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## DISASTER MANAGEMENT SYSTEM: AN EMERGENCY RESPONSE SYSTEM

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**Abstract:** Disaster, as defined by the United Nations, is a serious disruption of the functioning of a community of a society, which involves widespread human, material, economic or environmental impacts that exceed the ability of the affected community or society to cope using its own resources. Disaster management is how we deal with the human, material, economic, or environmental impacts of said disaster. It is the process of how we “prepare for, respond to, and learn from the effects of natural disasters.” Disaster management plays a crucial role in protecting lives, safeguarding infrastructure, and promoting sustainable development.

The Disaster Management System is a unique & indigenous technology system made for individuals to have enough preparatory resources to cope up with any kind of disaster if unfortunately stuck with it. The website is practical and easy to navigate through and will prove to be useful for swift retrieval of information.

### I. INTRODUCTION

In order to build a sustainable webpage for helping the needy struck by a disaster, “Disaster Management System: An Emergency Response System” is a helpful guide. Using light framework of Computer languages such as HTML, CSS & PHP the webpage guides the user in an easy & user friendly manner.

### II. SYSTEM REQUIREMENTS

#### HARDWARE REQUIREMENTS

The hardware required for the Disaster Management System are listed below:

- Working PC/ Laptop
- Minimum Processor required : Intel i5 8th generation
- Hard disk capacity : 256GB
- RAM capacity : 8GB

#### SOFTWARE REQUIREMENT

The software's required are listed below:

- Developing tool : Visual Studio Code, version 1.86.2, XAMPP
- Operating system : Windows 10, Linux Mint

### III. SYSTEM ANALYSIS

**Existing System:** NDMA.gov.in, short for National Disaster Management Authority, is a website run by the Indian Central Government in order to provide any kind of information regarding disaster, if stuck or as a preparatory website for the users for the unknown.

It consists of information such as, updates on ongoing disaster response and relief operations across the country. This may include situation reports, press releases, and information about deployment of resources and assistance provided to affected areas. It also Details about training programs, workshops, seminars, and conferences organized by NDMA to enhance the capacity of stakeholders in disaster management. Visitors may find information about upcoming events, registration procedures, and training materials.

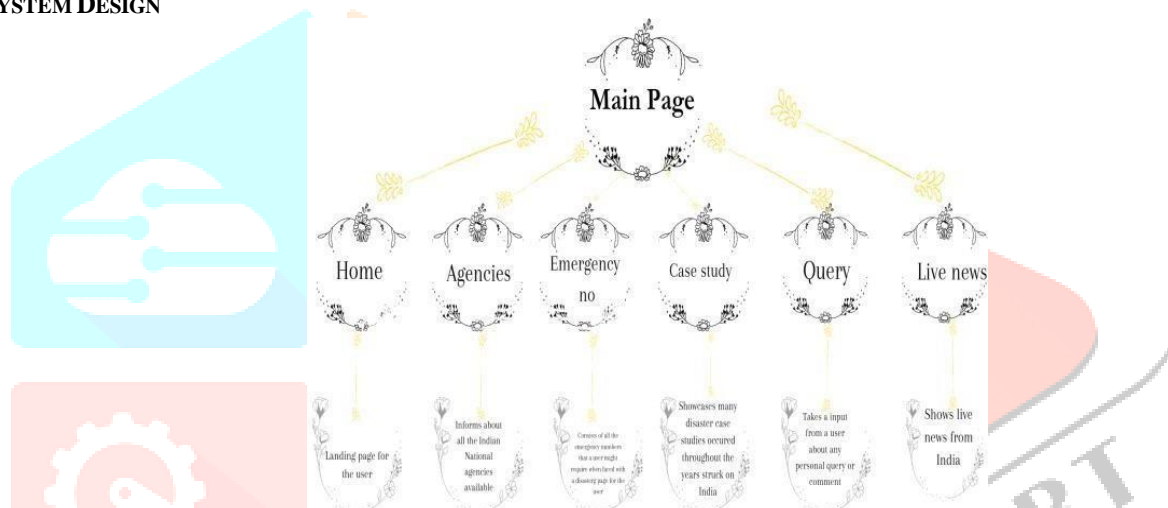
#### PROPOSED SYSTEM:

Our Disaster Management indigenous technology system is made for easy access, quick retrieval of information regarding any kind of disaster be it natural or artificial. It is compact size due to usage of light, still-in- use coding languages such as HTML, CSS, Python, JQuery gives the system an easy opening and closing option, which further reduces the load on the web-browser, and helps open the page quickly.



Packed with essential information, such as information regarding agencies, immediate emergency helpline numbers for various states of the Nation, information regarding the Government overlooking the disasters, if required, various case studies for quick view of how the Government has rescued the target groups from various disasters, and many more such information. Users are also provided with query or a comment section to upload any personal query or comment on the site.

#### IV. SYSTEM DESIGN



#### V. SOFTWARE ENVIRONMENT TECHNOLOGY

PHP and MySQL, along with HTML and CSS is the backbone of the project. In order to run live news on the server, Python code is also used.

