WEB APPLICATION FOR ADULTERATION DETECTION

Priyanka.G, Kiruthika.S
Assistant Professor
Department of Computer Science and Engineering
Sri Krishna College of Technology
Coimbatore, India

Abstract— Adulteration is the action of reducing the quality of a product by the addition of another substance in order to increase the quantity of the food item in raw form or prepared form, which may result in the loss of actual quality of food item. The aim is to develop a website which helps people to find the adulterated product in our day-to-day life such as in milk, food grains, oils etc. This website gives the information about how to detect the adulterant in different adultered products using some basic steps which can be done easily. It also gives navigation support to the nearby laboratories from their current location in order to verify the product which is in large quantity. The website also contains chat bot support. It also explains the users how to perform step by step process to detect the adulterant product and with the pictures it is easy to differentiate between the pure and adulterant product. The feedback form helps the users to fill their queries for better improvement.

Keywords—Adulteration, chatbot, HTML, CSS

I. INTRODUCTION

Food Adulteration is a process by which the quality of a given food is reduced through addition of adulterants or removal of vital substance. Food adulterants refer to inferior chemical substance present in food that cause harm or is unwanted in the food. During food adulteration, small quantities of non-nutritious substances are added intentionally to improve the appearance, texture or storage properties of the food. Food adulteration is quite common in the developing countries. Some causes of food adulteration include: Profit motive of traders, food insecurity, increased urbanization, high population demands, illiteracy of general public, lack of effective food laws, and lack of government in initiative. Some of the types of food adulteration include Intentional adulteration, Incidental adulteration and Metallic adulteration. In Intentional adulteration, the adulterants are added with intention to increase profit. Examples include sand, marble chips, stones, chalk powder. In Incidental Adulteration, adulterants are found due to negligence, ignorance or lack of proper facilities. Examples include Packaging hazards like larvae of insects, droppings, pesticide residues, etc. Metallic adulteration involves adding metallic substances intentionally or accidentally. Examples include arsenic, pesticides, lead from water, mercury from effluents, tins from cans, etc. Developing a website for detecting adulteration in food samples is really a useful thing for day to day life. This helps people who consume food products especially processed food to find adulterants. Sometimes adulteration is beneficial but not in all case. When it comes to the commercial mind of manufacturers, the effect of adulteration may be different. The rate of the effect depends on the quantity of the adulterant used and the website can be used to find and test whether adulterant is present or not. The website provides sufficient images and instructions to find adulterated foods. The result can be obtained by comparing the image present in the website and the resultant obtained by the user after following the given procedures. Since people are not very much aware of adulteration and its effects, they don’t have that much knowledge about it. This website gives adequate information about adulteration. People can just visit this website to know about the food they are consuming whether it is adulterant free or not. The people who want to test their food in large quantities are supported with navigation through Google directing all the FSSAI regional headquarters. Any queries or complaints can be registered through the contact us forum or through the usage of chat bot.
II. BACKGROUND AND MOTIVATION

Food is essential for existence of life. Adulteration of food deceives the consumer and can cause risk to their health. With respect to identifying adulteration in food products, the Food Safety and Standards Authority of India has launched a website DART (Detect Adulteration with Rapid Test) which provides information regarding adulteration of food products. The purpose of this manual is to list out common methodologies available for food adulterants generally found in India. It includes common quick tests for detection of adulterants in milk and milk products, oil and fats, sugars and confectionery, food grains, spices and condiments, fruits and vegetables, beverages. In addition to this it also includes sensory evaluation quick tests for the above mentioned food products. The scope of this manual is meant for household, which can induce awareness among the consumer about food safety. The drawbacks of the existing application include no details about existing laboratories and nearby FSSAI headquarters. The proposed system includes additional features like navigation support for various FSSAI headquarters, latest news about adulteration that happens in the outside world, statistical updates on the number of laboratories present. The application also includes a chatbot which facilitates the user to ask any queries regarding adulteration.

III. DESIGN METHODOLOGY

The website should be clear and understandable to the user. He/she must be able to access the site easily without any frustration. For achieving this, designing plays an important role. This chapter gives the overview about the designing methodology used in developing the web pages.

A. Creating Web Pages

In this webpage used html, CSS, java-script for creating the front end of the webpage. HTML provides the structure of the page. Java-script allows dynamic content to get execute in a webpage. CSS is used to control presentation, formatting and layout.

