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INTELLIGENT INTERACTIVE MIRRORR

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Abstract - *The task shows the plan of a shrewd gadget Smart Mirror. The shrewd mirror here is fundamentally for home climate. These brilliant mirrors are not generally utilized because of cost or high necessities of equipment. The proposed shrewd mirror will be worked by Raspberry Pi and will be associated by genuine world through web. The savvy mirror will comprise Raspberry-Pi, LED screen, speakers, amplifier with two-way mirror and acrylic glass. With the assistance of voice acknowledgment API the mirror will speak with the client through voice orders and reacts them in like manner. The mirror will feature some fundamental conveniences like time, nearby news, climate, and so on The mirror will likewise fill some development role, for example, Home Automation utilizing Smart Mirror. This mirror with man-made reasoning will give an unprecedented encounter to the client.*

Key Words: Intelligent Interactive Mirror, Raspberry pi, Open CV etc.

1.INTRODUCTION

Heterogeneous figuring gadgets with remote availability which installs ordinary items are being utilized in various exercises are giving an entirely different encounter. The intelligent figuring, voice advancements, fake insight are giving straightforwardness in life in extremely secure and advantageous way. In each house there is a mirror and we look at the mirror regular and discover what we look like. The brilliant reflect is an alteration over a typical mirror with interconnected shrewd gadgets and advancements with inserted insight which offers progressed usefulness like time, news, climate, showing maps. This mirror will help in creating brilliant homes and give an extraordinary.

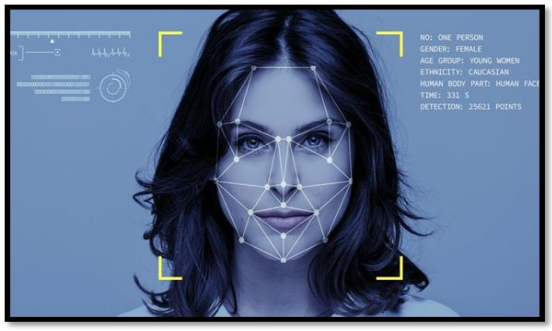
1.1 Related Work:

1)Face detection and recognition:

The Intelligent Interactive Mirror leverages face recognition technology to match the user's face to their profile. The user creates a profile the first time his face is detected by the mirror and is not recognized as an existing user. The face identifier utilized is a Convolutional Neural Network (CNN) based article finder prepared utilizing the Max-Margin Object Detection misfortune.

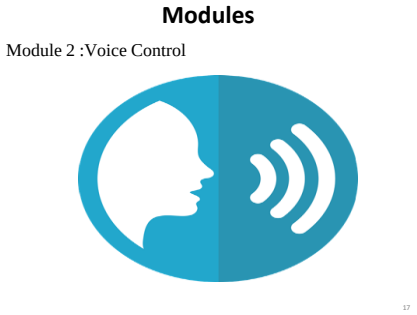
Face attributes:

The Intelligent Interactive Mirror utilizes the perform various tasks learning approach dependent on convolutional neural organization (MTL-CNN) to mutually assess different facial ascribes from a solitary face picture proposed.

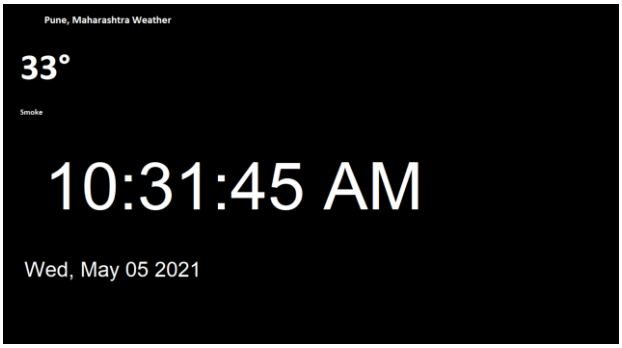


2) Voice Control:

The system supports interaction between user and system. Users can control all functions using voice commands, including registration, authentication, searching, and signing out.



3) Day, Date, Time:



2. PROPOSED SYSTEM

The prerequisites and determinations of the Intelligent Interactive Mirror took from individuals' gadgets that they utilize regular including PCs, tablets and cell phones. This mirror is coordinated with comparable elements from each to give the client what they would expect out of an advanced 'savvy' gadget. Figure 1 shows the framework engineering of the savvy reflect idea. Clever Interactive Mirror is a basic mirror that has been upgraded with the assistance of innovation. The point of the task is to give a simple way to clients to get to data, for example, news sources, climate, traffic alarms, and so forth.

