Digital data and call notification system in Google Glass using Arduino Nano

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ABSTRACT: The Google Glass is a futuristic Device. It is a Head mounted display which shows data in front of one eye of the user. The user can interact with the Real world simultaneously connected with the digital world. The idea for designing this device is to connect the Concept of Augmentation Reality to the User.

KEYWORDS: Google glass, Oled display, Arduino nano,

I. INTRODUCTION

Google Glass is a brand of smart glasses - an optical head-mounted display designed in the shape of a pair of eyeglasses. Google Glass displayed information in a smartphone-like, hands-free format. Wearers communicated with the Internet via natural language voice commands.

In this paper we analyse the design of Google glass and working condition. It has three class of working nature-

1. It works as a voltmeter and can read the data up to 12V with the accuracy of 0.1V.

2. It works as a call notification system. If the User is getting call or not.

3. It works as a Heartbeat data detector.

II. WORKING

The design of Google glass is done by 3d printing technique. 3D printed object is created using additive processes. Additive process is a process in which an object is created by laying down successive layers of material until the object is created. Each of these layers can be seen as a thinly sliced horizontal cross-section of the eventual object.
    Our Google glass is programmed in Arduino Nano which is connected to the mobile device through Bluetooth module HC-05. The data's send to the Arduino Nano which is evaluated and send to Oled display which shows this data to user in the Reflecting glass.
Heart beat sensor and voltmeter Wires are directly connected to The Arduino Nano. With the help of a switch we can toggle between this function. If User gets the miss call then the data is send through the Bluetooth module to Arduino Nano and Arduino Nano send the message "Someone is Calling You" to the Oled display. All other function will stop for some time and this message will start showing up. After a delay Oled will reset back to its last function.
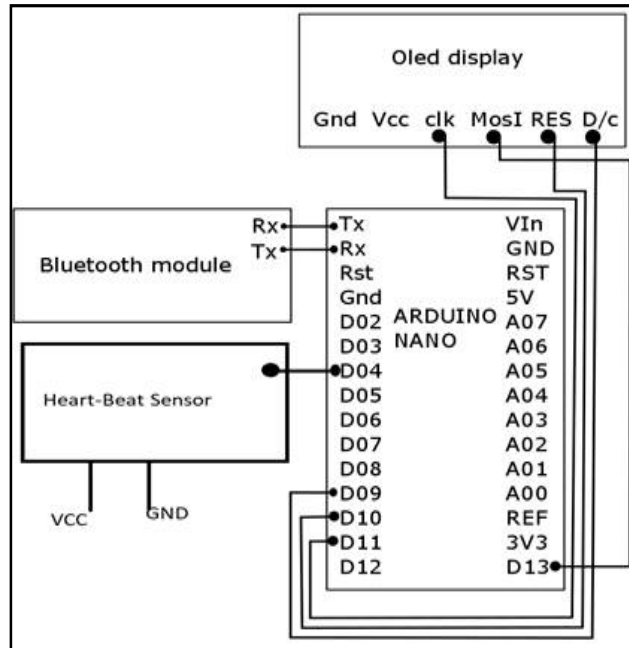
Figure 2.1 Circuit diagram
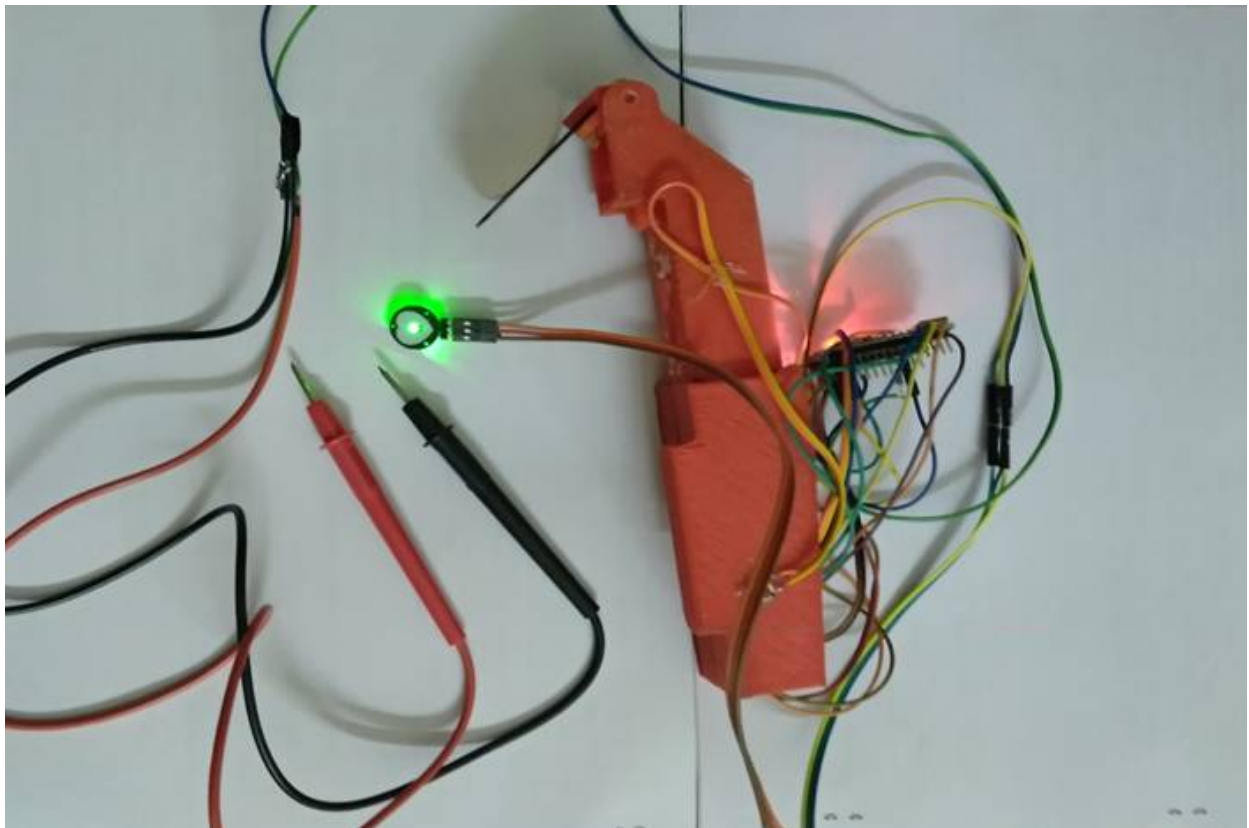
Figure 2.2 Google Glass

