

EVERYONE: Hi my name is Rishir, Hi my name is Shivanath, Hi my name is Kavir, Hi my name is Savir, Hi my name is Samarth.

Everyone: And we are team Vibrations to Victory!!!!!!

Intro:

Samarth: Vibrations to Victory, hmm... What an interesting name this is. Do you wonder why that is our team's name?

Shivanath: That's because our project deals with something called cymatics.

Savir: Before we get into what cymatics is, we want to share our journey of how we landed on this topic. Since this year's theme is masterpiece we started by brainstorming on various topics where art meets science.

Rishir: Some of these include: Recycle for art supplies, Anti-Gravity art materials, AR/VR for surgeries, delayed reactions for space missions(DON'T SAY AND)

Kavir: An all in one pen, Creative block, and during this process of our research we visited NASA Goddard and learned about how vibrations from the sun can be observed to predict Solar Flares. After our visit to NASA Goddard the concept of vibrations intrigued us quite a bit, and that's when we really leaned into cymatics.

Shivanath: To put it simply, cymatics is "The study of visible sound" ; this means you can turn music into art.

Samarth: Did you know that of the entire spectrum of audible and visible frequencies, humans are only limited to a fraction of that spectrum?

Savir: Cymatics can overcome the constraint of the inability to observe audible frequencies that are outside of 20 to 20 thousand Hertz. All of this is very interesting, but how does this help the community?

Problem:

Rishir: Depression is a common health problem all throughout the world. An often overlooked fact of depression is that it suppresses creative expression.

Samarth: What if there is a way to combine creative expression with therapy to bridge this artistic block, and possibly allow for more motivation?

Research:

Kavir: Art therapy can help a person struggling to finally be able to relax enough to get in touch with their emotions.

Rishir: This can greatly bring the stress levels down in patients struggling with anxiety. Art therapy fosters self-awareness, it helps process and understand emotions, and builds self-confidence.

Savir: In our research, we figured out that cymatics could be helpful in many ways. One of the ways that it could be helpful is for treating anxiety and stress.

Shivanath: We researched on the internet, and news articles, we visited the NASA Goddard Space Center and presented to the community at Howard County Library. We also built a model to test our theory.

We reached out to a psychiatrist named Dr. Mitra and received great feedback. We used it to improve our solution

Samarth: We noticed that these patterns can be created with sand on a chladni plate, water, oil and other materials can also be used. Kevin, do you want to talk about our solution?

Solution:

Kavin: Art, Music and Cymatic Therapy are the key factors into making the Chladni Plate one of the main instruments for Therapy. The Chladni Plate is a thick metal sheet with sand on top. It generates pictures and patterns using sand and vibrations just from 400 hz. For the demo, we used a circular plate and a square shaped plate and found very different results.

Savir: The circle plate requires a piano on the cell phone to create visible, consistent, and eye-catching patterns. Whereas the square shaped plate requires a synthesizer. First off, the circle plate can produce 3 very different patterns. And the square can produce 1 pattern, both equally as amusing.

Samarth: We will do a quick demo to show our model..

Below can be ignored if we don't have enough time:

Shivanath: Fidgeting with these different notes, frequencies, and patterns can be very calming and relaxing.

Rishir: If this project can be adopted at a county level we could create cool instruments for students to play with, which could help them relieve their stress and anxiety.

Communication/Core Values:

Shivanath(discovery): For us, this was a very new topic. While we researched, we learned a lot about how cymatics can influence mental health and help the community. We learned information that we thought we would never have learned without this opportunity.

Samarth(Fun): We had a lot of fun learning together and made new friends. We kept supporting each other and encouraging each other when we were solving problems. Our classes were long but cheerful because they were with friends, and we played while working very hard. This helped us begin a new brotherhood that we will cherish for a long time.

Kavin(Impact): We believe that this will be very impactful with anyone with any mental health disorders. Not only this, cymatics can be inclusive to people with depression, audible disabilities and anxiety.

Savir(Innovation): We need inventive methods like this that could improve on top of existing techniques in therapy for helping people. This will give people an alternative method to relax and calm down.

Rishir(inclusion): We worked together ensuring that everyone was included. All of us had a lot of fun while working hard as a group. We were inclusive, courteous and kind to each other. Every step of the way we worked as a strong team. Some of these instances include building the missions, building the robot, and even creating this project.