

Annual Report - Club Sigma, 2023-

24

“Ad astrum, ad infinitum” was the theme Club Sigma had avowed to at the start of the academic year, with the view of exploring the infinite realms of possibilities that science possesses. To this end, 5 of Sigma’s 11 events this year were collaborations with other clubs and departments, leading to a wide and eclectic range of science themed events, interspersed with more informal, light-hearted events. We collaborated with Nature’s Club for a webinar, and with Art and Design, World Music and Dance Club, and English Literary Society, as well as hosting the Carnival in collaboration with Chemistry Department’s Chemscope.

Our inaugural event of the academic year 2023-24 was a virtual quiz conducted via Zoom Cloud Meetings on Sunday, August 6, 2023, in honour of Hiroshima Day. The event, Atoms in War and Peace, was a quiz-style event in the format of Two Truths and One Lie. 37 participants joined. Participants were separated into groups of five and given one minute to identify the false statement from a set of three assertions. This event was held during Peace Fortnight to showcase the potential of nuclear energy in both warfare and destructive operations, as well as in peaceful processes such as energy generation and cancer treatment with radioisotopes. The quiz consisted of 10 rounds of questions in all, all aimed at spreading information regarding nuclear energy. This was followed by the screening of excerpts from documentaries from BBC, Discovery, Kurtzgesagt and other resources, regarding the functioning of nuclear power plants, and the peaceful possibilities for nuclear energy.


The session saw enthusiastic participation, and we received positive feedback from several participants.

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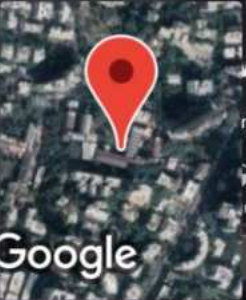
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We followed this up with our first, fun collaboration with Art and Design, called Starry Nights. The event took place during Peace Fortnight on August 9, 2023, in Room 30. The event commemorated the historical role of the night sky as inspiration in art, with a modern, science-themed twist. We had 10 participants, who used reference photos from the Hubble, Event Horizon, and James Webb Space Telescopes as inspiration for their paintings, using various mediums to create their own starry nights.



Soon after, the world of space science received an impetus in terms of public enthusiasm by virtue of ISRO's successful launches of Chandrayaan-III and Aditya-L1; Sigma chose to capitalise on the curiosity surrounding this quest to reach the stars, and was rewarded with the most enthusiastic and well received participation of any event in this academic year for our space-themed discussion event, Cosmos Quest.


Cosmos Quest aimed to dispel the myth that space science is inaccessible to the general public. Held online via Zoom Cloud Meetings, on the 16th of September, the event was an informal discussion with a variety of prompts, and 97 participants talked about sports in space, moon base feasibility, black holes, dark energy, speed-of-light travel, Dyson Spheres, ISRO's future direction, space traffic concerns, and the feasibility of a moon-based civilization. Besides the physics and the probability or improbability of such concepts, we also discussed the ethical and ecological perspectives of space exploration, particularly with regard to the idea of “nuking” Mars in favour of civilization, and whether extravagant expenditures on space exploration programs can be justified, concluding with a brief trivia session on the Chandrayaan-III mission.

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How do we justify spending so much on space programs? is it more important than the ongoing global crisis for survival?



a Dos... | Chaitra Bhanu... | ARTHA ANIL | 83 others | Sigma Club Sophia

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In-call messages

Let everyone send messages


Messages can be seen on other devices if they are deleted when you are not present


Madiha mulla 18:01
 Explain the concept of 'dark energy' and how the expansion of the universe was discovered?

MALIHA RAZI 18:04
 Yes please explain dark energy

Send a message

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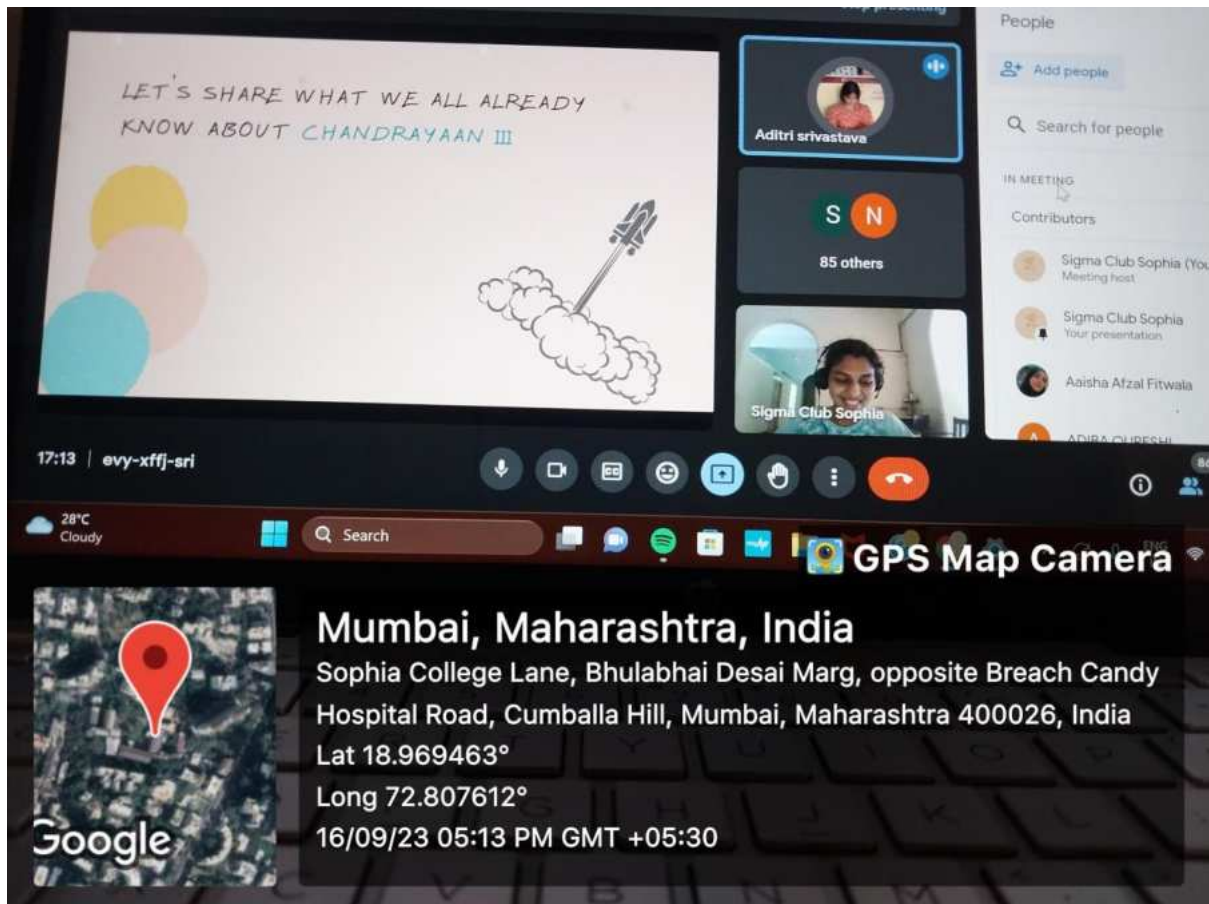