III. DESIGN

3.1 Display

Figure 3.1 Display

3.2 Toggle Switch
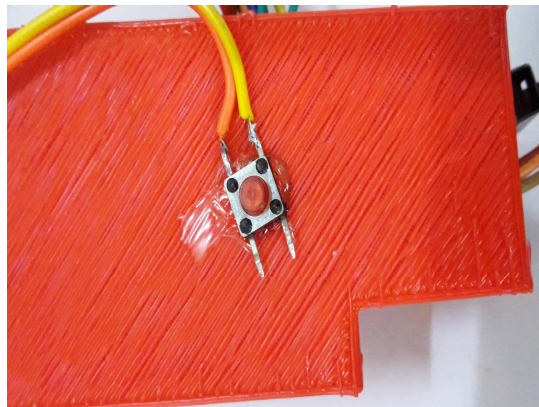
Figure 3.2 Toggle Switch

3.3 Main switch
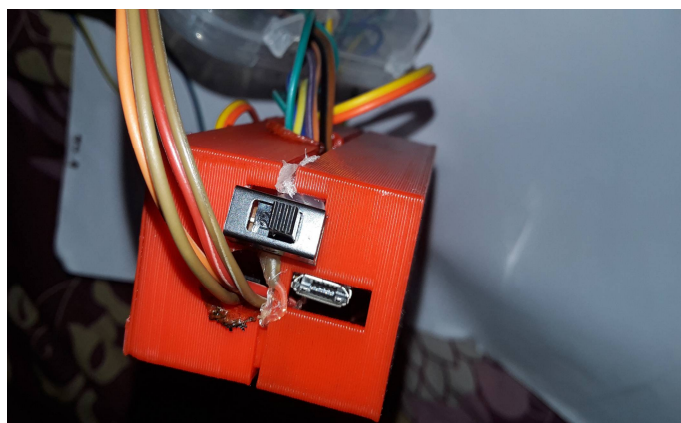
Figure 3.3 Main switch and Charging port

3.4 Measuring Probe

Figure 3.4 Probe

IV. RESULT

The design of Google glass is compact and easy to use with all the three features working accurately and efficiently Following are some specifications of the project-

Colour	Red
Dimension	200mm*85mm*35mm
Weight	200 gm.
Accuracy	0.1
Voltmeter range	0-12V

Table 4.1

Health Monitor-
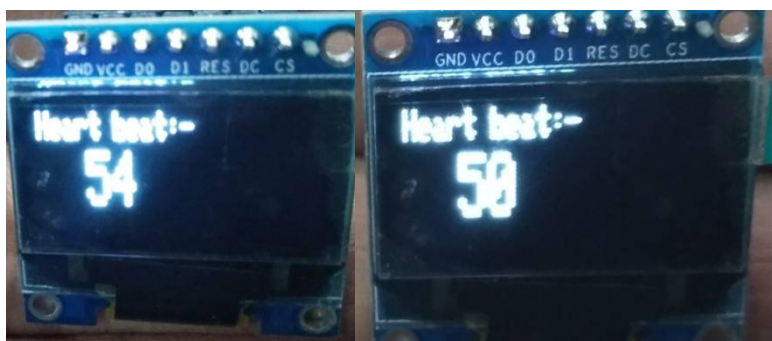This function is set as default program. After switching on the Google glass, it starts showing the heart beat data.

