Yuru Musical Instrument Hackathon India 2023

Musical Instrument - Product Idea

Team Name	SARGAM
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Internal Reference ID (To be filled by Committee)	*This field must be kept BLANK*

Read the Instructions carefully before filling-up the details

1. Please make a copy of this word document and start filling in the details of the "Musical Instrument" that you wish to create for this Hackathon.
2. Ideas submitted in any other format/template shall be rejected.
3. Ideas submitted with partial information shall be rejected.
4. Please make sure the technical approach, design, and usage of the proposed Musical Instrument are adequately explained using appropriate graphical diagrams and images added to the same document.
5. Yuru Musical Instrument Hackathon is an attempt to create innovative Musical Instruments for fun and casual music lovers. Please do keep this in mind while ideating and designing the Musical Instrument.
6. Please use Spresense™, toio™ and MESH™ along with any other 3rd party HW/SW components/modules/boards (like MICs, Speakers, Sensors, Actuators, Raspberry PI, Arduino etc.) to create the Musical Instrument.
7. Please note that the cost of 3rd party HW/SW items used for creating the Musical Instrument will have to be borne by the participants.
8. **After filling-up the details, please Save the Word file as PDF**.
9. **Please send the PDF file** to Ideathon-YuruIndia-2023@sony.com
10. Please do not send any other file or document to the aforementioned email-ID.

1. Name of the Musical Instrument

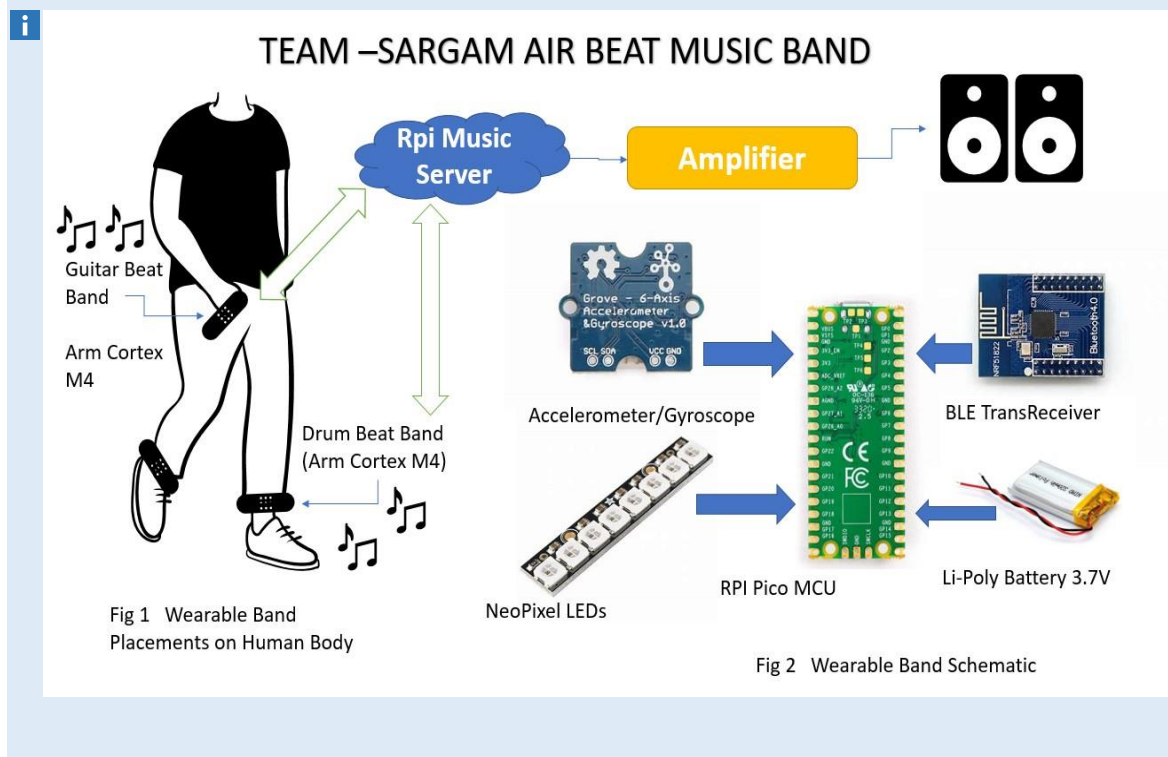*Air Beats (An Arial Standalone Music Player)*

