CLOUD APPLICATION DEVELOPMENT

Image recognition with IBM cloud visual recognition

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ABSTRACT

- Today Students Attendancebecame more important part for any organizations/institutions. Attendance of students in the classroom is one of mark representation of total marking after finish the end of class some of the students are cheating. They are attendance while manual system by sign in the form of attendance. Furthermore, manual attendance is ineffective way while digital technology is available and widely used nowadays and waste of papers. The conventional method of taking attendance by calling names or signing on paper is very time consuming and insecure, hence inefficient. We proposed an automatic attendance system for students and lecturers.
- The class teacher locks the number and later others teachers can check the display for verification and a hardware based solution using Raspberry pi and PIR sensor, they opens the door to entry and exit of students in a class room.

INTRODUCTION

1.1 IMAGE PROCESSING

Image processing is a method to perform some operations on a picture, so as to induce an enhanced image or to extract some useful information from it. It is a kind of signal processing within which input is a picture and output could also be image or characteristics/features related to that image. Nowadays, image processing is one among the rapidly growing technologies.

DESIGN THINKING

- **CONCLUSION & FUTURE SCOPE**

Conclusion

The paper presents in innovative touch-less palm print recognition. The proposed paperless system offers several advantages like flexibility and user-friendliness. The paper is a review on the field of palm print recognition system. It highlighted on palm print recognition process step by-step, started from collect the palm print data which coming under the acquisition stage, then the remove unwanted data and noise by enhancement technique which is done under the pre-processing stage and the result of this stage is Region of Interest (ROI) which is very important part on palm print ,the next steps is extracted the feature from ROI of the palm print image and the result of this feature vector which is stored in database as template for matching propose. The next stage is matching which is to compare between input palm images with a template which we store at the enrolment phase.

TOOLS USED IN AI

- AI has developed many tools to solve the most difficult problems in computer science. Some of the AI tools are,

- Search and optimization
- Logic
- Probabilistic methods for uncertain reasoning
- Classifiers and statistical learning methods
- Artificial neural networks
- Convolutional neural networks
- Deep feed forward neural networks
- Deep recurrent neural networks

PROBLEM STATEMENT

a. No backup for the attendance records once the lecturer accidentally lost the attendance sheet.
b. Course mate help those who did not attend the class sign the attendance which also known as 'buddy-signing'.
c. Hard in analysing and tracking student performances based on attendance factor.
d. Student lack of knowledge and skills due to the poor attendance in attending classes.

APPLICATIONS OF AI

AI is relevant to any intellectual task. AI can be used in various techniques are pervasive and are too numerous to list here. Frequently, When a technique reaches mainstream use, it is no longer considered artificial intelligence and this phenomenon is described as the effect. Some of the applications of AI are,

1.Healthcare

2.Automotive

3.Finance & Economics

4.Cyber security

5.Law-related professions

6.Military

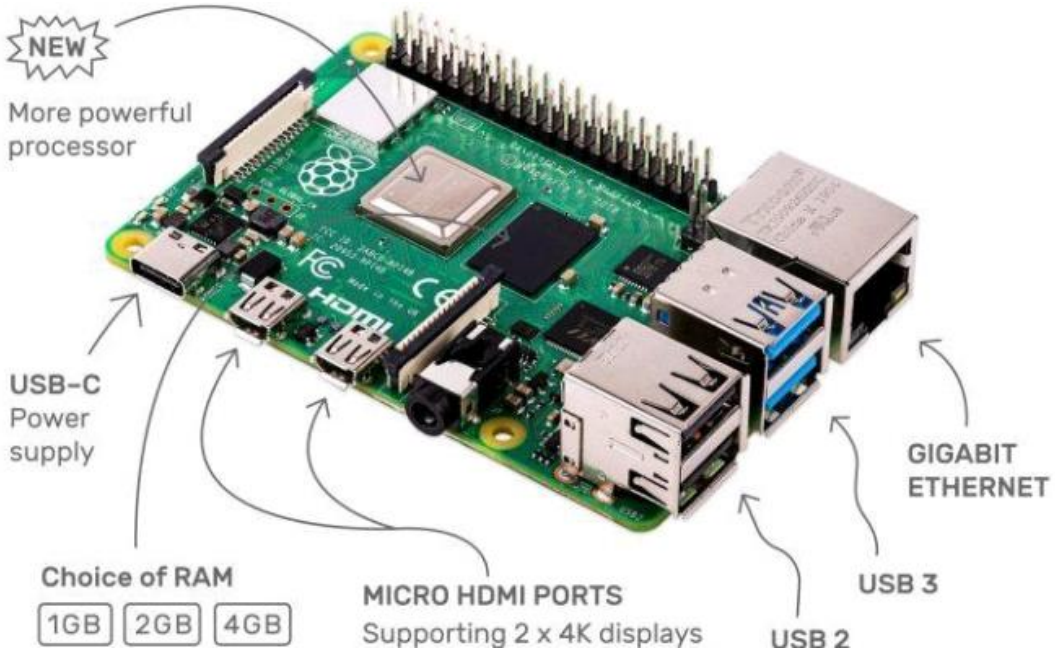
7.Advertisement & Social media

APPLICATIONS OF RASPBERRY PI

- Desktop PC

*Using Raspberry Pi, the micro SD card, and a power supply, a simple desktop can be made. We would also need an HDMI cable and a suitable display, maybe an old monitor. Keyboard and mouse are also needed.

- Wireless print server
- Media Usage
- Game Servers
- Robot Controller
- Stop Motion Camera
- Time-lapse Camera Combining
- FM Radio Station
- Web Servers



Raspberry pi 4

PASSIVE INFRARED SENSOR

A passive infrared sensor is an electronic sensor that measures infrared light radiating from objects in its field of view. They are most often used in PIRbased motion detectors. PIR sensors are commonly used in security alarms and automatic lighting applications A PIR-based motion detector is used to sense movement of people, animals, or other objects. They are commonly used in alarms and automatically activated lighting systems.

