INTEGRATION OF SMART DOOR LOCK WITH FACE RECOGNITION BASED ON RASPBERRY PI 3 WITH GOOGLE ASSISTANT FEATURES

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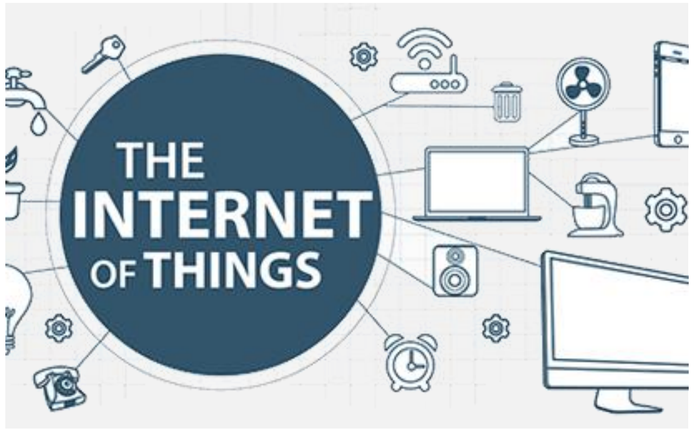
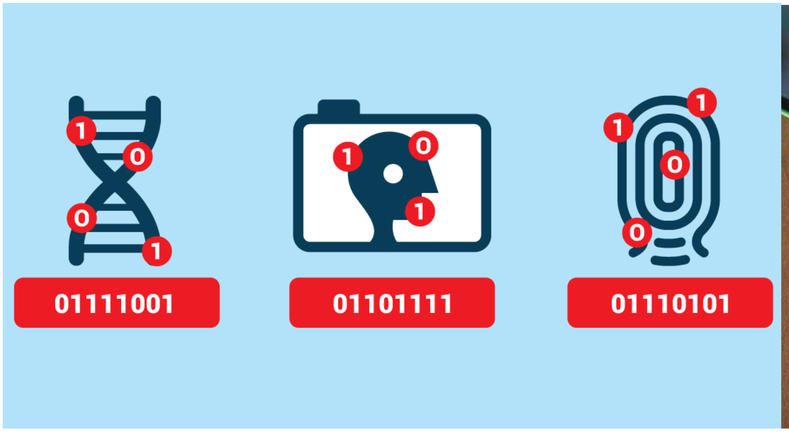
SECTION 1