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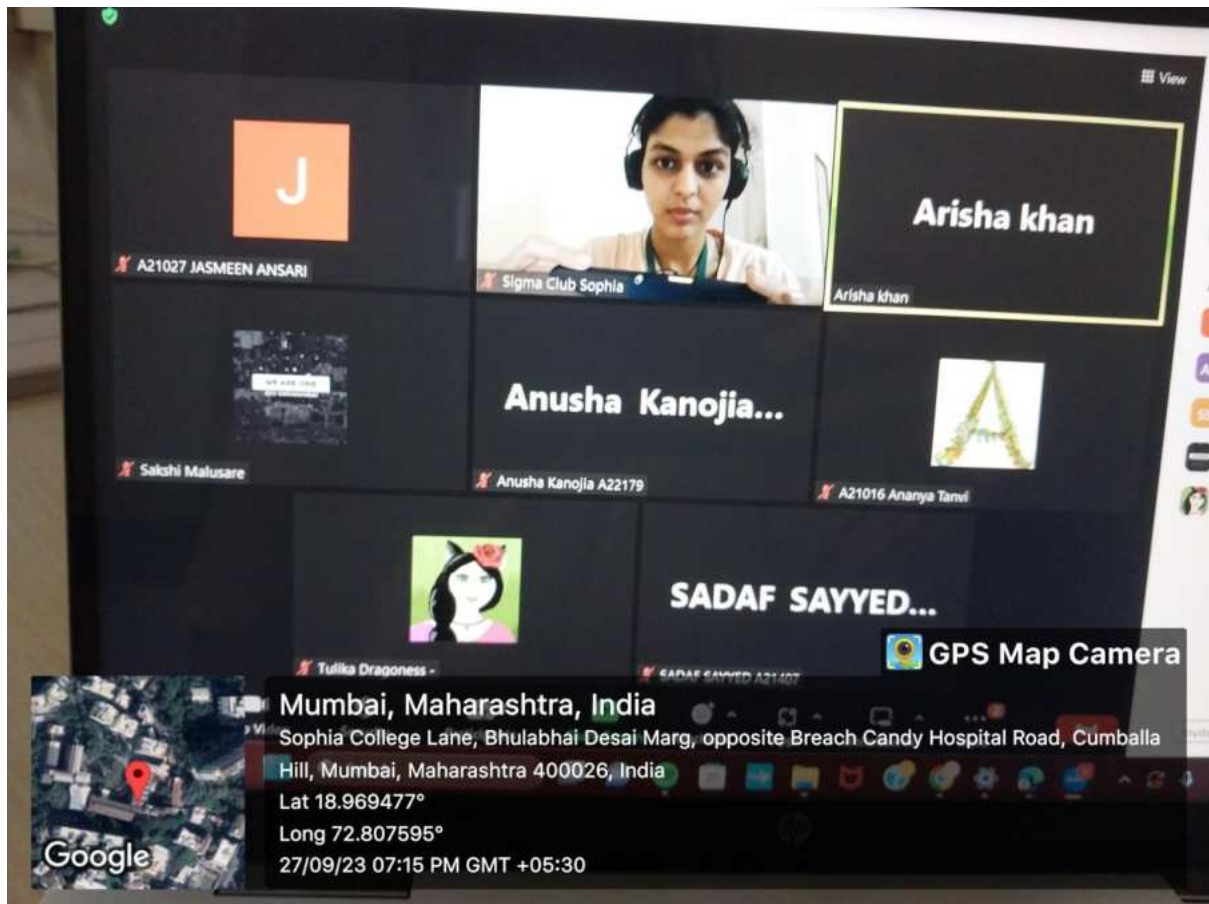
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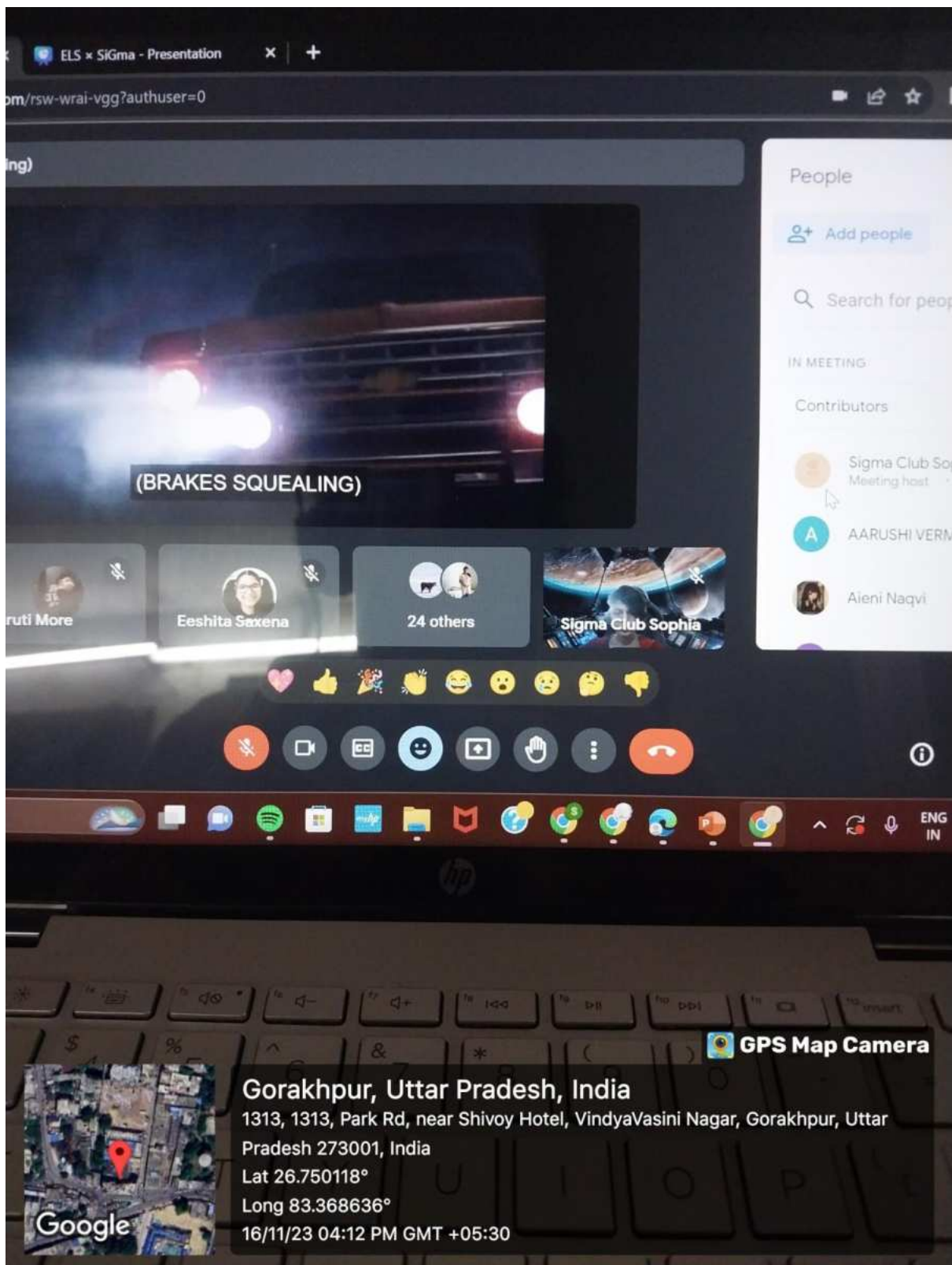
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Following this was our debate event on the 27th of September, 2023, over Zoom Cloud Meetings, on the pros and cons of AI. The event was held online as an informal, first-come, first-served discussion; speakers gave arguments for and against AI, with cross-questioning and disagreements permitted. We also aired several short documentaries from analysts and discussed numerous resources on the subject. We held this debating event as a prompt for students to learn more about the subject and conduct their own study, as well as to promote the sharing of accurate information. 9 participants joined.



