SMART MIRROR 2.0:A touch-free reflective interaction that unveil user customizable intelligence

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ABSTRACT— In today's environment, increment is addressable to us rather well through with our phones, our portable computer, our screen, and much. As machinery cultivates, knowledge would breed and further not here from the outmoded flair of collaboration with campaigns. In the bygone, evidence was dispatched through rag, then through CPUs, and in today's daylight and stage of development, through our phones and manifold other means. Expertise should industrialize more cohesive into our breathes - more unbroken and more imperceptible. We anticipate to shove the casing further, into the forthcoming. We recommend an innovative modest approach of fixing with your daybreak rag. We extant our impression, the Smart Mirror, facts at a glimpse.

Keywords—Smart Mirror, rpi3b, PIR sensor, rpi-cam, interactive surface.

I. INTRODUCTION

As we know that our life keeps on changing and to cope-up with it we must stay put and make necessary changes to our daily routine, same goes for the technology it keeps on changing to make our world smarter we add more new features to it. The Canny-Portrayal's cognitive content is to incorporate profession coherent into people's lives aside swing it where everyone's quotidian one of these days run into. The destination of the smart mirror is to increment the respective fruitfulness by thrifty period of time.

The canny reflector render a warm facile cognitive content that allows the individual to rightful bearing ahead and be communicate with the multipurpose data, so much content can likewise be maneuver on some other disposition equivalent to cellular telephone merely as we are alive in the era of modern technology where systems are helmeted with versatile AIs and adding so much a appliance to our living would yield our way to a intact brand-new assorted level.

II. LITERATURE SURVEY

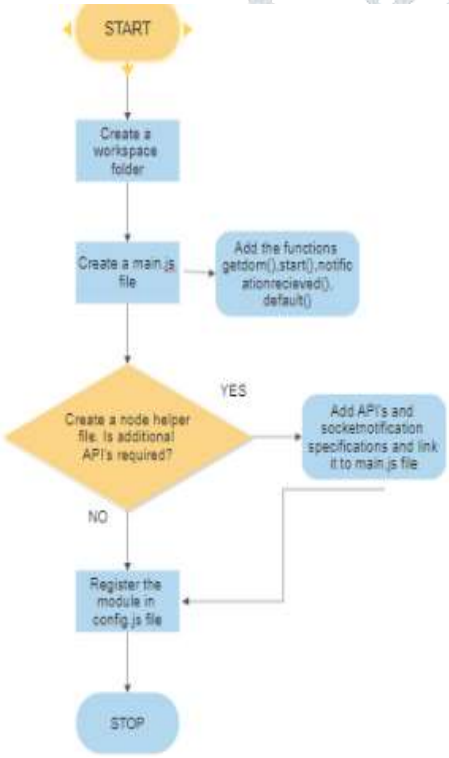
PROJECTS	AUTHORS	WORK
Artificially Intelligent Smart Mirror using Raspberry Pi	Abdullahil Kafi, M. Shaikh Ashikul Alam,Sayeed BinHossain[Department of Computer Science and Engineering BRAC University Dhaka, Bangladesh]	It also provides some basic AI features like real time interaction with users. DIS-ADVANTAGE: qualitative data-overload.
Raspbian Magic Mirror-A Smart Mirror to Monit	R.M.B.N. Siripala, M. Nirosha, P.A.D.A. Jayaweera, N.D.A.S. Dananjaya, Ms. S.G.S. Fernando Faculty of Information Technology, Sri Lanka Institute of Information Technology, Co	Infull serviceable observance scheme for parents, where assist the parentstoprompt (to-do-list).

