

Online pharmacy for rural areas

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Abstract

During the pandemic, medicine scarcity was seen throughout our country especially in rural areas and with strict covid restrictions, people had to travel long distances to nearby towns to buy medicines and basic needs like bandages, vitamins and many more due to lack of online delivery.

We create an E-commerce website that delivers OTC medicines and daily essentials like vitamins, baby products, bandages, first aid kits, toiletries to rural areas. We ensure the safe delivery of products, contactless and quick.

We develop the website using HTML, JavaScript, and CSS for the front end and PHP for the backend. We will use MYSQL as a support database. The website is user-friendly.

We created an E-commerce website that delivers OTC medicines, vitamins, baby products, bandages, first aid kits, toiletries to rural areas.

We conclude by creating a useful E-commerce website that provides online medicine delivery making it easily accessible for people living in rural areas.

Keywords:

CSS, HTML, JAVASCRIPT, MySQL, medicines online, PHP

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List of acronyms

Acronym	Unfolding
CSS	Cascading Style Sheets
HTML	Hypertext Markup Language
MySQL	My Structured Query Language
OTC	Over The Counter
PHP	Hypertext Preprocessor

1 Chapter: Introduction

Pandemic has lead to so many changes in lifestyle of people. Usage of blogs, brochures, portfolios, newspapers online kept people updated as well as cautious since going out was least preferred and source of knowledge was through E-platforms. E-commerce has been the main source of meeting needs of people. These needs can be shopping necessities, buying groceries, milk, meat etc.

One of our teammates happened to stay in a village during lockdown time. People living in her village could order everything from home except for medicines as there was no medicine delivery to her village. Local pharmacy always had scarcity in medicines, so people living in her village had to travel to nearby towns to buy medicines[1].

Going out to buy medicines during lockdown with all the travel restrictions and high risk is when the need of online pharmacy was seen as a better choice when everything else was being delivered at door except for medicines. With the click onto the internet, purchasing medicines and getting them delivered is easy, safe and convenient for consumers. It is time saving, private and confidential[2].

To develop this website, we use HTML, JavaScript, and CSS for the front end and PHP for the backend. We will use MYSQL as a support database.

2 Chapter: Survey of related work

The Application of IT in the hospital pharmacy management Authors -Tie Hong, Man Dong

Conclusion - The introduction of information technology in the hospital makes the management of drugs using by permission more simple and reliable especially in the narcotic drugs, psychotropic drugs, and medicare drugs used. The information technology makes us master the whole hospital drug use situation and achieve the goal of effective monitoring and scientific supervision on the clinical medication.

Authors -N Ambreen Kubra, N Brundha

Conclusion - The term mobile application is a way by which a computer program is developed to be implemented on smart handled devices and android phones and so on. To develop a pharmacy application the android platform is used. This application will facilitate the clientele to get access to the medicine without walking through every pharmacy in the tracked location.[3][4]

3 Chapter: Problem statement, objectives and main contribution

Medicine scarcity was seen throughout our country especially in rural areas and with strict covid restrictions, people had to travel long distances to nearby towns to buy medicines and basic needs like bandages, vitamins and many more due to lack of online delivery, so we create a user-friendly website to deliver medicines and basic essentials to rural areas of our state[5].

Functionalities of this website are as follows. This website contains OCT over-the-counter medicines (medicines that do not require prescriptions), vitamins, supplements, bandages, toiletries (medicated shampoos, conditioners), creams, baby products (powder, diapers, sippers, feeding bottles, etc.), first aid kits. Consumers can search the product, select the required quantity, check the price, stock availability, estimated delivery time, and payment methods. This website is accessible by people in urban areas and rural areas which makes it unique.

To develop this website, we are going to use HTML, JavaScript, and CSS for the front end and PHP for the backend. We will use MYSQL as a support database[6].

