

FOOD ADULTERATION

A PROJECT REPORT

Submitted by

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In The fulfilment for the Mini Project

of

BACHELOR OF TECHNOLOGY

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AT

DEPARTMENT OF INFORMATION TECHNOLOGY

**MAHARAJ VIJAYARAM GAJAPATHI RAJ COLLEGE OF
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VIZIANAGARAM-535005,AP (INDIA)

DECLARATION

I hereby declare that the project entitled “**FOOD ADULTERATION**” submitted for fulfilment of Mini Project in B.Tech Degree is my original work and the project has not formed the basis for the submission in any degree or any other similar titles.

Vadisela Jaya Sri(22331A12B1)

Place: Vizianagaram

Date:

CERTIFICATE



This is to certify that the project entitled **“FOOD ADULTERATION”** is the bonafide work carried out by Vadisela Jaya sri(22331A12B1) of B.Tech VI Sem Information Technology,MVGR College of Engineering (Autonomous), Vizianagaram, during the year 2024-2025, in fulfilment of the Mini Project in Bachelor of Technology and that project has not formed the basis for the submission previously of any degree or any other similar title.

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Table Of Contents

Chapter	Title	Page No.
1	ABSTRACT	1
2	INTRODUCTION	2
3	PROBLEM STATEMENT	3
4	SYSTEM REQUIREMENTS	4-5
	4.1 HARDWARE REQUIREMENTS	
	4.2 SOFTWARE REQUIREMENTS	
5	TECHNOLOGIES USED	6-7
6	EXISTING SYSTEM	8
7	PROPOSED SYSTEM	9
8	USE CASES	10
9	PROCESS FLOW	11
10	SAMPLE CODE	12-15
11	OUTPUT SCREENSHOTS	16-17
12	ADVANTAGES	18
13	LIMITATIONS	19
14	CONCLUSION	20
15	FUTURESCOPE	21
16	REFERENCES	22

ABSTRACT

Food adulteration has become a growing public health concern, with many food products containing harmful substances that affect consumer safety. Adulterants are added to food items to enhance appearance, increase shelf life, or reduce production costs, but they pose serious health risks. This project introduces a web-based system that provides an easy-to-use platform for users to check information about food items and report suspected adulteration cases.

Unlike systems that rely on third-party APIs, this platform uses a manually curated MySQL database to store details such as food benefits, disadvantages, and common adulterants. Users can search for a food item, view related information, and submit reports if they suspect contamination. These reports are stored in the database for administrative review.

The system is developed using HTML,CSS,JavaScript,PHP and MySQL, ensuring fast access to data and independence from external sources. It is lightweight, scalable, and provides a user-friendly interface that helps spread awareness about food adulteration while allowing the public to take action. This project is an effort to create a community-driven approach toward ensuring food safety and increasing consumer awareness.

INTRODUCTION

Food is an essential part of daily life, and ensuring its purity is crucial for maintaining good health. However, in recent years, food adulteration has become a widespread issue, where harmful substances are intentionally added to food products for economic gain. Adulteration not only reduces the nutritional value of food but also causes severe health problems, including food poisoning, organ damage, and even life-threatening diseases such as cancer.

Consumers often lack awareness of the adulterants used in food and their potential health effects. Additionally, there are very few user-friendly platforms that provide structured information about food safety or allow consumers to report suspected adulteration cases. Laboratory tests and food safety inspections exist, but they are not easily accessible to the general public.

To bridge this gap, this project introduces a Food Adulteration Detection and Reporting System, a web-based application that allows users to:

1. Search for food items and view their advantages, disadvantages, and common adulterants.
2. Submit reports if they suspect food adulteration in real-life scenarios.

PROBLEM STATEMENT

Food adulteration is a serious issue affecting millions of people worldwide. Adulterants such as chemicals, artificial colors, and non-edible substances are added to food to increase shelf life, enhance appearance, or maximize profit. These substances pose significant health risks, including food poisoning, kidney damage, cancer, and other long-term illnesses.