October was a quiet month, owing to the odd semester examinations, but November saw 4 varied Sigma events taking place, starting with our collaboration with ELS, Eclipse of Tomorrow, on the 16th of November. The event was an online screening of the classic science fiction movie, E.T., followed by a discussion on common plot devices in science-fiction media. The movie, which features an extraterrestrial being with extraordinary powers, accidentally crashed to Earth. The discussion covered various sci-fi plot devices and tropes, including time travel, space warfare, catastrophic world endings, dystopias, extraterrestrial invasions, and alien stowaways. The event covered various media, including Jurassic Park, Marvel Cinematic Universe, Dan Brown novels, the Flash TV series, and Doraemon. 25 participants participated.



On the 17th, we held a webinar with our resource person for the event, Dr. Anand Gokani, M.D., who graciously consented to share his insights with our students, in a session called “Webinar on Health and Sustainability.”

The goal of the seminar was to discuss basic lifestyle adjustments that people should adopt on a daily basis to prevent and manage chronic illnesses in a holistic manner. He spent a lot of time discussing how taking some little but significant actions might improve our health. Surprising facts on the four white poisons—milk, sugar, maida, and salt— that we eat practically every day, were among the main takeaways. 69 participants joined. He spoke at length about how some small but very impactful steps can be a boon for our health. Some of our key takeaways included surprising information about the four white poisons that we consume on an almost daily basis, namely milk, sugar, maida, and salt.

