Smart Mirror

Santosh B¹, Sheekar Baradia², Mohammed Muzamill³

¹Professor, Department of Computer Science, PDA College of Engineering, Kalaburagi, India
²Student, Department of Computer Science, PDA College of Engineering, Kalaburagi, India
³Student, Department of Computer Science, PDA College of Engineering, Kalaburagi, India

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Abstract -*The Smart Mirror introduce the design and the development of a futuristic Smart Mirror with an artificial intelligence for the home environment as well as for industrial use. The smart mirror would collect real world machine data and the data would be transmitted from the machine and would be managed by the Raspberry Pi. The Smart Mirror is developed as a personalized device which includes Raspberry Pi, microphone, speakers, LCD screen covered with a reflective one way mirror. This provides the real time weather forecast, latest news updates, local time corresponding to the location. And using Google personal assistant we can therefore interact with the mirror and get the required output.*

***Key Words*: Smart Mirror, Artificial Intelligence, Raspberry Pi, Google personal assistant, Real time weather forecast, News RSS feeds.**

1. INTRODUCTION

Smart mirror is basically a mirror, which provides the information which we need in our day-to-day life, as weather report, real time news, time, etc. The mirror has a LCD screen at the back which will be showing all the information, as this was an existing system by reference[1] and to this we have implemented a personal assistant so that can interact with the mirror and the user.

Based on this interactive computing and communication technologies, many devices/products are now emerging and it is providing comfortable, secure and convenient personal services everywhere whether it is home or various industries. We look at the mirror daily and interact with it psychologically to find out how we look. The interactive mirror is a development effort by adding the mirror with proper embedded intelligence for offering enhanced features such as weather of the city, latest updates of news and headlines and local time corresponding to the location which was previously developed by the references. The Smart Mirror would help in developing smart houses with embedded artificial intelligence, as well as finding its applications in industries, smart office, and other applications.

It can do all the work which we command it to, as it has a personal assistant which will listen to your commands and will response according to it. The smart mirror has microphone through which it will listen to the commands, and there is speaker from which it will give its response. Smart mirror have the some capabilities like showing date and time which was done before when it was developed, but objective of this project is as follows: It must be capable of showing all the real time data, the Smart Mirror must be capable of showing the information on the screen correctly, the screen should not affect the reflection of a person, the Smart Mirror must take the voice command as the input and give the required response to the user, and the Google personal assistant should provide proper response.

2. PROPOSED SYSTEM

The mirror is eventually a technologically augmented interaction device. The objective of designing the mirror is to provide a natural interface in the ambient home environment for accessing various services such as location based weather, time, calendar, etc. The project includes downloading the raspbian operating system based on debian and extracting the image on SD card, inserting the card in the Raspberry Past slot and then performing the required steps. We are developing prototype i.e. design and development of a futuristic Smart Mirror on Raspberry pi 3 B+ for the ambient home environment as well as for commercial uses in various industries.

The data would be transmitted from the machine and would be managed in a central database. We have also worked on including Artificial Intelligence in the Smart Mirror where in a Voice enable LCD assistant will see to the needs of the user and this will be a personal assistant to the user.
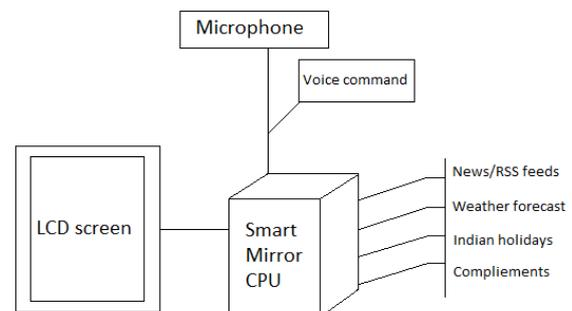

Fig -1: Proposed Design

The smart mirror is built using Raspberry pi. There is an LCD screen which we are using for displaying the content like news, weather, time, date, Compliments, upcoming holidays. We are using microphone to give the commands for raspberry pi through which it will interact with the user and there is a speaker by which we can get the required response.
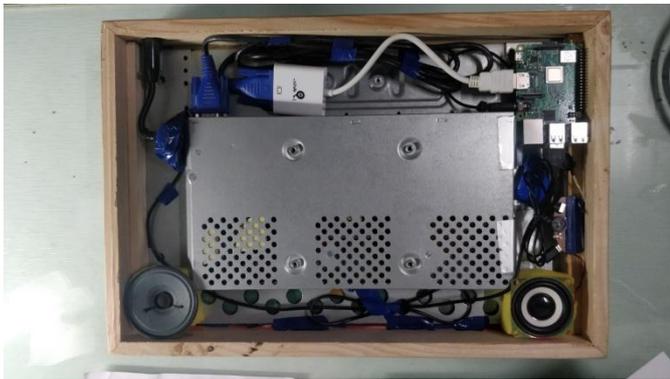
Fig -2: Setup of project

The above figure-2 shows the setup of the project which consists of, Raspberry Pi 3 B+, a wooden frame, reflective mirror, speaker, VGI-to-HDMI convertor that connects LCD screen to raspberry pi, a microphone, and a LCD screen for the display and then we need to give the power supply for the raspberry pi and also for LCD screen.

Fig -3: Model of Smart Mirror

The figure-3 shows the final model of the Smart Mirror. It shows the real time data of weather forecast, date, time,

day, upcoming holidays, compliments, news RSS feeds, and has Google personal assistant in it, which works on hotword "OK Google".

3. CONCLUSION

In this paper we have studied and implemented a Smart Mirror using Raspberry pi. The programming and interfacing of raspberry pi has been helpful during the implementation. The problem which was defined we have over come to it. And we have met the objectives successfully. We have designed a futuristic smart mirror that provides natural interaction between users and the ambient home services. The core of the mirror is based on a creating a Smart Mirror, which we developed to demonstrate the various functionalities provided by the mirror. So this system provides an alternative to the existing system with personal assistant that can handle user's commands and give out the correct information.

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