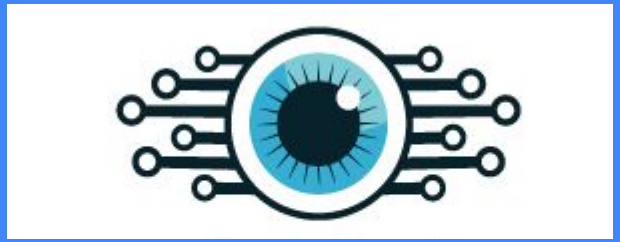
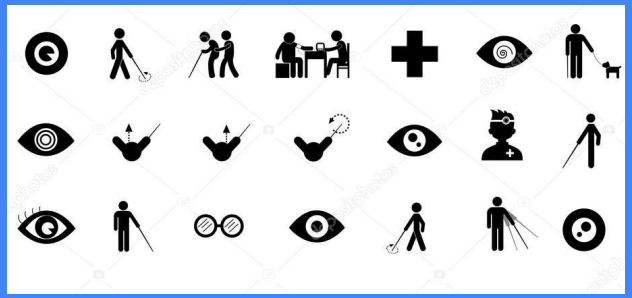
# Be My Eye





# Outlines

- **Introduction**
- **App’s Idea**
- **Used Tools**
- **User’s Segment**
- **Features**
- **Challenges**
- **Future work**
- **Demo**

# Introduction


According to a report by the World Health Organization, there are currently 284 million people in the world who are visually impaired, and 39 million people are blind. So it will be an essential thing to have a system which help these people when they move from one place to another.

Visually impaired people always find a difficulty to move alone from one place to another, because it’s difficult for them to detect if there is an object or obstacle in front of them, or if there is a stairs or water.

# Be My Eye

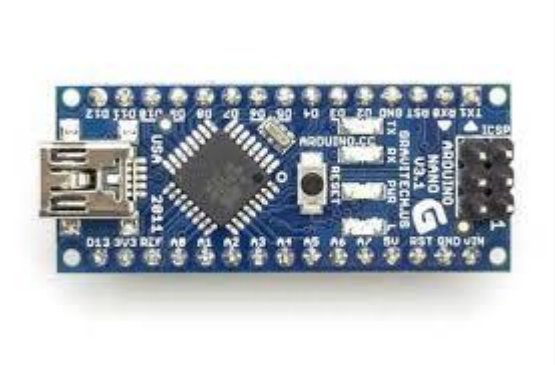
consists of smart stick and a small box, smart stick can detect any object.

- ★ It alerts the user when there is water.
- ★ when the user is going to go upstairs or downstairs.
- ★ It warns the user if there is a hole in front of him.

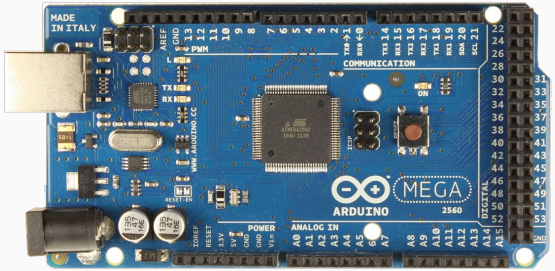
- ★ Once this smart stick faced one of these cases, the stick will start to vibrate and buzzer sound will start also, the box will describe the case which faced the user through a speaker.
- ★ Description can be in Arabic or English according to what the user chooses
- ★ User's family can track the user by GPS.

# Used Tools

- Hardware tools



Arduino nano



Arduino mega

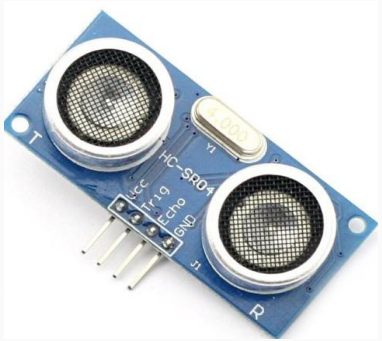
# Used Tools

- Hardware tools


Esp8266 NodeMCU

# Used Tools

- Hardware tools



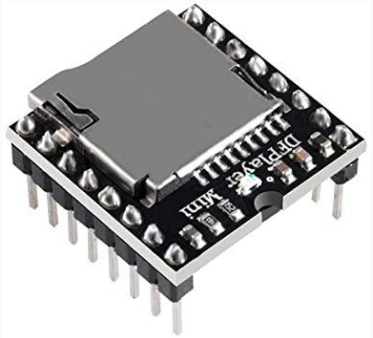

Ultrasonic sensor

Force sensor

Water sensor

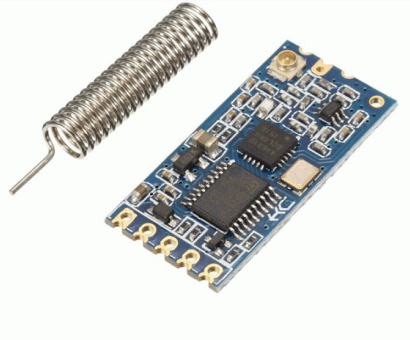
# Used Tools

- Hardware tools



MP3 module

GPS module



Wireless serial module HC-12

# Used Tools

- Hardware tools

Vibration motor

Buzzer

Speaker

# Used Tools

- Software tools


Arduino IDE


Blynk

# User's Segment

Visually impaired person

&

His/Her family

# Product design

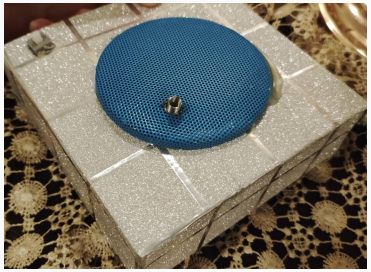
Smart stick:

- It is strong enough to support your weight made from Aluminum
- Its length can be easily controlled which makes it easy to keep in a bag or anything else .
- It is lightweight so that you can hold and move it in front of you without becoming tired
- It has a tip that grips the floor and does not slide.