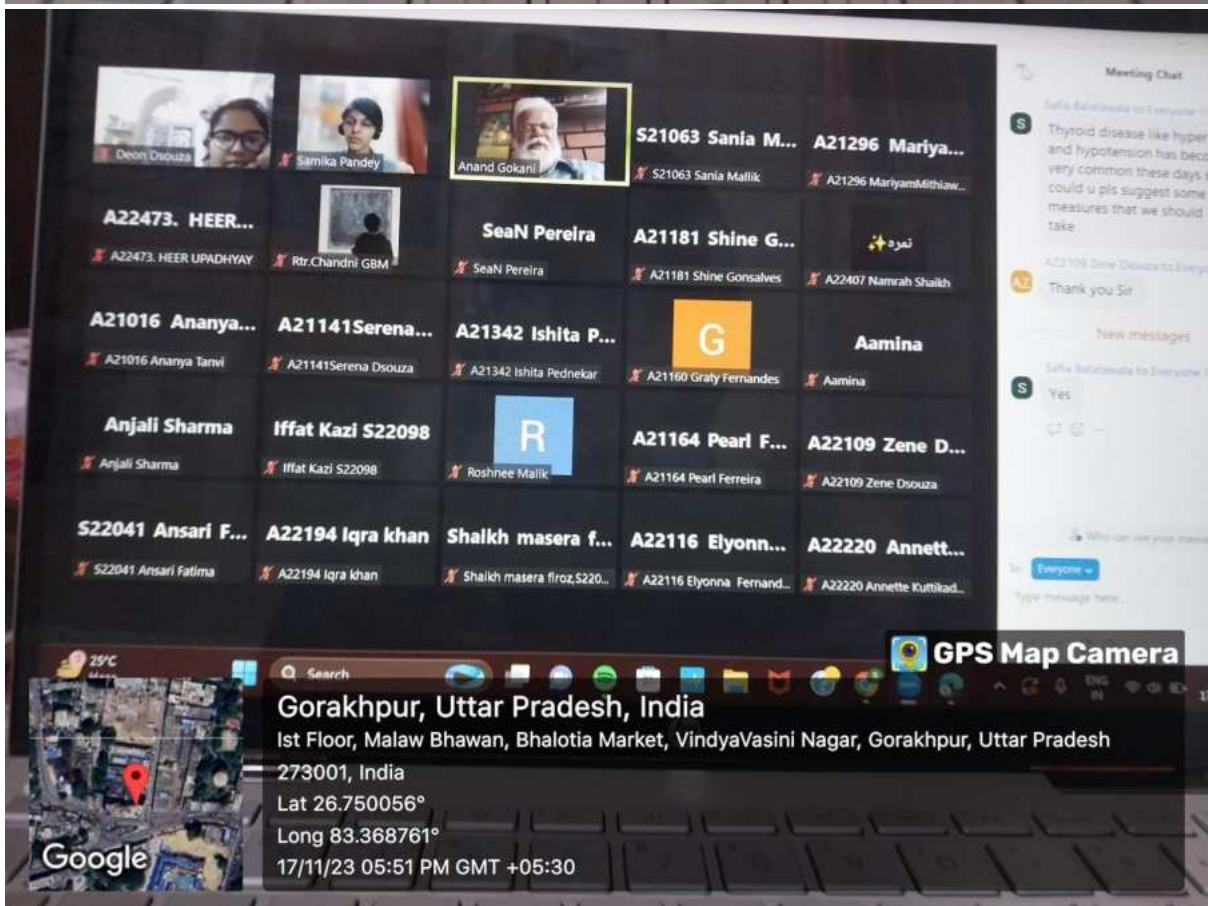
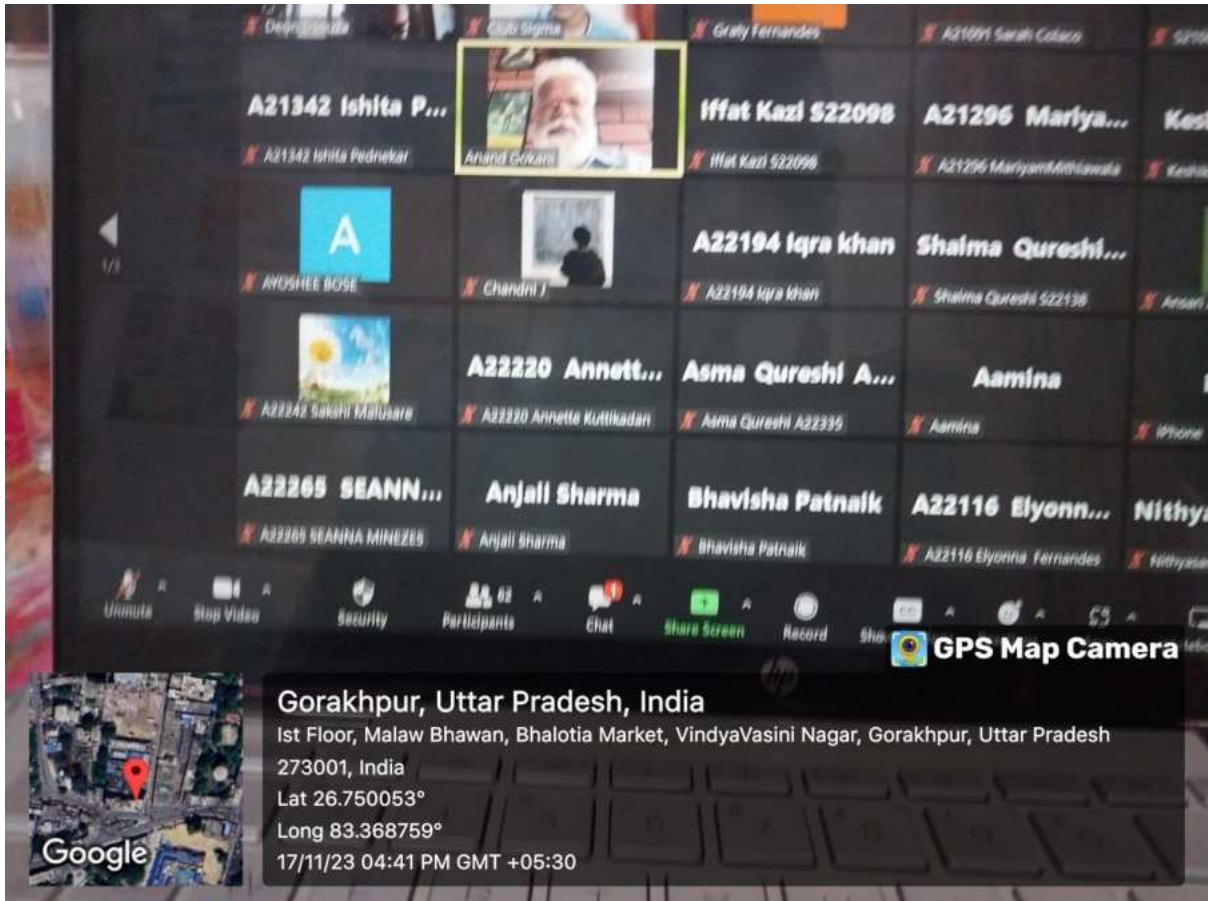
Starting off with milk, the speaker intrigued our audience by calling it a poison, as it is considered a superfood. He explained that milk is a superfood indeed but in its pure, unadulterated form. Milk that is sold off in the markets as toned loses all the fat soluble vitamins, minerals and essential elements. Pasteurization further denatures the protein part of it. And moreover, the livestock being supplemented with dozens of hormones and steroids in order to get a good yield, the milk we get is full of leached chemicals, having a very negative impact on health.

Sugar is very acidic and to neutralise that acidity our body leaches calcium from our bones to make our stomach alkaline. Sugar is found in all our soft drinks in a very high quantity, and basically ubiquitous across cuisines.

Maida is very tough to digest as it is made from the most non fibrous part of the crop and hence is a very sticky substance that remains in the stomach for long periods.