or Children by Using Raspberry Pi Technology	lombo, Sri Lanka	DIS-ADVANTAGE: Applying needed functions were problem that occurred during design phase.
Smart Mirror A smart home solution	Justin Gentry Michael Trivelli Hector Zacarias,[University of Central Florida - College of Engineering and Computer Science	User can design and implement their own widgets, allowing ultimate customizability to tech savvy users. DIS-ADVANTAGE: Don't have enough counter space and you don't have enough outlets.
Smart Mirror A Secured Application of Artificial Intelligence Recognizing Human Face and Voice	KoushikiMukhopadhyay1 ,Chandrava Sinha1 , Himadri Nath Saha , Sukanya Rakshit , Supratim Auddy Computer Science & Engineering Department Strathclyde Business School1 Institute of Engineering & Management, Kolkata 2 Guru Nanak Institute of Technology, Kolkata	Consists of functionalities like real time information and data updates, voice commands, Face recognition. DIS-ADVANTAGE: Does not have a manual mirror running feature.
A Smart Home Center Platform Solution Based on	Xibo DENG , Zhiran PENG Wenquan WU((School of Electronic Engineering, Navy University of Engineering, Wuhan, 430000 P. R))	Smart Mirror can provide a series of intelligent experience for the residents, such **as** control all th
Smart Mirror		e intelligent furniture through Smart Mirror. DIS-ADVANTAGE : It does not contain the electrochemical system :so the external control system development is simple.
Voice Controlled Smart Mirror with Multifactor Authentication	Adokiye Charles Njaka , Na Li, Lin Li (Department of Computer Science, Prairie View A& M University, Prairie View, Texas 77446, USA)	The mirror can provide multimedia services while ensuring high end security across the entire system DIS-ADVANTAGE: Command diagnose failure.
Personalized Magic Mirror: Interactive Mirror Based on UserBehavior	Dongwook Lee, Jieun Park, Moonheon Lee(.Information and Communications University, Digital Media Lab, 517-10, Dogok-dong, Kangnam-gu, SeoulSouth Korea)	The mirror describes **,** intuitive interaction method and personalized information DIS-ADVANTAGE: The usercentered digital mirror system, and the possibility for developing a mirrorshaped computer system
Reflecting health: smart mirrors for p	Riccardo Miotto,Matteo Danieletto,Joel T. Dudleynpj Digital Medicine	Smart mirror could record and evaluate body position and motion to identify p

ersonalized medicine		osture and movement issues, as well as offer feedback for corrective actions. DIS-ADVANTAGE: Evaluate body position and motion to identify posture and movement issues.

III. METHODOLOGY

A. Algorithmic Flow



I)MODULES

STEP1: Create a Workspace folder. This will be called by MM core when running.

STEP2: Make a GETDOM() function. This function will render your content on MM screen.

STEP3: Make a default() function. Here your default configuration values will be set.

STEP4: Make a start() and updatedom() function.This function will execute when your module is loaded. Here you can edit the visuals of the weather module.

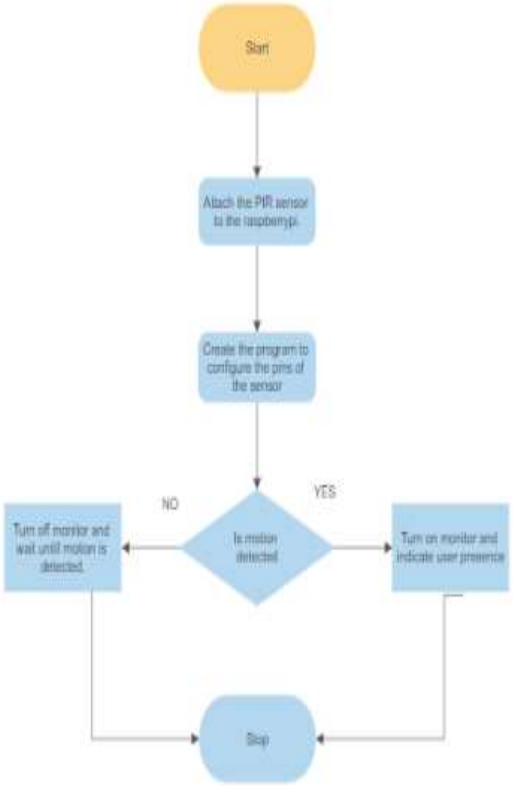
STEP5: Make a notificationrecieved() function.This function communicates with the node helper file to get data.

