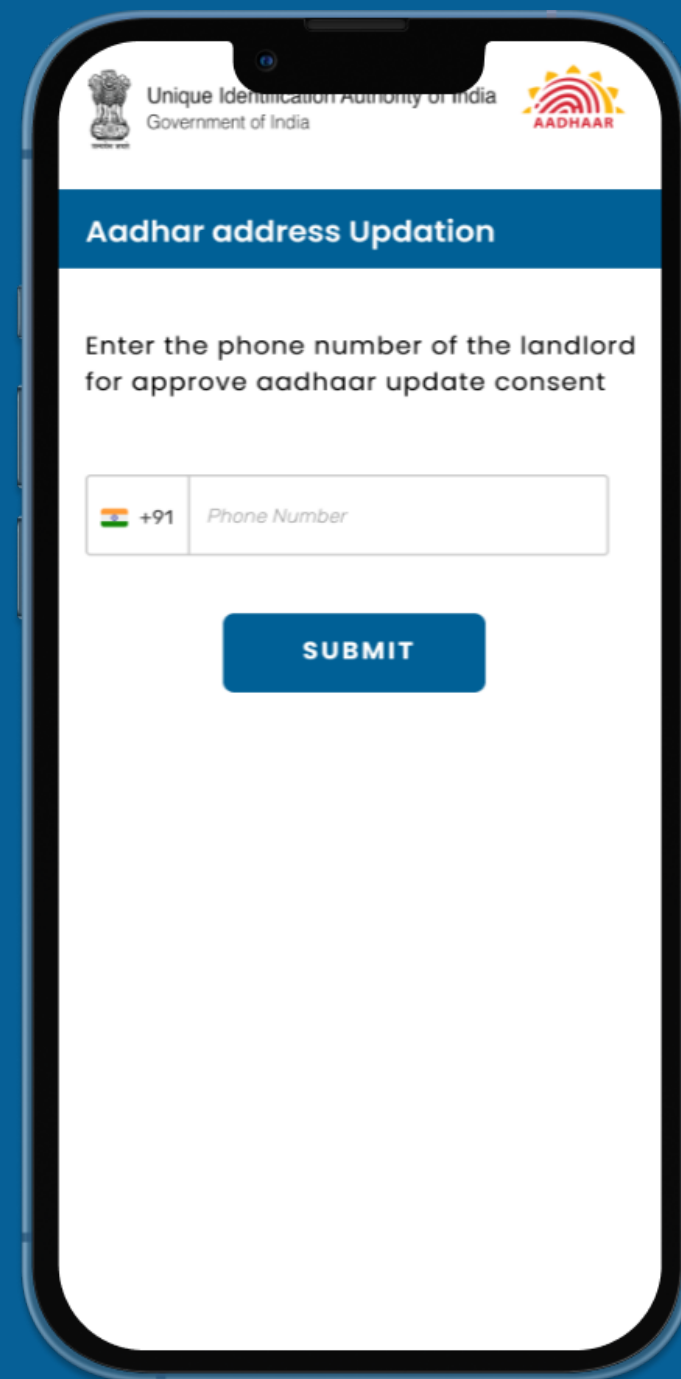
**Landlord's  
number need not  
be Aadhaar  
registered number**

This way no Aadhaar related data is being shared by both the parties, other than the name and picture of the tenant which is a mandate for verification.

