Green Access

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Abstract

Quickly "Tawakkalna" application became the primary entry key for 35 million people. The company or facility must appoint a person to verify the availability of all conditions for visitors. Which made human errors an important factor in the entry of unauthorized persons. We solved this problem through an access tech gate that verifies the fulfillment of the conditions. By image processing of the "Tawakkalna" application and facial detection.

Introduction

Policies and conditions for entering public and private places have emerged that maintain the safety of those inside these places, using the human element to verify that they meet health conditions. Our solution is system is divided into two parts for the electronic access control of the gate, the first part is by using image processing and the second part is by using a camera for the face recognition.

Method

Using the Python language and some libraries used, running it on the Raspberry Pi console and linking it to the private portal engine, a picture of the person's face is taken, then a picture is taken of the Twakallna application, and the program will verify that it is the same person and meets the health conditions and some other signs. allowed to enter if meets all the conditions, except that will repeat again as in **figure1**. One of our most important features is not to save people's photos.
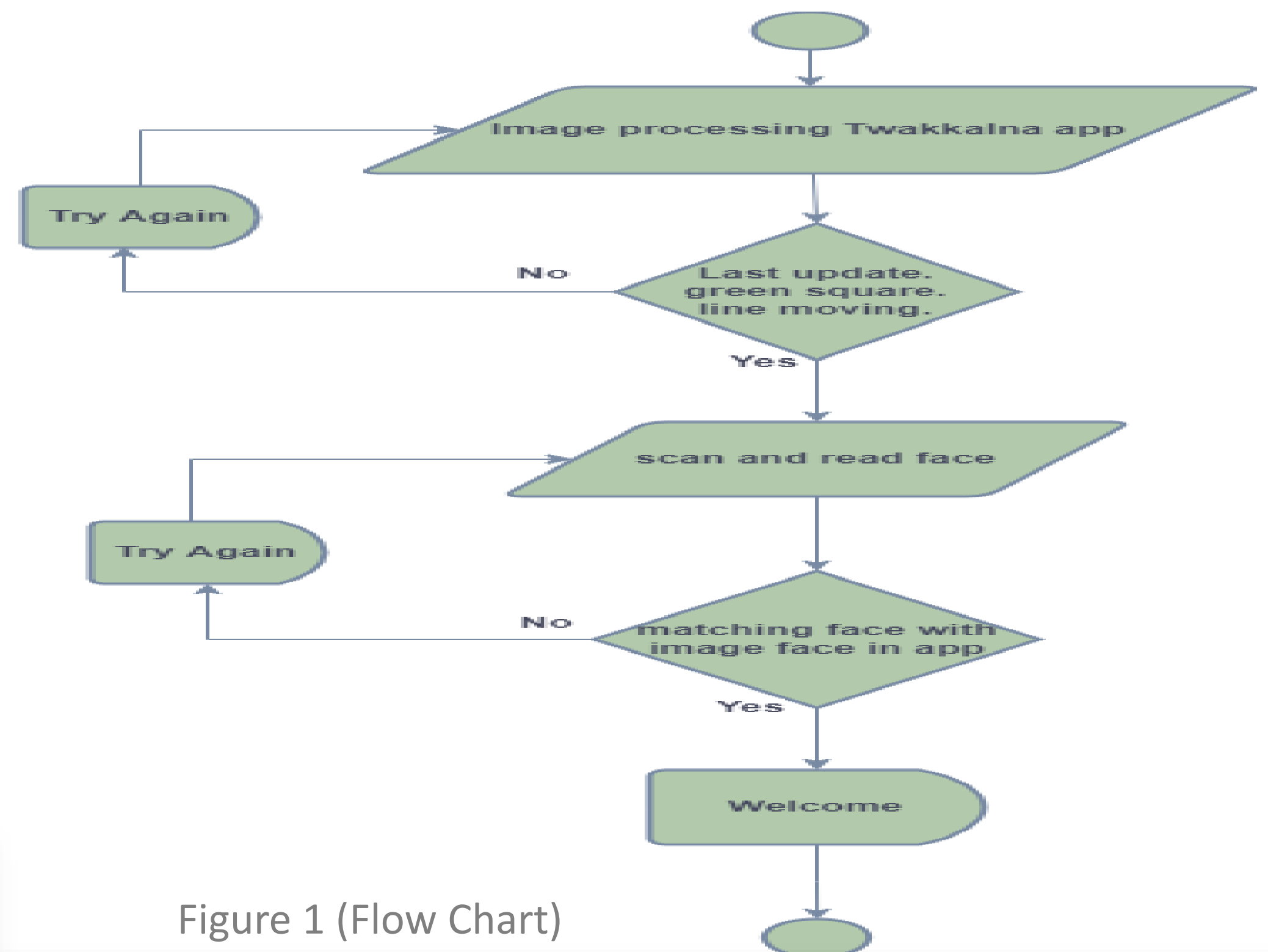

