

Smart Mirror with Google Voice Assistance

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Abstract: It's a design based on the raspberry pi 3 that is equipped with high technology and innovative applications and is the latest design in place of the mirror that we use today. Usually, an individual becomes difficult to find enough time in the day to accomplish all the tasks that are part of life, so multitasking becomes necessary. In the morning it is an important time to prepare you in front of the mirror, which is often slow and time-consuming. This Smart Mirror is able to handle a variety of problems in doing business in the same time. The goal of this project is to create a product that meets the needs of a person when preparing and receive information such as news, weather, time and other useful information. This mirror is designed with the ability to collect this information during the preparation of a morning daily life in order to more efficiently and easily. To make this more interesting mirror, we can develop our products to include a variety of control methods, as well as music and other entertainment.

Keywords: Raspberry pi, Google voice assistance, Magic mirror.

1. Introduction

The internet transforms people's lives more ease by connecting with the information. Technology and science have shown widespread improvement in terms of achieving the goal of designing and expanding things that can provide comfort to human life and make it easier.

This project is aimed at addressing the major causes of the community as it is often wasting a lot of time in the mirror when it comes to makeup and grooming without knowing any information such as weather conditions, time, traffic info and latest news. "Smart Mirror" is designed to achieve the goal of helping and pleasing an individual in getting information while improving his or her personal appearance. Smart Mirror" comes with *Voice Assistance* application which is a voice service that is able to answer all user questions.

2. Scheme

Smart mirror is designed to achieve the goal of helping and pleasing an individual in getting information while improving his or her personal appearance. It displays information to know such as time, weather, news and other things like traffic information. "Magic Mirror" comes with voice assistance which is voice service that is able to answer all user questions.

This design is a design that has two-way communication between the user and the mirror itself. Just using the word this voice service system will analyses questions and instructions from users. Hence, community life and usage will be easier as well as reaching the goal of being a smart and intellectual user in internet usage.

Different components such as raspberry PI, monitor control board, LED circuit, power source are assembled. The monitor control board and raspberry PI are connected through HDMI, A Wi-Fi switch is used to control the AC power source.

The components are enclosed inside a frame, the assembled display and other components are placed beneath a glass panel, which is a one side film panel that can reflect the information displayed on the display. The raspberry pi is the backbone of the whole setup. LED strips can be placed on either sides, it's an optional add on, it can make the mirror more attractive and appealing. The enclosed components will not be visible at the same time the display contents can be viewed. This interface thus provides a fun filled at the same time an informative experience. The overall circuit is fairly simple at the same time can be understood and made future modification.

The software part of the project mainly involves the flashing of Google services and acquiring the Google credentials. This step is the most vital step in the software area of the project. Once we get this step done our project will have an access to the Google services that are require for its functioning.

3. Block diagram

The smart mirror is worked on the basis of personal assistance provided by google voice service and the working diagram is given below.

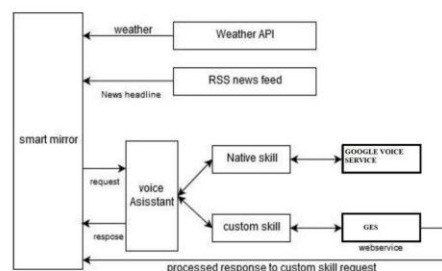


Fig. 1. Working of smart mirror

The working of the smart mirror is explained as when the mirror connected to the network, it will collect the data required to be displayed. It will collect the weather details using the weather API which is provided. And also collect the news feed from the particular news provider using their RSS feed. Also it's include calendar details also.

The working of the voice assistance is by, it will collect the request from the user and will process the request and sent to the GES and give back the required reply to the user.

4. Smart Mirror Setup

The mirror setup is a simple process. In order to boot up the raspberry pi board, raspian OS has to be installed. Here the OS provided the google AIY project is used. Downloading the setup from the webpage and boot it into SD card using any third party flasher. After flashing the disk image into the SD card, boot the CPU using it. Next stage is to create the Google credentials in order to activate the voice service. This is done in the google API credentials console. Through which we have to create the client ID for our project. After creating the ID, activate the voice service. The will allow as to talk to the google voice assistance. After activating the service, make to system into auto bootable.

After setting up voice service into the system, we have brought the mirror interface in to it. In order to do that, we have install magic mirror [2] software into the system. Direct installation can be possible through the terminal of the system. After installing the software, customize it as required.

Add modules like calendar, weather, news feed, time etc. adding of the calendar module is by linking the google calendar with it. So that we add event by speaking with the voice assistance. Similarly, the weather is added with weather API of your region as required.

News feeds are collected by linking the module with RSS feed of particular news source.

We can also include services like SPOTIFY in to the mirror interface. Which will display the track that playing and can access it with the voice service.



Fig. 2. Working mirror interface

5. Result

Designing of a smart mirror device that has a voice assistant implemented in it is done here. The backbone of the device is the Raspberry pi. The circuit mainly consist of five important components. It includes a monitor control board, RASPBERRY

PI, LED circuit, 12v &5v power supplies, LCD panel The control board & the raspberry pi is connected via HDMI 12v power supply powers the monitor control board & the 5v powers the raspberry pi. An LED circuit is used as an optional component for providing a LED indication, its draws the power required from the 12v power source.

A Wi-Fi switch is included for providing a remote access to the AC power source. Google APIs requires the access to Google credentials. Create a new project using our Google account. Enable the Google assistance API. After enabling create client ID credentials by configuring with our Email and project name. Download this client ID and move it in to configuration.

The major advantages of the device can be concluded as follows: Simplify the lives of communities and individuals known to spend a lot of time in front of a mirror. Innovative and fun filled way of information display.

Virtual assistant implemented in a more convenient way, making the traditional mirror experience more productive. The Internet transforms people's lives more ease by connecting with the information. Technology and science have shown widespread improvement in terms of achieving the goal of designing and expanding things that can provide comfort to human life and make it easier.

6. Conclusion and Future Scope

The project is aimed at creating a smart futuristic mirror, which provide natural interaction between user and the mirror. View mirrors are provided as a display monitor that shows all the important data that is useful to the user. "Smart Mirror" is also equipped with voice services capable of giving something unusual. There is a two-way communication between the user and the mirror itself. In future work, we will investigate how the context of the user and the environment can be used to provide optimal service experience in a home environment. This system can be built more useful to users by upgrading more functions such as setting integrated light, speech processing and face recognition.it has been found that as a result of many studies, an average person spend a maximum of two hours in front of normal mirror.in the busy world that we are living today, we can make the time that we spend in front of a mirror more productive and useful. Mirror form a smart futuristic provide natural interaction between user and the ambient house.

References

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