PHP is embedded within HTML code, allowing developers to mix PHP code with HTML to create dynamic web pages. It supports a wide range of databases, making it versatile for database-driven web applications. PHP code is executed on the server, which means that the client (web browser) only receives the HTML output of the PHP scripts.

MySQL is an open-source relational database management system (RDBMS) that uses Structured Query Language (SQL) for managing and querying data. It is widely used in web development for its reliability, scalability, and ease of use. MySQL is known for its speed and performance, making it suitable for small to large-scale applications. It supports various storage engines, allowing developers to choose the one that best fits their application requirements. It provides features like replication, clustering, and partitioning for high availability and scalability. It integrates seamlessly with programming languages like PHP, Python, Java, etc., making it a popular choice for web developers. When used together, PHP and MySQL form a powerful stack for building dynamic web applications. PHP handles the server-side logic, processing requests, interacting with databases, and generating HTML content, while MySQL stores and manages the application's data.

HTML is the standard hypertext markup language which is used to create the structure and content of web pages. It consists of a series of elements, which are enclosed by tags, defining the different parts of a webpage such as headings, paragraphs, images, links, forms, and many more.

CSS (Cascading Style sheets) is a style sheet language used to describe the presentation of a document written in HTML. It allows developers to control the layout, appearance, and style of multiple web pages all at once. It works by targeting HTML elements and applying styles to them. Styles can include properties like color, font, size, spacing, positioning, and more. It follows a cascading style hierarchy, where styles can be inherited from parent elements or overridden by more specific selectors. CSS can be applied to HTML documents in various ways, including inline styles, internal stylesheets, and external stylesheets.

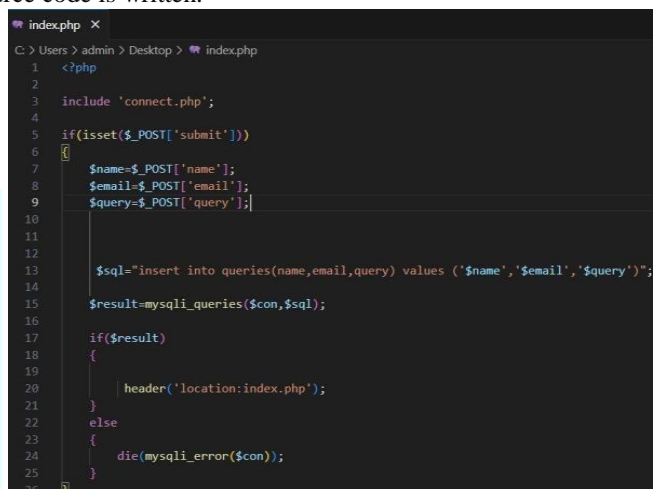
HTML provides the structure and content of a webpage, while CSS determines its appearance and style. It enables responsive web design, allowing developers to create layouts that adapt to different screen sizes and devices.

Bootstrap (formerly Twitter Bootstrap) is a free and open-source CSS framework directed at responsive, mobile- first front-end web development. It contains HTML, CSS and JavaScript-based (optionally) design templates for typography, forms, buttons, navigation, and other interface components. It is the most popular HTML, CSS, and JavaScript framework for developing responsive, mobile first projects on the web.

Python is a general-purpose language, meaning it can be used for a wide range of applications, including web development, data analysis, artificial intelligence, machine learning, scientific computing, automation, etc. Python comes with a comprehensive standard library that provides support for common tasks and functionalities, such as file I/O, networking, regular expressions, and more. This reduces the need for external libraries for basic programming tasks. Python is dynamically typed, meaning variable types are inferred at runtime, making Python code more concise and flexible. Popular libraries and frameworks include Django and Flask for web development, NumPy and pandas for data analysis, TensorFlow and PyTorch for machine learning, and many more.

## VI. SOURCE CODE

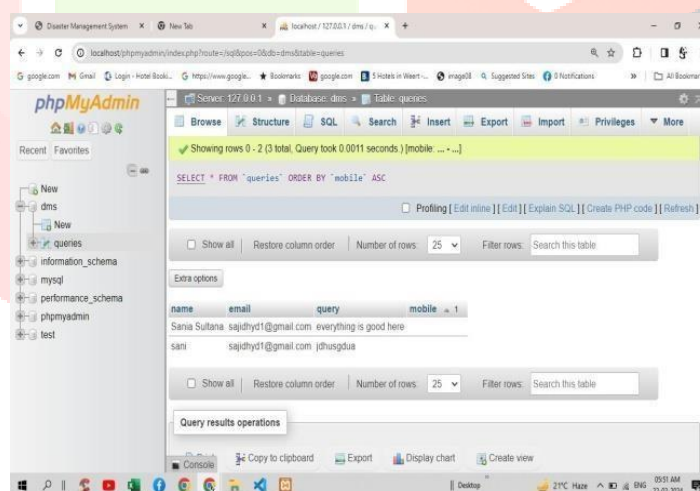
In order to run the php file, a source code is written.



```

index.php
C:\Users\admin\Desktop> index.php
1 <?php
2
3 include 'connect.php';
4
5 if(isset($_POST['submit']))
6 {
7     $name=$_POST['name'];
8     $email=$_POST['email'];
9     $query=$_POST['query'];
10
11
12
13     $sql="insert into queries(name,email,query) values ('$name','$email','$query')";
14
15     $result=mysqli_query($con,$sql);
16
17     if($result)
18     {
19         header('location:index.php');
20     }
21     else
22     {
23         die(mysqli_error($con));
24     }
25 }
26
  
```

Along with it a database in MySQL is created to store values of the user's query/comment section.



