Proposal of Smart Mirror using Raspberry PI

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Abstract- This paper discusses the designing and workings of Intelligent mirrors, which continue the works today and will take its place in the future technology, provide both mirror and computer aided information services to its users. These mirrors work just microcontroller cards onboard. These are the system which connects to the internet and display it on the mirror. It sometimes would also be handled by Raspberry Pi, Microphone, and Led. These devices are covered with a sheet of reflective mirror.

Keywords – Smart Mirror, Raspberry PI, Artificial Intelligence, Weather, Time, News, shutter.

As computer as these are the artificial intelligence for keeping an eye to the house. It shows various things on mirror such as time, date, weather, current temperature and news of house environment. this information we can seen is only possible because of the

I. INTRODUCTION

Day after day we are moving towards a more modern life. Changing technology is making our life more modern. So this paper describes the voice controls mirror called “Magic Mirror”. These mirrors are the wireless connected physically objects which are able to work only through internet. Now a day’s these are not only used in houses to detect thief and to know the house environment but also used in many industries. These are just like the sensors used to know the time, date, temperature, news etc. it shows all the data simultaneously. It acts as a watchman in absence of any member. Android and Adriano are two different ecosystems Used along with the concept of IoT. It gives a caution through alert message when thief enter in home the PIR sensor will detect and give the caution or the alert message. A common thing needed for building smart mirror are using high quality one way glass, a LED monitor frame to hold glass and monitor and a web browser with python so that we can provide the features and drive the display. Hence, the project has been developed with the idea of making home smart to save time.

II. LITERATURE SURVEY

As the time is going and going , people are devising new and advanced technologies and moving towards a more modern and machinery society so that people can make their tasks more easy.

In 2003 PHILLIP made their mirror TV using the same characteristics. His product was just a Normal TV which was put behind a two – way mirror so that TV will look just same as a mirror when turned on and will also work in the same manner when a TV is turned on.After many efforts.

In 2005 PHILLIPS declared his research project MYHEART which shows The idea which shows the idea of an Informative mirror. And on the other side, their original Mirror TV was simply a TV that was well functioned as a mirror. The project MYHEART was Originally made to show various medical statistics. Hence, the project requires nobody Electronics so that one can collect and use the data. James law cyber texture developed and designed a commercially sold smart mirror

In 2011. This Mirror was just like the smart mirror. This contributes of a 32” LCD – display covered by 37” LCD – display covered by 37” and a 2 – way display can show time, date, weather, temperature news etc. The smart mirror has many input methods like remote controller.

Project made by FRANCO CHIARUGIETAL in 2013 describes the motivation behind the Project. the idea was to express features related to stress, anxiety, and those features to qualify an individual well – being. The features would be expressed from multisensory devices. The Would be collected in the form of videos, images 3d face scans breath samples.

In the year 2014, consumer electronics show in introduced their smart mirror concept. It Explained the gesture control as an input method. TOSHIBA showed their smart mirror to Be used for the purpose that it would serve in each room . Bathroom smart mirror would show Information such personal fitness monitor.

Then, in 2016 Microsoft introduced their smart mirror on which they have used to work. Rather than selling a finished product users have the option to use their own mirror as a do – it yourself mirror product.

Then after several practices a company called NEW KINPO GROUP invented their take on Smart monitor called HI – MIRROR in 2017. This mirror has a camera to monitor on your Skin and give you the list that what to improve. It also uses the facial recognition to log a user’s Skin firmness, clarity, softness, brightness and health on day to day basis.
III. PROBLEM STATEMENT

But, the main problem is with existing mirror is only shows the object kept in front of that or face of human. People also waste too much time in standing in front of a mirror. So we are developing a project which overcomes to time wastage.

IV. BRIEF DESCRIPTION

The full system can be divided into four sections.
• The Raspberry Pi 3.
• LED monitor
• Acrylic Mirror

4.1 The Raspberry Pi 3.

After the magic code will be given implements on it to run the application, the monitor will get input from Raspberry Pi 3 using HDMI cable and voice command can be given using a microphone.

4.2 LED Monitor

LED display is a flat panel monitor which uses a lightning diodes called as pixels for display videos. This brightness is used when they are visible in the sun when used outdoors but recently that they are also used on public common vehicles. Also used for variable message signs on highways. We are using 2 way mirrors for the purpose of dual functionality. It will attached to the top of the monitor and on a wooden frame to hold the in tire system together the two way mirror acts as a reflective mirror when the system switched on and the data can be simultaneously displayed while the mirror is switched on.

4.3 Acrylic Mirror

When there is nobody in our home it is switched on to security system by using sensors and viewers to detect the human presence. when the person enters the house and passes through the mirror the mirror captures the image of that person and store it in the drop box also it inform the owner of that mirror updating the image of that person from the drop box. In this way the mirror can also be used as a security system.

V. METHODOLOGY

• As same as mirror

We can see our pictures as same as we can see in a normal mirror which looks in one way mirror with high concentration.

• Information giving mirror

Time, date, weather forecast and many more details are searched and displayed on the mirror. News in searched from various websites. DHT22 is a sensor used to know the temperature and humidity. Hence in other way it is used as an information giving mirror also.

• Security Keeping mirror

When there is nobody in home, the smart mirror can also be used as a security guard or a watchman to detect the movement of a person when the person passes from the mirror that mirror captures in the drop box in this way it can also be used as a security system.
Algorithm for Information system
- Step 1: Switch on the power supply.
- Step 2: Get the date, time, and weather details from predefined URL.
- Step 3: Get the news from www.zeenews.com
- Step 4: Write down all the respects in code section to be displayed on mirror.
- Step 5: Exhibit it on mirror via LCD monitor.
- Step 6: Switch to thief detection mode using VNC Viewer.
- Step 7: When power supply is of no use switch it off.

Algorithm for Thief Detection
- Step 1: Start
- Step 2: Setup the Camera
- Step 3: Verify whether PIR sensor output is high or low.
- Step 4: Go to step 3, if it is low.
- Step 5: Camera is turned on, if it is high.
- Step 6: Image is captured and stored on raspberry pi.
- Step 7: Check for Wi-Fi connection.
- Step 8: If it is connected, image is uploaded to drop box.
- Step 9: Notification is updated in drop box.

VI. RESULTS
A revolutionary smart mirror system that provides information like time, date, accurate temperature and humidity, and latest news while looking and grooming in front of mirror and also helps in thief recognition.

REFERENCES