Key points of Pro Rescue solution

Completeness of solution

This solution is based on an end to end approach where different sensors placed on ground interacts with IBM Bluemix NodeJs server and sends their real time data like reading locations and values to the MongoDB which is fetched by the Admin app and processed for disaster detection algorithms.
If the disaster is detected through algorithm, it is broadcast to different channels like mobile app and Admin app.
This project also focuses on a User Interactive mobile app from where a user can get the disaster notification in nearby areas, get the location and contact details of the nearby rescue teams, ask for rescue, provide help, ask for help or find nearby safe assembly areas.
In rescue me, a user can ask for rescue by sharing his/her location as well as the details of people with him/her. One can also track the rescue team around, by seeing their location and contact details on map.
In provide help, one can provide help at the time of disaster by several means like food, accomodation, medical equipments etc which will be reflected in user app as well as admin app.
In ask for help, a user can call for a help, which could be medical equipments, shelter, food etc.
The highland and open places have been marked as safe assembly areas in the map.
An admin/rescue team member can monitor all the statistics, manage dashboard as well as see the locations of disasters, rescue requests and rescue teams' location on the map.
The app also features designflow chatbot system. In case user is not able to get the help from any source, he/she can always ask chatbot for help and guidance. This chatbot supports Machine Learning, hence it can be trained for multiple responses based on user input.
The need of affected people at the time of pre-disaster as well as post-disaster is taken into consideration while designing this User Friendly solution.

Impact on ground

1. Cost effective: Mobile app and Admin portal will be free of cost along with NodeJs server and MongoDB, however hardware assembly costs around $9 for one time setup.
2. Practical: This solution is apt to its needs as it can be practically implemented in real environment with minimum cost.
3. Ease of Implementation: Implementing such a solution is easy, as it is already implemented with ease for this demo.
4. Low maintenance: NodeMCU costs around $5 and sensors around $1-$2, so highly low budget setup. Also NodeMCU is a very robust product hence doesn't need much of maintenance.

Effect and efficiency

1. Accurate & Reliable Data: Live data is getting recorded from the field sensors, which is accurate and reliable enough.
2. Improves rescue processing efficiency: Data is getting posted from NodeMCU every second, hence every second update is monitored. Also rescue team and helping people are monitored using the app, which is very effective for rescue processing.
3. Lowers damage done by disaster: It increases the efficiency of the rescue team as well as common user to escape the disaster or atleast disaster effects can be minimized by information broadcast with the real time data.

User Experience

1. Icon centric UI: The app and the portal is designed such a way that maximum functionality can be achieved with a simple and eye catchy UI.
2. Easy to use: The UX of the app and portal is expressive as the user can easily understand what is the function of each button and can easily operate the app.

Uniqueness of solution

1. Track Rescue team: Rescue teams in nearby location can be tracked on agm maps as well as the app shows the direction to the nearest rescue team based on Haversine Formula.

2. Can help others: There is an option in the app to opt for help. One who is willing to help at the time of disaster can also help others with food, accomodation, relief materials, medicines etc.
3. Monitor live field data: Live sensors are placed on the ground from where data is getting posted every second to the database creating a reliable and efficient way of monitoring.
4. Admin can track & monitor: Admin through admin portal can track and monitor the disaster situations based on the live data, and notification updates.
5. User can also track nearby location for help: Once a user opts for help, his/her location and contact will be shown in the admin portal as well as app. So a person seeking for help can ask for help through contact details given.
6. Safe assembly areas: Safe assembly areas such as grounds, open spaces are shown on the app for prevention from disaster.
7. Live disaster update: App user as well as admin will get the notification on devices once a hazard is raised.
8. Chat support system: A user can always take help and guidance from chatbot in case of emergency.

Implementation areas

1. Chemical disasters, Gas explosion
2. Forest fires, City fires, Explosions
3. Flood, Mass water logging