



# NOISE OF YOUR OWN TOUCH

HCI PROJECT



# HUMAN COMPUTER INTERACTION

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# INTRODUCTION:

- ❑ Human Computer Interaction deals mainly how human interacts with the computer or with a computing device. It also deals with the input tranferred from human to the computer and how naturally they receive the output response back from the device. The main purpose is to make more user friendly.
- ❑ Tangible user interface deals with such situation where both the input and output (feedback) in case of sensitivity would be very natural. Here natural feedback means that how easily we can see light, hear sounds and sense the vibration .



# MAIN TARGET OF THE PROJECT:

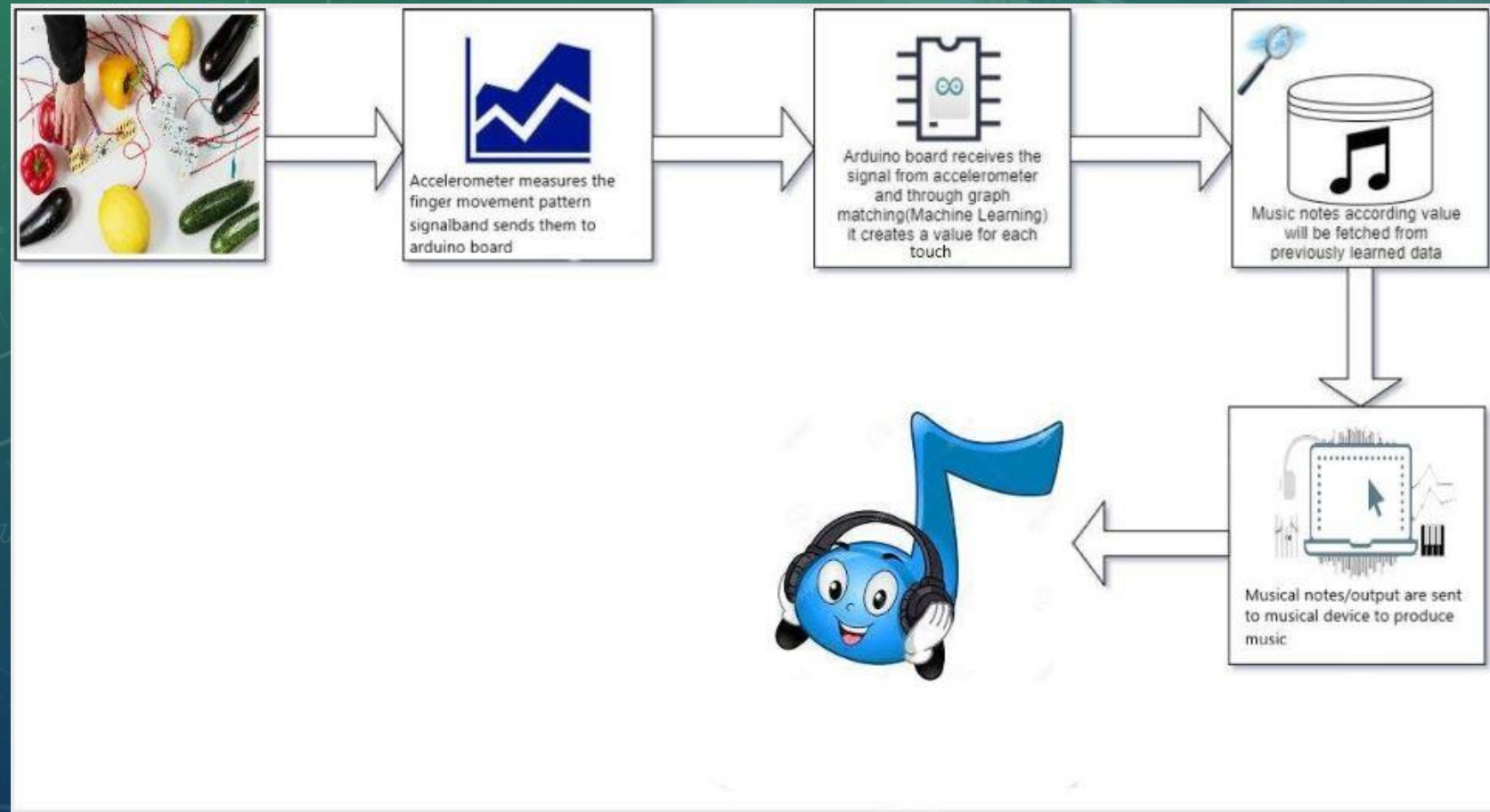
- ☐ A tangible interface will stimulate the sound of a human touch, touching a metallic object, fruit, vegetable to similar type of electronic sound with the help a MIDI Interface Piano.
- ☐ It would make us feel very natural due to the collaboration of different electrical components and embedded sensors on a breadboard.
- ☐ The end process will make different electrical sound for different objects which will be touched.

# BRIEF DESCRIPTION:

- ❑ This tangible interface is design to hear various frequency sounds with just touching.
- ❑ The working principle on Playtronica is very simple, each time it get touched the mechanism gets trigger making sound and glowing light.
- ❑ The music will take the shape of the finger pattern that gets in contact with the muscle tissue, metallic objects, fruits , vegetable, etc.
- ❑ For instance a metallic glass with full of water, another one with half-filled lastly other one empty of water , for each them three different musical sounds would rang out.
- ❑ LEDs will point out the partition of circuit which is active but due to music and glowing of bulb it can determined that this tangible interface is more user friendly.



