Moments

Take a Moment...

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About Moments 🖼️

What is it?

Moments is a digital picture frame that allows you to share your favourite moments with friends & family. You can customize the experience by controlling the images from your phone.

Who is it for?

The frame can be used by anyone who you want to share your favourite moments with, be it in your own home or at your grans.
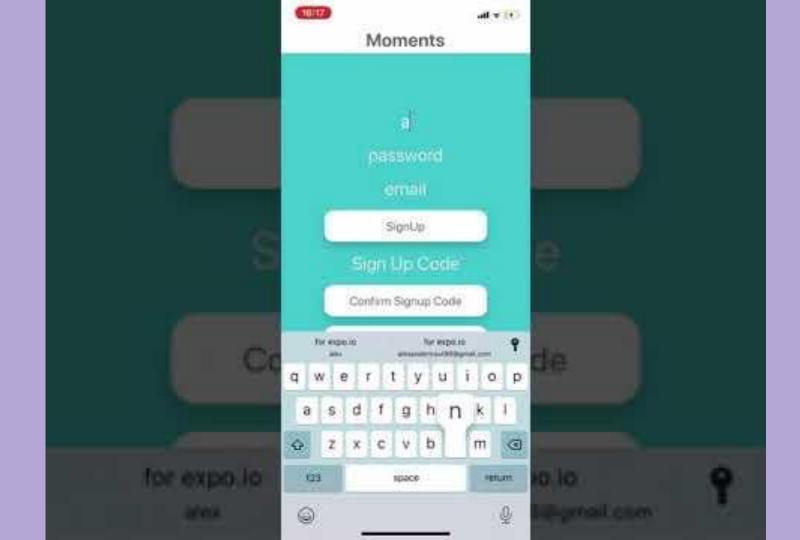
NORTHCODERS

Demo 📱

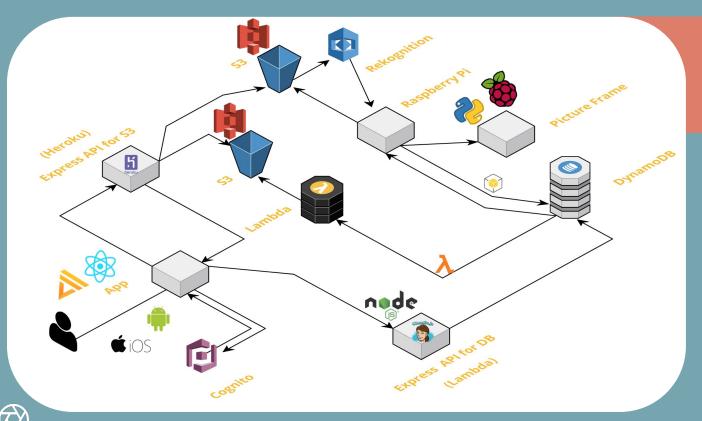# Fun fact ◔

- Node
- JavaScript
- Heroku
- Jest

24%

76%

- Claudia.js
- Python
- Raspbian
- Multer S3
- DynamoDB
- AWS SDK
- Amplify
- Cognito
- Rekognition
- S3 Buckets
- Lambda
- OpenCV
- React Native
- Expo