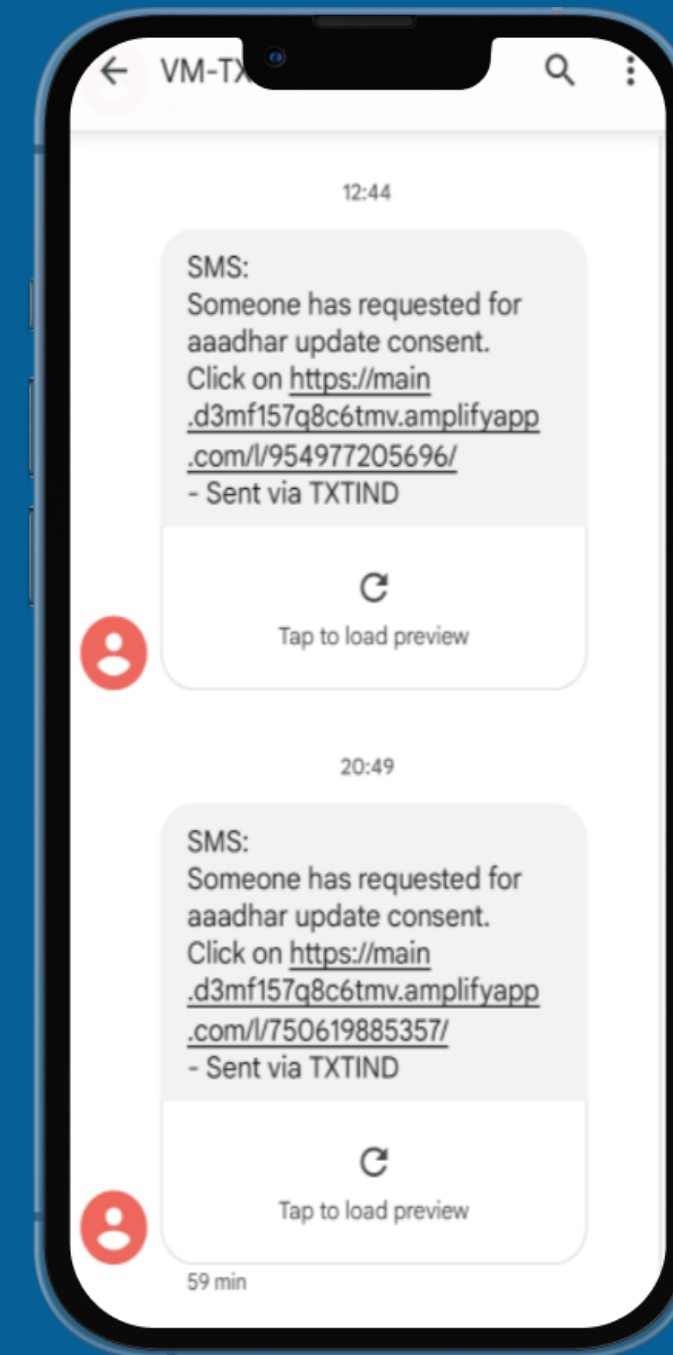


**A request link will be send to the landlord by SMS**

**Landlord will authorize himself in the portal by self Aadhaar details after opening the link**

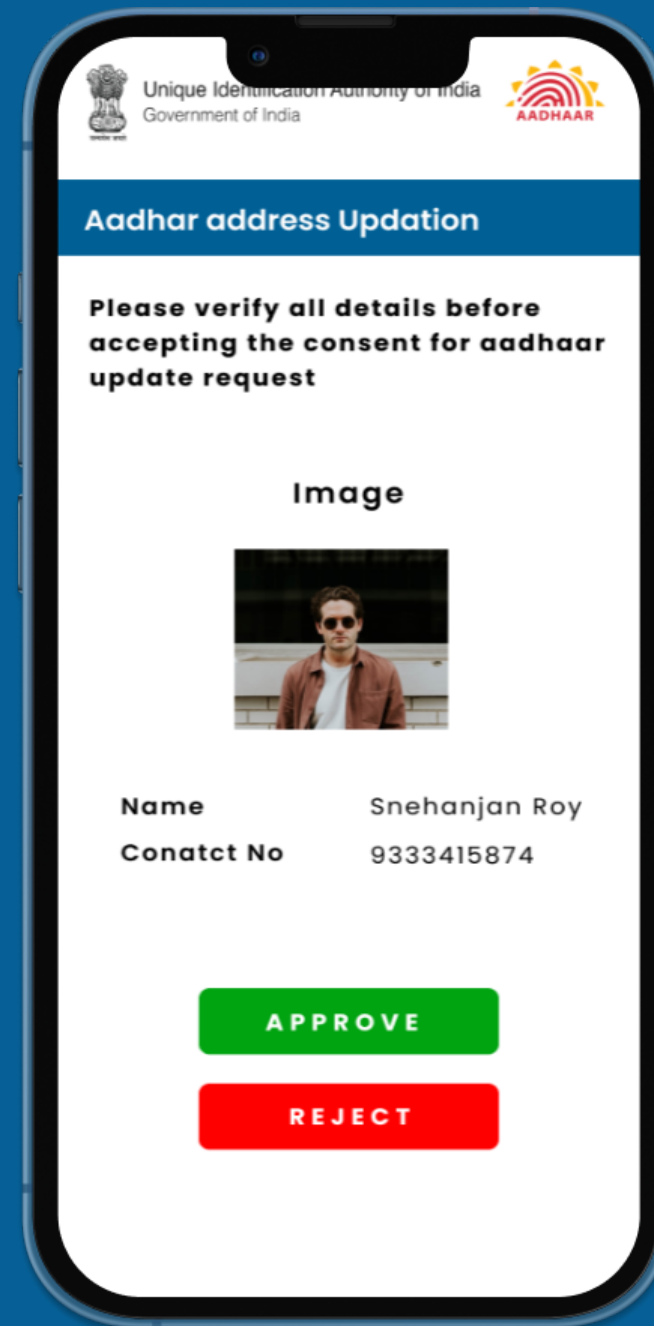


The screenshot shows the 'Aadhaar address Updation' screen from the Unique Identification Authority of India (Government of India). It features the Aadhaar logo and a title bar. The main heading is 'Aadhaar address Updation'. Below it, the text reads: 'Enter