Despite the presence of food safety laws, many consumers remain unaware of adulterants and their harmful effects. Additionally, existing methods to detect food adulteration, such as laboratory tests, are costly, time-consuming, and not easily accessible to the general public. There is no centralized system where users can access verified food adulteration information and report suspicious cases in a structured manner

SYSTEM REQUIREMENTS

To develop and deploy the Food Adulteration Detection and Reporting System, certain hardware and software requirements must be met. These requirements ensure the system operates efficiently and can handle user interactions smoothly.

4.1 Hardware Requirements

The system can run on a standard computing device, whether a personal computer or a web server. The minimum and recommended hardware specifications are as follows:

Minimum Requirements

- **Processor:** Intel Core i3 or equivalent
- **RAM:** 4 GB
- **Storage:** 20 GB free disk space
- **Display:** 1024 × 768 resolution
- **Internet:** Required for web hosting
- **Server:** Localhost for testing

Recommended Requirements

- **Processor:** Intel Core i5 or higher
- **RAM:** 8 GB or more
- **Storage:** 50 GB free disk space
- **Display:** 1920 × 1080 resolution
- **Internet:** High-speed internet for smooth deployment
- **Server:** Web Server (Apache/Nginx) for hosting

4.2 Software Requirements

The following software components are needed to develop and run the project:

- **Operating System:** Windows, Linux, or macOS
- **Programming Language:** PHP (for backend development)
- **Database:** MySQL
- **Web Server:** Apache (or any compatible server)
- **Frontend Technologies:** HTML, CSS, JavaScript
- **Browser:** Google Chrome, Mozilla Firefox, Microsoft Edge, Safari
- **Code Editor:** Visual Studio Code, Sublime Text, Notepad++, or any text editor

TECHNOLOGIES USED

● Backend Technologies (For Server-Side Processing)

PHP (Hypertext Preprocessor)

PHP is an open-source, server-side scripting language used for developing dynamic web applications. It allows communication between the client-side (frontend) and the database, handling data processing, form submissions, and authentication. In this project, PHP is responsible for retrieving food details, processing user-submitted reports, and storing data securely in MySQL.

MySQL

MySQL is a relational database management system (RDBMS) used to store and manage structured data efficiently. It organizes data in tables and allows for quick retrieval and modification through SQL queries. In this project, MySQL stores food information, including advantages, disadvantages, and adulterants, along with user-submitted reports.

● Frontend Technologies (For User Interface & Interactivity)

HTML (HyperText Markup Language)

HTML is the standard markup language for structuring web pages. It defines elements like headings, paragraphs, buttons, and input fields, forming the foundation of the user interface. In this project, HTML is used to create forms for searching food details and submitting reports.

CSS (Cascading Style Sheets)

CSS is a styling language used to design and enhance the appearance of HTML elements. It controls colors, fonts, layout, and responsiveness to improve user experience. In this project, CSS ensures a visually appealing and user-friendly interface.

JavaScript

JavaScript is a programming language used to add interactivity and dynamic features to web pages. It enables real-time validation, animations, and event handling. In this project, JavaScript improves the user experience by making the search and reporting functionalities more responsive.

- **Database Management System (DBMS)**

MySQL

MySQL is a powerful and widely used database system that stores, manages, and retrieves structured data efficiently. It supports SQL (Structured Query Language) for performing operations such as inserting, updating, and deleting records. In this project, MySQL acts as the central data repository for food adulteration details and user reports.

- **Development Tools**

Code Editors (IDE - Integrated Development Environment)

A code editor is a software tool used for writing and editing code. It provides features like syntax highlighting, debugging, and auto-completion. In this project, Visual Studio Code, Sublime Text, and Notepad++ are used for writing PHP, HTML, CSS, and JavaScript code.

Web Browsers

A web browser is a software application used to access and display websites. Browsers interpret HTML, CSS, and JavaScript to render web pages properly. In this project, Google Chrome, Mozilla Firefox, Microsoft Edge, and Safari are used for testing and viewing the application.

EXISTING SYSTEM

The current system for detecting and addressing food adulteration is highly inefficient and lacks accessibility for the general public. Food adulteration awareness primarily depends on laboratory testing, government regulations, and consumer complaints, which are time-consuming and costly. Consumers often remain unaware of the common adulterants present in their daily food items, as there is no real-time platform to provide instant information. Awareness programs conducted by food safety organizations are limited in reach and do not provide an interactive method for users to check the purity of their food.