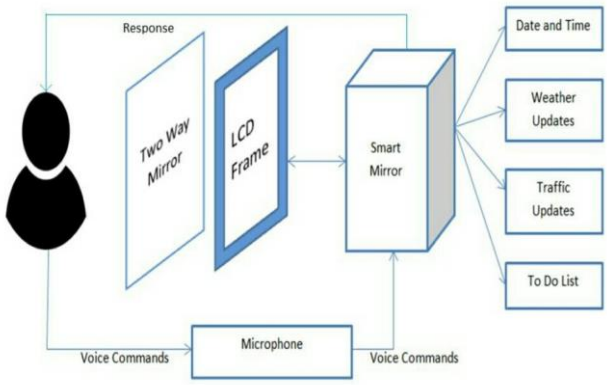


figure 1 : System Architecture of Smart mirror

The Intelligent Interactive Mirror CPU is the Raspberry Pi 3 PC. This is the place where every one of the modules will get introduced. The CPU takes in facial data from the camera, runs that data through the facial acknowledgment model and distinguishes the client. Later the face location it would recover the data customized to show for that client. At long last, the framework extends this data on to the associated Screen.

2.1 Requirements:

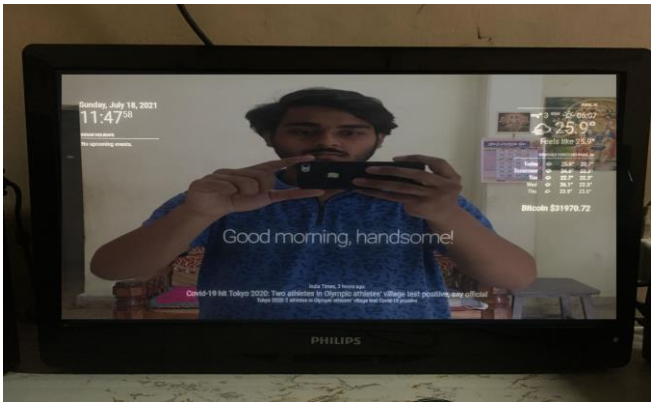
A) Software Requirements:

I) RASPBERRY PI:

Raspberry Pi projects are utilized for showing essential software engineering in schools and in emerging nations. Afterward, the first model of the raspberry pi became famous, selling outside its market for utilizations like mechanical technology. It is generally utilized in numerous spaces, due to its minimal expense, measured quality, and open plan.

II)MIRROR:

A mirror known as a two way reflect is utilized in this undertaking. A two mirror is extraordinary when contrasted with a customary mirror. The two way reflect isn't painted with a murky shading on the back , rather it's left immaculate. This gives the property of the mirror being intelligent on one side and straightforward/clear from the other. Consequently the two way reflect goes about as a mirror as long as there is no light sent from the rear of the mirror.



III) RASPBERRY-PI CAMERA:

The Raspberry-Pi camera Module utilized here to take high definition video, just as stills photographs. The Pi camera works with all models of Raspberry Pi 1, 2, 3 and 4. It very well may be gotten to through the pi camera module, and there are different outsider libraries exceptionally worked for it, including the Pi camera python library.

IV) MICROPHONE:

We can communicate with the Intelligent Interactive Mirror through an mic. A receiver is utilized to drive the voice acknowledgment capacities of the gadget. USB receivers must be utilized on the grounds that the Raspberry Pi doesn't have normal mouthpiece input.

B)Software Requirement:

A) Python :

Python is an undeniable level and deciphered programming language. It is well known in the Raspberry Pi people group to program raspberry pi and it has heaps of help and predefined libraries. We utilized it to foster different modules like face recognition and voice order.

B) OpenCV :

OpenCV (Open Source Computer Vision Library) is a PC vision and ML programming library. CV was worked to give a foundation to applications and to speedup the utilization of machine knowledge in the business items. As CV is authorized, the library makes it simple for organizations to use and change the code. OpenCV has countless calculations. These calculations can be utilized to perceive faces, recognize different articles, group human activities in recordings, track moving items and so on The library is utilized big time by organizations, scientists and by the public authority. OpenCV has C, C++, Python and Java interfaces and it additionally upholds Windows, Linux, Android and Mac working frameworks. OpenCV is composed hereditarily in C++ and has a templated interface. This venture utilizes the face acknowledgment calculation from the OpenCV library to perceive faces.

C) Raspbian OS:

Raspbian is a working framework dependent on Debian upgraded for the Raspberry Pi equipment. Raspbian accompanies more than 35,000 bundles, pre-accumulated programming packaged in a pleasant configuration for simple establishment on Raspberry Pi PCs.

3. CONCLUSIONS

Our framework coordinated the idea and techniques that have been executed in many existing frameworks a savvy reflect framework. It is a clever use of making a brilliant cooperating framework. The framework is solid and simple to use, in this intelligent framework; we have been concentrating on an intuitive framework for home. There exist many advantages from the savvy reflect. A help arranged design has been adjusted for the turn of events and organization of the different administrations, where the mirror interface, the news channels all utilization Web administration correspondence instruments. By using sensor, we can lessen the power utilization since the mirror will show data just within the sight of a human.

The future model is ready with potential and most likely hearty as far as usefulness. It utilizes voice orders to switch between each perspectives and signals to connect with content. Rather than restricted to a home we can carry out the usefulness to a glass material. So it can have a wide scope of uses like one can arrangement this usefulness to a glass table, which he utilized in office. This will help him to have any familiarity with notices from many locales simultaneously in a solitary screen. Another application is that this usefulness can be arrangement in broad daylight places.

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