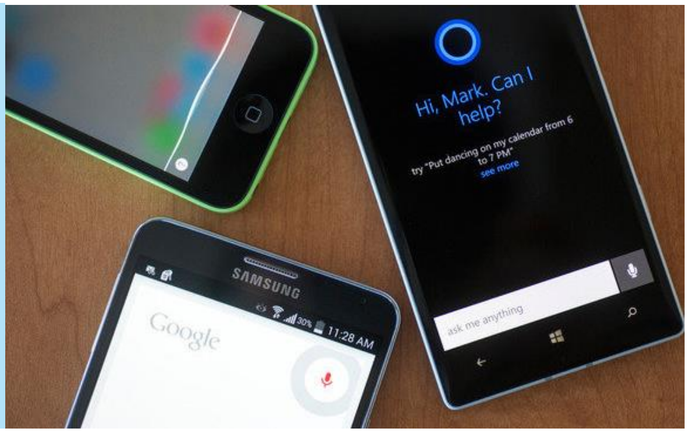
INTRODUCTION

BACKGROUND

MAKING OF THIS THESIS







INTERNET OF THINGS

The development of Internet of Things

BIOMETRIC SECURITY

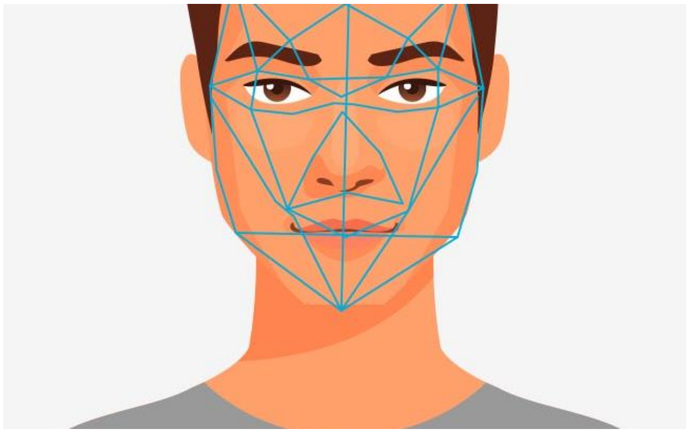
The development of Biometric Security

NATURAL USER INTERFACE

The development of Natural User Interface such as NLP, etc

PROBLEM STATEMENT

MAKING OF THIS THESIS



FACE RECOGNITION

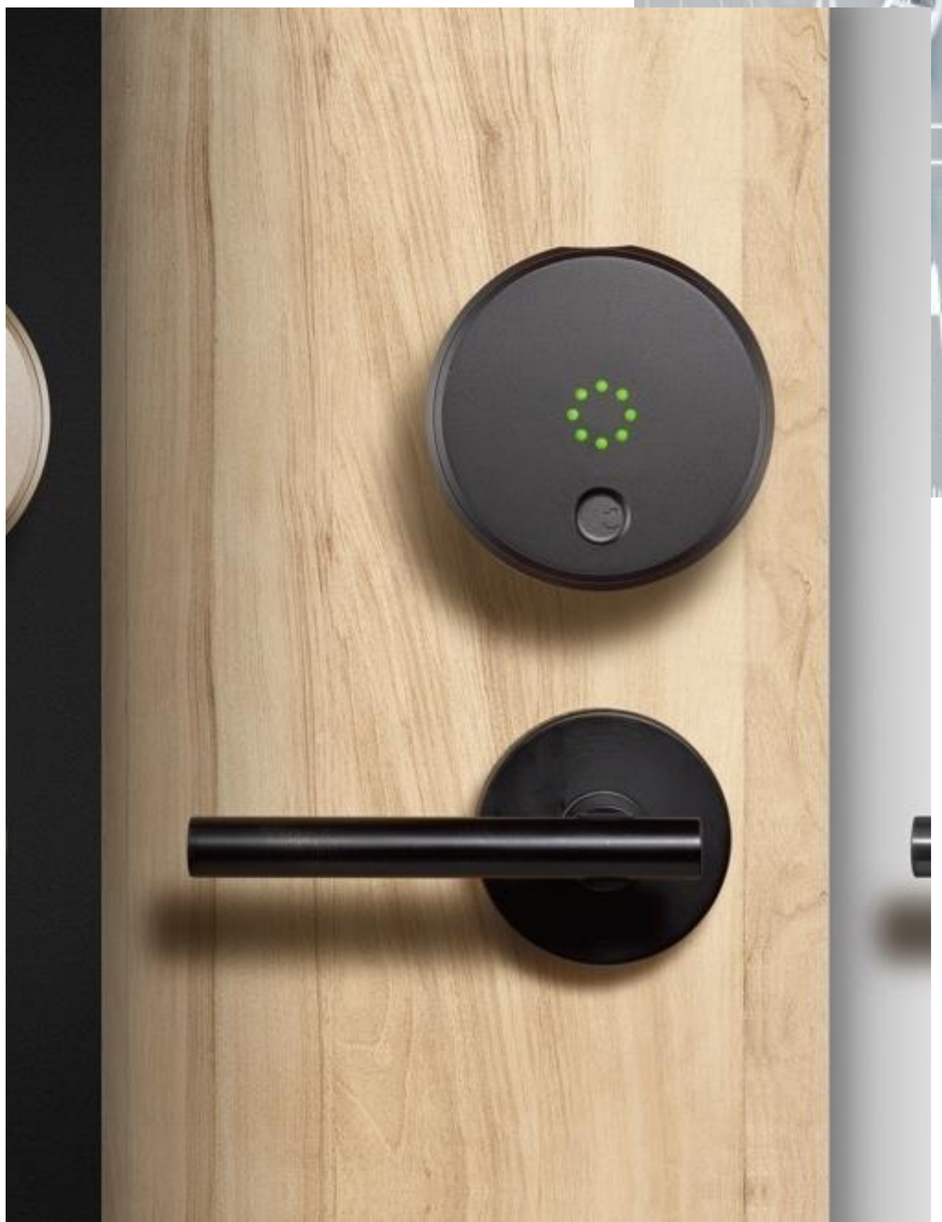
How to implement face recognition on a smart door