Moreover, reporting food adulteration is a complex and lengthy process. Consumers must file complaints with regulatory authorities such as the Food Safety and Standards Authority of India (FSSAI) or local health departments. This involves physical verification, paperwork, and long waiting periods before any action is taken. Additionally, food adulteration detection relies heavily on laboratory testing, which is expensive and not widely available in remote areas. The absence of a centralized database makes it difficult for consumers to access reliable information on food safety. As a result, there is a need for a more efficient, digitalized system that provides real-time food adulteration details and allows users to submit reports quickly.

PROPOSED SYSTEM

The proposed Food Adulteration Detection and Reporting System is a web-based platform that aims to overcome the limitations of the existing system. It provides an interactive and user-friendly interface where users can instantly check information about food adulterants, their advantages, and disadvantages. Unlike traditional methods that rely on laboratory testing and printed reports, this system stores food details in a MySQL database, allowing quick retrieval of information without depending on external APIs. Users can enter a food item's name and immediately get details about its common adulterants, health effects, and benefits when consumed in pure form.

Additionally, the system includes an online reporting feature that enables users to submit complaints about suspected adulteration cases. The reports, which contain food details, location, and a description of the adulteration, are stored in the database and can be reviewed by concerned authorities. The use of PHP and MySQL ensures efficient storage, retrieval, and management of data, making the system highly responsive and reliable. By digitalizing the food adulteration detection process, this system significantly improves accessibility, reduces dependence on physical testing, and enhances public awareness. The proposed system is an innovative solution that promotes food safety and empowers consumers with real-time information.

USE CASES

User Registration and Authentication

New users must register on the platform by providing essential details such as their name, email address, and a secure password. The system uses encrypted passwords and session-based authentication to ensure secure access. Once authenticated, users can submit reports, view food information. These security mechanisms safeguard user data and prevent unauthorized access.

Food Information Lookup

Users can enter the name of a food item to retrieve detailed information about it, including information of the item, advantages, and disadvantages. The system fetches this information from a pre-populated database, eliminating the need for repeated manual entries. This feature helps raise awareness about food safety and educates users on how to detect adulteration at home.

Report Submission by Users

Users can report suspected cases of food adulteration by submitting details such as the food name, location, description. The system stores these reports in the database under an inquiries table for review. This feature helps crowdsource food safety incidents and empowers users to take proactive steps. The submitted reports are saved in inquiries table in the database.

View Submitted Reports

Users and administrators can view submitted reports categorized by food type, location, message. This transparency helps users stay informed about adulteration trends in their region. The reports are retrieved from the inquires table form food_safety database.

