Secure Door Lock
Milestone 2 Presentation

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Milestone 2 Progress Matrix

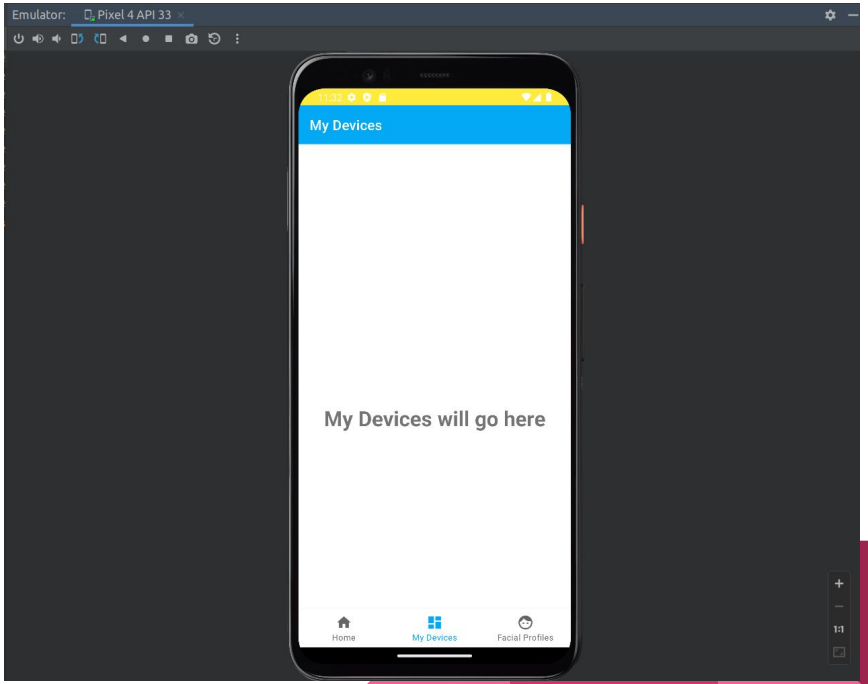
Task	Percent Completed	James	Christopher	Warren	Luke	To Do
Camera	0%	20%	20%	40%	20%	Delayed
Image Recognition	0%	20%	40%	20%	20%	?
Raspberry Pi	0%	25%	25%	25%	25%	Delayed: Awaiting final confirmation of camera selection
.apk Creation	25%	40%	20%	20%	20%	?
Begin backend endpoints	50%	20%	20%	20%	40%	Need websockets and IOT backend.

Milestone 2 Task Discussion

- Camera Selection for Door Lock
  - Delayed until Milestone 3
  - Selection process and testing needed is complex
- Raspberry Pi
  - Delayed until Milestone 3
  - Cannot work with until camera selection is made
  - Once camera selection is made, access will be granted to Pi

Milestone 2 Task Discussion

- .apk Creation
  - Application Login Screen created
  - Main Dashboard Section created



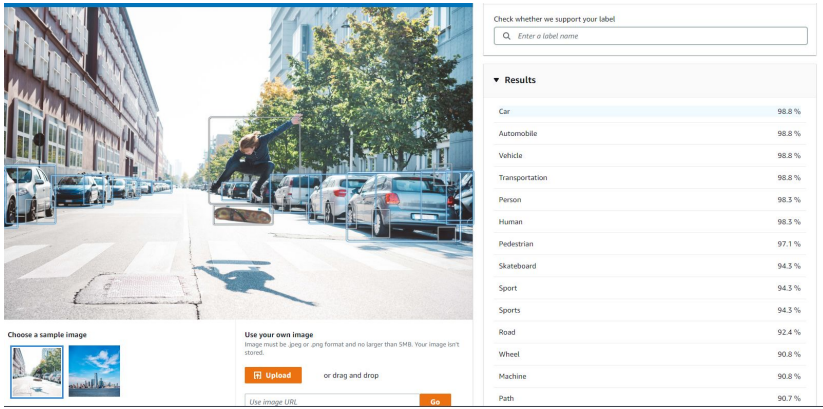
Milestone 2 Task Discussion

- Backend Endpoints
  - Route Handling for Incoming Requests established
  - Handles Authentication, Login, Dashboard Navigation and Re-Authentication
  - SQLite Database Established to Store User Profiles and Device Information
  - User is authenticated through a Java Webscript Token

Image Recognition

- Created code to take an image from a local system or elsewhere
  a. Mainly processed via JSON requests

```
{

 "Image": {

        "S3Object": {

                "Bucket": "rekognition-console-v4-prod-cmh",

                  "Name": "assets/StaticImageAssets/SampleImages/skateboard.jpg"

                    }

                }

}
```



- Can use different labels to find different things or people

Image Recognition


```
"Labels": [
        {
            "Name": "Car",
            "Confidence": 98.87621307373047,
            "Instances": [
                {
                    "BoundingBox": {
                        "Width": 0.10527367144823074,
                        "Height": 0.18472492694854736,
                        "Left": 0.0042892382480204105,
                        "Top": 0.5051581859588623
                    },
                    "Confidence": 98.87621307373047
                },
```

Image Recognition

```python
import boto3 #This uses the Amazon python SDK to operate
#most of the input is JSON requests from the server but this is just the actual driver code to read the faces.
def detect_labels_local_file(photo): #takes a photo object in as input


    client=boto3.client('rekognition') #Linking to the client in this case its the amazon Rekognition

    with open(photo, 'rb') as image: #opens the photo as an image
        response = client.detect_labels(Image={'Bytes': image.read()}) #The detect labels function is how we get the parameters

    print('Detected labels in ' + photo)
    for label in response['Labels']:
        print (label['Name'] + ' : ' + str(label['Confidence'])) #gives the actual output. This can be changed to metadata if we want later.

    return len(response['Labels'])

def main():
    photo='photo'

    label_count=detect_labels_local_file(photo)
    print("Labels detected: " + str(label_count))


if __name__ == "__main__":
    main()
```

Meetings with Dr. Silaghi

Date	Topic
October 19, 2022	Discussion of current tasks that have been assigned and current Raspberry Pi status.
October 26, 2022	Discussed final camera Selection as well as login flow for application.

Milestone 3 Task Matrix

Task	James	Christopher	Warren	Luke
Camera	20%	20%	40%	20%
Image Recognition	20%	40%	20%	20%
Raspberry Pi	25%	25%	25%	25%
.apk Creation	40%	20%	20%	20%
Begin backend endpoints	20%	20%	20%	40%

Thank you. Questions?