USER EXPERIENCE

How to integrate Google Assistant with IoT device

NOTIFICATION

How to implement smart notification to user

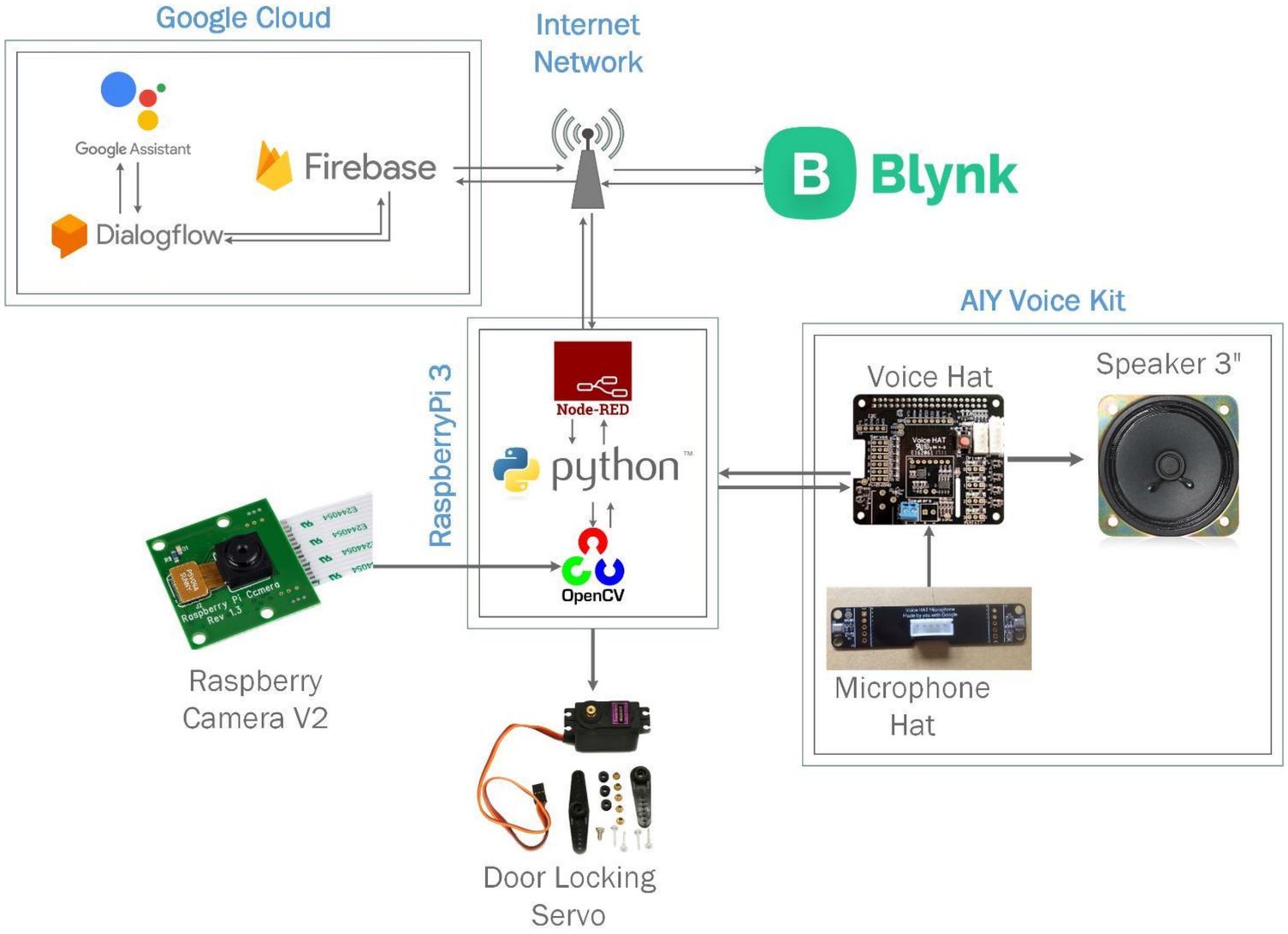


PURPOSE OF THESIS MAKING

Create new alternative in the house security development based on IoT by integrating smart door with biometric security and natural user interface.

