



INDIA INTERNATIONAL SCIENCE FESTIVAL 2023



SPACE HACKATHON

In Association with



राष्ट्रीय नवप्रवर्तन प्रतिष्ठान — भारत
National Innovation Foundation - India



Team Name: HUST.LERS

Name of College/University: Vellore Institute of Technology - Andhra Pradesh

Team Member Details:

- Radha Krishna Garg
- Aryan Gupta
- Md. Anas Jamal

Problem Statement:

Understanding on Problem Statement:

As a participant in the "Geospatial Game Creation - Satellite Image Guessing Challenge," our task is to design a two-player interactive geospatial game where players guess real-world locations from satellite images. The challenge aims to promote spatial awareness and problem-solving skills while ensuring an enjoyable learning experience.

To address this, we access satellite imagery data from sources like Bhoonidhi and Bhuvan, integrating high and low-resolution images to create a diverse dataset. The game development process involves designing a user-friendly interface, implementing algorithms for accurate player assessment, and incorporating educational elements to encourage exploration and learning about different places in India and all over the world. Users can get to experience the architecture, the culture and the amazing geographic landmarks in their country at the comfort of their home.

Brief about your approach:

Our team created an interactive multiplayer game centered on geographical exploration. By utilizing street views, landmarks, and map-based guesswork, players challenge themselves to accurately pinpoint locations and measure their proximity to the actual coordinates.

This immersive experience gamifies the discovery of diverse places, cities, and countries, injecting excitement and competition into learning. Through map interaction and exploration, players enhance their geographic knowledge in an engaging, enjoyable environment. The app after revealing what the current area on the map was will also provide you with important cultural, historical or geographical facts about that location to increase users knowledge on that area and to signify that each place is important and must be preserved

Detailed Proposal & Solution Approach

Overview:

Introducing a dynamic multiplayer geolocation game elevating your gaming adventure. Compete with friends, explore street views, and strategically guess locations to climb the leaderboard, adding an exciting competitive edge to your experience. Earn your place on the leaderboard, incentivizing engagement and rewarding your expertise in geolocation guessing. There will be 2 available game modes, 1st one will be guessing the location based on the provided street view, 2nd will be guessing the location based on the given clues like traditional food, important monuments/landmarks and other factors that could hint to that particular place

Fun Element:

The interactive gameplay, real-time competition with friends, and the challenge of accurately guessing locations make the game both entertaining and competitive.

Exquisite Gameplay:

Enter a room, set parameters, and dive into an adventure with intuitive controls and a visually captivating environment.

Leaderboard Glory:

Witness the glory as top scorers claim their place on the leaderboard, igniting the competitive spirit for the next round.

Increase Knowledge:

Playing the game will increase the cultural knowledge of the users given how different places look like and with the clues we will provide them like what food, monuments/landmarks are famous there or are those locations of geographical importance like mountain, volcanoes etc,

Detailed Proposal & Solution Approach

Elevated Fun Factor:

Blend of strategy, precision, and competitive camaraderie makes the game an immersive and entertaining experience.

Precision and Points:

Accuracy matters as the game calculates the precise distance between guessed and actual coordinates, rewarding points for spatial acuity.

Endless Replayability:

