Smart Bridge

RISP2020

# Smart Guest Identifier With Remote Access Management

Project Report


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# 1-INTRODUCTION:

## 1.1-OVERVIEW:

These days people are spending most of their time at the office or are busy with some or the other work indoors. We may miss our guests who have come to visit us as we will not have any idea that someone has arrived at our doorstep. Also it is important that we only allow access to known people at our home. So this device application is developed to provide a solution for access management.

## 1.2-PURPOSE:

The purpose of this project is to come up with device application by utilizing GUEST RECOGNITION WITH REMOTE ACCESS MANAGEMENT. This device captures faces of the visitors waiting at the doorstep, recognizes them using IBM Watson Visual Recognition and sends the image to the mobile app of user. The user can see the image of person who is at their door and can open the door by using mobile app. The mobile app also has an emergency button which will send notification alerts in case of an emergency.

# 2-Literature Survey:

## 2.1-Existing Problem:

In today's world security of our home has become a major concern. With most people stuck at work or are busy indoors, if anyone tries to visit it may go unnoticed and we may miss some important guests that arrive at our doorstep. Moreover we also intend to not open door for any stranger.

## 2.2-Proposed Solution:

This project provides solutions to above mentioned problems by using Facial Recognition and Remote Access. Facial Recognition is used to capture the faces of people that arrive at our doorstep. In the backend image of detected face is sent to the user's mobile application.Then the mobile application allows the user open the door or restrict entry based on his wish to provide access. In case of emergency situation when the security of home is compromised the app provides the Emergency button which can be used to notify the emergency services.

## 3-Theoretical Analysis:

## 3.1-Block Diagram:

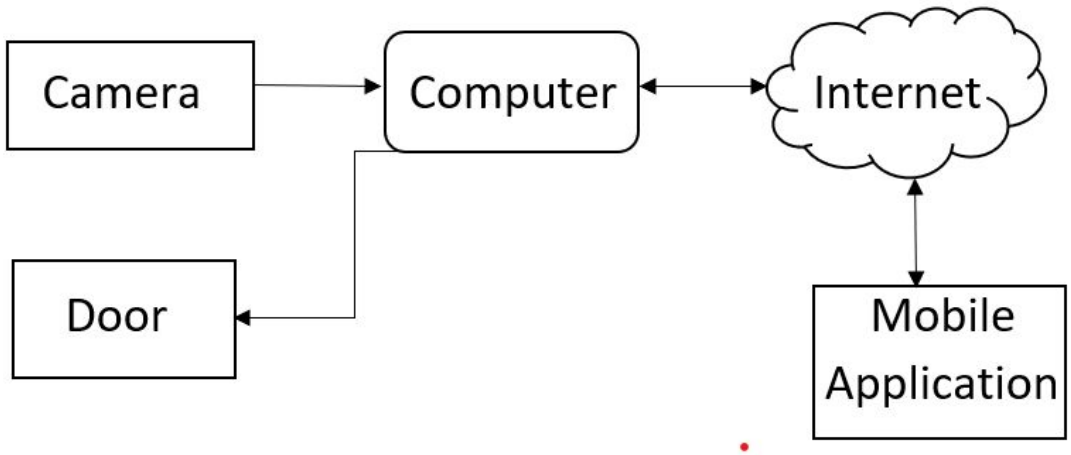



**Figure 1 : Block Diagram**

## 3.2-Hardware/Software Designing:

The hardware part of the project involves a camera which captures image of the faces using the open cv software. These images are then sent to the IBM visual recognizing service where the face is recognized, then the image sent to the IBM Cloud services (Object storage and cloudant DB) and then the image is sent to the user's mobile application which was developed using MIT app inventor. Other software like python for coding and node red for creating web application are also used.

