IOT Based Smart Mirror

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***Abstract*—** The smart mirror is an IOT Based technology in which we have to use the sensor to make it smart as compared to normal mirrors. Smart mirrors are using hardware technology such as LED for illumination, LCD Display for information, internet connection, touch capabilities, and operating system. A smart mirror is a two-way mirror with anelectronic display. This mirror helps give more information in one place. This mirror improved human's awareness of their technology.

This mirror can provide multiple facilities for humans and can be used for different purposes like Security purposes, Timesaving, etc. This mirror can show time, weather, date, day, etc. In this project, one more facility is available which is for face detection. Sometimes it's very difficult to identify the known person. So, we can use this mirror at this time. This mirror gives information to us by day to day without any human interaction. On this smart mirror, Users can easily be stored and update their data. It has to ability to detect the user's face and give information to that person. We can use this device when we have too short of time for gaining different information with the help of multiple devices

The smart mirror aims to provide an easy way to information services such as news feeds, weather, clock, etc. And it is better than comparing a normal mirror for perform multiple tasks.

Keywords—smart mirror, LCD Display, two-way mirror

I. INTRODUCTION

The smart mirror is a modification of a normal mirror with interconnected smart devices and technologies with embedded intelligence smart homes and provides a unique environment to the users. The smart mirror is a two-way mirror with an electronic display behind the glass. The display can show the viewer different types of information in the form of widgets, Such as weather, time, and date. The raspberry Pi is programmed using python and connects to a monitor with an inbuilt speaker to provide an onscreen interface and voice assistance. Every day entities become "smart" as a result of the IOT, which allows them to send information and automate tasks without the need for human intervention (Akshaya, Niroshma Raj & Gowri 2018). The smart mirror is an internet of things (IOT)- based intelligent technology that can be used to facilitate and improve the user's awareness of numerous functions. With the help of interactive computing systems and embedded systems, the level of living and quality are changing dramatically by using this smart mirror. The purpose of a mirror in day-to-day life is to observe and interact with us. The interactive mirror is a development effort to augment the mirror with proper fixed information for offering better features that provide personalized data such as date, weather, and time corresponding to the location,Usually, the sole purpose of the mirror is for personal admiring oneself, decoration, and architecture. This odd time can be managed efficiently. The smart mirror is embedded with various electronic features.

II. LITERATURE REVIEW

In this Research paper, a smart mirror is made by Raspberry pi. The intelligent smart mirror is made of raspberry Pi (Shravani Nerli, Smita & Venkata Siva Reddy, 2021). Systems connected with Raspberry Pi to the network via wireless connections, and the API network interface helps to give information about weather forecasts from the specified dressing index date, time, and other information and the information on the display may be read by the user and can interact with the Smart mirror like asking about weather information and date and news. The designed intelligentmirror has the advantage of simple operations, low cost, and application prospects (Sirinayake, Dasanayake & Rodrigo, 2021). A smart mirror is a project that showstime, date, temperature, news, and weather and acts as a mirror. This paper is mainly about how Smart mirror work so written. We can control some components of the Smart mirror through voice commands with the help of a microphone (Yusri, Kasim, Hassan, Abdullah, Ruslai, Jahidin & Arshad, 2017). Students & and other persons have put many features of Smart mirror in the study of the Smart mirror project. Such as telling time, listening to songs, showing weather reports, and giving information about temperature and news, etc. Using an intelligent mirror, the users can easily keep track of their daily activities. Smart mirror also helps with somehousehold chores. You can record your image in the intelligent mirror. Can it be used in homes as well as in the office, company, showroom, mall, etc.? We can also use smart mirrors for security purposes. This mirror is made of a combination of artificial intelligence technology and IoT (Piyush Maheshwari, Maninder Jeet Kaur & Sarthak Anand, 2017)). An intelligent mirror has been made which detects the person's face identifies it, and then shows the person's data to the user. My personal life has improved by using a smart mirror

III. METHODOLOGY

The smart mirror displays the information following the user command as well as works as a regular mirror. The monitor is connected to the Raspberry Pi, the required real-time data update is accessed by the user via Wi-Fi. A wooden frame isalso attached to the LCD monitor.

