SMART INDIA HACKATHON 2022

Ministry/Organization Name/Student Innovation: Central Ground Water Board (CGWB), Ministry of Jal Shakti.

PS Code: RK114

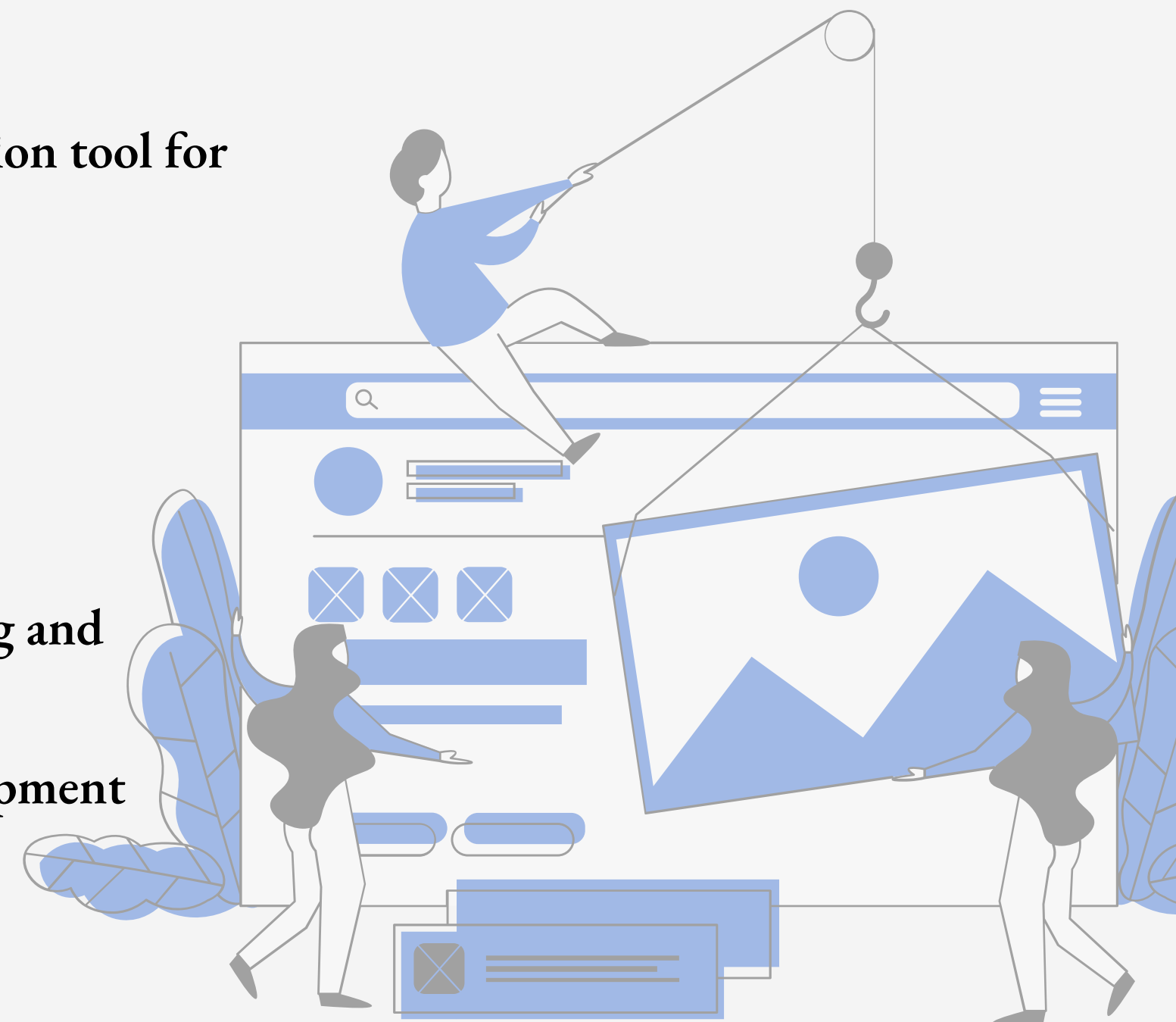**Problem Statement Title:** User-friendly data visualization tool for interpretation of groundwater isotope data

