Basic Details of the Team and Problem Statement

Ministry: Ministry Of Jal Shakti

PS Code: 1291

Problem Statement Title: A mobile app that crowd sources water-related problems from around a community, open sources data, etc. and display them on a map.
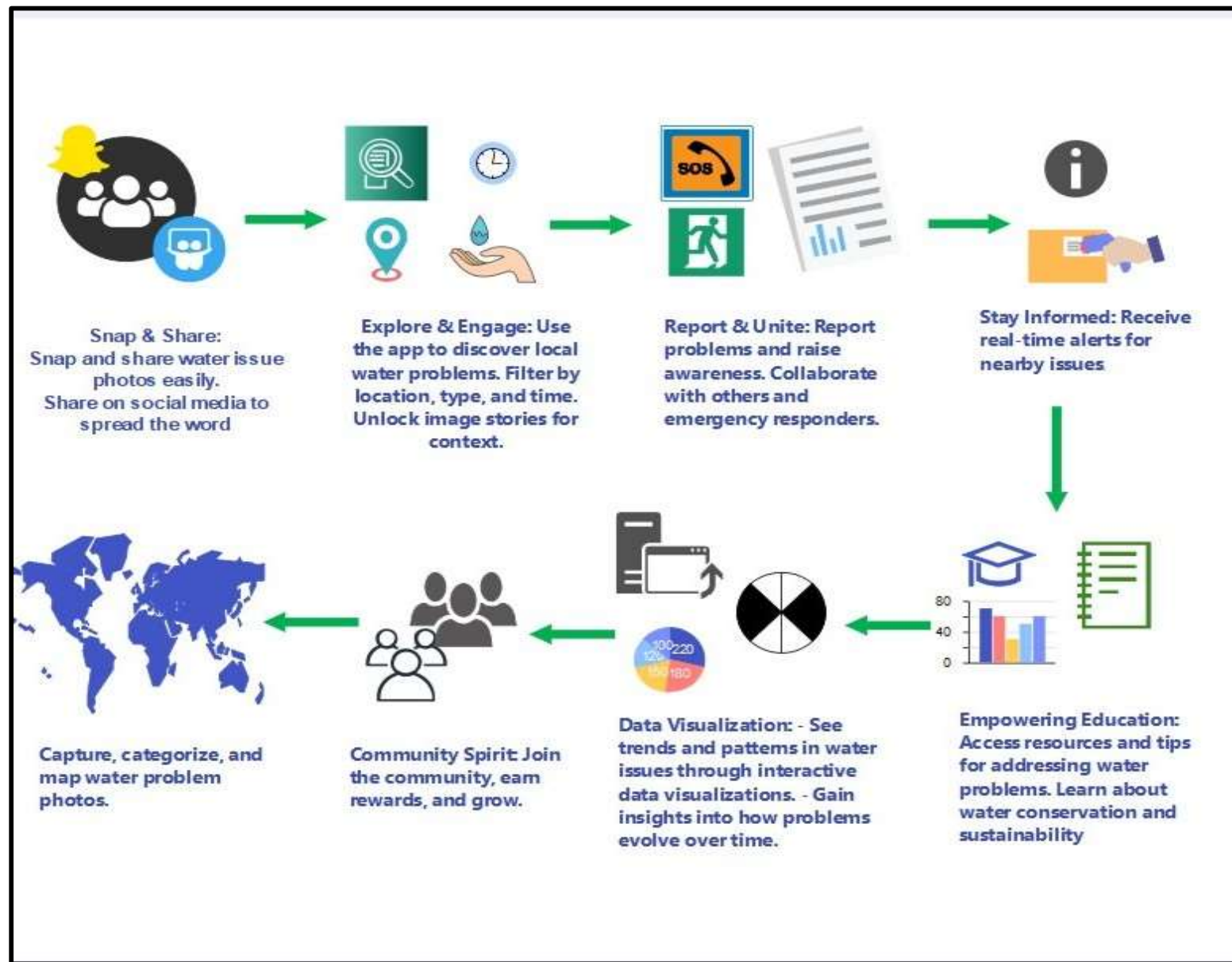
Team Name: SPARTAN2023
