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DISASTER MANAGEMENT SYSTEM - SOLACE

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Abstract – *Disaster Management is a collective term used for encompassing all aspect of planning for responding to emergencies in disaster, Including both pre and post-event activities. It refers to the management of the risk and the consequences of the event. In essence, disaster management is quite simply response and relief; it's systematic method aimed toward reducing the negative impact and/or consequences of the adverse events. In India, 57% land is vulnerable to earthquake, in which 12% is vulnerable to severe ones. 68% land is vulnerable to drought, 12% to flood and 8% is vulnerable to cyclone [1]. Apart from the natural disaster, some cities in India are vulnerable to man-made disaster like chemical and industrial disaster. There are many tragic disaster happened in India in past years like 1984 Bhopal Gas Tragedy, 2001 Gujarat Earthquake, 2004 Indian Ocean Tsunami, 2008 Mumbai attacks, 2013 Uttarakhand Flash Flood [1]. In all these major catastrophic natural disaster in the form of cloud burst, earthquake, tsunami and various man-made disasters which killed thousands of people and thousands were reported missing. So we are designing a website by which anyone from around the world can provide help to those people who are affected by the disaster and to provide them basic help by sending them materialistic help like clothes, food and financial help to them.*

Key Words: Disaster Management, Emergencies, Systematic process, Website, Basic help, Disaster.

1.INTRODUCTION

It's easy nowadays to think a disaster is over once it leaves the breaking news coverage and newspaper headlines. But don't be fooled—disasters take months, Sometimes years to recover from and there are always ways you can help.

Keep raising money
Keep volunteering
Keep donating

There is a map module which show the area affected so that you can reach out there for help. If you live nearby a community that has been affected by a disaster. That map will also show the list of nearby NGO's which are authentic and anyone can donate materials like food, clothes, sanitation, packed water bottles etc.

Payment Portal is maintained by which one can donate any amount of money to the affected area development or for the help of people affected by the disaster. This payment portal is safe and authentic so the money raised from the donation will only be used for the help of the people affected by disaster or in development of the affected area.
Blog module is also provided in which anyone can share their experience with the disaster and provide information about what to do and how to do to cope up with these tragic situations. There are many blogs which consisting of information about which things are most needed in these situations so that one can easily make a note on what to donate. So anyone can feel free to write anything about their experience or suggestion which provides some sort of help to the people who are affected or to the one who wants to provide some kind of help to them.

Fig-1: Natural Hazard Prone Areas In India

This image represents the natural hazard prone areas in India.

1.1 Problem Statement

The purpose of our website is to help people at the time of a disaster may it be a natural or a man made disaster by creating awareness among people about these disasters and encouraging our website users to help the people at

the time of need either financially or by sharing there own stories or directly donating time, clothes, food, etc . Also the website provides the latest news about different disasters worldwide.

1.2 Literature Survey

We are using Java to develop the Android based client software and MATLAB for the server application. A shortest route algorithm is used to calculate the best path for the data. The shortest route for the user to reach to the nearest safest spot will be displayed on the Android phone. Alert is sent in the form of sms and in case if a resident does not have a smart phone, they will be alerted through siren.[2]

For having a robust disaster management and reducing disaster impact, it is important to ex-ante risk reduction investment in development planning. Projects planned in disaster prone areas should mandatorily take disaster risk audit of the project. There has to be a more people-centric preventive approach to disaster management. Government should facilitate, engage with relevant stakeholders in design and implementation of policies, plans and standards aimed at disaster management.[3]

2. OVERALL ARCHITECTURE

Disaster OVERALL management is a cycle of activities , beginning with mitigating the vulnerability, preparedness in responding to operations, responding and providing relief in emergency situations and aiding in recovery. The spatial data management and geometric engineering technologies in disaster management include Information Communication and Technology (ICT), Geographical Information Systems (GIS), Remote Sensing (RS), and Global Positioning System (GPS). The employment of recent advances in special knowledge management and geometric engineering technologies in disaster management has significantly improved disaster management through facilitating knowledge capture, integration and analysis.

The integration of such technologies with alternative one another} and with other technologies like call Support Systems (DSS), the world-wide-web and simulators has created more effective disaster management. Spatial knowledge Infrastructure (SDI) and GIS have proved crucial in making ready for, mitigating, detecting, responding to, and recovering from natural and technological disasters. Without SDI one cannot expect effective and economic disaster management, as SDI is the initial input for GIS and emergency response modeling and simulation systems. SDI is gathered, displayed, accessed, and distributed.

Providing information for disaster response

The responsibility of maintaining information should be shared between different organizations based on appropriate and accepted policies for data production, people training to work with these datasets and accessing policies and using data/information. It describes the required components for developing spatial information ready for access and use. These parts will aid and contribute to the event of a correct disaster response atmosphere. There is a need for an appropriate framework which identifies the relationships between each component including the effect of the components on each other and the effect of external factors on each component.

SDI in emergency management

SDI is an initiative intended to make an environment that will enable a wide variety of users to access, recover and spread spatial data and information in an easy and secure way. In principle, SDIs allow the sharing of data, which is extremely useful, as it enables users to save resources, time and effort by avoiding duplication of expenses associated with generation and maintenance of data.

SDI includes five components are Access, People, Policy, Data and Standards. The relations between every of the SDI parts have to be compelled to be outlined so as to possess a higher and correct disaster response atmosphere. SDI can be an appropriate framework in bringing the disaster response components together and facilitating decision making for disaster management to increase the efficiencies and effectiveness of all levels of disaster management phases.