the phone number of the landlord for approve aadhaar update consent'. There is a form field for the phone number, with a dropdown for the country code (currently showing '+91') and a text input for the 'Phone Number'. A blue 'SUBMIT' button is located below the form field.



**This will prevent address updation by unauthorized entities**

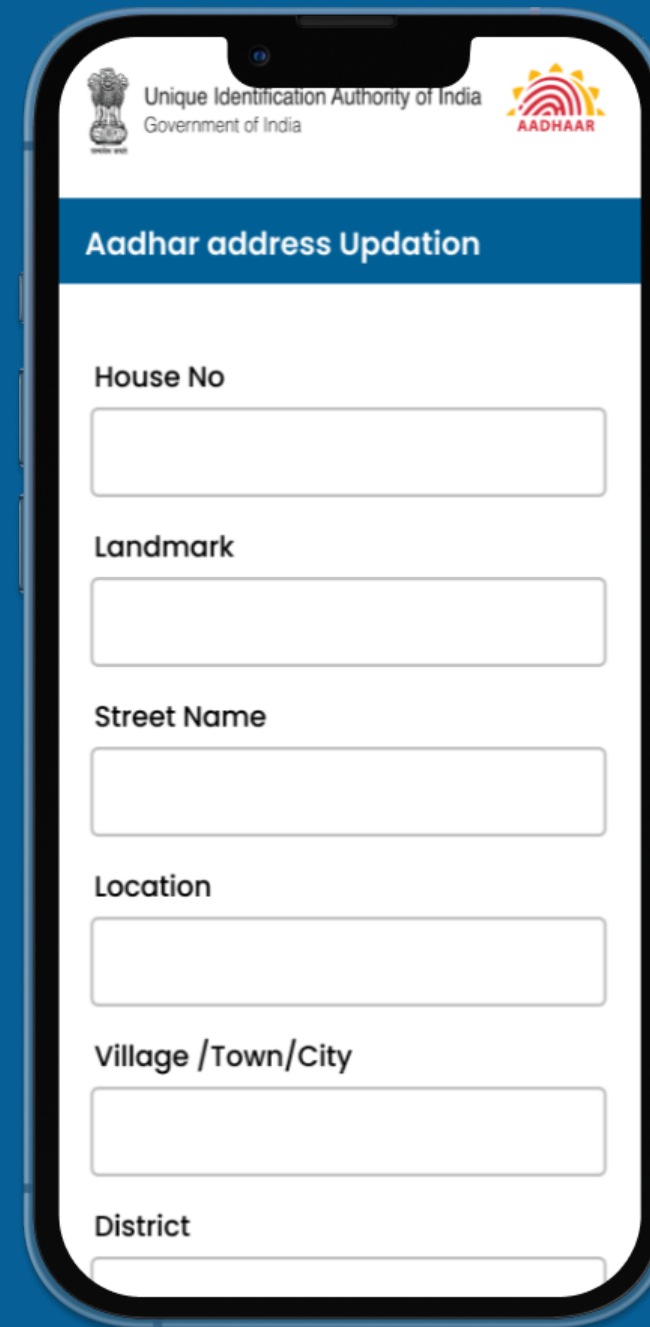
**Landlord will check the identity of the tenant by name and profile picture and accept or reject the request**