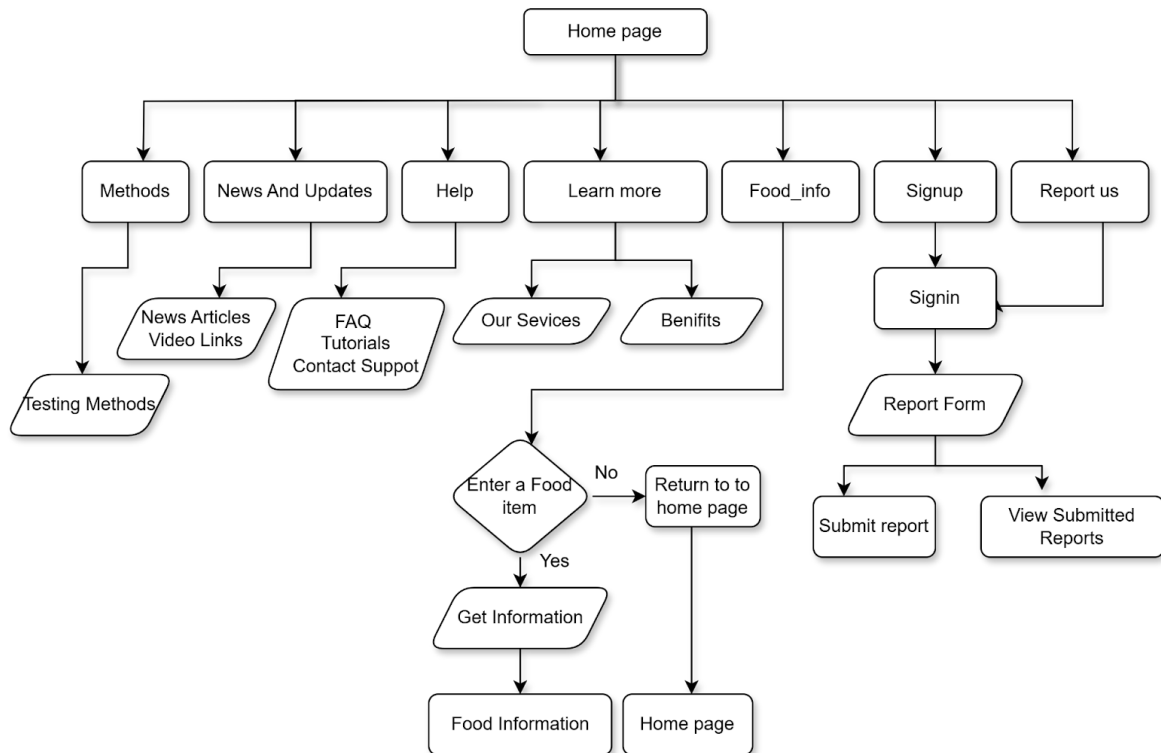
Admin Management and Monitoring

Administrators can manage the system by verifying user-submitted reports, updating the food information database. They can delete inquiries submitted by users in the database.

Updates and News Section

The platform includes a section for important updates and news related to food safety, such as government alerts, banned substances, or new detection techniques. Users can stay informed and aware of emerging threats in food adulteration.

PROCESS FLOW



SAMPLE CODE

Home.html

```
<?php
session_start();
if (!isset($_SESSION['email'])) {
    header("Location: signin.html");
    exit();
}
?>
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Home Page</title>
    <link rel="stylesheet" href="hpage.css">
</head>
<body>
    <div class="content">
        <h2>Welcome, to Purity Probe;</h2>
        <p>"Safeguard your health."</p>
        <div>
            <form action="testing.html"><button
type="submit"><span></span>Methods</button></form>
        </div>
        <div>
            <form action="news.html"><button type="submit"><span></span>News and
Updates</button></form>
        </div>
        <div>
            <form action="signin.html"><button type="submit"><span></span>Report
Us</button></form>
        </div>
        <div class="navbar">
            <ul>
                <li><a href="help.html">Help</a></li>
                <li><a href="learn1.html">Learn More</a></li>
                <li><a href="signup.html">Signup</a></li>
                <li><a href="food_info.html">Food_info</a></li>
            </ul>
        </div>
    </div>
</body>
</html>
```


Hpage.css

```
* {
    margin: 0;
    padding: 0;
    font-family: sans-serif;
    /* width: 100%;
    height: 100%;
    background-image: linear-gradient(rgba(0, 0, 0, 0.75), rgba(0, 0, 0, 0.75)),
url(background.jpg);
    background-size: cover;
    background-position: center;*/
}

.content {
    width: 100%;
    position: absolute;
    top: 50%;
    transform: translateY(-50%);
    text-align: center;
    color: #ADD8E6;
    width: 100%;
    height: 100%;
    background-image: linear-gradient(rgba(0, 0, 0, 0.75), rgba(0, 0, 0, 0.75)),
url(background.jpg);
    background-size: cover;
    background-position: center;
}

.content h2 {
    font-size: 70px;
    margin-top: 80px;
}

.content p {
    margin: 20px auto;
    font-weight: 100;
    line-height: 25px;
}

.navbar {
    width: 85%;
    margin: auto;
    padding: 35px 0;
    display: flex;
    align-items: center;
    justify-content: space-between;
}
```

```

.navbar ul li {
    list-style: none;
    display: inline-block;
    margin: 0 20px;
    position: relative;
}

.navbar ul li a {
    text-decoration: none;
    color: #fff;
    text-transform: uppercase;
}

.navbar ul li::after {
    content: "";
    height: 3px;
    width: 0;
    background: #009688;
    position: absolute;
    left: 0;
    bottom: -10px;
    transition: 0.5s;
}

.navbar ul li:hover:after {
    width: 100%;
}

button {
    width: 200px;
    padding: 15px 0;
    text-align: center;
    margin: 20px 10px;
    border-radius: 25px;
    font-weight: bold;
    border: 2px solid #fff;
    background: transparent;
    color: #0e0000;
    cursor: pointer;
    position: relative;
    overflow: hidden;
}

span {
    background: #009688;
    height: 100%;
    width: 0;
    border-radius: 25px;
    position: absolute;