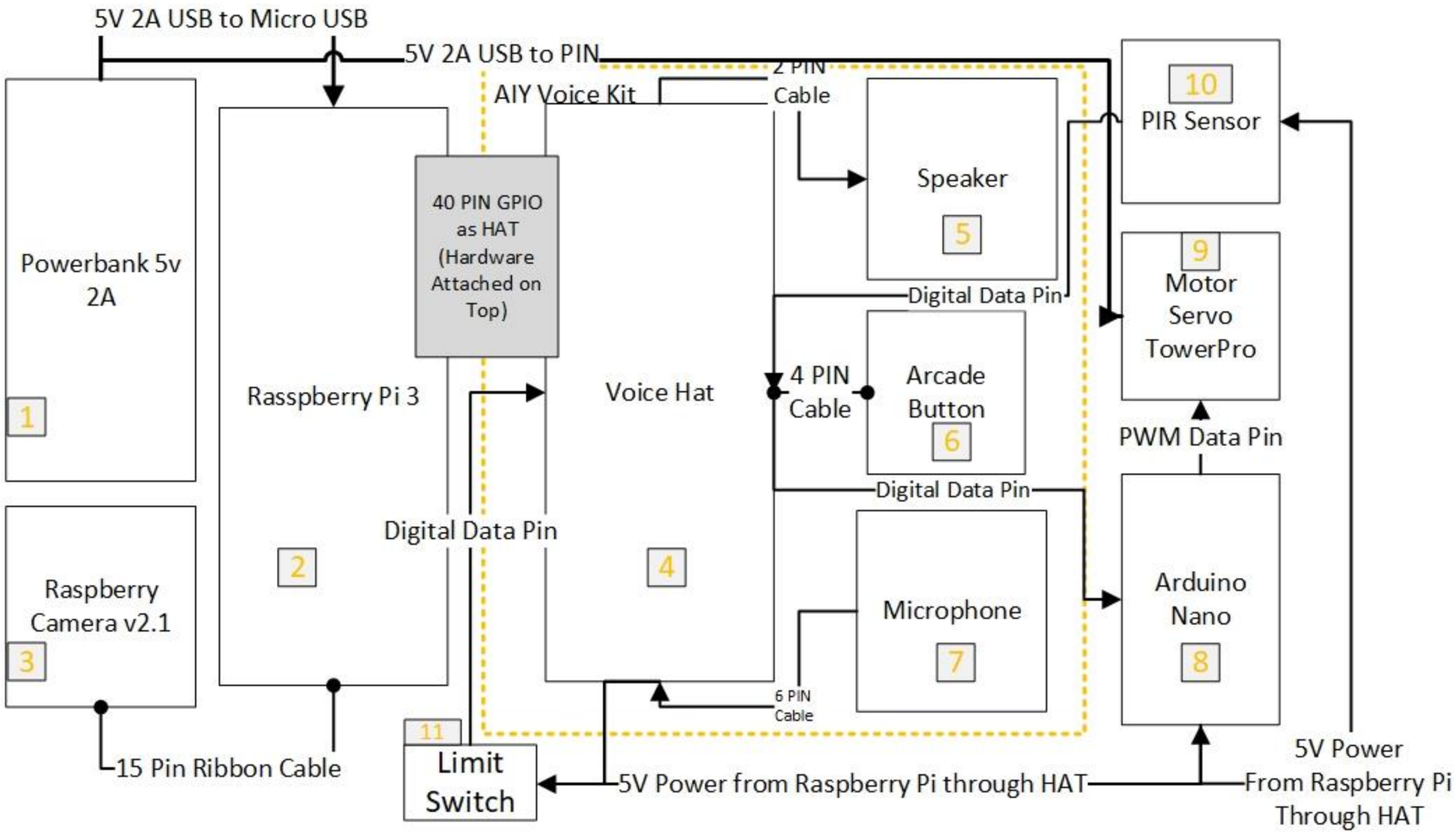
SECTION 2

SYSTEM PLANNING



SYSTEM PLANNING

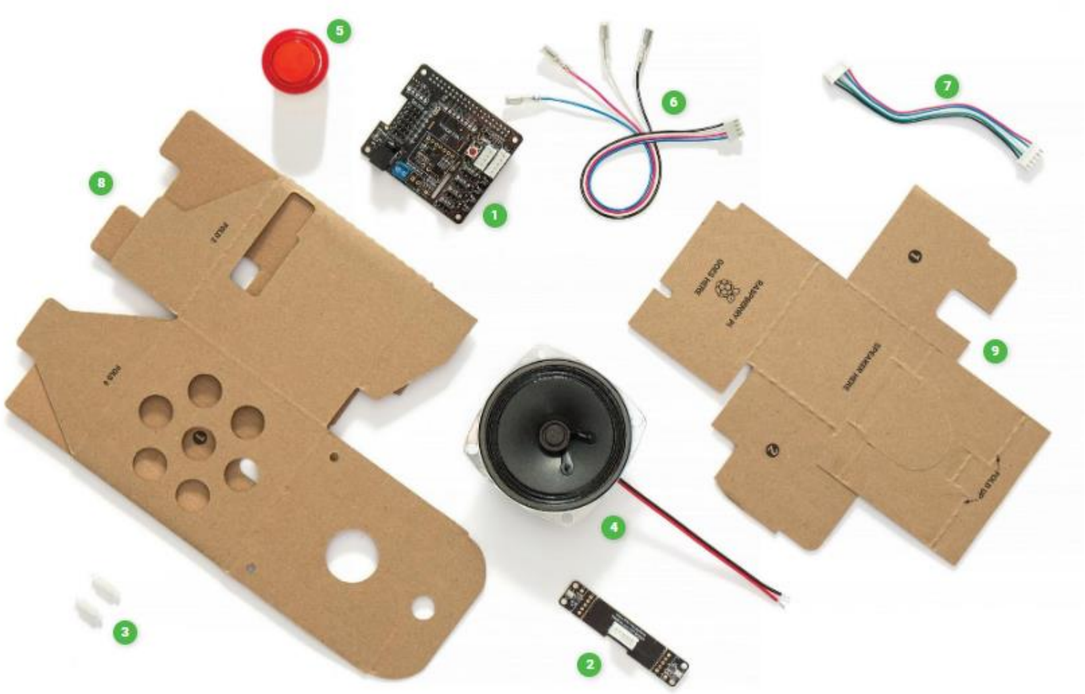
OVERALL SYSTEM DESIGN



SCHEMATIC OF

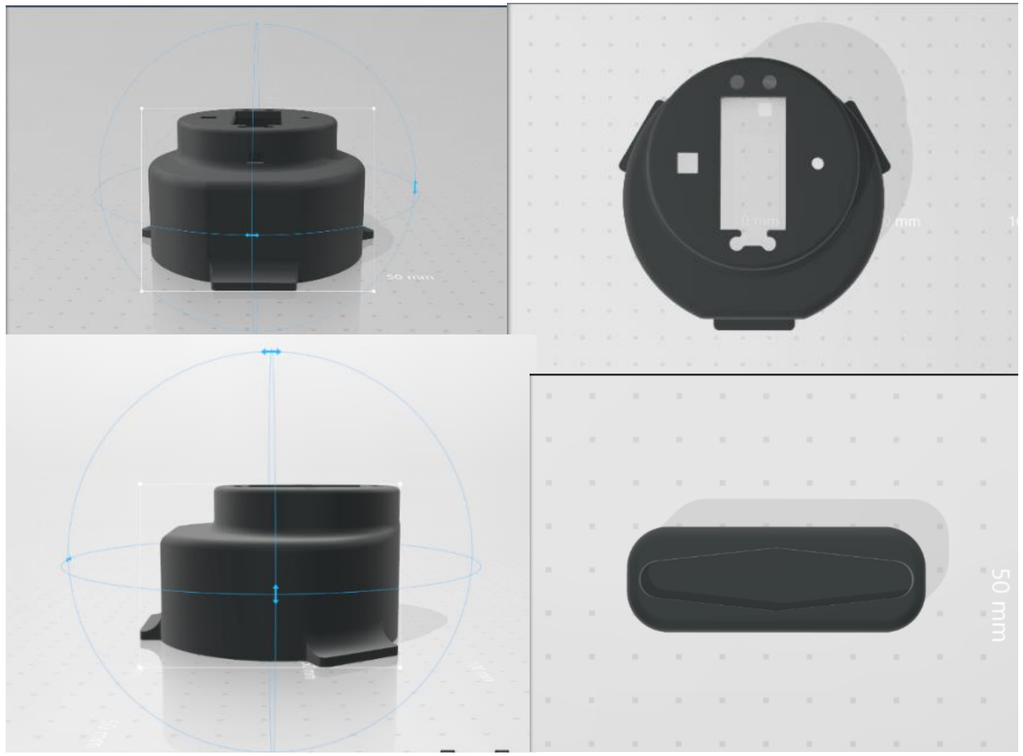
HARDWARE

HARDWARE DESIGN



AIY VOICE KIT COMPONENT

Tampak AIY Hat, Speaker, Microphone, and Arcade Button