Figure 4.1 Heart beat data

Call notification-
When a user connects the Google glass with his mobile device and gets a phone call, it generates a call notification in the display of Google glass. "Someone is calling you" is displayed in The Display of Google glass.
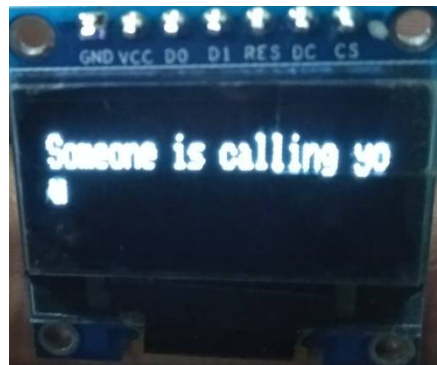

Figure 4.2 Call notification

Digital Data-
After switching the device to Digital data monitoring using toggle switch, the data are showing below.
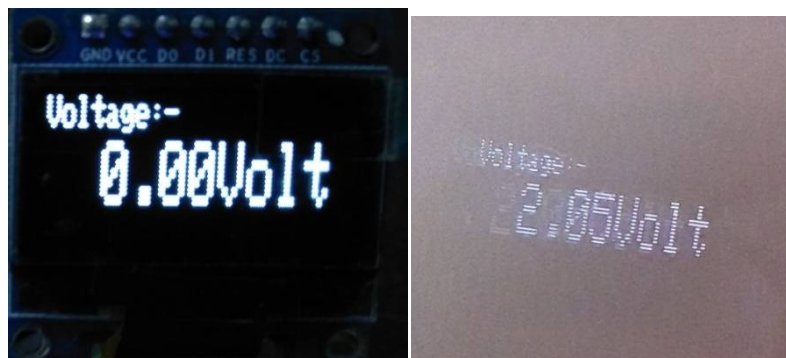A voltage of a 2.0V battery is measured using measuring probes.

Figure 4.3 Voltmeter (a) In Oled display (b) In Display Glass

V. BENEFITS AND LIMITATION

Benefits-
1. Easy to Wear and use

2. Fast and accurate up to 0.1

3. It is a useful technology for handicapped and disabled people.
4. Secure and safe to use

5. User wearing glass can also use Google glass.

Limitation-
1. It can be easily broken or damaged

2. Surrounding noise effect the accuracy.

3. Voltmeter can read up to 12V only. Above it will damage the device.

4. User has to focus for watching data.

VI. FUTURE SCOPE

With the invention of Google glass, we have got a futuristic gadget. Presently it is in limited scope, but Google believes its future is bright and the device itself is "incredibly compelling".

REFERENCES

[1] **Pooja S. Mankar**-Advance Technology- Google Glass-International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 02 Issue: 01 | Mar-2015

[2] **Miss. Shimpali Deshpande, Miss. Geeta Uplenchwar Dr. D.N Chaudhari**- Google Glass –International Journal of Scientific & Engineering Research, Volume 4, Issue 12, December-2013.

[3] **Shubham chhabra, Shubham Kumar Patel, Vishal Sharma, Toshar**- "Google Glass"-International Journal of Computer Science & Information Technology Research, Volume 2,Issue 4, December-2014.

[4] **Hartiksha Rishu, Lakhwinder Singh** – "Review Paper On Google Glass Technology"-International Journal of Computer Science and Communication Engineering Volume 5,Issue 1, February-2016.

[5] **Namrata S. Pathkar, Neha S. Joshi**- GOOGLE GLASS: PROJECT GLASS- International Journal of Application or Innovation in Engineering & Management (IJAIEM)

[6] **Pallavi N. Holey, Vishwas T. Gaikwad**- Google Glass Technology- International Journal of Advance Research in Computer Science and Management Studies Volume 2, Issue 3, March 2014

[7] **G.P.Gowdham , N.Balasubramanian**- "A Review on the Google Glass Technology"-International Journal of Emerging Technology in Computer Science & Electronics (IJETCSE) ISSN: 0976-1353 Volume 12 Issue 4 –FEBRUARY 2015.

[8] **Siddharth Bhandari, B Regina**- 3D Printing and Its Applications- International Journal of Computer Science and Information Technology Research ISSN 2348-120X (online) Vol. 2, Issue 2, pp: (378-380), Month: April-June 2014