```

```
    left: 0;
    bottom: 0;
    z-index: -1;
    transition: 0.5s;
}

button:hover span {
    width: 100%;
}

button:hover {
    border: none;
}

}
```

OUTPUT SCREENSHOTS

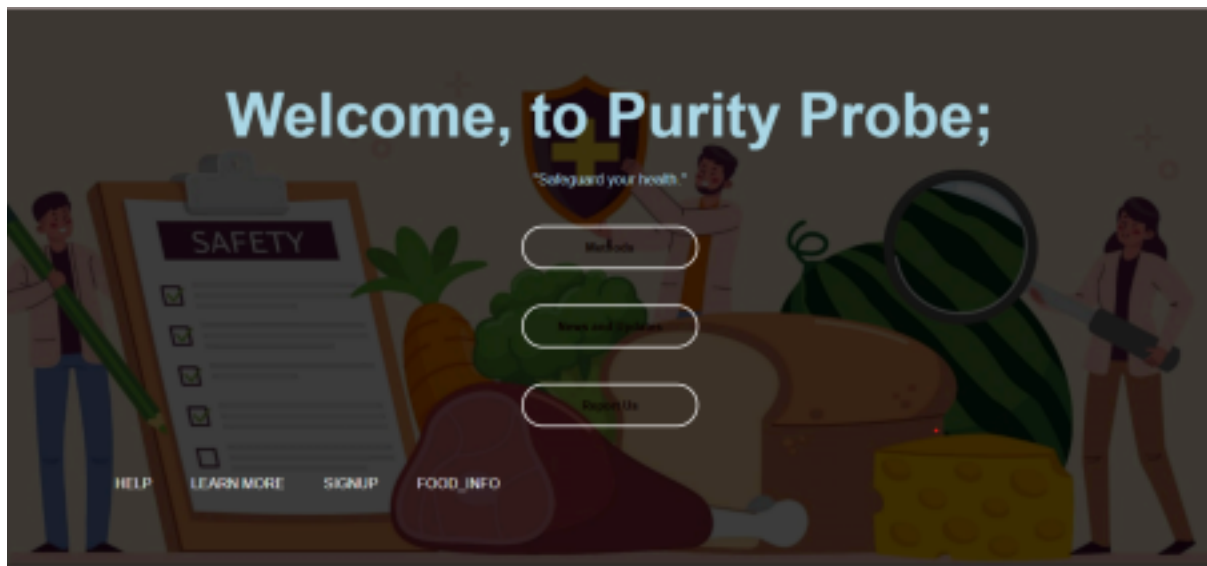


Fig.1

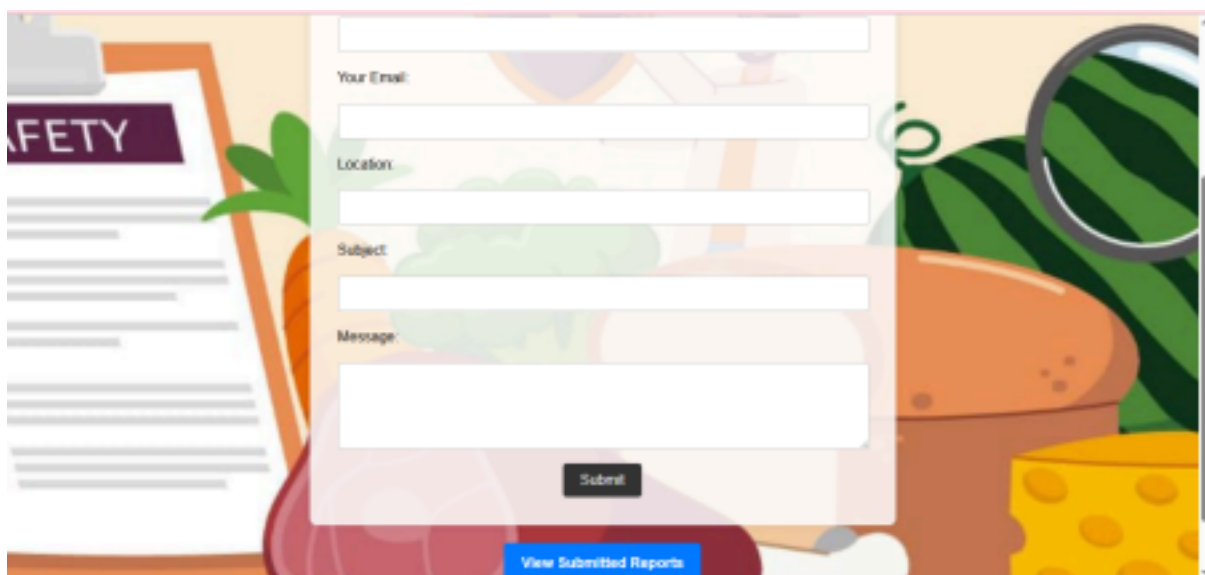


Fig.2

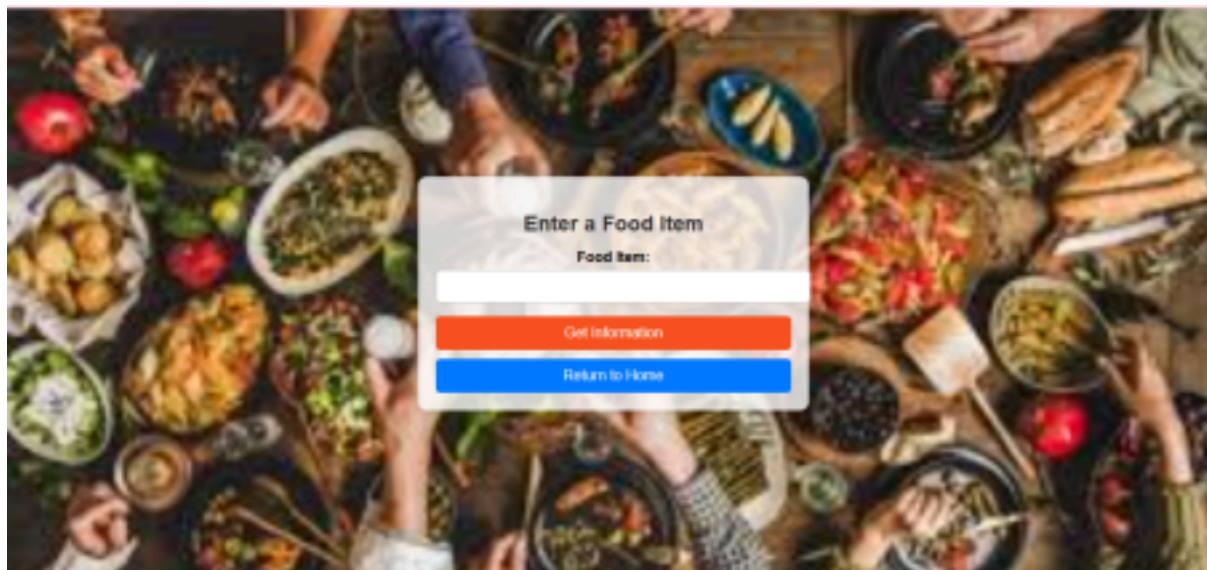


Fig.3

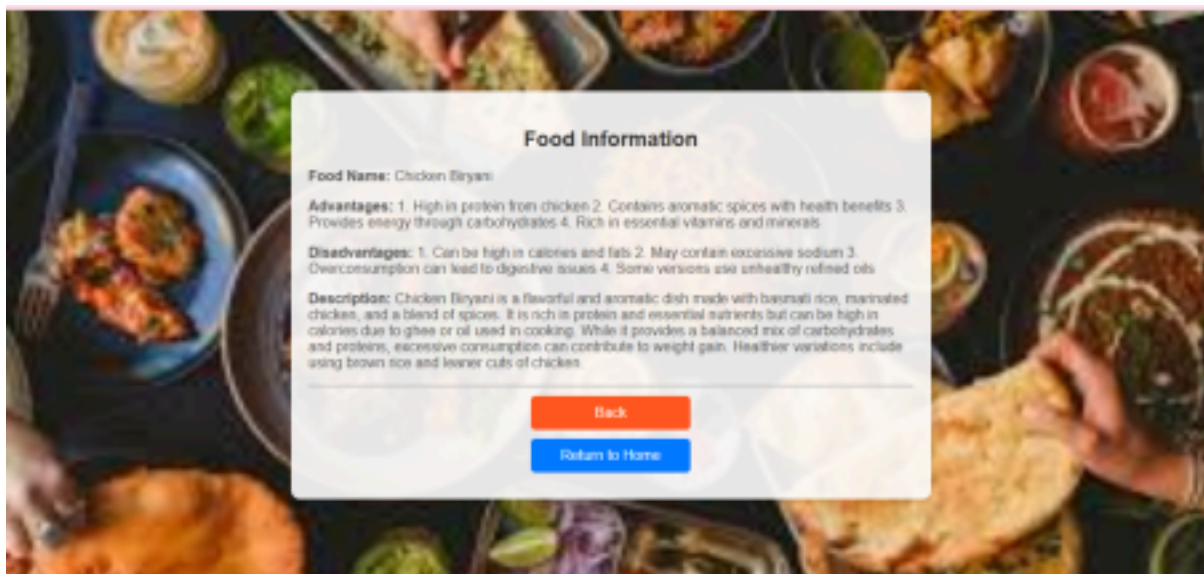


Fig.4

ADVANTAGES

- **Instant Access to Information:** Users can quickly check food adulteration details without relying on external sources.
- **User-Friendly Interface:** Simple web-based system accessible to both technical and non-technical users.
- **Efficient Reporting System:** Allows users to submit complaints online, reducing delays in addressing adulteration cases.
- **Database-Driven System:** Stores food details in MySQL, ensuring fast and organized data retrieval.
- **No Dependency on APIs:** Since all food details are stored in the database, the system works independently without external API integration.
- **Digitized Awareness System:** Helps spread awareness about food adulteration and its harmful effects.