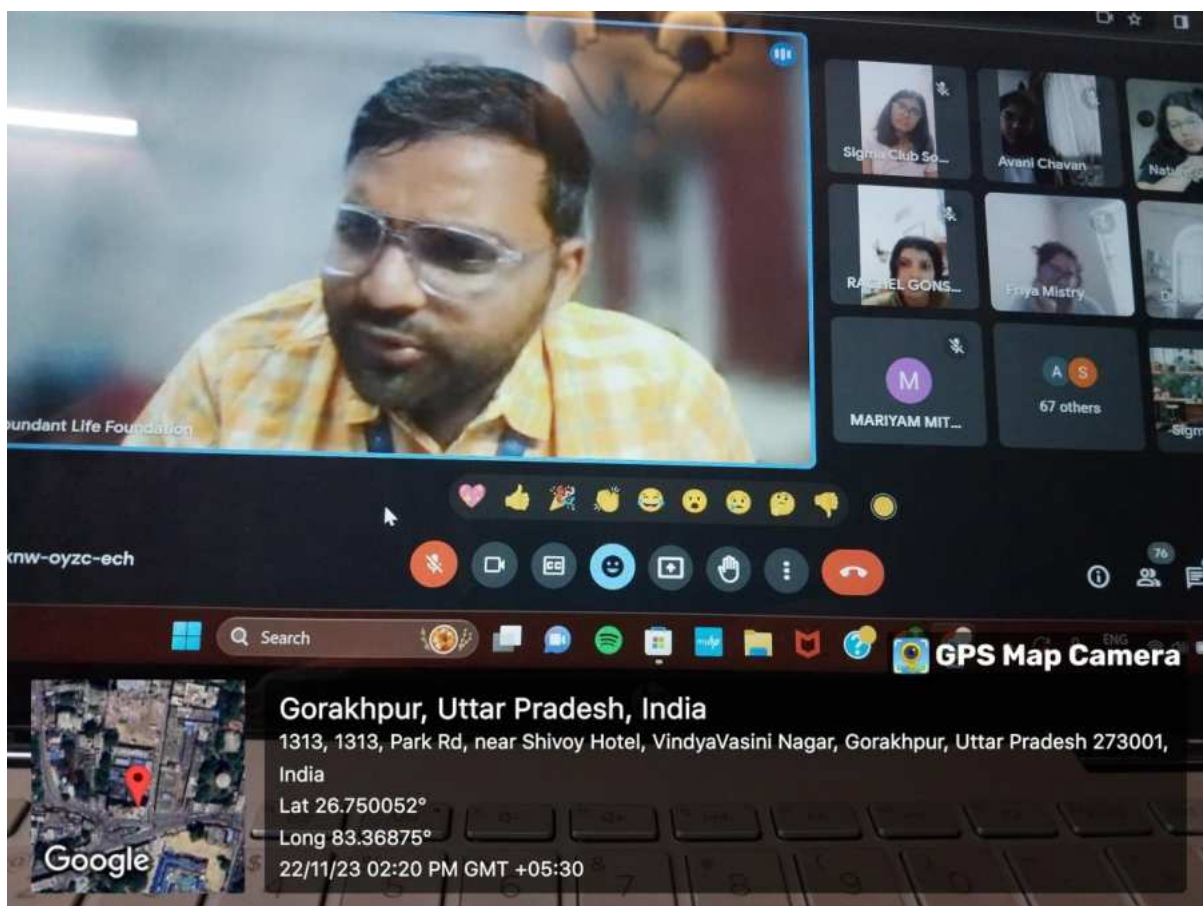
Salt, too, is a dangerous thing. Especially iodised salt, that is not even a requirement for most people. The speaker demonstrated how excess iodine in the diet leads to hyperthyroidism and disease. Salt in our diet is not only required as sodium chloride, rather we need multiple other salts such as chromium, magnesium, etc. But with table salt, there is an excess of sodium and the deficiency of the other salts which causes many health issues.

The facts and concepts explained by Dr. Gokani were very informative and we had a Q/A session where he answered various questions about the replacements of these food items in our diet. Dr. Gokani seemed to have motivated the audience considerably to make sound changes in their diets to lead a sustainable lifestyle after reviewing our choices, towards a healthier existence.



The 22nd of November saw yet another webinar, this time in collaboration with Nature Club and Mr. Abhishek Anand, the founder of the Patna-based NGO, Abundant Life Foundation. In light of the government's recent green push on Mission Life, we believed it would be advantageous for the students to hear about the mission from someone who actually works in the field. In Webinar on Mission Life, Mr. Anand discussed the detrimental effects of mindless consumption and ecologically damaging activities in our daily lives. He stressed upon waste management practices and the need for implementing lifestyle changes across urban and rural populations. The webinar covered topics like waterways, single-use plastics, and everyday changes. Mr. Anand also provided insights and answered questions from students, emphasising the importance of addressing these issues in our daily lives. We had 74 participants.





The 26th of November, 2023 was another memorable day for our team, with our fun music-themed collaboration with MWDC, Wavelengths, taking place online via Google Meet. In this fun collaboration with WMDC, we tried to combine science and music, by holding a discussion on people's favourite music, followed by a brief session on the science of music. We asked participants to share their stories about music, and discussed everything, from the tunes that helped people get through difficult times to the artists they happened to come across by chance. 10 participants were part of the session. In this fun collaboration, we tried to combine science and music, by holding a discussion on people's favourite music, followed by a brief session on the science of music.