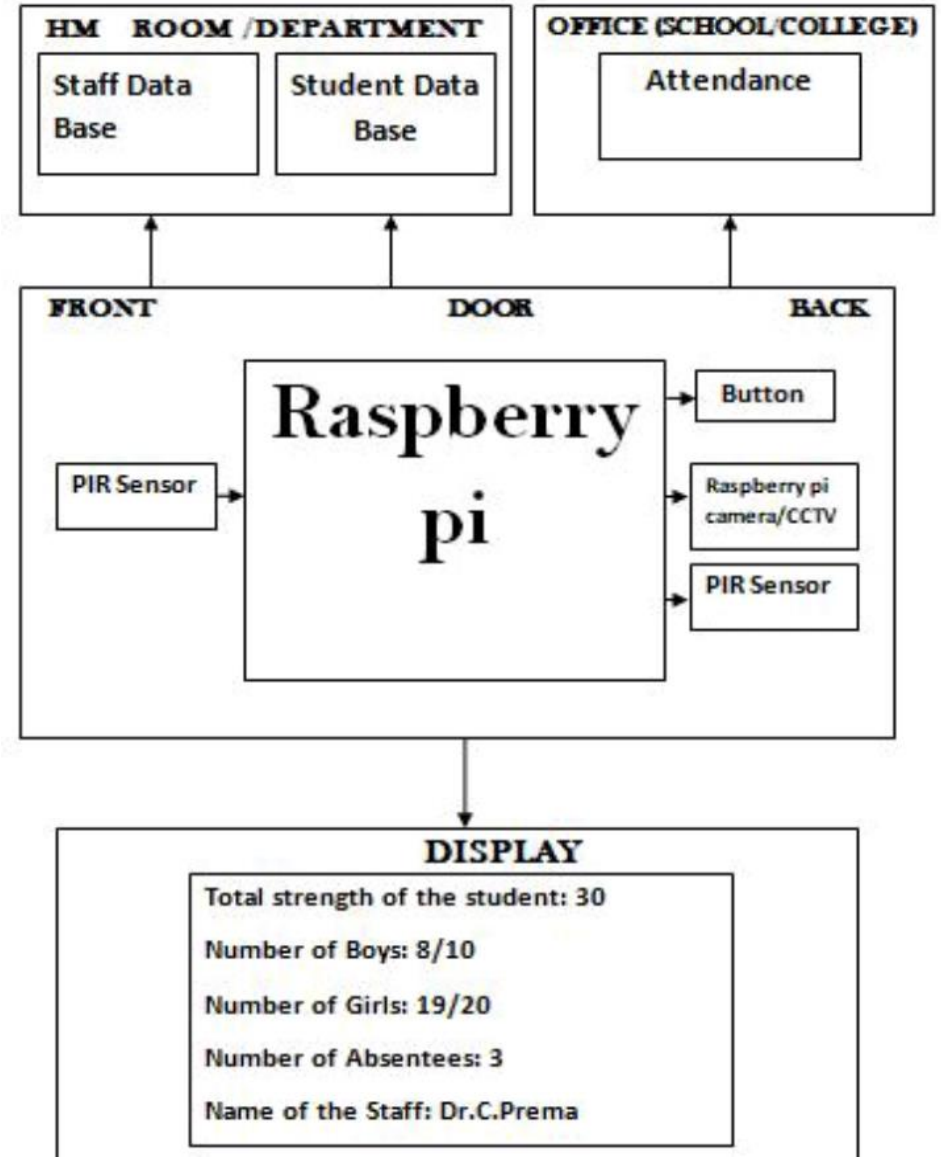
Passive Infrared Sensor

HARDWARE REQUIREMENTS

It offers ground-breaking increases in processor speed, multimedia performance, memory, and connectivity compared to the prior-generation Raspberry Pi 3 Model B+, while retaining backwards compatibility and similar power consumption. For the end user, Raspberry Pi 4 Model B provides desktop performance comparable to entry-level x86 PC systems.

This product's key features include a high-performance 64-bit quadcore processor, dual-display support at resolutions up to 4K via a pair of micro-HDMI ports, hardware video decode at up to 4Kp60, up to 4GB of RAM, dual-band 2.4/5.0 GHz wireless LAN, Bluetooth 5.0, Gigabit Ethernet, USB 3.0, and PoE capability (via a separate PoE HAT add-on). The dual-band wireless LAN and Bluetooth have modular compliance certification, allowing the board to be designed into end products with significantly reduced compliance testing, improving both cost and time to market.

BLOCK DIAGRAM



Block diagram of Classroom Attendance Display

SOFTWARE REQUIREMENTS

OpenCV (Open Source Computer Vision Library) is an open source computer vision and machine learning software library. OpenCV was built to provide a common infrastructure for computer vision applications and to accelerate the use of machine perception in the commercial products. Being a BSD-licensed product, OpenCV makes it easy for businesses to utilize and modify the code

Features Of OpenCV

1.Automatic Memory Management

2.Automatic Allocation of the Output Data

3.Saturation Arithmetic.

4.Input Array and Output Array

5.Error Handling

6.Multi-threading and Re-enter ability

FUTURE SCOPE

The project scope of this project is to develop a hybrid student attendance management system through the palm print scanning. In this project, desktop-based student attendance system will be developed for a purpose just to obtain the palm print of students who attend the class. In addition, web-based student attendance system will be developed for purposes to display the attendance status/condition of ever student, generate reports related to the student attendance, and etc. Besides that, proper planning will be carrying on in order to perform this project by using the project methodology that had been chosen.