ACCESS CONTROL SYSTEM BY FACIAL RECOGNITION

Facial Biometrics, Software, Internet, Electronic Time Attendance Recorder, Facial Recognition, Database

ACKNOWLEDGMENT

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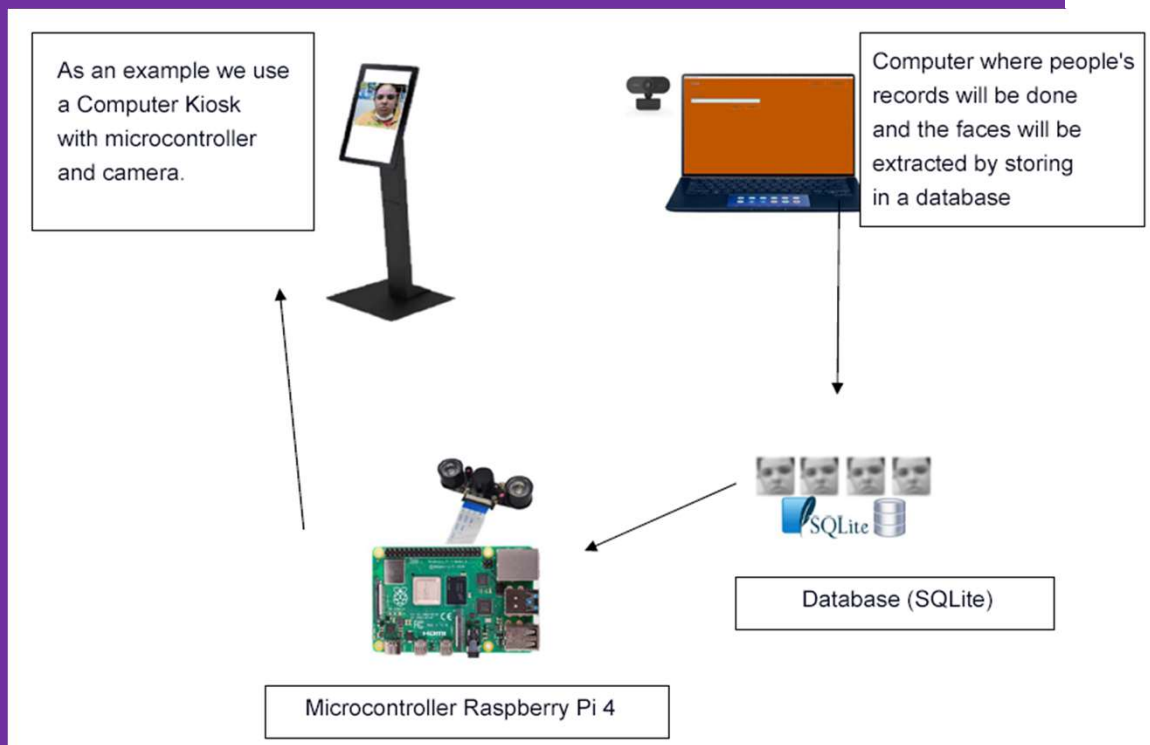
INTRODUCTION

- The process of access control or electronic verification of people's identity has become increasingly common.
  Currently, companies are increasing the use of personal identification systems

- In the past, the biometric system was an automated safety method that was based on the recognition of a person based on a physiological or behavioral characteristic, such as height, eye color and skin.

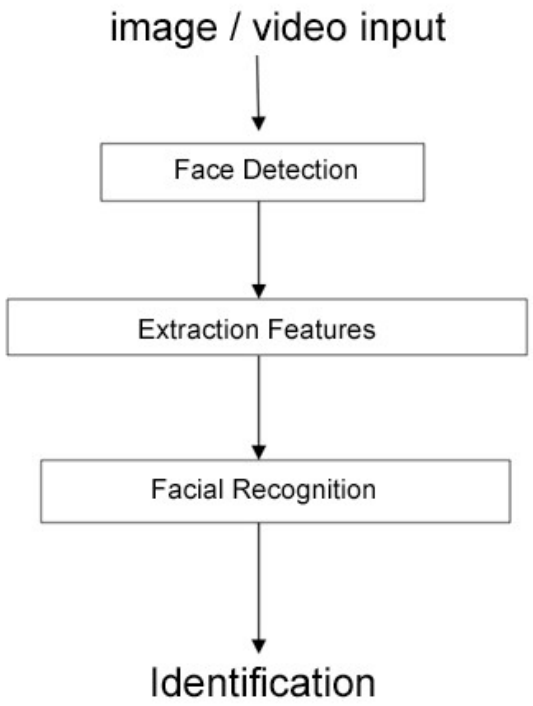
- In this project using a micro controller, people can access based on facial recognition system and also develop this application with low computational cost.