STEP 6: Create a node helper file.

STEP 7: Add the required API's to get data and connect this file to the main workspace.

STEP 8: Register the module by adding the main workspace file in the config.js file.

II)PIR



STEP 1: Create a workspace folder and name it MMM-PIR-Sensor.

STEP 2: Create a file pirsensor.js and add four functions which are getdom(), socketnotificationrecieved(),notification recieved() and start().

STEP 3: In getdom(), check for user presence and and indicate the following by a red colour.

STEP4: In socketnotificationrecieved(), get datafrom the node helper file and pass it to the notification() function.

STEP 5: Configure the start() function to run while the MM is starting.

STEP 6: Create a node helper file

.

STEP 7: Add the functions activateMonitor(), deactivateMonitor(),socketnotificationrecieved()

STEP 8: In activateMonitor(), set the trigger to always off. Check for movement detection and start the monitor if motion is detected.

STEP 9: In deactivateMonitor(), set the trigger to always on. If there is no motion detected in a particular time frame, turn off the monitor.

STEP 10: In socketnotificationrecieved(), get data on the motion detected and relay it to the pirsensor.js file.

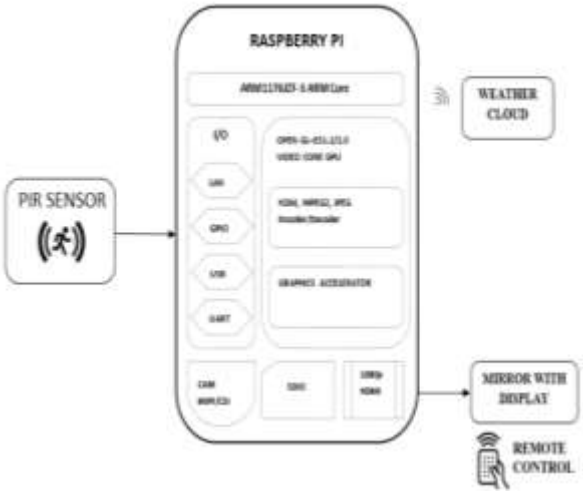
STEP 11:Add this module in the config.js file and set the required values and pin number for output.

B.Preparing the Monitor

We specifically chose the DELL 24inch monitor to fit in the hand-made wooden cabinet. It turned out to be little challenging for us to remove the monitor's bezel as we had no prior experience in opening the hardware parts of a monitor. First, We had to remove a screw on the back of the monitor. Then remove the bezel using a screwdriver. Then we placed the monitor display with the rpi attached to it in the cabinet.

C.Architecture

The System architecture of Smart Mirror 2.0 mainly consist of Rpi, LCD monitor screen,2-way Mirror,PIR sensor. The two-part portrayal yield the reflector its genuine identification. It has mirror like opencast element same region and likewise it is lucid for pale with groovy intensity level. The reflector foundation at frontal where the individual tin shift himself/herself in the depiction element the same instance it allows the airy display to running through with it and kind the user user interface forthcoming.



C.The Assembly

Place the monitor on the frame, connect cables/Raspberry Pi, and attach the back panel.