3D MOUNTING SERVO DESIGN

3D Mounting Servo design for servo mounting

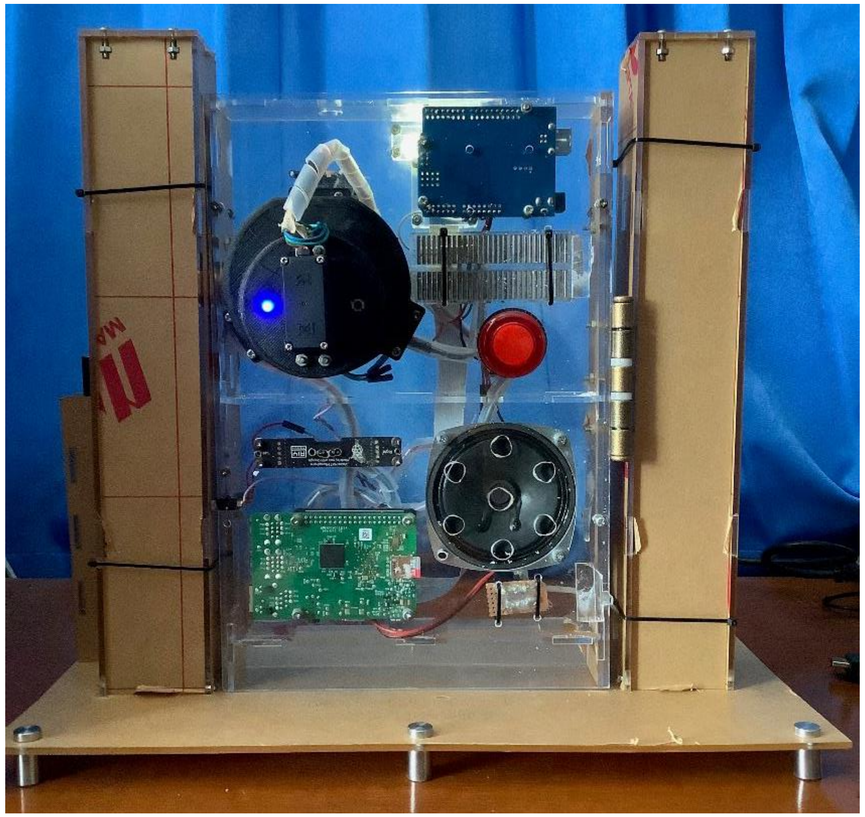
SMART DOOR PROTOTYPE DESIGN

FRONT VIEW

Front facing camera for recognizing face

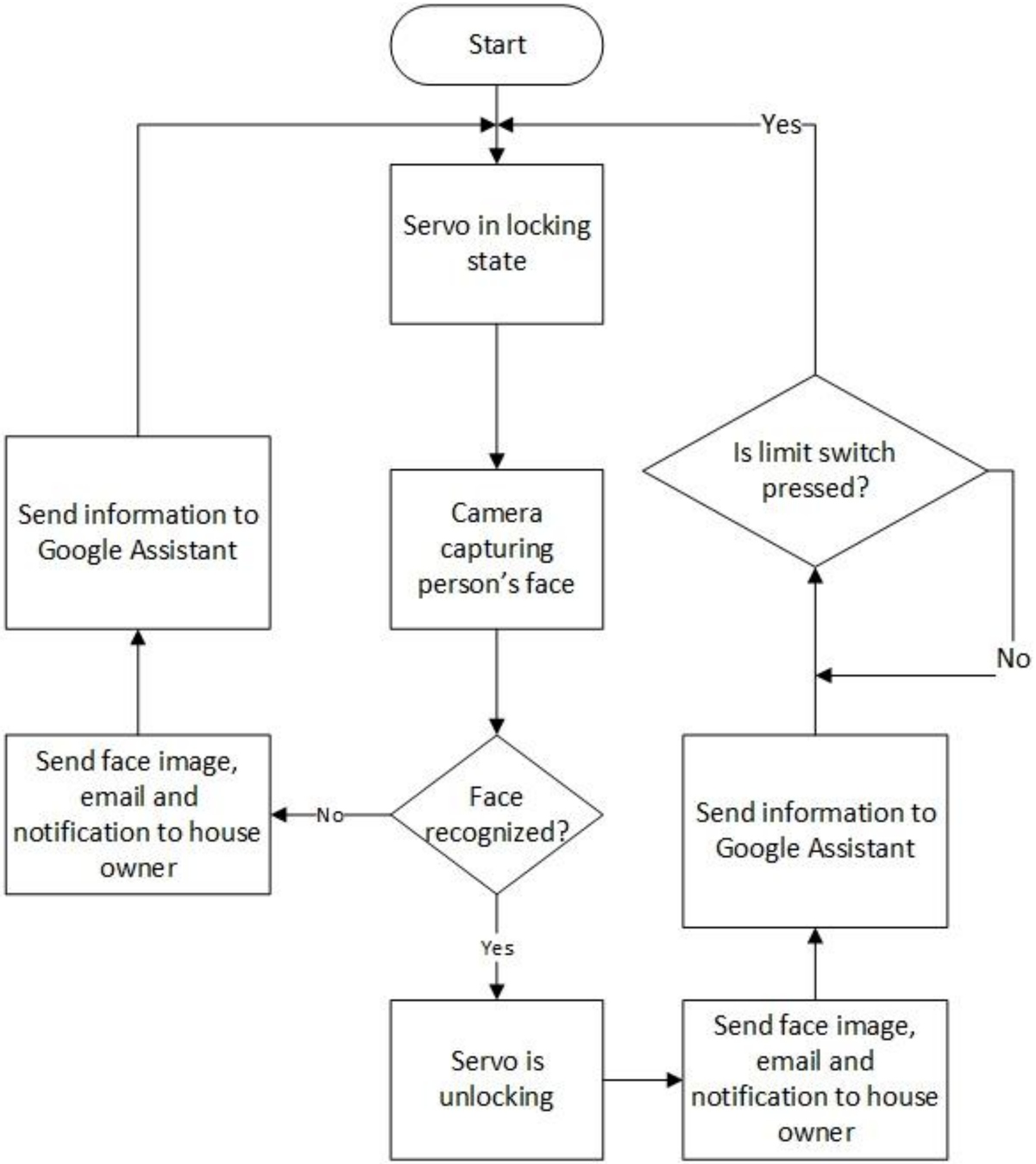
SIDE VIEW

Door locking servo that controlled by servo