ACCESS CONTROL MODEL

- ✓ Python algorithm and Kivy library to create the interface where people will be registered.
- ✓ Captured photos stored in the SQLite database
- ✓ Raspberry Pi, acts in the training of these faces
- ✓ After training, our software and active camera to identify the faces previously registered in the system.

METHODOLOGY



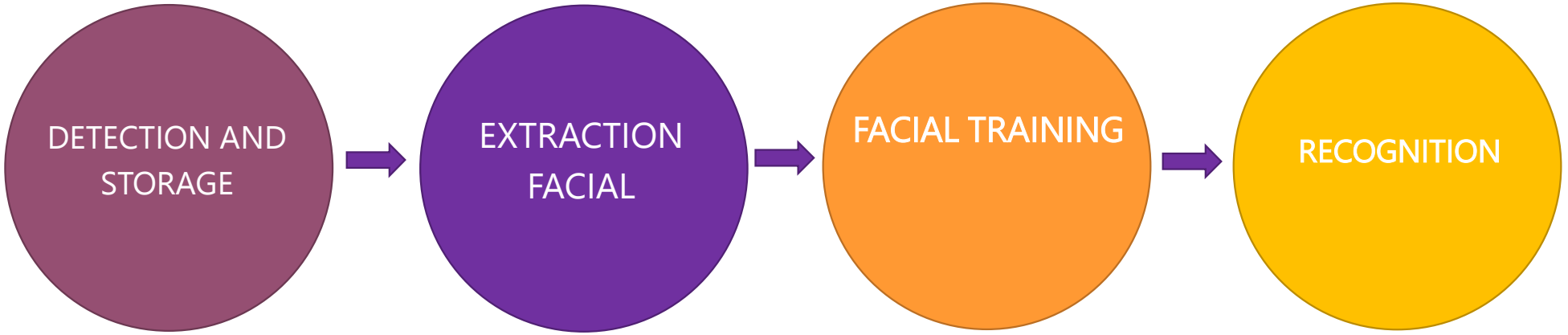
Generic scheme for facial recognition

Facial recognition, a code was developed to process face extraction using a digital camera.

The method used is based on the identification of the user's facial attributes.

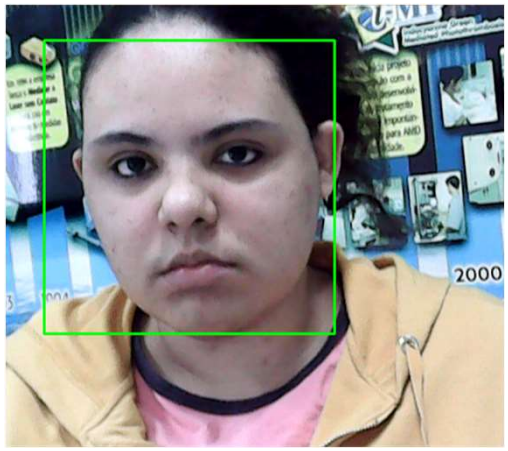
The Neural Network was used due to the ease that the network has to receive information and compare it with other information in a very short time