D. *Software used*

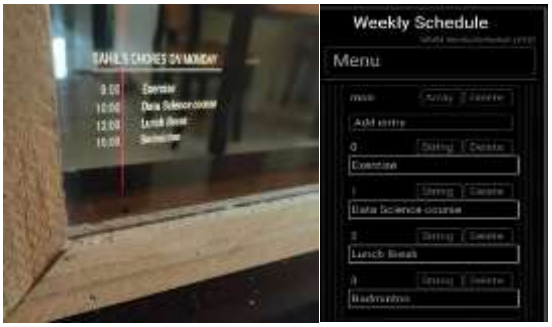
Here are some of the software we have used for the implementation of our project using various tools are as follows:

- CSS
- JavaScript
- GitHub
- R Pi
- Nodejs
- HTML

The primary computer hardware element utilised for our scheme is the Rpi3. We misused Rpi3 as it inverted additive practicality equal Bluetooth,Wi-Fi for property and twofold instrumentation escale and it was rather casual to activity. The Rpi3 is incapable of moving UNIX system direct which we were healthy to good numerous packages misused for our program.

IV. EXPERIMENTAL RESULTS

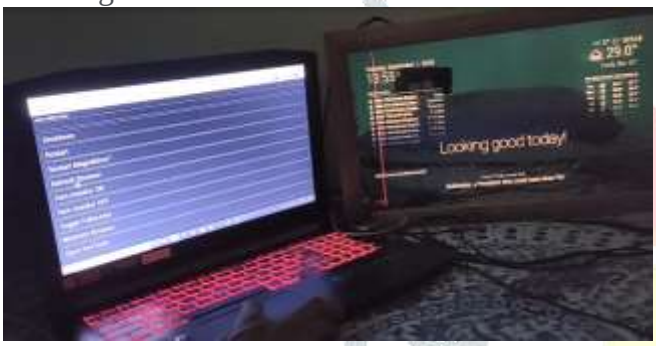
A. The Weekly Schedules: Users are able to create a profile and create the optical interface to display what peculiar information feeds they want.



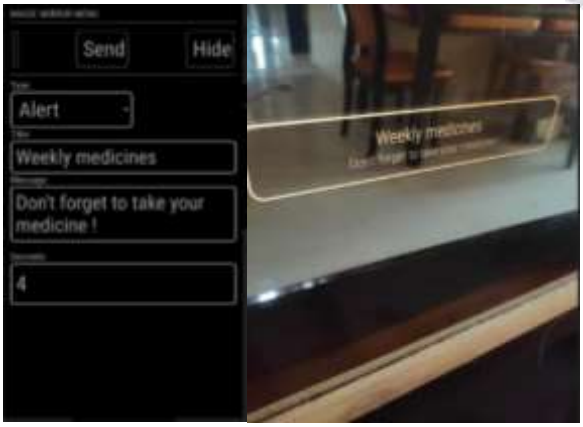
B. **PIR Sensor :** The idea behind the implementation of PIR sensor was to limit the usage of mirror by minimizing the use of electricity as the mirror would be only functional when a person is standing in front of it.

C.Covid Case Chart: This **chart** displays the performance of confirmed **COVID**-19 happening per day.

D.The Remote Control feature: The entire system can act by reverting information on wholly reaching **remote control**.



E. **ALERTS:**This smart mirror can socialize , update you, provide you information on Central Power Center for Communication; Ex: Informing, Alerts.



F. Indian Calender: The **mirror** can also exhibit some other information like **Calendar** which append **Indian** Holidays.

G.*Mobile phone Casting*:The mirror can also cast phone or tablet screen without any disturbance.

V.FUTURE SCOPE

Our aim was to create a mirror that would act as an attractive and modern gadget as a part of home automation. However we decided to add features which would help user to stay ahead of his /her schedule. This prototype can also be implemented in places like gyms, shopping malls, Airports, Hospitals. Security features like face recognition can make it more viable and secure to store sensitive information.

VI. CONCLUSION

The **Smart Mirror 2.0** has range in the piece of land of Internet of Things and domestic mechanization. It can be adjacent to the domestic appliances, mechanized inclination, etc. which can thrive the practicality of the reflector. The surface commendation application utilized tin can be

upcoming increased as a implementation of security department.The prototype designed in this project will provide the user with an enhanced experience by making use of multiple features, the user can stay up to date with schedules, weather, news headlines while preparing for the day in with the fully functional Smart Mirror.

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