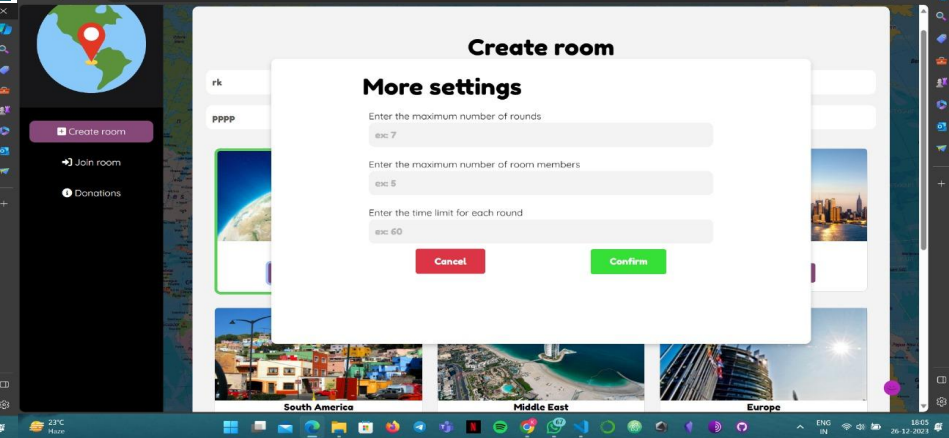
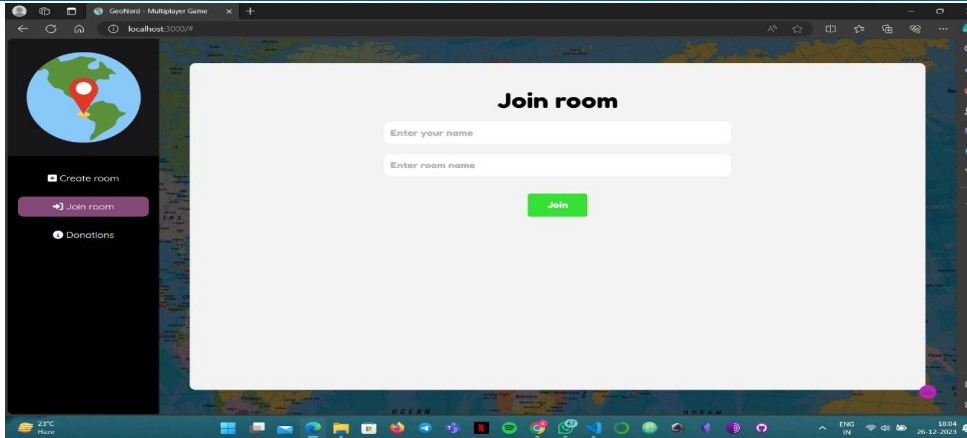
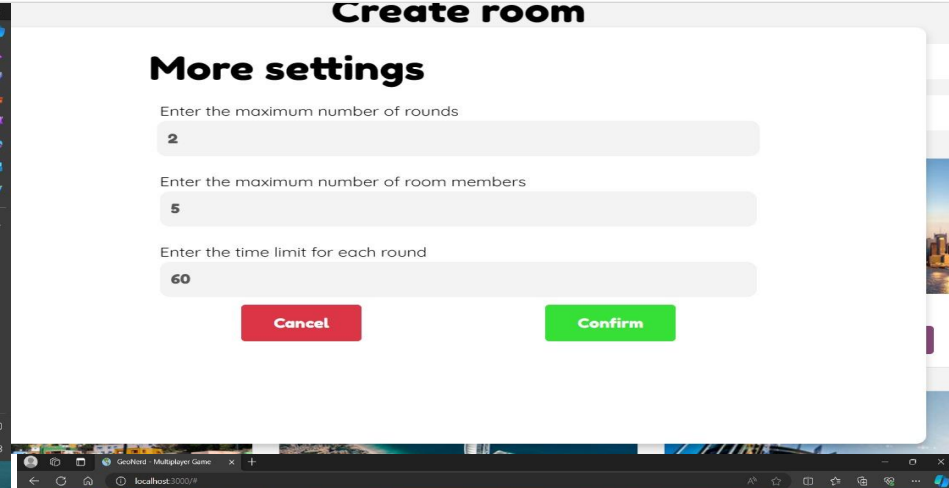
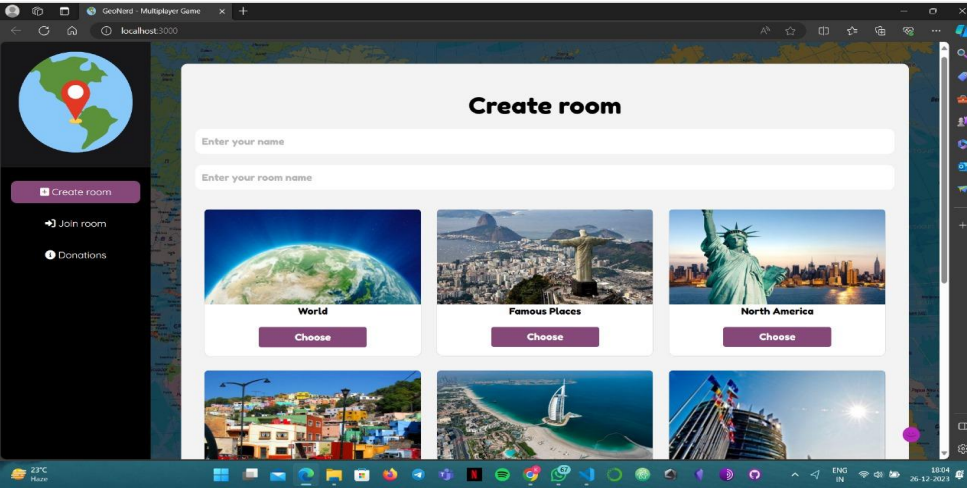
Choose to continue the excitement with the option to play again or exit, promising endless replayability.