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Tech stack ⚙

- React-Native
- Expo
- AWS Amplify
- AWS Cognito

- S3 Buckets
- AWS Lambda
- Claudia.js
- dynamoDB

- Python
- OpenCV
- AWS Rekognition
- Boto3
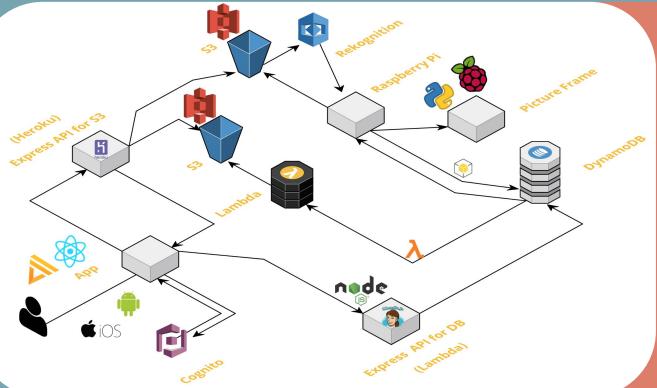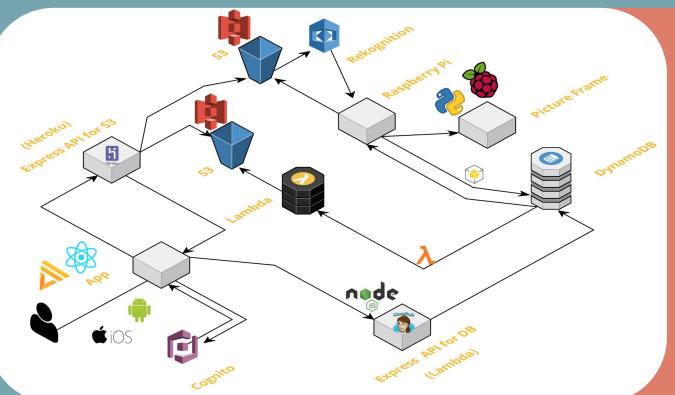
Diagram labels:
- S3
- Rekognition
- Raspberry Pi
- Picture Frame
- (Heroku) Express API for S3
- S3
- Lambda
- DynamoDB
- App
- iOS
- Cognito
- Express API for DB (Lambda)

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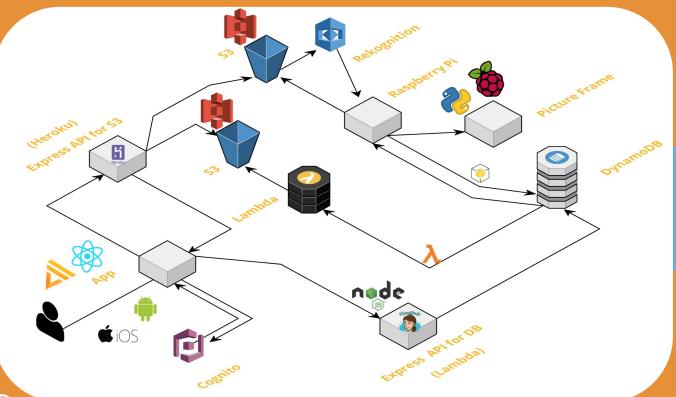
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Challenges we overcame