Home Page

Figure1.1 Home page 1 shows the structure of the homepage.

Figure1.2 Introduction about Adulteration with a video gives the introduction about adulteration.

Figure1.3 Survey about Equipment’s and Laboratory gives the statistic update of the number of laboratories present.

Figure1.4 Latest News gives the news about adulteration that happens in the outside world.
Figure 1.5 Navigation Support gives us the navigation support to the regional headquarters and laboratories in each region.

Figure 1.6 Chat Bot shows the position, working of chat bot and how it is represented in the website.

B. Products Page

Figure 1.7 depicts the representation of milk and milk products and the procedure for testing a sample.

Figure 1.8 Oils & Fats shows the representation of oils and fats products and the step necessary for testing a sample.

Figure 1.9 Sugar & Confectionery The test procedure for detecting Adulteration in sugar & confectionery is indicated.

Figure 1.10 Foods grains & its Products depicts the representation of food grains and its products and the procedure for testing a sample.

Figure 1.11 Salts, spices & condiments shows the required steps for checking adulteration in salts, spices & Condiments.

Figure 1.12 Fruits & vegetables gives us how to test fruits and vegetables and also gives us the image of the result.
C. Contact Page

Figure 1.14 Contact page gives the information about the appearance of the contact page.

Languages Used for Developing Web Page

1. HTML
2. CSS
3. JAVASCRIPT

HTML

HTML stands for hypertext mark-up language. HTML describes the structure of web pages using markup. HTML elements are the building blocks of HTML pages. HTML elements are represented by tags.

HTML tags label pieces of content such as heading, paragraph, table and soon. Browsers do not display the HTML tags, but use them to render the content of the page. HTML tags normally come in pairs like <p> and </p>. The first tag in a pair is the start tag, the second tag is the end tag. The end tag is written like the start tag, but with a forward slash inserted before the tag name. With cascading style sheets and java-script, it forms a trial of corner stone technologies for the world wide web. Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia.

CSS

CSS stands for the cascading style sheets and CSS describes how the HTML elements are to be displayed on screen, paper, or in other media. CSS saves a lot of work, it can control the layout of multiple web pages all at once, external style sheets are stored in CSS files. CSS issued to define style for web pages, including the design, layout and variations in display devices and screen sizes.

A CSS is a rule- set consists of a selector and a declaration block. The selector points to the HTML element want to style. The declaration block contains one or more declarations separated by colons. Comments are used to explain the code and may help to edit the source code at a later date. Comments are ignored by the browsers. A CSS comment starts with/* and ends with */ comments can also span multiple lines.

Java Script

Java-script is one of the three core technologies of world wide web content engineering. It is used to make dynamic web pages interactive and provide online programs including video games. The majority of websites employ it, and all modern web browsers support it without the need for plug-in by means of a built in Java script engine. Java script can change HTML styles can hide the HTML elements, showing the hidden HTML elements can also be done by changing the display style.

CONCLUSION AND FUTURE ENHANCEMENT

Web-site design for detecting adulteration is not just giving the users information; it’s about protecting them by giving knowledge about the things they were never aware of. By providing them the necessary procedures needed to test the food items they are able to perform those tests at any time and at any place. As the world is developing day-to-day and the networking system changes the world. In such a environment surroundings the development to these types of web-site will be very useful for the users. The chat bot support and navigation support provided by the website helps the users in easy access to their doubts and queries.

In future, this website can be enhanced by giving any sample-based results by implementing machine learning tools for analysing the test samples report would be an enormous step. Also, by increasing the food samples, types of adulteration and real-time case studies in the website would be really helpful for the users since they can gain lot of information through these resources provided.

REFERENCES

[3] https://www.w3schools.com/
[8] Priyanka, G. PREDICTION OF AIRLINE DELAYS USING K NEAREST NEIGHBOR ALGORITHM.


Sivaram, M. "Odd And Even Point Crossover Based Tabu Ga For Data Fusion In Information Retrieval." (2014).


Obulatha-II-ME-CSE, Miss O. "Position Privacy Using LocX."

SRE-NAR, Time Series Prediction Using. "SRE-ADALINE."

Kousik, N. V., M. Sivaram, and S. Kalidass. "AUTONOMOUS GREEDY ROUTING IN WIRELESS SENSOR NETWORKS."