# Product design

Smart box:

A small light box that can be carried anywhere and installed on the bag or attached to the belt or tied around the hand.



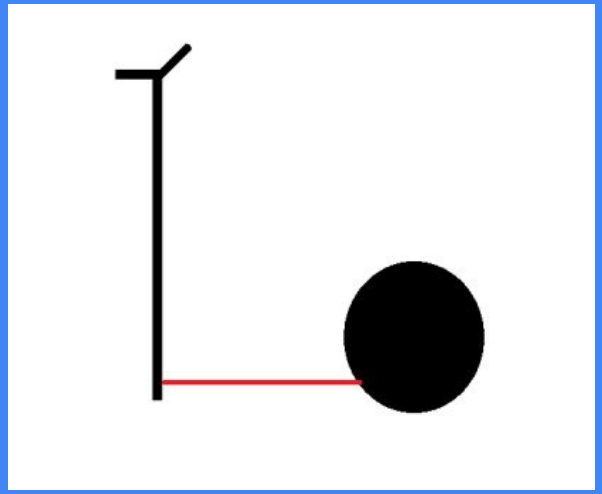
# Features

Basically, our project consists of an easy-to-use smart stick that detects certain situations that the user needs to be alerted to in order to pass or avoid them ,which are :

- Hit an object.
- Edge or hole
- Wet ground.
- Go upstairs.
- Go downstairs.

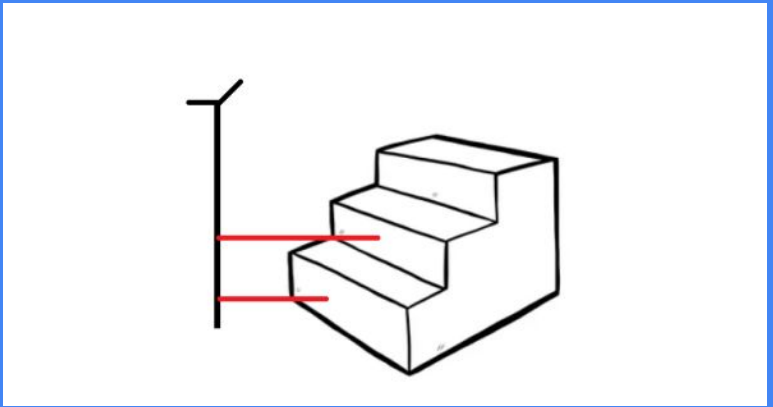
If one of these cases detected a sound from the smart box will describe the case in both languages arabic and english according to what the user choose.

# Hit an object

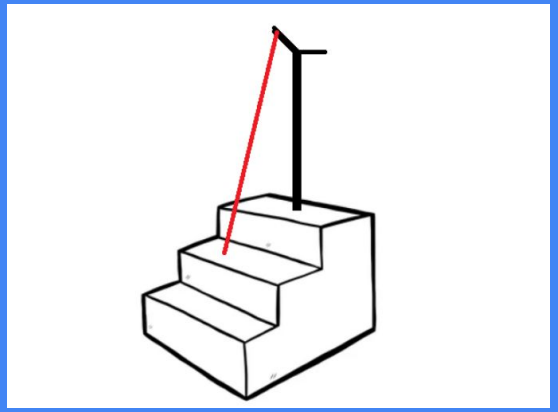


# Wet ground

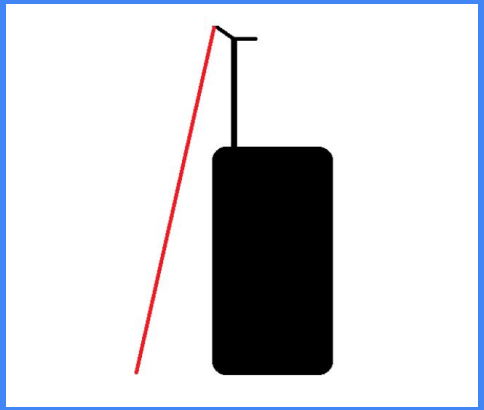
# Go Upstairs.



# Go downstairs



# Edge or hole



# Features

For users' families:

Tracking system:

It enables visually impaired people' family or friends to track their location by download Blynk app. To support this feature we use GPS module and esp8266 NodeMCU and blynk app.

# Constraints and challenges

- The sensors which used are very sensitive, and the accuracy of some of them becomes not high.
- GPS module sometimes disconnect and sometimes take time to connect again.
- The Blynk IOT app used with GPS is no longer free and we have paid to use it and renew its subscription every month.

# Future work

→ Add many options for languages.

→ Add a clock that is controlled by a voice commands, something like Siri, to perform some tasks such as calling a person, setting an alarm, or searching for information through Google and then reading it to the user.