Team Leader Name: Neha Deepak Puri
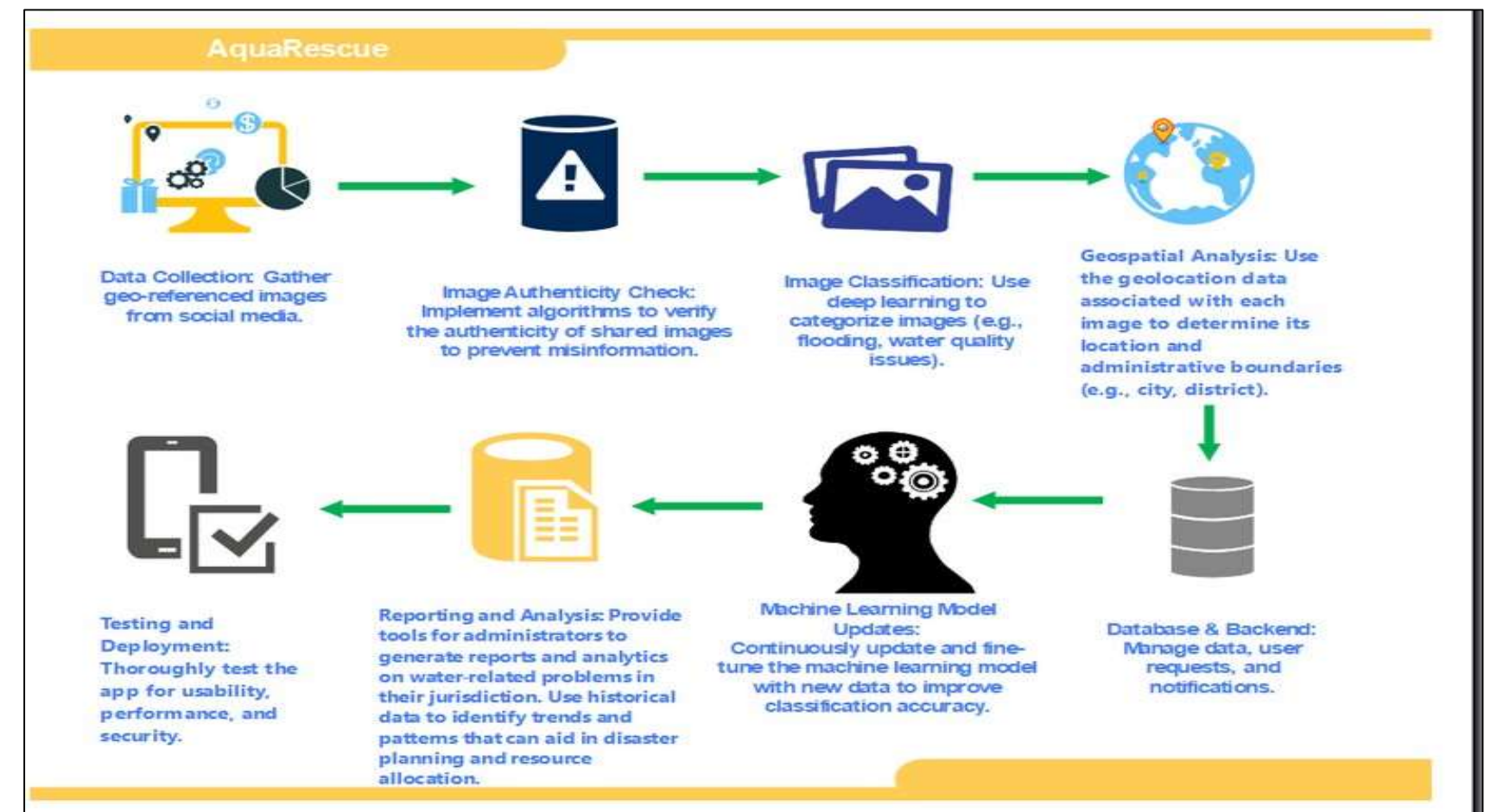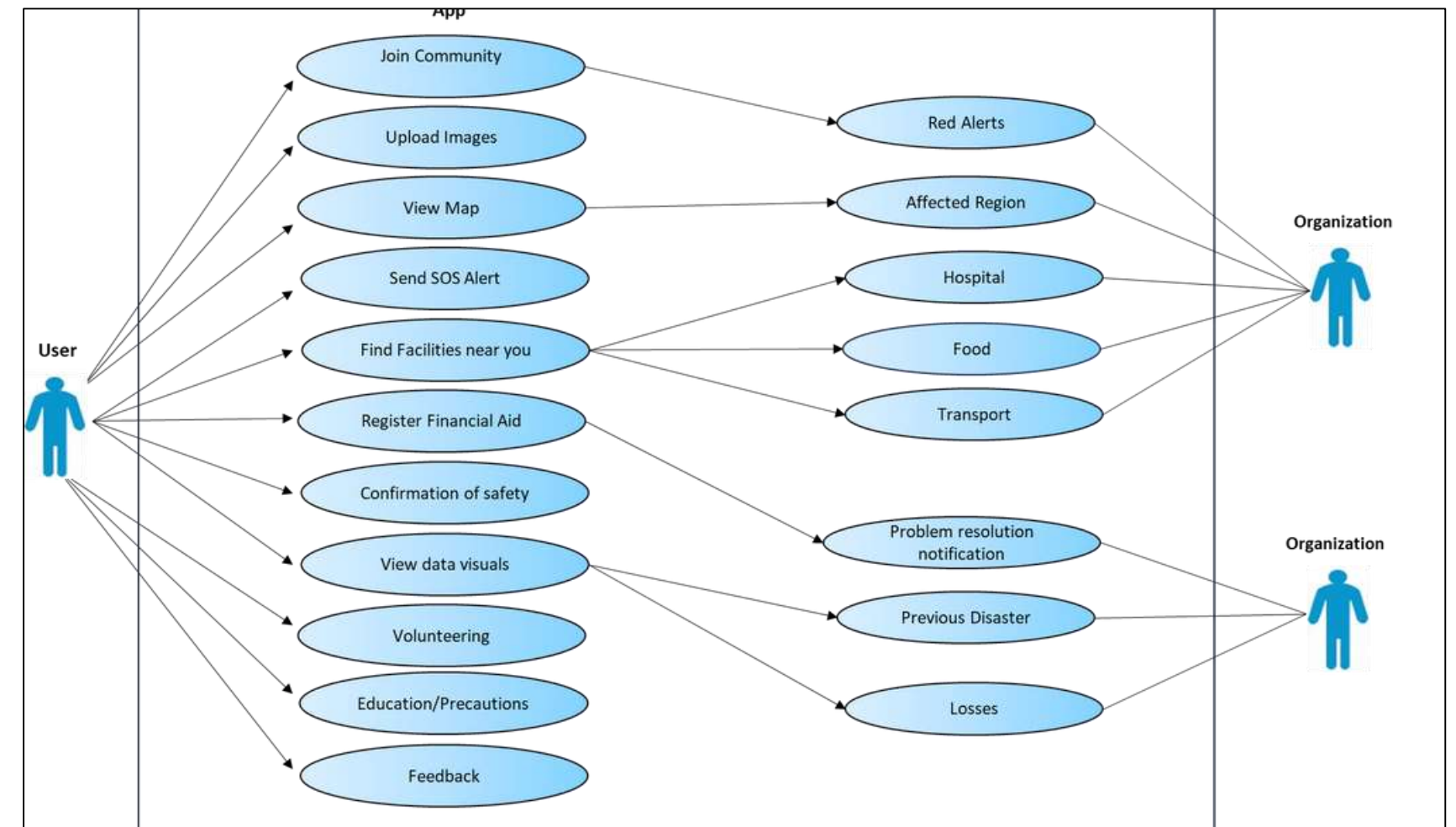**Institute Code (AISHE):** C-41256