Navigation
not flexible

AWS
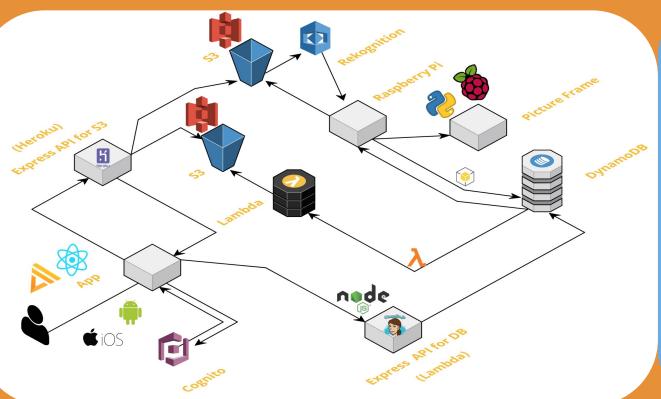Cognito
styling

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Tech stack ⚙

- React-Native
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- Claudia.js

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- Boto3

S3 API
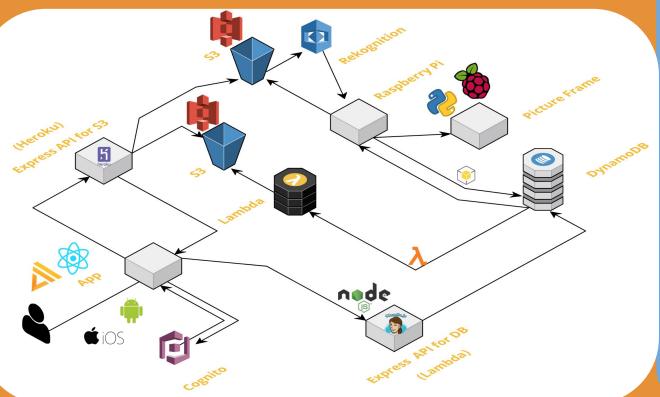

Express.js server

Multer & Multer S3

JEST & Supertest - TDD

Hosted on Heroku

dynamoDB API

dynamoDB

MVC architecture - promisification
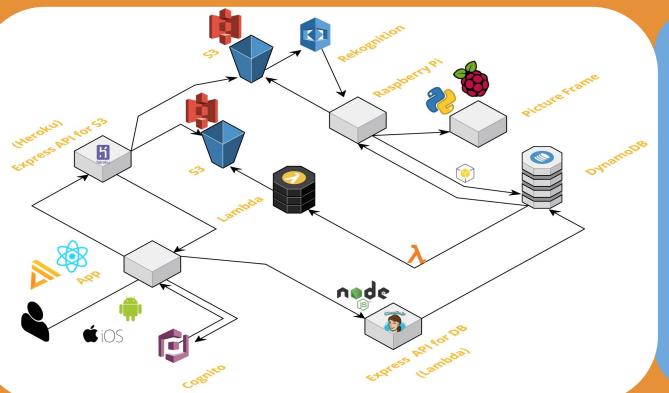
AWS dynamoDB Document Client

AWS Lambda - Triggers on dynamoDB streams

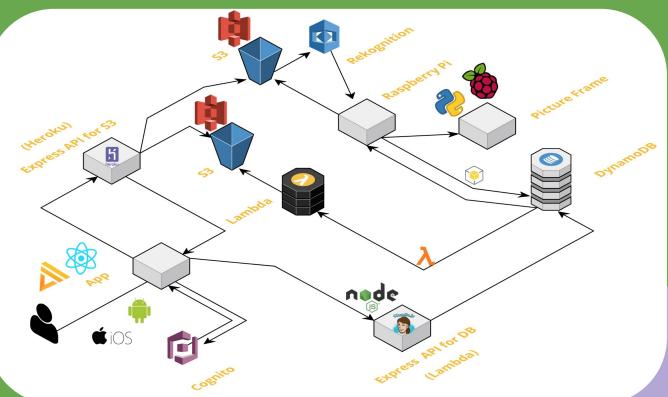Claudia.js - serverless

Challenges we overcame

Sending images to S3 from app

AWS Lambda - error loop

Tech stack ⚙
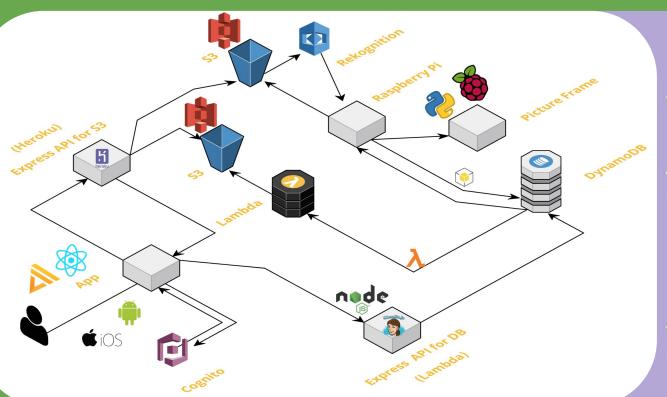

- React-Native
- Expo
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- AWS Cognito

- S3 Buckets
- AWS Lambda
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- dynamoDB

- Python
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- AWS Rekognition
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Slideshow

S3

Rekognition

Raspberry Pi

Picture Frame

(Heroku)
Express API for S3

S3

Lambda

DynamoDB

App

iOS

Cognito

Express API for DB
(Lambda)