**Tenant will be notified of the same via SMS**

The landlord's name, Aadhaar number, Aadhar linked phone number are never shared even once in the overall process.

**If the request is accepted, tenant will be able to view the address of the landlord**

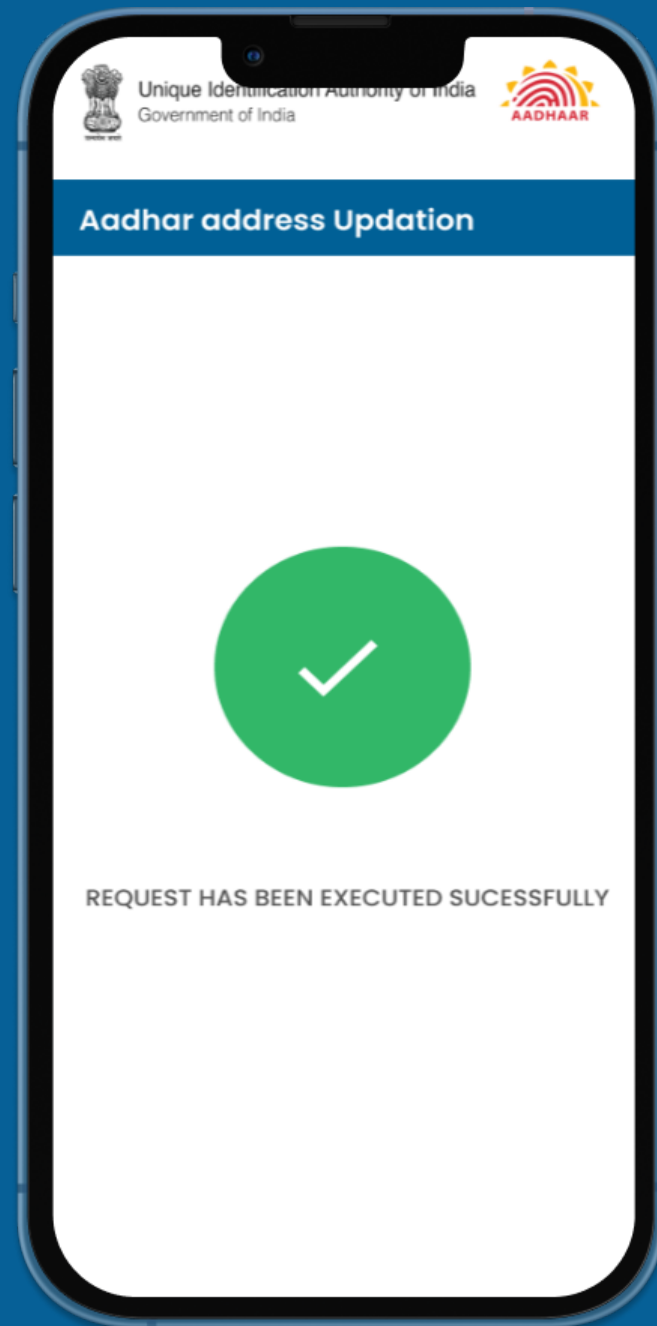
A smartphone screen displaying the 'Aadhar address Updation' form. The form is titled 'Aadhar address Updation' and is part of the 'Unique Identification Authority of India Government of India' app. It contains several input fields for address details: House No, Landmark, Street Name, Location, Village /Town/City, and District. Each field is represented by a white rectangular box with a thin border. The form is set against a blue background with white text and icons.