- **Admin Control for Verification:** Ensures that submitted reports are reviewed for authenticity.
- **Scalable & Future-Ready:** Can be expanded to include more food categories, image recognition, or AI-based detection.

LIMITATIONS

- **Limited Database Coverage:** Only pre-stored food details are available, and users cannot check all food items.
- **No Real-Time Adulteration Detection:** The system provides information based on stored data but does not analyze food samples.
- **Manual Report Verification:** Admin must manually review reports, which can take time.
- **User-Dependent Data Entry:** The accuracy of reports depends on the correctness of user inputs.
- **No Immediate Government Action:** While users can report issues, further action depends on authorities outside the system.

CONCLUSION

The Food Adulteration Detection and Reporting System is an innovative web-based solution that allows users to instantly retrieve food adulteration details and submit reports on suspected cases. By using PHP and MySQL, it ensures efficient storage, retrieval, and management of food safety data. Unlike traditional methods, this system eliminates manual paperwork and delays, providing a faster, more accessible, and user-friendly way to promote food safety awareness. Though it has some limitations, the system lays the foundation for improving food safety through digitalization.

FUTURE SCOPE

- **Expansion of Food Database:** More food items and adulteration details can be added for better coverage.
- **AI-Based Adulteration Detection:** Machine learning can be integrated to detect adulteration based on user-uploaded images.
- **Mobile App Integration:** A mobile version of the system can be developed for easier access.
- **Government & Regulatory Collaboration:** Direct linking with food safety organizations to take immediate action on complaints.
- **Real-Time Alerts:** Users can get notifications about recent food safety warnings or reported adulteration cases.

REFERENCE

- Food Safety and Standards Authority of India (FSSAI):
<https://www.fssai.gov.in>
- World Health Organization (WHO) – Food Safety:
<https://www.who.int/health-topics/food-safety>
- Research on Food Adulteration – NCBI:
<https://www.ncbi.nlm.nih.gov/>
- Food Adulteration Tests – Government Reports:
<https://www.india.gov.in/>