2. Describe the Musical Instrument

> ℹ️ *Air Beats is wearable band device which has ability to play tunes like Guitar Notes, Sitar Notes, Drum Strokes. which could be played easily with simple Hand and Leg Coordination. So, anyone enjoy the Dance with Music Beats at the Same time. The Wearable Band has 6 Guitar Nodes E, A, D, G, B, E which are usually used as a notation of any musical device. The neo pixel led creates a light pattern while playing the music, which makes the device more enjoyable.*

3. Any similar Musical Instrument or Prior Arts?

> ℹ️ *The Hands, developed by Michael Waisvisz based MIDI Protocol*

4. Technical Approach/Design

TEAM –SARGAM AIR BEAT MUSIC BAND

Rpi Music Server

Amplifier

Guitar Beat Band

Arm Cortex M4

Drum Beat Band (Arm Cortex M4)

Accelerometer/Gyroscope

BLE TransReceiver

NeoPixel LEDs

RPI Pico MCU

Li-Poly Battery 3.7V

Fig 1   Wearable Band Placements on Human Body
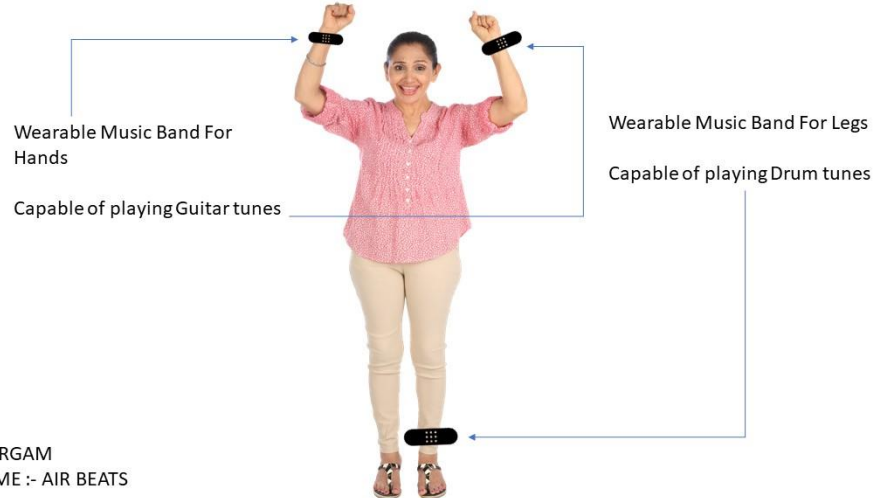
Fig 2   Wearable Band Schematic

5. Uniqueness & Novelty

Highlight the Uniqueness & Novelty of the proposed Musical Instrument. How it is different from related products in the market.
• Multiple Preset options (like Guitar, Sitar or any other string based musical instruments).
• Wearable Technology makes devices easy to handle.
• Linking of Digital Music Server for Great Music Throughput.
• Manual Tuning Free (Usually Happens with Orthodox Guitars, drums etc.).
• Neo Pixel LEDs makes device more enjoyable

6. Usage and End User Experience

Air Beats Real Time Usage

Wearable Music Band For Hands

Capable of playing Guitar tunes

Wearable Music Band For Legs

Capable of playing Drum tunes

TEAM :– SARGAM
DEVICE NAME :- AIR BEATS

How does the Musical Instrument elevate the User Experience though casual music filled with fun?

1. As this device could be wearable with hand and led, it will create pattern sound when you move your hands and legs, meaning you could create music with dance and creation of beats at the same time.
2. Neo Pixel LEDs pattern elevates your mood and releases your Happy Hormones.
3. If you use karaoke, along with this device creates great music all around.
4. Dance And Play Activity at the same time.

EVALUATION (to be populated by the Judging Panel)

Evaluation Parameter	Remarks	Rating (1 – 10) 1 being the lowest