**Tenant can also do minor edits within 100m range\***

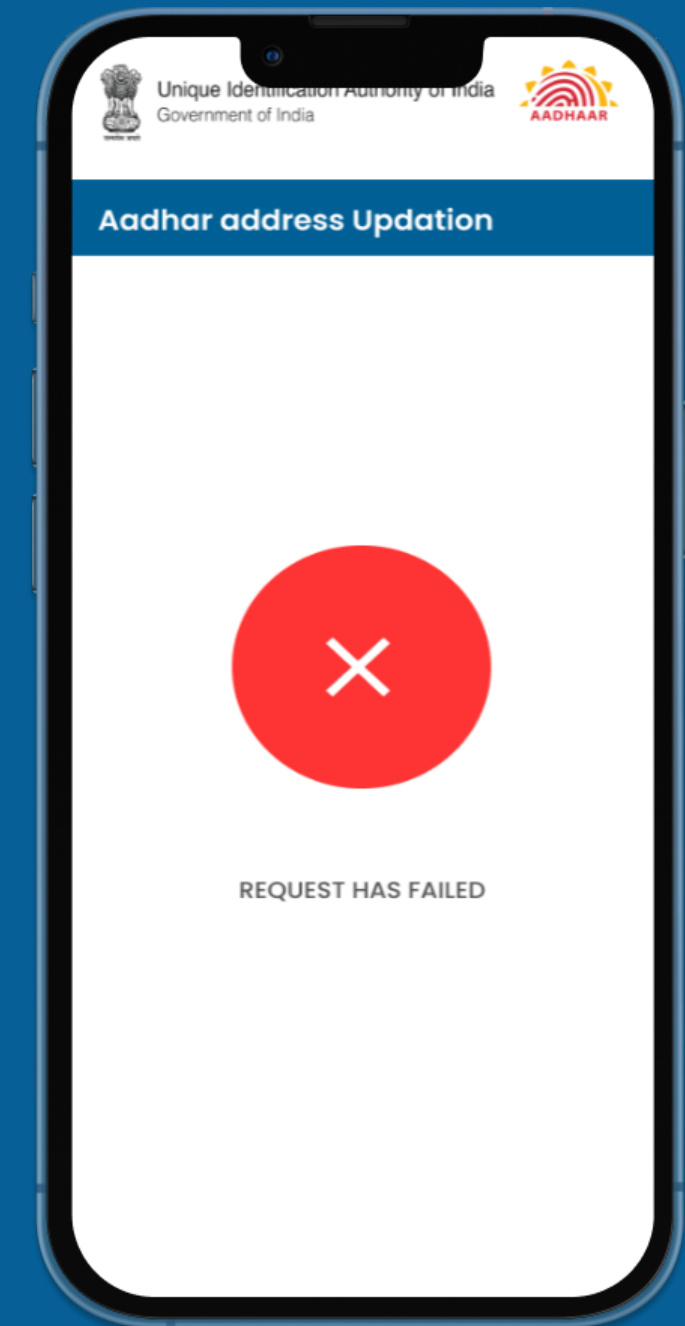
The distance will be calculated by Google Maps API.