Within this framework, it should be noticed that, the challenge of designing, executing, and maintaining an SDI is based on many different disciplines. Also this framework requires different factors relating to the conceptual, technical, political, institutional and financial perspectives. Therefore, the decision-makers in disaster management community should understand the significance of these factors and the importance of human and societal issues, which contribute to the success of SDI developments. Also, these factors ought to be thought of within the long so as to attain property and current development of SDIs for disaster management atmosphere particularly in earthquake disaster management.

3. Technology Used

According to the proposed methodologies, we developed a website on a local host. We used several technologies and tools. The tools we used were:-
Word Press
XAMPP
And the technologies used are :-
PHP
MySQL

3.1 WordPress

WordPress is a free and open-source content management system (CMS) based on PHP and MySQL. Features embody a plugin design and a model system. It is most related to blogging however supports alternative kinds of web page together with additional ancient mailing lists and forums, media galleries, and online stores. Used by over sixty million websites, including 30.6% of the top 10 million websites as of April 2018, WordPress is the most popular website management system in use. WordPress has conjointly been used for alternative application domains like pervasive show systems (PDS).

3.2 XAMPP

XAMPP may be a free and ASCII text file cross-platform net server resolution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages. Since most actual net server deployments use identical parts as XAMPP, it makes transitioning from a local test server to a live server possible.

Xampp basically helps us to configure a local host on which we run our website for now. This is done for testing purpose to see the look and feel of our website.

XAMPP is a 5 primary component system

X means it is cross-platform

A is Apache: responsible for handling a request that comes in and pulls a thread from a worker
pool and isolates the request. It conjointly handles parsing the request, caching, adding in response headers, buffering, input and output asphyxiation, also as BASIC auth Access
M is MySQL which is used to store persistent data across requests / threads
P is PHP which is used to process a single request on a single thread and run business rules and access persistent data store.
P is PERL is a application programming language.
Our website, consist of many pages:
The Home Page: It consists of all the links to all the other pages. We have a display of images, from gallery and some maps. Also we have links to the live feeds about any disaster which has just been reported or has formerly be reported.
The Photo Gallery: Here are all the picture of the site there for the visitors to view.
Disaster : This is mainly for the awareness of the visitors of our site about the disasters, and precautions to take in case of the particular disaster. It has two pages:-
Natural Disaster: It consists all the information about natural disasters.
Man Made Disaster: It consists all the information about man-made disaster.

Blog: This is where the visitors can post about their own experiences and share what they know through the means of posting blogs.

Donation Portal: If someone wants to help the survivors of a disaster they can donate on our website which has links to trust NGO's in that nearby area. So, it is like directly donating your money to those NGO's.

Near By: This is a page which contains a map which indicates the most trusted organizations which help at the time of the disaster. We can also search an area and this map will show the organizations near that area.

4. IMPLEMENTATION AND RESULTS

Following figures shows some live screenshots:

Fig -2: Home Page

This is the how our home page looks in the beginning. There are all the links in the top right corner. Though, not in the picture but as we scroll down we can see map of India representing disaster prone areas also we have links which lead to news about the latest disaster.

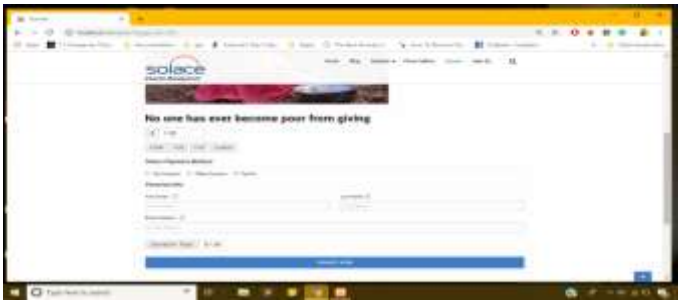

Fig -3: Donation Portal Page

This is the page with Donation Portal. Here we have options to choose from for payment method. We can choose the amount of money we want to donate and then all we have to do is enter our details and that easily money is transferred.

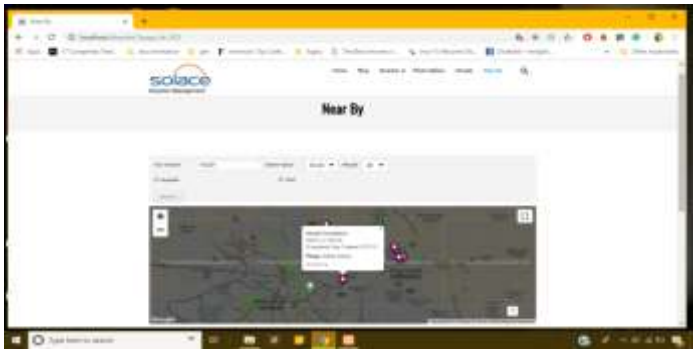

Fig -4: Near By Page

In this page, we have an user interactive map where we just have to type the area and we will get all nearest NGO's in that area along with their address and contact details.

Fig -5: Blog Page

This is how the blog page on our site looks like. Here people can share their views and there experience.

CONCLUSIONS

This paper accommodates a website by which one can provide first help to the disaster hitted area. Additional features that could be added to this project include identifying the most appropriate health care centers, field coordinating , and essential medicines and dressing of the victims. By this research paper one can the process for providing basic help to the victims of the disaster

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