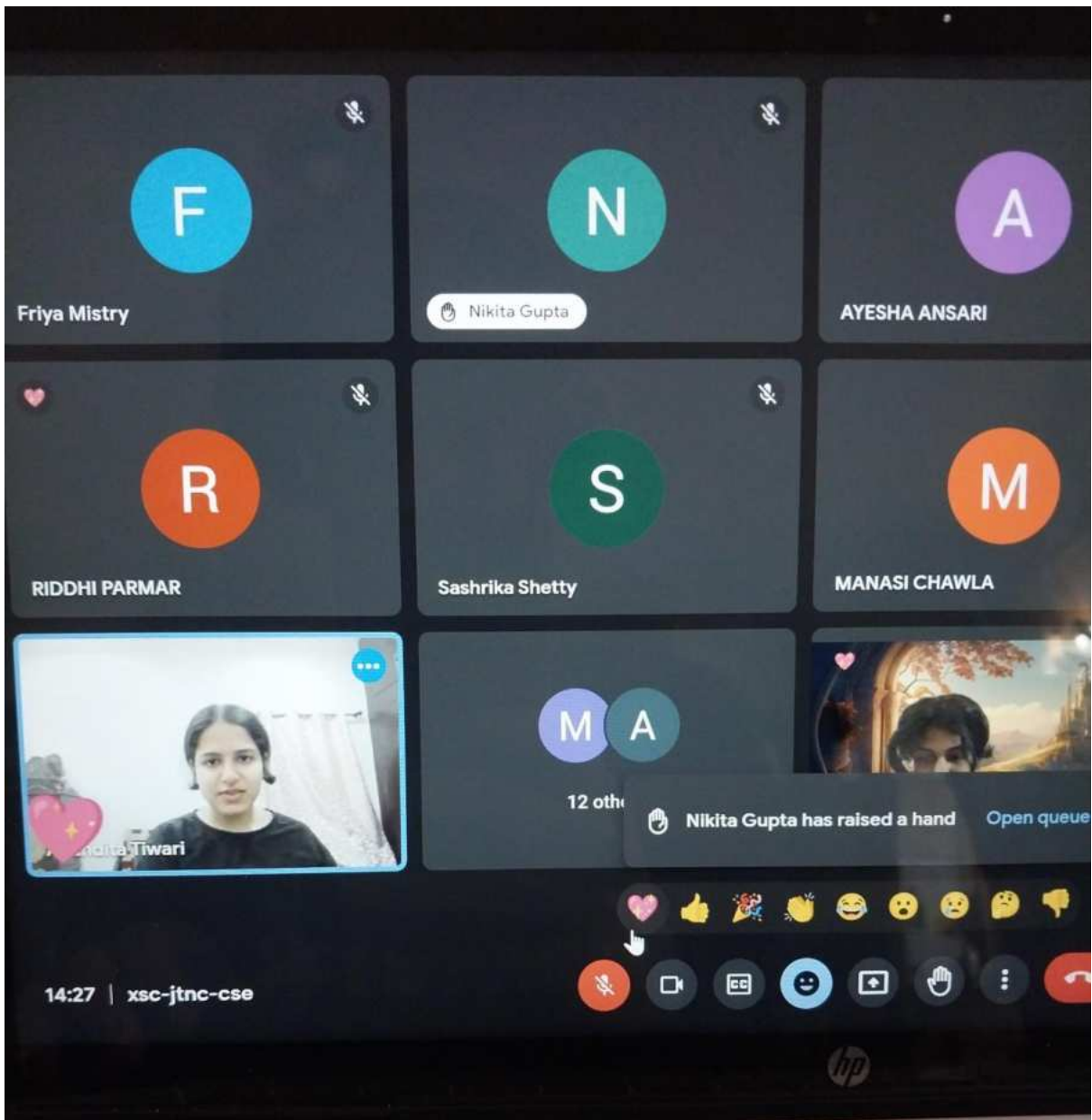
Despite the relatively lower participation, we saw enthusiastic discussion by the participants on various music forms, artists and groups. Because every song holds a story, we invited participants to share their music-related stories, and they delivered. From the songs that got them through tough times, to the artists they stumbled across by serendipity, we covered it all. From Taylor Swift to Aruna Sairam, and from SEVENTEEN to Tchaikovsky, the range was truly stunning.

We also, by pure luck, had a participant who happened to be well versed in Carnatic music: and were treated to a brief glimpse of the vocal alaap techniques employed by classical singers.

We followed this up by talking about the incredible science of music and sound, sharing various fun facts about sounds in space, and also streaming NASA's reconstruction of the

sounds made by a black hole. The participants unanimously expressed wonder and awe. To end, we discussed the science behind the lengthening and shortening of vocal cords to alter sound pitch, vis a vis operatic techniques and screened an educational short documentary on the neurochemistry of music.

Despite the lower participation, we were heartened by the wholehearted appreciation expressed by the participants, and still consider the event a successful one.



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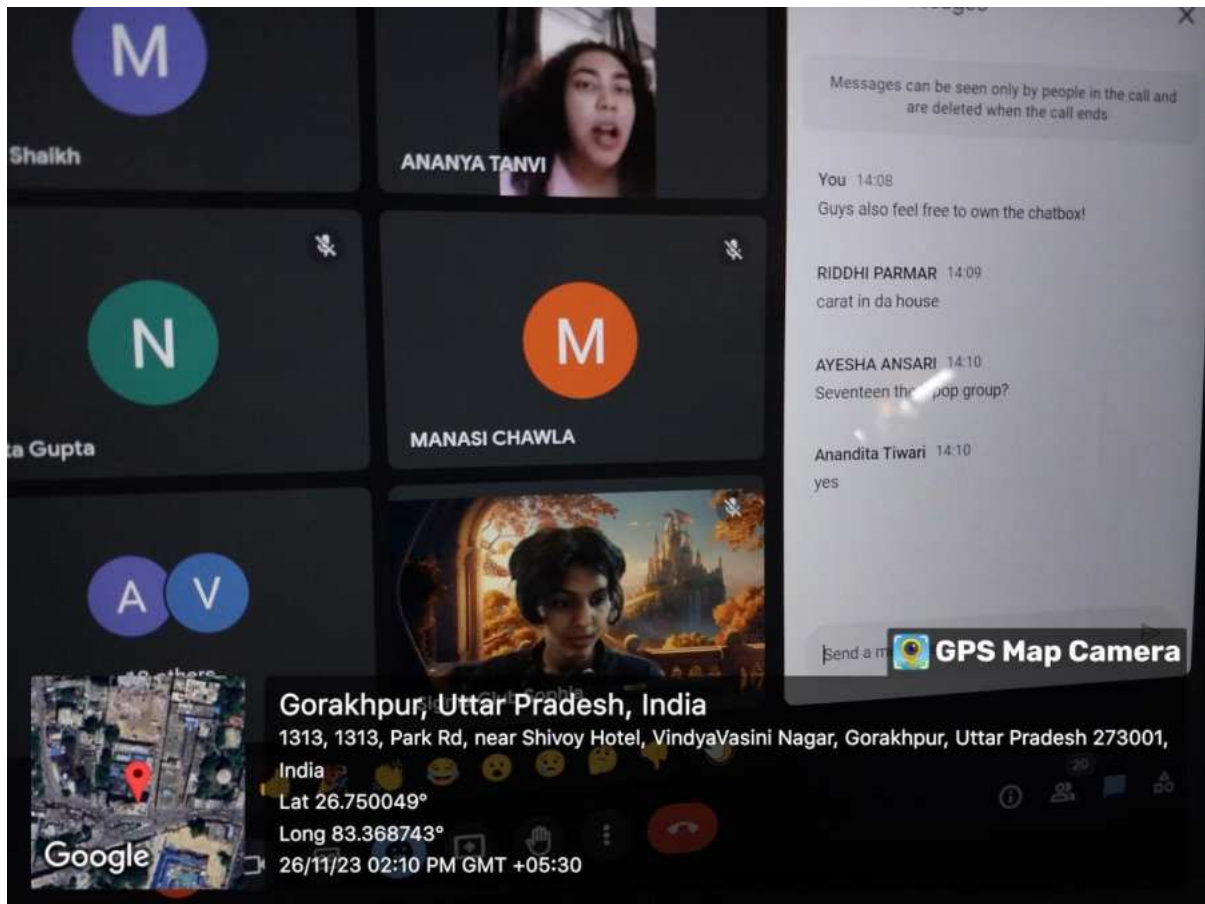
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Drawing inspiration from Marvel's famous What If series, on the 17th of December, 2023, we held an online interactive discussion event, over Google Meet, where we explored potential match-ups across the DC and Marvel superhero franchises, followed by the screening of a Lego Avengers short film. 45 participants joined.