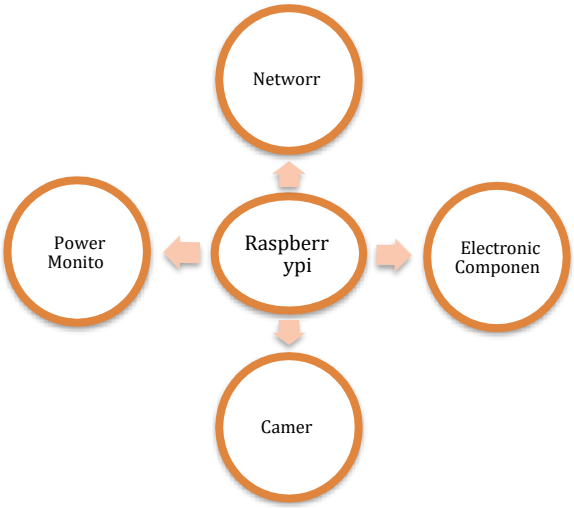

Fig. 1. Raspberry pi connects devices

The monitor screen is used to display the information for the user such as date and time, weather, calendar, daily news updates, or headlines displayed on the mirror.

IV. FEATURES

A. ***Weather***

It provides weather forecasts such as high and low temperatures, chances of rain or snow, air quality, and humidity. So, we can plan our routine according to the weather and prevents the changing weather problem and this saves our time because we do this at the time of getting ready by seeing the mirror.

B. ***Time***

At the time of getting ready for any work, we want to check the time for ready on time. So, it helps in seeing the time at the time of getting ready.

C. ***Date***

It provides information on the current day, date, month, and year.

D. ***Calendar***

By using this feature, we can check the information of any day and we can plan meetings in the future by selecting the right day for a meeting or any important work.

E. ***Face Detection***

This feature helps to detect who is in that area and displays the content that matches the particularperson, and we can also use this for information on how many people are present in that particular area.

V. FUTURE SCOPE

The scope of the study for this project is to develop a good solution for the development of a smart mirror. In today's daily life, a person does not get time for himself. That's why a smart mirror has been created. So that the user can reduce the need to take out time separately, smart mirror provides essential information without the use of a phone. The smart mirror automatically turns on when there is a person inside the room and turns off when no one is inside. Due to this, the time the person turns on and off the smart mirror is saved. Updated news, time, calendar, and weather report notification on the display when the smart mirror is on. Information is not shown on the user's face but shows in the corner of the display. General information can be shown on the smart mirror, which the user receives using his phone or smart watch, tablet, etc.

VI. CONCLUSION

The smart mirror acts as a smart home control device. It is a future-based system that provides facilities to users for an easy-to-use mirror interface, allowing users access to customizable services in a highly interactive manner, which performs other tasks simultaneously. This mirror works both as a normal mirror as well as a mirror showing daily notifications to the users. The mirror is used to display time, weather, date, etc. The user can interact with the mirror has the advantages of small size, simple operation, user-friendly, personalized user interface, and many other merits which are suitable for multiple applications like college, home, office, etc. In the future, Smart Mirror will be made smarter by upgrading AI. There is a great scope to improve AI. Soon, normal mirrors will be replaced by smart mirrors if they can be made affordable for users. Overall, the proposed smart mirror system incorporates various functionalities to grant users access to personalized information services.

V. OUTPUT

This is the result, or we can say the output of our project. This project provides the daily small information which is needed in our everyday life. We can catch the daily updates in a short time and get ready for our work at the same time.

So, it saves a lot of time and gave daily updates which we need on regular basis.

Fig. 2. Smart Mirror interface

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