Figure 1 (Flow Chart)

Results

	Positive	Negative
Positive	24	6
Negative	0	20

Table 1 (Confusion matrix)

Conclusions

At the end of this project, security guards will be dispensed with to check visitors, reduce human errors and reduce costs, and it is possible to convert it to TinyML that works under very low power and is easy to use. There were some challenges, including the difficulty of finding a specialized camera for the mobile screen and some scalable limits.
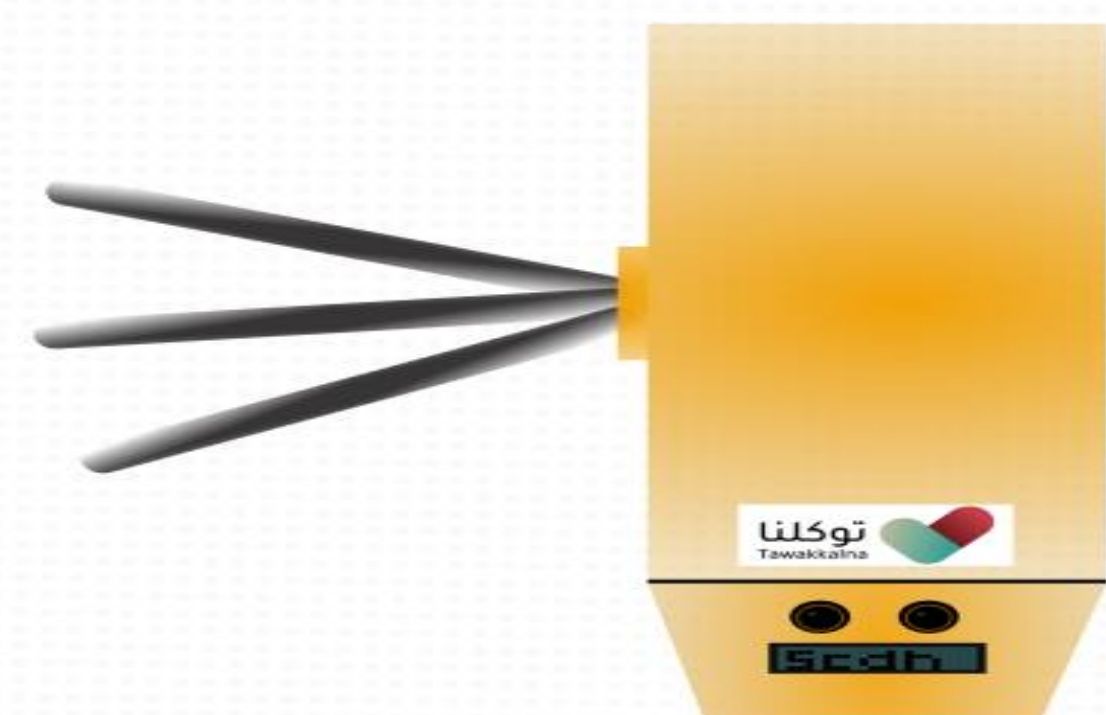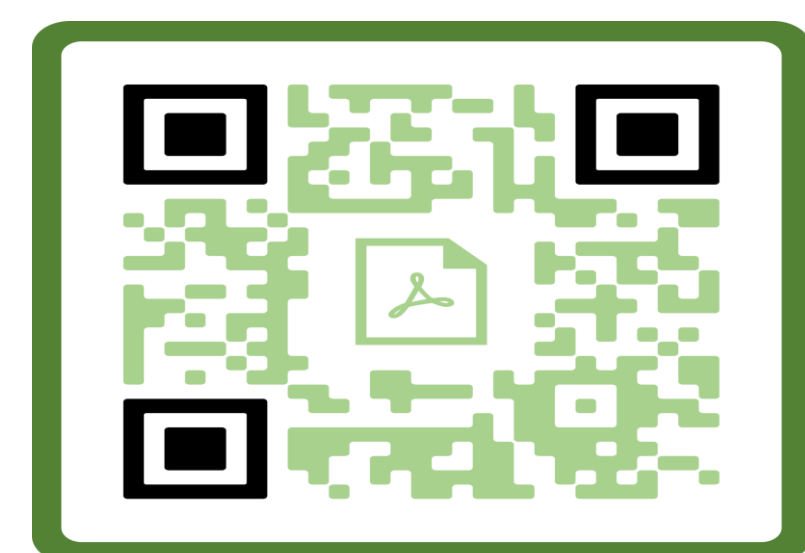

Figure 2 (Access gate)

Refernces