We link up with reliable delivery agencies and ensure that the delivery agents sanitize their hands as well as the products before the delivery. We can also provide a contactless delivery option. As soon as the order is placed, they get an estimated delivery time. Customers can also choose a fast delivery option with an extra charge to receive the medicines within a day.

This website is time saving, helpful, user friendly, convenient, private and confidential with a safe and contactless quick delivery.

4 Chapter: Solution

By creating a useful E-commerce website that provides online medicine delivery making it easily accessible for people living in rural areas, we made our website work with as less steps as possible as shown in the models below making it easier to understand and less complicated. We successfully extended our delivery to the rural areas which is our main focus and utmost priority.

4.1 Modeling

Use Case Diagram

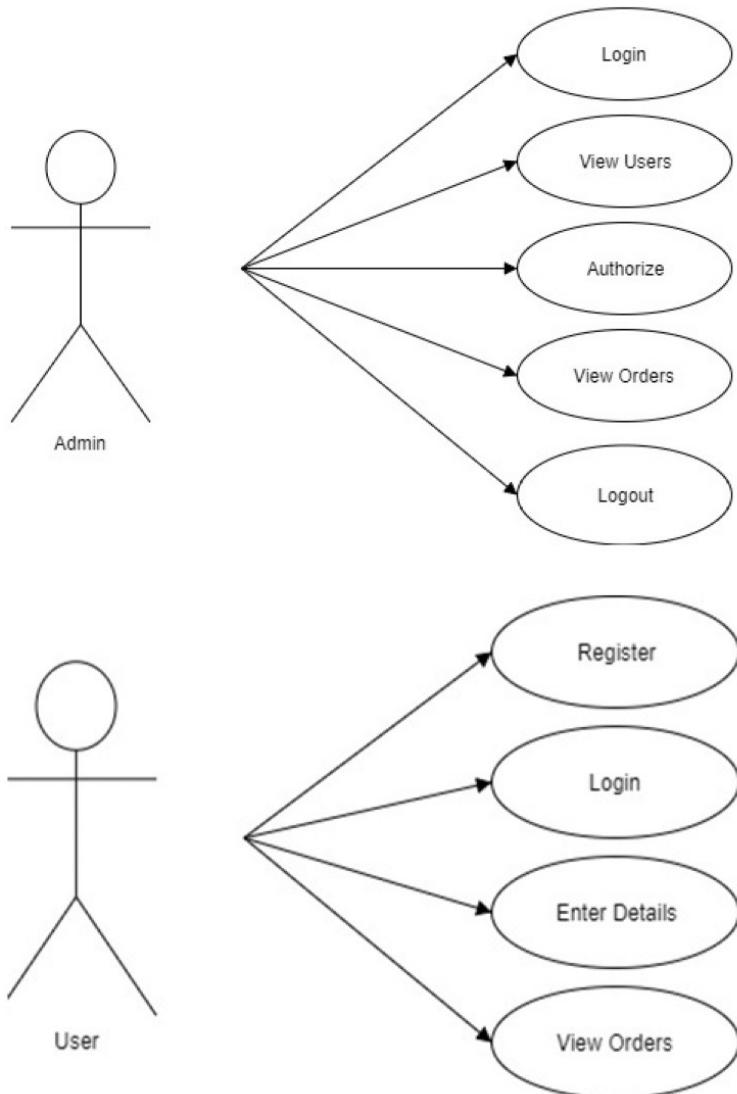


Figure 1 Use Case Diagram

Sequence Diagram

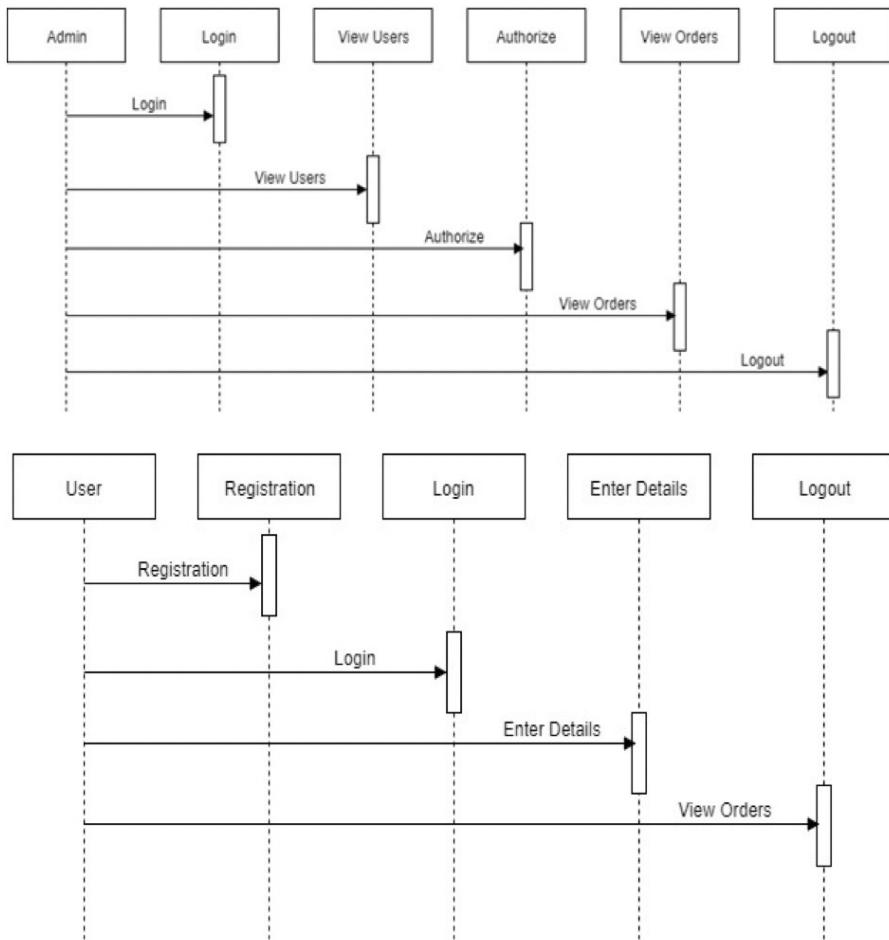


Figure 2 Sequence Diagram

4.2 Implementation or Application

Frontend

HTML

- HTML stands for HyperText Markup Language, which is the most widely used language on the Web to develop web pages.
- HTML was created by Berners-Lee in late 1991 but "HTML 2.0" was the first standard HTML specification which was published in 1995. HTML 4.01 was a major version of HTML and it was published in late 1999. Though HTML 4.01 version is widely used currently we are having the HTML-5 version which is an extension to HTML 4.01, and this version was published in 2012.
- HTML is a MUST for students and working professionals to become great Software Engineers especially when they are working in Web Development Domain. [7]
- Some of the key advantages of learning HTML:
 - Create Web site
 - You can create a website or customize an existing web template if you know HTML well.
- Become a web designer - If you want to start a career as a professional web designer, HTML and CSS designing is a must skill.
- Understand web - If you want to optimize your website, to boost its speed and performance, it is good to know HTML to yield the best results.
- Learn other languages - Once you understand the basics of HTML then other related technologies like javascript, PHP, or angular have become easier to understand.[8]

```
<!DOCTYPE html>
<html>
  <head>
    <title>This is document title</title>
  </head>
  <body>
    <h1>This is a heading</h1>
    <p>Hello World!</p>
  </body>
</html>
```