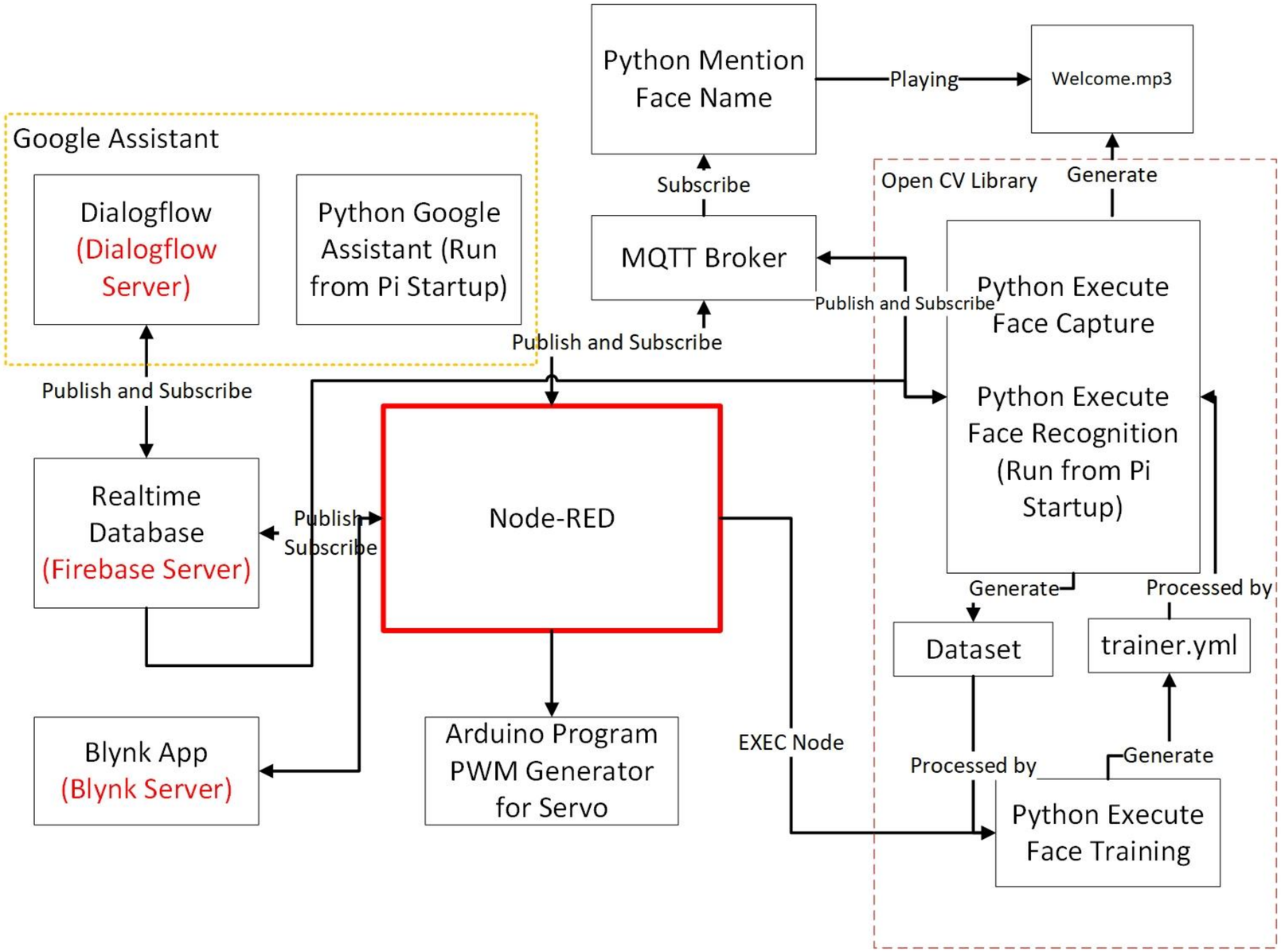
BACK VIEW

3D Mounting case for servo, Raspberry Pi, Arduino, and AIY Voice Kit



SYSTEM PLANNING

FLOWCHART

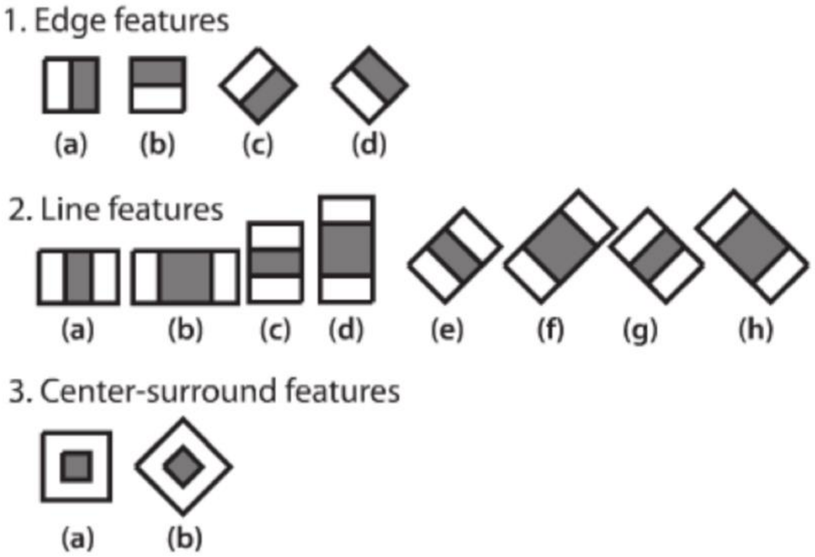


SCHEMATIC OF

SOFTWARE

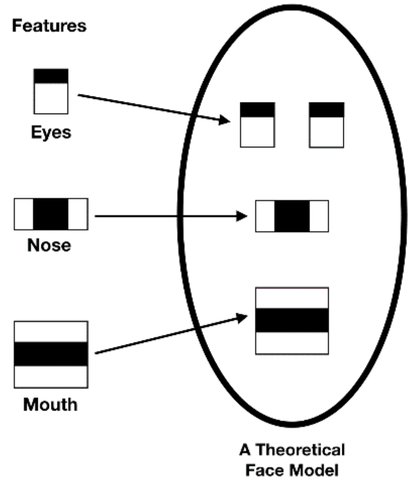
HAARS CASCADE

FACE DETECTION PROCESS