Team Name: BRUTE-FORCES

Team Leader Name: Yashasvee Dwivedi

Institute Code (AISHE): 1-449514562

Institute Name: Bundelkhand Institute Of Engineering and Technology, Jhansi

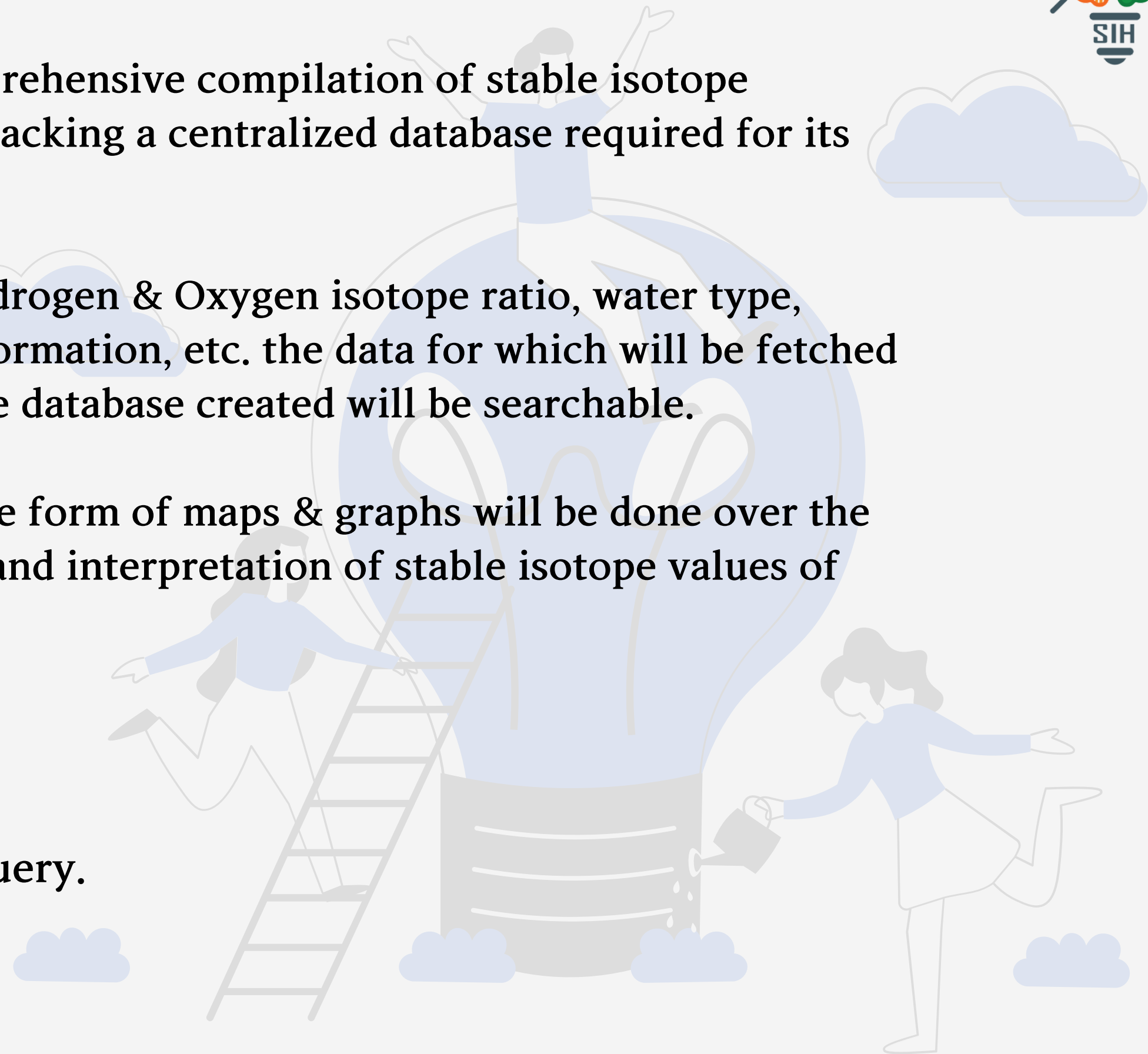**Theme Name:** Agriculture, FoodTech & Rural Development

OUR IDEA/SOLUTION

- We'd be creating a website that provides a comprehensive compilation of stable isotope groundwater data and will fill the room for the lacking a centralized database required for its effective management.

- The website will be storing information like Hydrogen & Oxygen isotope ratio, water type, collection date & time, site location, project information, etc. the data for which will be fetched from CGWB & other research organizations. The database created will be searchable.

- Visual representation of the available data in the form of maps & graphs will be done over the portal which will enable ease of understanding and interpretation of stable isotope values of groundwater

TECHNOLOGY STACK

Front-end : HTML, CSS, JavaScript (DOM), Jquery.
Backend: Python, Framework – Django, API fetching, node.js, express, mongoDB

USE CASES

General Public:-

1. They can use the website to know about the groundwater levels and water quality in their locality.

2. They will also learn about the different water conservation methods that are suitable for water conservation in their locality.

3. The website can spread awareness among the people and provide them with genuine information pertaining to groundwater resources and their depletion.

Government authorities:-

1. The Government with the concerned ministry can use the website as a dynamic library for the accumulation of the data collected by the surveys and research conducted to study underground water reservoirs.

2. Use the website to spread awareness among the citizens and draw their attention to the depleting water resources.

3. The website will serve as a unified database with its analysis based on different criteria and effective visualization depicted by maps and graphs to enhance understanding of the collected figures.

DEPENDENCIES / SHOW-STOPPER

Non-availability of data at the specified time can result in the late updation of data which will fail the live data service of the web portal.

TEAM DETAILS

Team Leader Name: Yashasvee Dwivedi
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