# CONCEPTUAL DIAGRAM:



# PHYSICAL DIAGRAM:

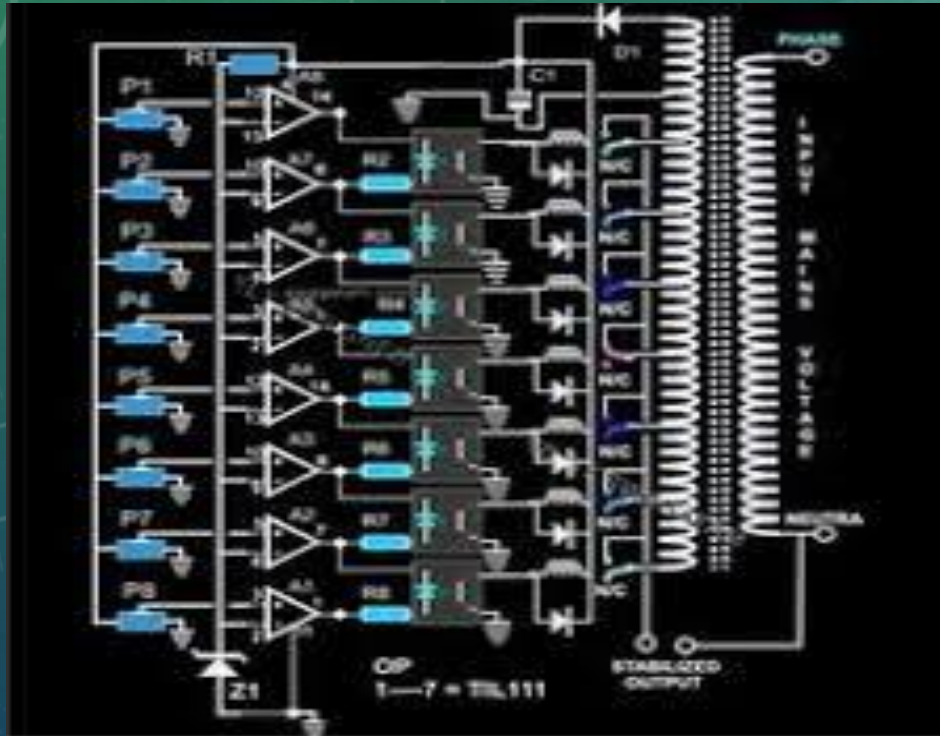


Figure1: Schematic Ciruit diagram

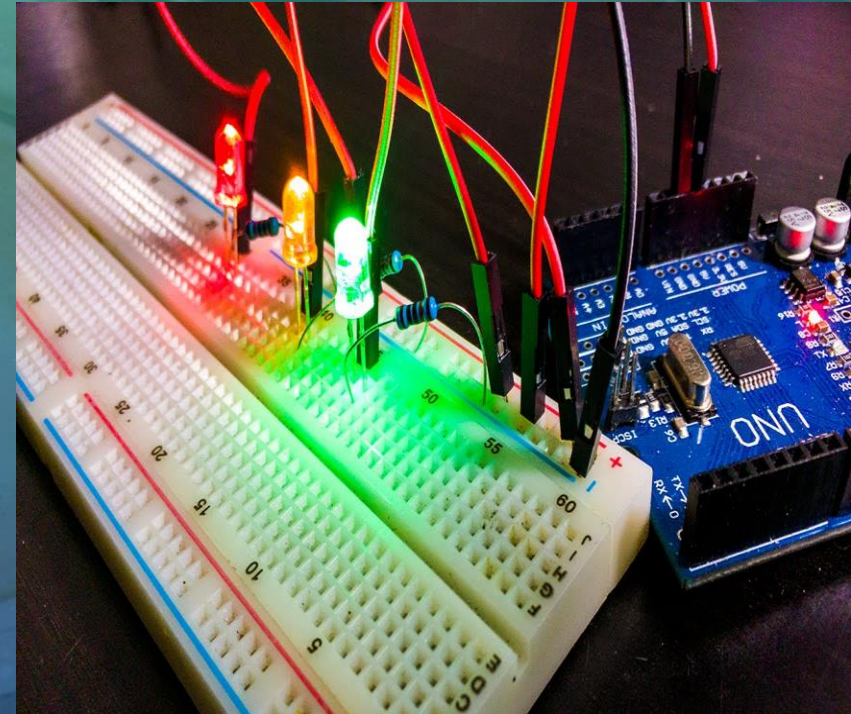


Figure2: Connection with breadboard



# COMPONENTS LIST:

1. **USB Cables** : Universal Serial Bus will connect the computing device with the electronic device
2. **MIDI controller board (playtronica board)**: It is a integrated board with digital input and output pins.
3. **UNO Board**: It also have digital input and output pins to pass and receive signals
4. **C type USB connector**: It will be used for connecting different types of touching object to the MIDI board
5. **MIDI Interface**: It connects multiple muscial intrument sound interface.
6. **LED**: Light emitting diode will be used for determining different type of object by glowing at different places
7. **Lithium Batteries**: It would act as an rechargeable battery for portable electronics
8. **5 pin DIN connector**: it is used in mainly low voltage application.
9. **MIDI Piano**: It will provide the sound representation.
10. **Electrical clips**: It will help us to make connection in between two points.



# PHYSICAL OBJECT VISUALIZATION:

The picture at the left is the very starting pineapple to demonstrate where the left bulb lits. After switching to the other pineapple the second bulb lits.



Figure 3: stage 1



Figure 4: stage 2

# CONCLUSION:

- As we can't present the sound (noise of MINI Piano) for different material , our representaiton for this project was the switching of bulb glowing.
- In general , this project would create different harmony noise for different object that would be touched.
- In real life connecting to MIDI Piano, different types of touch will give various frequency sounds.
- Since the whole system is programmable, the sound can be tuned according to the user's opinion.
- For further improvements and for research purpose each user(guest, audience) will be provided with questionnaire for a feedback.



# REFERENCES:

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