PROJECT OVERVIEW

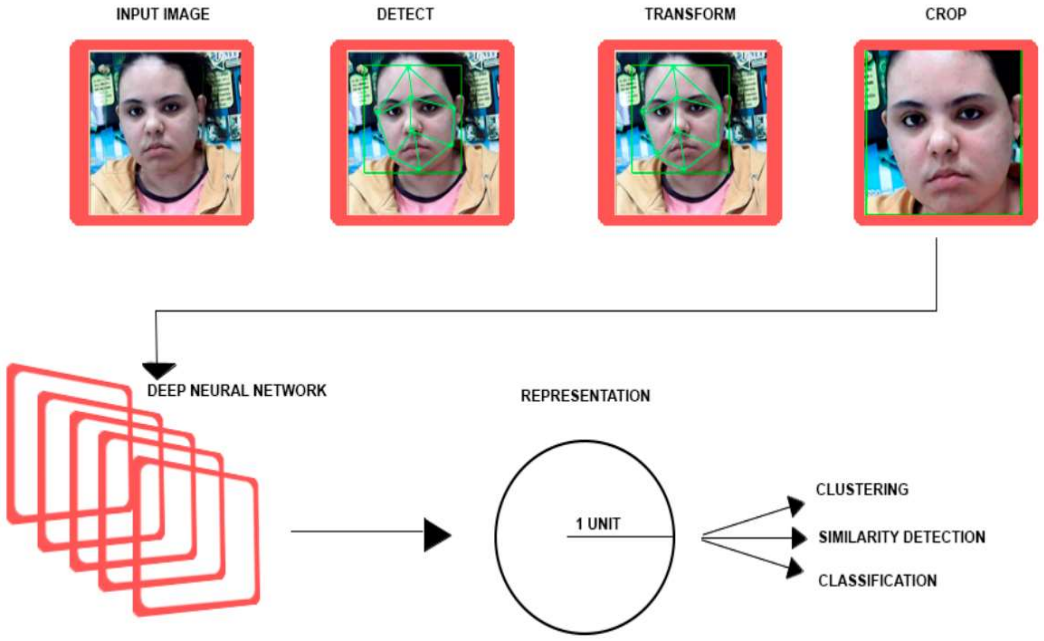


FACIAL DETECTION AND EXTRACTION

How face recognition works.



FACE DETECTION



EXTRAÇÃO DE RECURSO

EVENTS

LOG DATA
EMPLOYEE'S

Name , CPF, Cargo, Email..