\*The distance threshold can be configured through the environment variable settings for flexibility

**If all conditions are passed, the tenant can submit an address change request.**



**The request status will be display real-time on the tenant's side.**

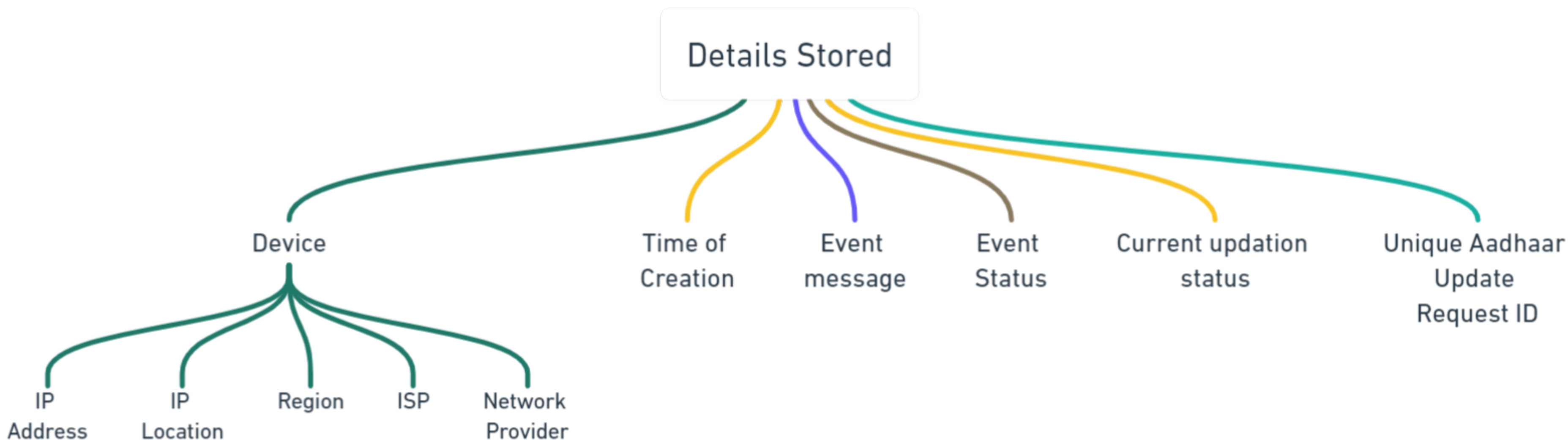


**The request will once again be verified on the server side and address will be changed.**


# SECURITY AND FRADULENT USAGE PREVENTION

- The Aadhaar number is never stored in database in plain text format. For audit logs and to identify user we are calculating hash of Aadhaar number using sha512 algorithm and storing the calculated hash which is non-reversible.
- A unique link is generated on each address change request initiation and it can be accessed only by the landlord whose number is provided, the identity of whose is verified via eKYC.
- In case of detection of any fradulent usage, the updated address of the tenant can easily be rolled back to the previous one from server side.
- There is a limit on the number of requests a landlord can approve during a stipulated time period so as to prevent fraudulent usage.
- In case the landlord has a lot of tenants(such as in case of a mess or hostel), there is a flexible option to increase his/her limit from the server side on a request basis.
- During every event, all necessary details such as IP address, Location etc are recorded on the server side to take actions in case of a fraud as well as for audit purposes (More info on next slide)


# DETAILED EVENT RECORDS ARE STORED FOR AUDIT PURPOSES



# FRAUDULENT USAGE PREVENTION : REQUEST ID BASED LOG



Unique Identification Authority of India  
Government of India



Request Id :

644481218072

Txn Id :

c23867a4-62b9-4108-a214-1783e29f30bc

Mobile No :

9641831706

Consent Mobile No :

8617024675

Audit Logs

User :

Tenant

Request IP :

202.142.123.192

IP Location

Dhanbad - JH - India - 828104

IP Provider

Bangalore - Zee Telefilms Ltd - ASI7747 SITI NETWORKS LIMITED

Status

Success

Message

Aadhaar Update Completed

Error

Timestamp [UTC]

Oct. 30, 2021, 7:26 p.m.

User :

Tenant

Request IP :

202.142.123.192

IP Location

Dhanbad - JH - India - 828104

IP Provider

Bangalore - Zee Telefilms Ltd - ASI7747 SITI NETWORKS LIMITED

Status

Success

Message

Error

Timestamp [UTC]

Oct. 30, 2021, 7:25 p.m.