This speculative superhero science-fiction themed event took place in two parts : the first was an interactive discussion event, where we explored potential match-ups across the DC and Marvel superhero franchises. We had prepared a variety of prompts, ranging from potential alternative careers for Marvel's superheroes (which do not involve saving the world), to encounters between counterparts from the two cinematic universes, such as Tony Stark and Bruce Wayne.

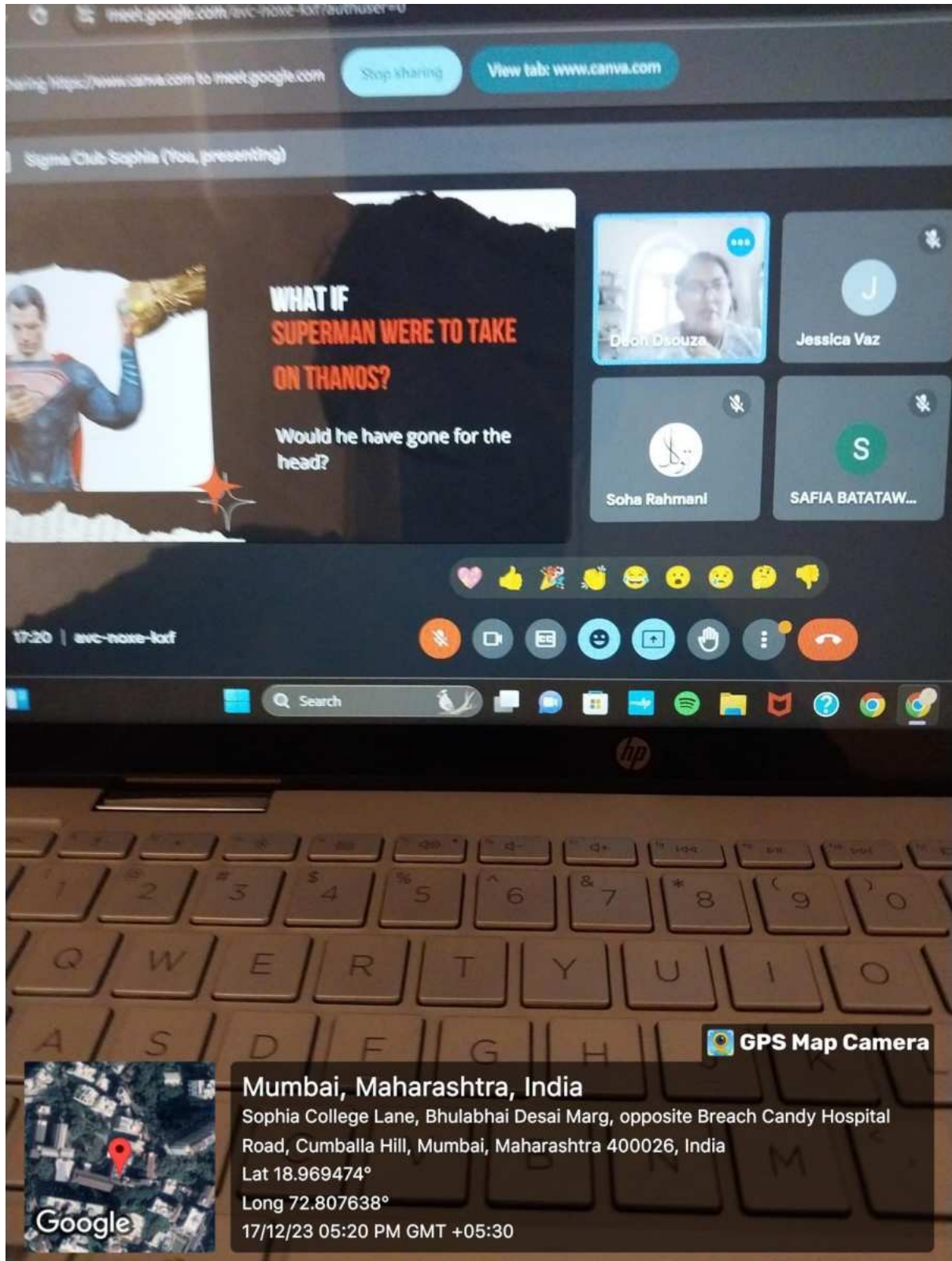
The discussion threw up a variety of interesting points of view – our participants agreed that Loki would make an excellent barista, even if you could never be sure whether or not your brew would turn you into a frog; it was generally agreed that Natasha Romanoff would make a fine ballerina, and Thor ought open a gym adjoining cafe Loki.