Institute Name: K .K Wagh Institute of Educational Research

Theme Name: Disaster Management

Introduction:

- Our 'AQUARESCUE' is an user friendly app for "**water problem management & prevention**" where user needs to upload image regarding water issues/disaster over **community** to provide alert to others. The fraud photos detected ,analyzed and categories according to problem and display it on map at affected area using technologies like **computer vision XAI, Assemble learning** and **GIS.**
- We are integrating social media with our map which helps to user updated and also in finding accurate information.
- The red alert will be sent to user by organizer before any major crisis happened also the **SOS** system will perform major role in any danger. When user will give the **SOS** alert there location will be pinned and immediate action will be taken by rescue team.
- **Map** is very crucial in flood like situation. Map will show all the necessary facilities near the flooded region on the map like nearby hospitals, shelter, transport, food arrangement.
- We are providing "Are you safe?" option so that localities safety is assured.
- People can register for **financial aid** with the proof.
- Also those who want to volunteer management program, want to give donation can enroll through our app.
- Our app also consists of features like people's **innovation**, educational videos, **disaster** related news.

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Use case/Idea/ Approach:-

- User need to upload photo through our app so that we can get **geospatial** data and locate it on map. we will categorize the photos into several disaster type and using technology like computer vision, ensemble learning and XAI we can find the accuracy.

- We will also retrieve data surfing from social media through **API** to verify its rationality.

- We will be using geospatial data for finding date, time and location, and also on community we can take poll for false data detection.

- If any problem remains unsolved user can directly communicate with management and **feedback** can be given and received.

- **Data visualization** will be made available with the help of chart, pie charts or graphs of financial loss, death rates and disaster related information. It can be helpful for prediction of disaster prone area

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Technology stack:-

- Frontend: React-Native, JavaScript.
- Backend: Python ,Node.js
- Monitoring/Analytics:- Firebase analytics.
- AI & ML: XAI and Ensemble learning, NLP.
- Data visualization:- Chart.js, D3.js.
- GIS: Google map API, AroGIS.
- Development Environment: Android Studio, VS Code.
- Computer Vision: OpenCV, TensorFlow and Keras**.**

Describe your Dependencies / Show stopper here

- A **prevention and management** android based platform for serving LOCALITIES for water related disaster.

- Providing safety and basic needs during the disaster to commoners who had been evacuated from their areas.

- Proper alerts, locating disaster photos on maps, **weather forecasting** as preventive measure for disaster.

- Community will be accessed by all user so that by sharing related images, innovation or donation others can get aware.

- Using technology like **XAI** we can get trust and interpretability to assist bias free debugGing.

Team Member Details

Team Leader Name : Neha Deepak Puri

Branch : BE   Stream : AI & DS   Year : III

Team Member 1 Name : Apeksha Ravindra Gangurde

Branch : BE   Stream : AI & DS   Year : III

Team Member 2 Name : Mansi Jitendra Joshi

Branch : BE   Stream : AI & DS   Year : III

Team Member 3 Name : Kanchan Kishor Supekar

Branch : BE   Stream : AI & DS   Year : III

Team Member 4 Name : Samruddhi Gajendra Mulay

Branch : BE   Stream : AI & DS   Year : III

Team Member 5 Name : Srushti Anil Ahire

Branch : Btech   Stream : CSD   Year : I

Team Mentor 1 Name : N M Shahane   Expertise : AI   Domain Experience (in years) : 15+

Category : Academic

Team Mentor 2 Name : D D Bage   Expertise :IOT , AI&ML   Domain Experience (in years) : 10+

Category : Academic