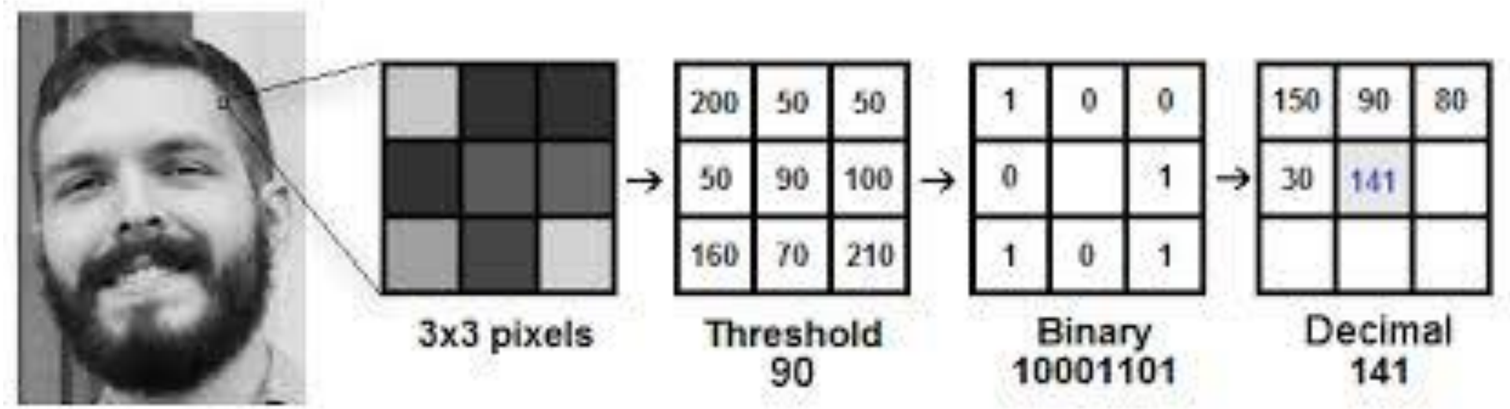
Face Detection determines the locations and sizes of human faces in arbitrary (digital) images.

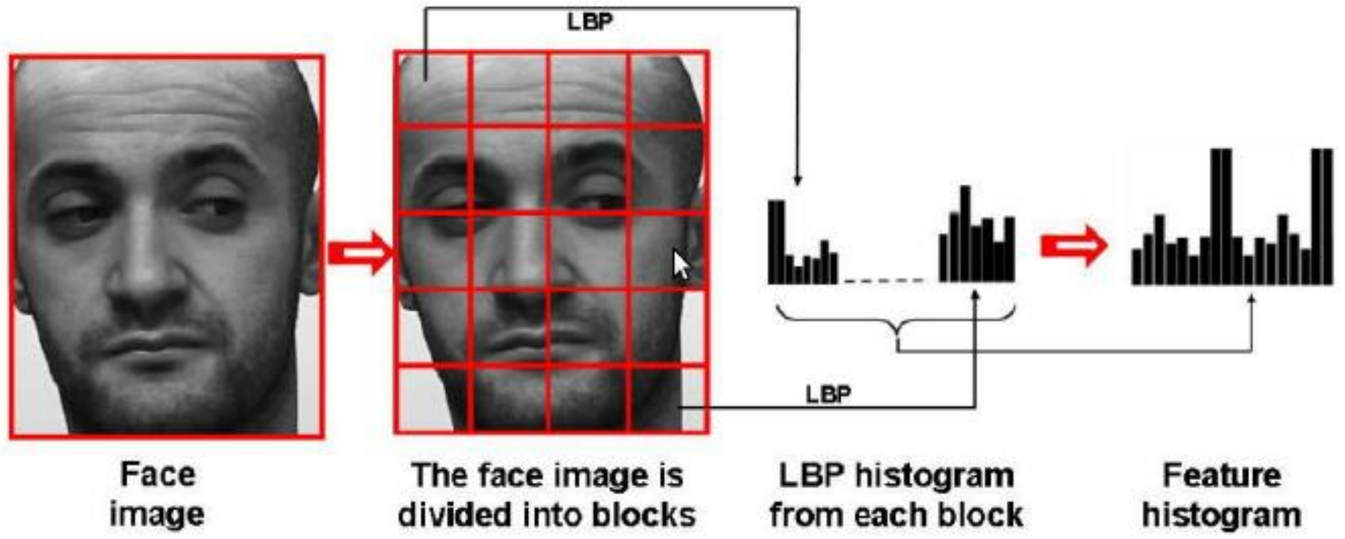
In **Face Recognition**, the use of Face Detection comes first to determine and isolate a face before it can be recognized.