Geographical Discovery:

Embark on a journey exploring global locales, unveiling their geography, rich cultural tapestries, and iconic landmarks. Immerse yourself in discovering diverse regions worldwide, fostering an understanding of their geography, cultural nuances, and breathtaking architectural wonders.

Cultural Insights:

Unveil the significance behind each location, fostering continuous learning and appreciation for its cultural, historical, or geographic importance. Encourage users to explore and protect these invaluable sites, promoting an understanding that every place holds unique significance, inspiring a deeper connection and a commitment to preservation.

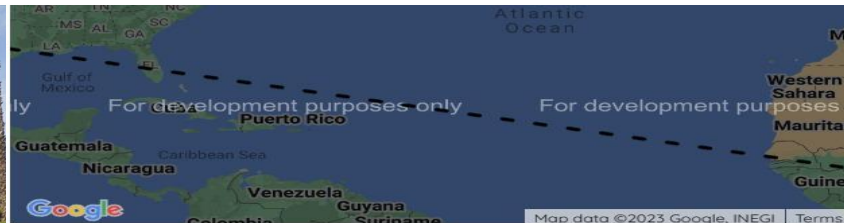




Confirm

Round: 1/2
00:51

Players Score
rk 0



Confirmed!

You are 13,209 km out!

Next



Winners

200

1st

rk

Play Again

Exit Game

Waiting list

● rk

Start

Tools and devices used on development

- The data used in the game can be any satellite data of any place across India during anytime. The
- following are some of the web sites, you can visualise and download open-source satellite data.
- Google maps
- Satellite image pins
- Bhuvan NOEDA Portal -
<https://bhuvan-app3.nrsc.gov.in/data/download/index.php>
- Bhuvan 2D Maps -
<https://bhuvan-app1.nrsc.gov.in/bhuvan2d2.0/>
- Bhoonidhi Browse and Order Portal -
<https://bhoonidhi.nrsc.gov.in/bhoonidhi/index.html>
- Bhoonidhi Vista -
<https://bhoonidhi.nrsc.gov.in/vista/index.html>
- Copernicus Data Space Ecosystem for Sentinel Data -
<https://dataspace.copernicus.eu/>
- USGS Website for Landsat Data -
<https://earthexplorer.usgs.gov/>

References/Acknowledgement

- [GeoGuessr - Let's explore the world!](#)

Technologies involved/used

- React JS
- Express JS
- Node JS
- MongoDB
- Google Maps
- Bootstrap CSS
- API calling