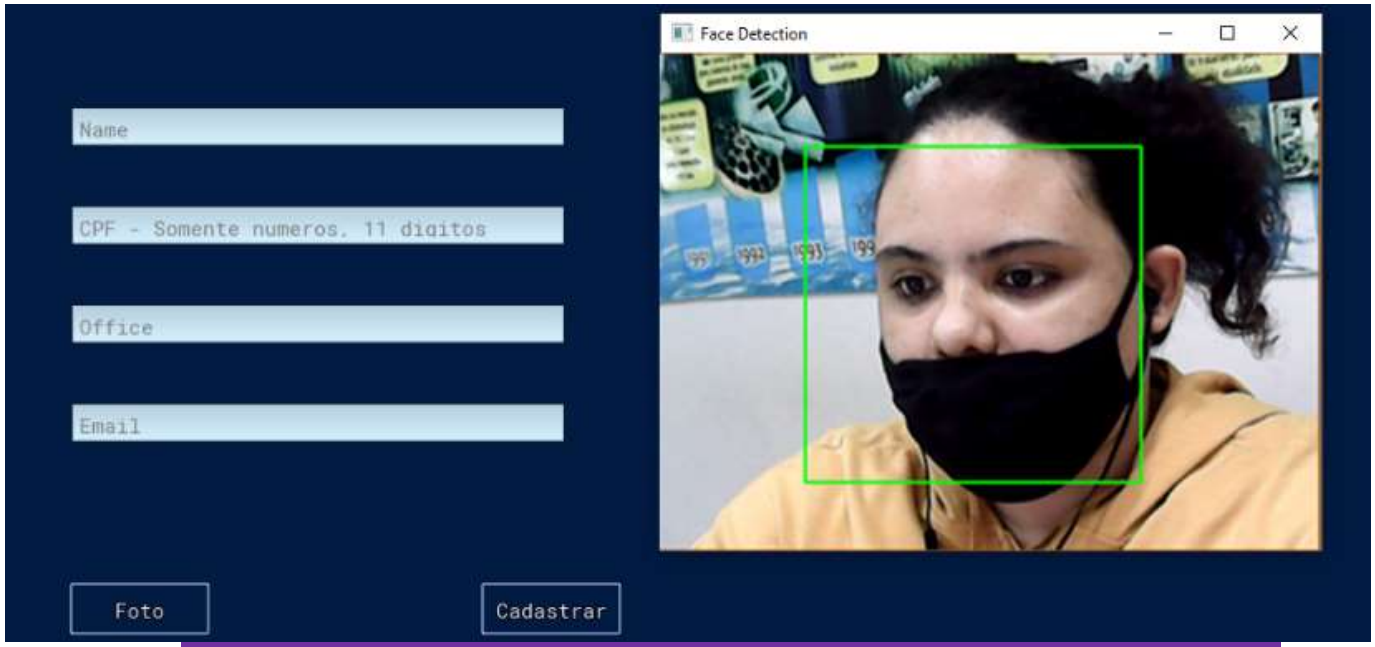
SIGN UP WITH PHOTO
EMPLOYEE

Sending photos

EMPLOYEE CHECK

Check-in & Check-out

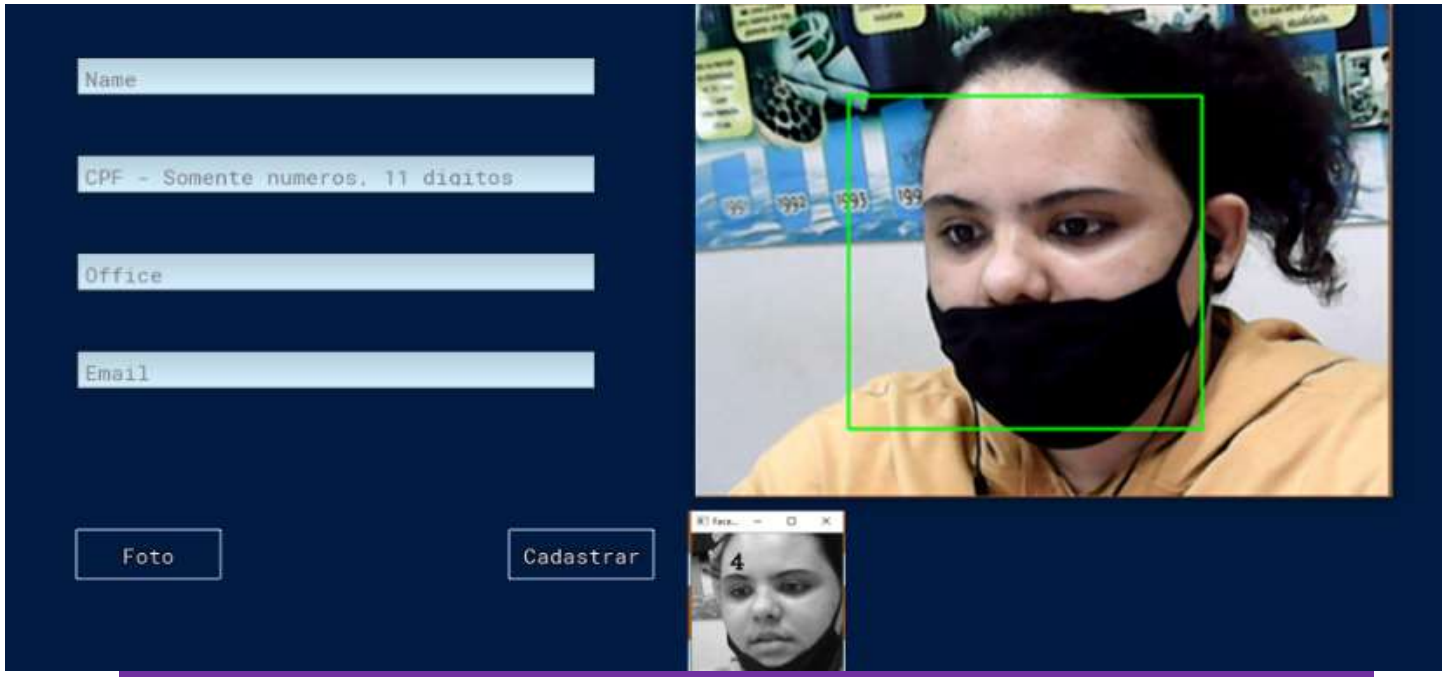
IMPLEMENTATION OPERABILITY



CREATE EMPLOYEE DATA

Where the person responsible will register the employee in the establishment. The person responsible inserts the initials such as: **Name, CPF, Title and Email.**

IMPLEMENTATION OPERABILITY



DATA STORED IN DATABASE

When the person responsible clicks "Photo" and the employee's faces are extracted and when we click "Register" the information is saved to the database.

IMPLEMENTATION OPERABILITY

CHECK-IN AND CHECK-OUT PROCESS

This screen is the screen of the software that employees will see during the check-in and check-out process.

RESULTS

✓The idea of developing the low-cost project with kivy interface to check in and check out was successful.

✓Recognition time had a prediction rate in fraction of seconds and the process of identifying approximately 75% of correspondence.

✓Raspberry vs PC

FUTURE IMPROVEMENTS

✓Database

✓ Add more Information to the register

✓Report

✓Alternative (Biometrics)

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