A HTML file is created for the homepage consisting of various div elements. A CSS page is also created.



```

<body>
<div class="hero">
<nav>

<ul>
<li><a href="#hero">Home</a></li>
<li><a href="#feature">Agencies</a></li>
<li><a href="#">emergency no.</a></li>
<li><a href="#">Case Study</a></li>
<li><a href="#query">Query</a></li>
</ul>
</nav>
<div class="heading">
<h1>DISASTER MANAGEMENT SYSTEM</h1>
<a href="#">News</a>
</div>
  
```

The screenshot shows a web browser window with a code editor displaying the contents of a file named 'style.css'. The browser's address bar shows the file path 'C:\Users\admin\Desktop\style.css'. The CSS code defines various styles for text and lists:

```

1 text-align: center;
2 color: #000070;
3 padding-top: 50px;
4 font-family: 'Times New Roman', Times, serif;
5 font-weight: bold;
6 padding-bottom: 20px;
7
8 #introduction h2{
9     font-family: 'Times New Roman', Times, serif;
10    font-size: 37px;
11    font-weight: bold;
12
13 }
14 #introduction p{
15     font-size: 20px;
16     font-family: Verdana, Geneva, Tahoma, sans-serif;
17
18 }
19 nav ul li{
20     list-style: none;
21     display: inline-block;
22     margin-left: 40px;
23
24 }
25 nav ul li a{
26     text-decoration: none;
27     color: #000070;
28     font-size: 20px;
29

```

```

msf > admin > Desktop > DMG > O:\DMS\html > [html] > body > section#emergence
</div><div class="row">
  <div class="col-md-6">
    <p>Odisha State Disaster Management Authority is an agency of the Department of Revenue & Disaster I...
    It was established as the Odisha State Disaster Mitigation Authority by a resolution of the Dep...
    <br/></p>
  </div>
</div>
</section>
<section id="query">
  <div class="form">
    <div class="form-control">
      Name : <input class="form-control form-control-lg" type="text" placeholder="enter your name" aria-label=...
      Email: <input class="form-control form-control-lg" type="email" placeholder="enter email address" aria-l...
      Any Query/Comment:<input class="form-control form-control-lg" type="text" placeholder="enter query" aria-...
    <button name="submit">Submit</button>
  </form>
</section>
<section id="emergency">
  <div>
</div>
</section>
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/js/bootstrap.bundle.min.js" integrity="sha384-...
</body>
</html>
```

In conclusion, the Disaster Management System webpage serves as a vital hub for disseminating critical information, resources, and tools to facilitate effective disaster preparedness, response, and recovery. Through a user-friendly interface and comprehensive content, the webpage enhances public awareness, and empowering communities to mitigate risks and build resilience against disasters. Visitors can find easily the necessary information regarding the disasters in this webpage. Interactive features such as query/comment integration facilitate communication between the user & the administrators.

Overall, the Disaster Management System webpage serves as a comprehensive platform for promoting disaster resilience, and empowering communities to effectively prepare for and respond to disasters. By leveraging technology and information-sharing networks, the webpage plays a vital role in building safer, more resilient society capable of weathering the challenges posed by natural and man-made hazards.

- [1][https://en.m.wikipedia.org/wiki/108\\_\(emergency\\_telephone\\_number\)#:~:text=Dial%2D108%2C%20or%20one%2D,for%20emergency%20services%20in%20India.](https://en.m.wikipedia.org/wiki/108_(emergency_telephone_number)#:~:text=Dial%2D108%2C%20or%20one%2D,for%20emergency%20services%20in%20India.)
- [2] <http://www.gujaratresearchsociety.in/index.php/JGRS/article/view/5179/4262>
- [3] <https://www.witpress.com/Secure/elibrary/papers/DMAN11/DMAN11008FU1.pdf>
- [4] <https://www.sciencedirect.com/science/article/pii/S2590061719300122>
- [5] [https://www.researchgate.net/publication/314216553\\_Disaster\\_Management\\_in\\_India](https://www.researchgate.net/publication/314216553_Disaster_Management_in_India)
- [6][https://www.researchgate.net/publication/359054344\\_Use\\_of\\_Technology\\_in\\_Disaster\\_Management](https://www.researchgate.net/publication/359054344_Use_of_Technology_in_Disaster_Management)