λ

Pi contacts dynamoDB through boto3

Actively compares lists of URLs for the user
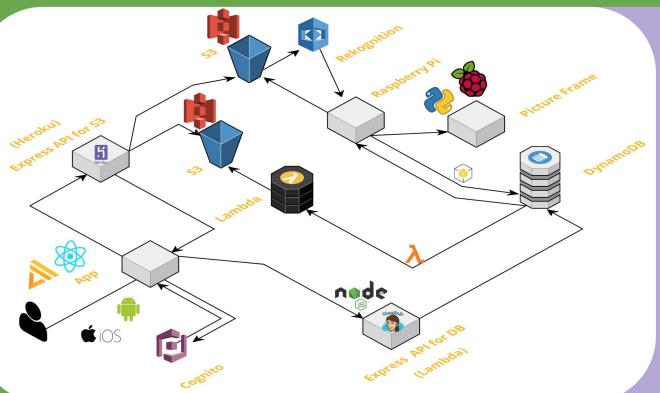
Downloads images

feh displays downloaded images

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Face Recognition

S3

Rekognition

Raspberry Pi

Picture Frame

(Heroku)
Express API for S3

S3

DynamoDB

Lambda

App

iOS

λ

node JS

Cognito

Express API for DB
(Lambda)

Triggered through capacitive touch switch

Picamera uses OpenCV to detect the user's face using Haarcascade models
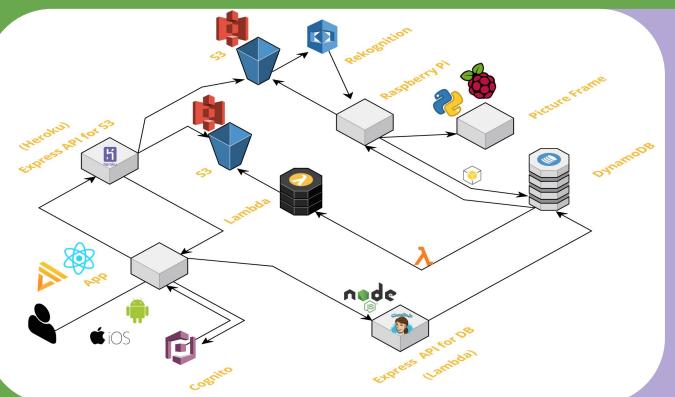
Detected face is captured and sent to S3

AWS Rekognition is invoked
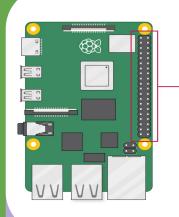
Active user in dynamoDB is set to recognised user

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Challenges we overcame

Getting used to python

Two programs running concurrently

Pi GPIO Map
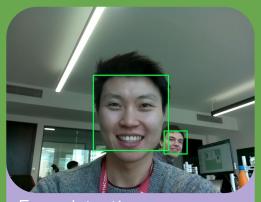
Left	Pin	Pin	Right
3V3 power	1	2	5V power
GPIO 2 (SDA)	3	4	5V power
GPIO 3 (SCL)	5	6	Ground
GPIO 4 (GPCLK0)	7	8	GPIO 14 (TXD)
Ground	9	10	GPIO 15 (RXD)
GPIO 17	11	12	GPIO 18 (PCM_CLK)
GPIO 27	13	14	Ground
GPIO 22	15	16	GPIO 23
3V3 power	17	18	GPIO 24
GPIO 10 (MOSI)	19	20	Ground
GPIO 9 (MISO)	21	22	GPIO 25
GPIO 11 (SCLK)	23	24	GPIO 8 (CE0)
Ground	25	26	GPIO 7 (CE1)
GPIO 0 (ID_SD)	27	28	GPIO 1 (ID_SC)
GPIO 5	29	30	Ground
GPIO 6	31	32	GPIO 12 (PWM0)
GPIO 13 (PWM1)	33	34	Ground
GPIO 19 (PCM_FS)	35	36	GPIO 16
GPIO 26	37	38	GPIO 20 (PCM_DIN)
Ground	39	40	GPIO 21 (PCM_DOUT)

Capacitive touch sensor

Face detection

LED and Breadboard

PiCamera module

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- Agile-inspired practices

- Morning & end-of-day stand-ups

- Friday sit-down code-walkthrough

- Trello Kanban board

- Pair programming

- Git version control

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Further ideas 💡

- Social media API's
- Album/playlist functionality and slideshow settings control

- Extract functionality into AWS

- Pi to start slideshow on boot
- Websockets or dynamo streams to get dynamoDB and the pi to update in real time

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