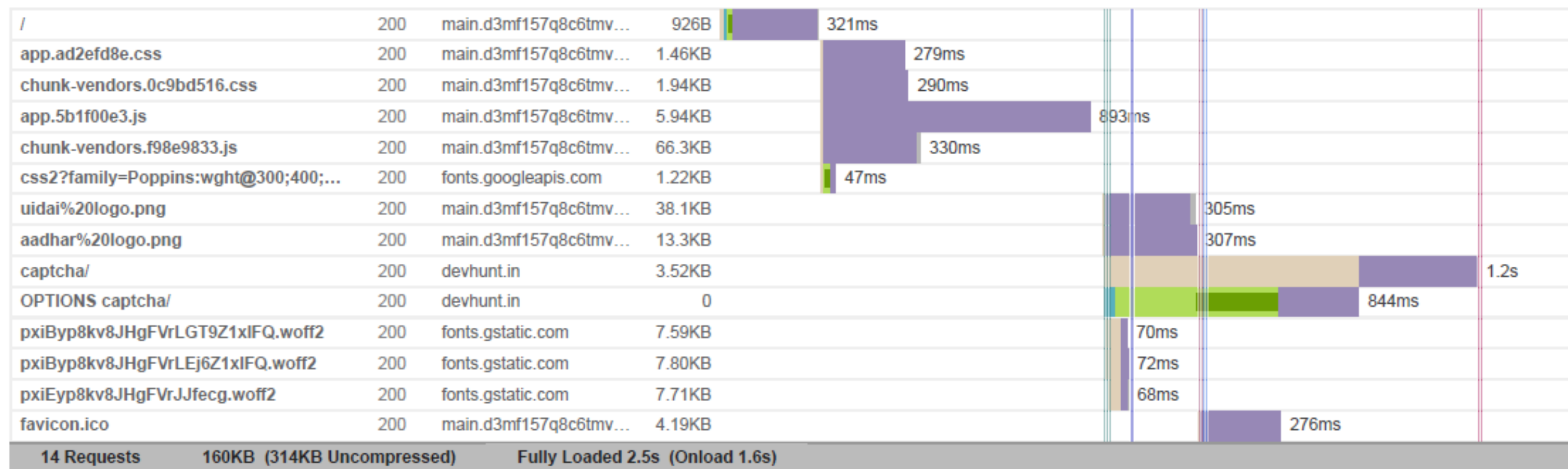
A unique request ID is generated on attempting address updation. All the details corresponding to the event **related** to this request ID including but not limited to approval of eKYC, approval by landlord, successful as well as failed address change attempts are recorded in the log. From the server side, we can also search for any request ID and view it's log in cases of fraudulent usage suspicion.



# LOW DATA REQUIREMENT

The waterfall chart displays the loading behaviour of your site in your selected browser. It can be used to discover simple issues such as 404's or more complex issues such as external resources blocking page rendering.

aadhaar-front



Our app uses ~160 KB just once to load and function completely according to the GT Metrix report attached [here\(click to view\)](#). This is way below the average Internet Network speeds in India which stands at 4.9Mbits/s(~627KB/s) according to the research [here\(click to view\)](#)



# AADHAAR APIs USED IN THE SOLUTION

- **Captcha API** is used during the eKYC of tenant and landlord to generate captcha.
- **OTP Generation API** is used to handle OTP requests and send OTP to the Aadhaar registered number.
- **eKYC API** is used to authenticate users and fetch their KYC data. Also used to get the landlord's address after consent approval

# The web app is accessible on every device.

## Thank You!



The image shows a laptop screen with the 'Aadhar address Updation' web application. The header includes the Government of India logo and the text 'Unique Identification Authority of India Government of India'. The main heading is 'Aadhar address Updation'. The form contains the following elements:

- A label 'Enter your 12 digit Aadhar number' above a text input field.
- A CAPTCHA image with the text 'mqj NoW' and a label 'Enter the Captcha' above another text input field.
- A blue button labeled 'Generate OTP'.
- A label 'Enter OTP' above a text input field.
- A blue button labeled 'Verify OTP'.