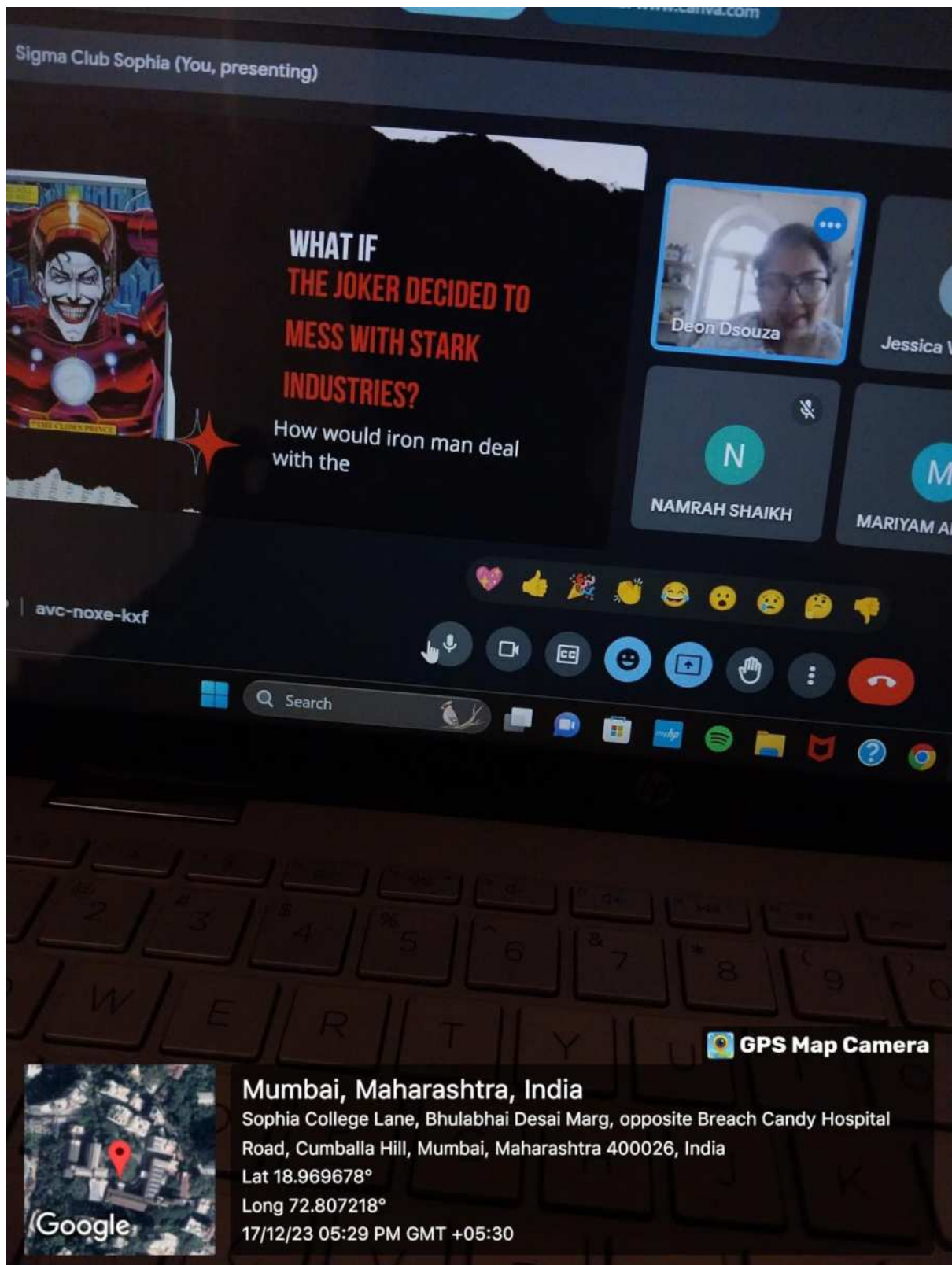
Apart from creating an alternate universe of their own, participants also opined on the outcomes of various match-ups in our gamified segment called I Hate You 3000. They had to convince us which, out of a given pair of hypothetical adversaries, would win in one on one combat, using only 3 sentences to put across their point!

We ended by streaming an animated Lego Avengers short film.

The participants expressed a willingness to attend future discussions and screenings as well, and the event was, on the whole, well received.

December, being Christmas season, also saw the Sigma team share some interesting facts about Christmas traditions world over during the Christmas wishing program on the 23rd of December, 2023.





Continuing in the same vein of non-serious events, on the 20th of January, 2023, we held a laughter fest by the name of Nobble Laureates - a parody of the Nobel awards, where we invited people to come up with and defend the most outlandish of hypotheses about how the world works. The sillier and more vehemently defended the hypothesis, the better!

This event was planned to be a non-serious one, and it truly delivered as a laughter fest. From the way physics works in Tom and Jerry to whether Schrödinger deserved to be charged with cruelty against animals for his famous “cat in a box” thought experiment, and whether we live amongst alien shape shifting lizards – the variety and creativity on display was incredible to behold.

From the invisible dimension from which mothers are able to find things that no one else can see, to the adventures that lost socks go on, and whether you could kill yourself with a basketball if you applied the right amount of force, we covered everything under the sun. We also took a brief detour into the terrain of serious science and delved into the concepts underlying Schrödinger's thought experiment; the electron wavefunction model and the observer effect – all simplified so as to be accessible to the sensibilities of students across streams.

Nobble Laureates was not only a hilarious event but also a creative thinking exercise. 6 participants showed up for the session. We are frequently quite set in our ways, deeply entrenched in the current quo and our strict ideas about how the world should be. The event served as a creative thinking exercise that defies logic by examining the possibilities that exist – because sometimes, following those what-ifs leads to the greatest of discoveries.





Sigma's swan song this year came on the 10th of February, when we collaborated with Chemistry Department's intercollegiate fest, Chemscope, to bring a range of fun, science themed games, in our flagship event, the Carnival. The Carnival offered engaging games and demonstrations, promoting science in interactive and entertaining ways. From stimulating intellect with trivia to demonstrating complex concepts through fun activities, the event successfully merged education with amusement, leaving participants both enriched and entertained.



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All in all, this year was a fruitful one for club Sigma, with a wide range of activities. Some of our planned events could not take place, due to scheduling issues, and/or - a few that didn't make it past the pipeline included collaborations with SSRI, SCEDA and MKS, a session on handling exam stress with the Counselling Centre, and a visit to the Nehru Science Centre. Regardless, the team, under the guidance

of our teacher in-charges, Tanaz Asha Ma'am, and Sir Mayur Gaikwad, had a productive and eventful year.