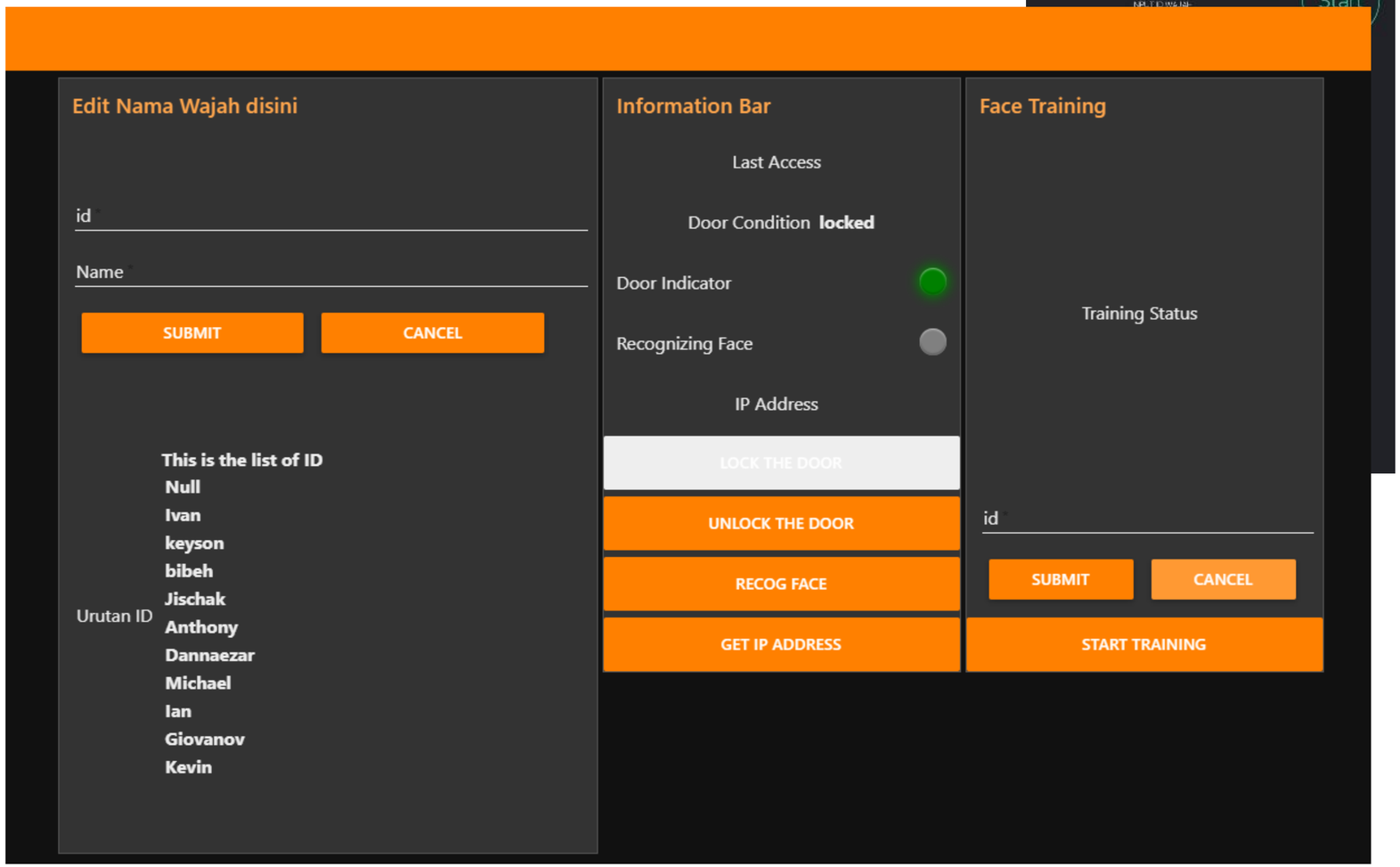
LOCAL BINARY PATTERN HISTOGRAM

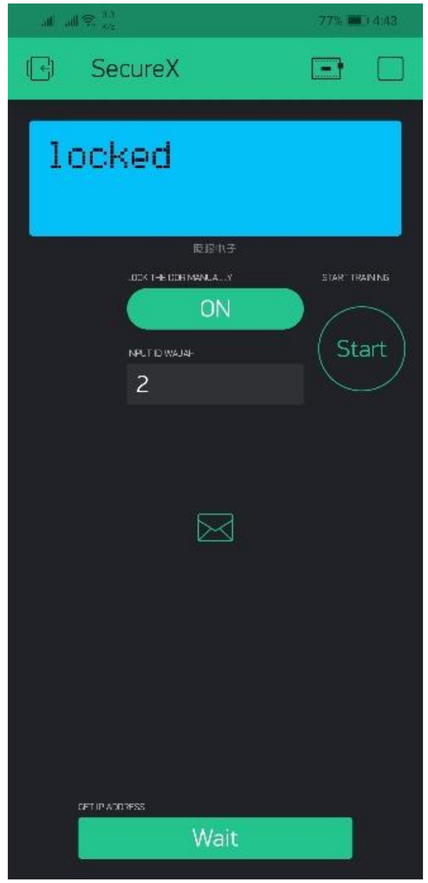
FACE RECOGNITION PROCESS0

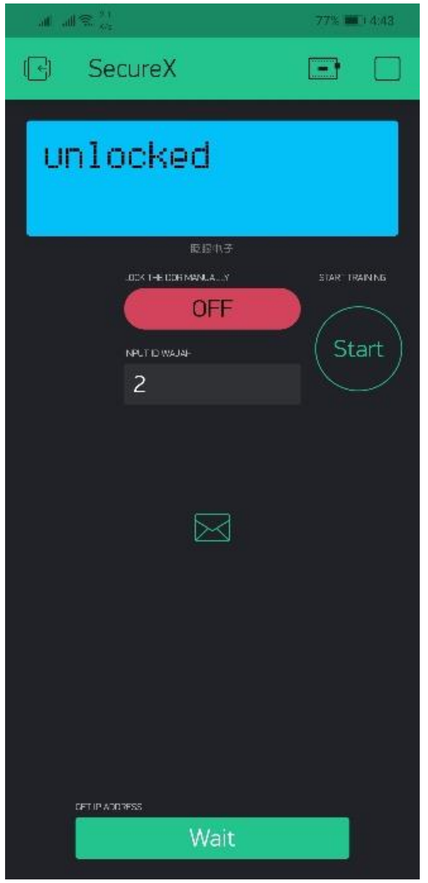




NODE-RED DASHBOARD







BLYNK

Training phrases

Add user expression

The condition of the door?

Is the door closed?

Is the door locked?

Is the door opened?

How is the door?

Search intents

ask_someone

door_condition

help

input_unknown

input_welcome Add follow-up intent

lock_door

quit

someone

Training phrases

Search training phrases

Add user expression

Who is accesed the door?

who is accessing my door

who is opened the door?

last access to my door

Who is access my door?

DIALOGFLOW INTENT


THANK YOU