Smart Mirror [Raspberry pi]

Team name/number: Team of Mirror(TOM)/ Team #1

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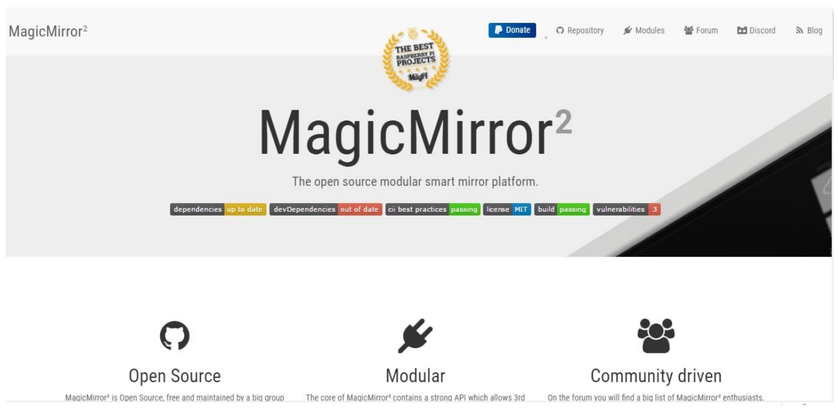
1. Background

The Smart Mirror is mirror with small computer(Raspberry Pi). The mirror displays necessary information for a user.

The information which is displayed on the mirror is attained from Google. The mirror is synced with the user's Google Account data.

2. Method



- https://magicmirror.builders/
- Open sources of basic modules are free
- 3rd party developer's modules and codes
- Big community of sharing ideas and asking questions and getting support

3. Final Output

Weather & Weather forecast
- The Mirror shows the weather of the day and weather forecast
- Weather API from openweather.org

Time
- The Mirror shows the current time. It also shows the date.

Schedule
- The Mirror shows your schedule that you uploaded on Google Calendar.
- Google Calendar API

Google Assistant
- The Mirror has a virtual assistant which a user can talk to using the microphone.
- Google Assistant API and YouTube API

Google Photo
- The bus schedule is a slide shoe of a photos
- Google photo album ID is used

Remote Controller
- This is for hiding showing the modules on the mirror with the html remote control on the user's smartphone

3. Findings From User Testing

1. Mirror Size

Users complained of the Mirror being too wide and heavy. They Prefer a portable mirrors. They will not occupy a lot of space and will be able to moved easily

2. Mirror Appearance.

The current mirror design is too basic and simple. Users especially female users prefer a stylish design.

3. Microphone.

The Mic has poor sensors. Users had problems on using the microphone.

4. Recommendation

Some users thought that it would be useful with touch screen. Also some wanted to connect their health application on the mirror

Course name: Human Computer Interaction

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Title: The 3rd user's feedback

After having a one-to-one talk with some users. We collected some information from them and noted that there are some flows that we need to fix for our next prototype. We met four users and most of their responses were similar and they also gave us their suggestions for other features. Most of the things they complained about was about microphone functionality and the mirror's appearance like

Mirror size
They complained about the mirror being so wide and heavy. They said they would prefer a mirror that would not require them to place it at the leaving room instead of their bedroom or anywhere. Designing a mirror with a light weight, and that does not take much space would be the best solution to this problem.

Mirror appearance
One of the users said "the mirror is not stylish at all; it looks like those mirrors that were used in ancient times". if we would change the frame of the mirror and design it in the most attractive shape the users will be more willing to use the smart-mirror.

Microphone
The microphone that we have a disadvantage, using it is more like blowing a balloon. A user needs to blow in air twice for the mic to respond causing the cheeks, ears and eyes to hurt after a long use. Getting a microphone that will respond with one go is what our users want so we will find a suitable mic for our users

One of the users we interacted with said it would be best if we add some features like face recognition and skin analyzer, making our smart-mirror a mirror that can detect a person skin's current state and give you advices that you can follow when your skin is in a bad condition. she also said about adding applications that can style their best suited makeup preferences.

4. Limitations

- YouTube is incompatible with the smart mirror module
- Mic sensors are not working properly
- Google Assistants is not working as smooth as on the smart phone
- Some APIs are not working well with the Raspberry Pi and Smart Mirror

5. Conclusion

Raspberry PI is not so expensive and anyone can easily access to the open sources on the Internet. This mirror is easily modifiable and customizable. Therefore, anyone can make their own custom made smart mirror to make their life more convenient and enthusiastic