## 4-Experimental Investigations:

There are several IoT challenges and issues that need to be understood before employing the right security solution that can dynamically vary with the situation .Based on certain critical situations such as IoT security applications, frequent authorization and authentication are necessary and could dynamically vary, potentially resulting in changes to the authorization of IoT devices. To address these issues, automated mutual authentication without user intervention is required in supporting users from remembering passwords for a large number of devices

## 5-Flowchart:

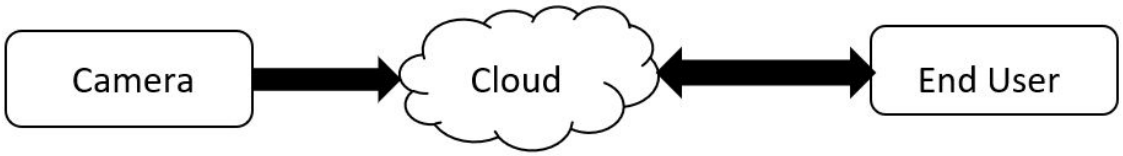
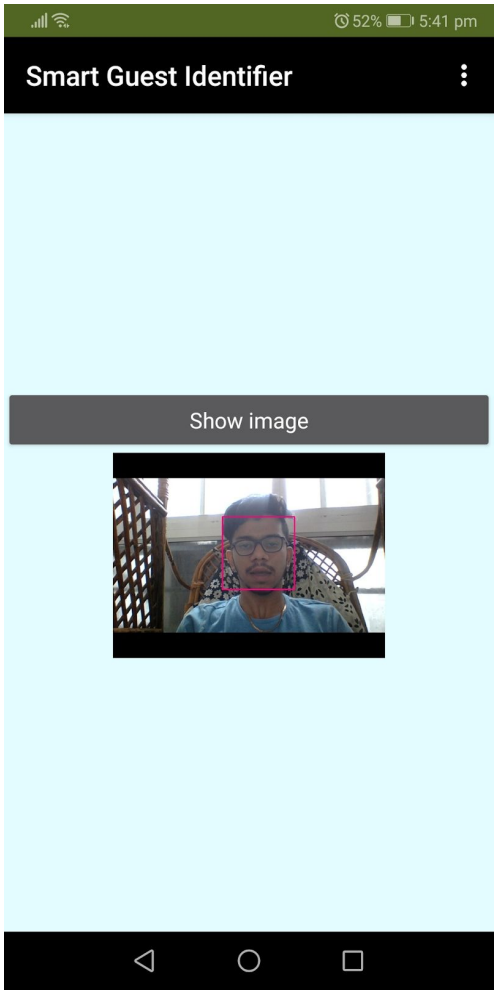



**Figure-2**

## 6-Result:

User can see the image of the person at his doorstep.



# 7-Advantages & Disadvantages:

## Advantages of IoT in Guest identification and remote access management

- The user can control the door remotely which reduces the hassle of user coming and opening the door.
- If the user is unaware that someone is at the door, he can be notified in the mobile app so he may not miss important guests.
- This project captures the face of the person at the door steps and send it to the user so the user can know who is at the door if the person is suspicious the user can inform the authorities.
- If the user is at work or someplace far, he can give access to guests remotely.
- If the security of user's home is compromised, he can notify the emergency authorities using the emergency button.

## Disadvantages of IoT in Guest identification and remote access management

There are also some downsides to the implementation of this IoT Project.

- There is a chance of these devices getting hacked which may lead to unauthorized access to users' home and there is a chance that the privacy of the user may be compromised.
- There is an issue of power sometimes there may be a power failure issue with the device which may lead to some serious problems for the user.

## 8-Applications:

- This project can be used to give Remote access to homes.
- This project can be used as security devices for homes.
- This project can be used for tracking the people who come at our doorstep.

## 9-Conclusion:

Thus, the proposed project could help in maintaining security of homes , helps the user to keep check of all the people that may visit him and make sure that the user will not miss any important guests and also gives the user the ability to give selective access to his home remotely.

## 10-Future Scope:

Many different security devices can be developed based on the concept of this project. Furthermore better intelligent algorithms can be created which will take the working of this devices to the next level.

## 11-Bibliography:


➢ **https://partheniumprojects.com/7763-2/**
➢ **https://www.springpeople.com/blog/future-scope-of-artificial-intelligence/**