Figure 3 HTML
JavaScript

- JavaScript is a lightweight, interpreted programming language. It is designed for creating network-centric applications.[11]
- It is complementary to and integrated with Java. JavaScript is very easy to implement because it is integrated with HTML.
- It is open and cross-platform. Javascript is a MUST for students and working professionals to become great Software Engineers especially when they are working in Web Development Domain.
- I will list down some of the key advantages of learning Javascript: Javascript is everywhere, it comes installed on every modern web browser and so to learn Javascript you do not need any special environment setup. For example, Chrome, Mozilla Firefox, Safari, and every browser you know as of today supports Javascript.
- Javascript helps you create really beautiful and crazy fast websites. You can develop your website with a console-like look and feel and give your users the best Graphical User Experience.
- JavaScript usage has now extended to mobile app development, desktop app development, and game development and this opens many opportunities for you as Javascript Programmer.
- Due to high demand, there is tons of job growth and high pay for those who know JavaScript. You can navigate over to different job sites to see what having JavaScript skills looks like in the job market. [9]
- Great thing about Javascript is that you will find tons of frameworks and Libraries already developed which can be used directly in your software development to reduce your time to market

<html>

```

<body>
  <script language = "javascript" type = "text/javascript">
    <!--
      document.write("Hello World!")
    //-->
  </script>
</body>
</html>

```

Figure 4 Java Script

Bootstrap

- Bootstrap is the most popular front end framework in the recent time. It is sleek, intuitive, and powerful mobile first front-end framework for faster and easier web development.

- It uses HTML, CSS [10]and Javascript. Here are some listed applications of bootstrap
 - Scaffolding – Bootstrap provides a basic structure with Grid System, link styles, and background. This is covered in detail in the section Bootstrap Basic Structure CSS – Bootstrap comes with the feature of global CSS settings, fundamental HTML elements styled and enhanced with extensible classes, and an advanced grid system. This is covered in detail in the section Bootstrap with CSS.
- Components – Bootstrap contains over a dozen reusable components built to provide iconography, dropdowns, navigation, alerts, popovers, and much more. This is covered in detail in the section Layout Components.
- JavaScript Plugins – Bootstrap contains over a dozen custom jQuery plugins. You can easily include them all, or one by one. This is covered in details in the section Bootstrap Plugins.
- Customize – You can customize Bootstrap's components, LESS variables, and jQuery plugins to get your very own version

```

<head>
  <title>Bootstrap 101 Template</title>
  <meta name = "viewport" content = "width = device-width, initial-scale =
1.0">

    <!-- Bootstrap -->
    <link href = "css/bootstrap.min.css" rel = "stylesheet">

    <!-- HTML5 Shim and Respond.js IE8 support of HTML5 elements and media
queries -->
    <!-- WARNING: Respond.js doesn't work if you view the page via file:// -->

    <!--[if lt IE 9]>
    <script src =
"https://oss.maxcdn.com/libs/html5shiv/3.7.0/html5shiv.js"></script>
    <script src =
"https://oss.maxcdn.com/libs/respond.js/1.3.0/respond.min.js"></script>
    <![endif]-->

</head>

<body>
  <h1>Hello, world!</h1>

  <!-- jQuery (necessary for Bootstrap's JavaScript plugins) -->
  <script src = "https://code.jquery.com/jquery.js"></script>

  <!-- Include all compiled plugins (below), or include individual files as
needed -->
  <script src = "js/bootstrap.min.js"></script>

</body>
</html>

```

Figure 5 Bootstrap

Jquery

- jQuery is a fast and concise JavaScript library created by John Resig in 2006. jQuery simplifies HTML document traversing, event handling, animating, and Ajax interactions for Rapid Web Development.
- jQuery is a small and lightweight JavaScript library.
- jQuery is cross-platform.
- jQuery means "write less do more".
- jQuery simplifies AJAX call and DOM manipulation.

Backend

JSP

- Adding dynamic content via expressions As we saw in the previous section, any HTML file can be turned into a JSP file by changing its extension to .jsp.
- Of course, what makes JSP useful is the ability to embed Java.
- Put the following text in a file with .jsp extension (say hello.jsp)

MySql

- My SQL is an application used to create computer databases for the Microsoft Windows family of server operating systems.
- It provides an environment used to generate databases that can be accessed from workstations, the web, or other media such as a personal digital assistant (PDA). [11]
- MY SQL is probably the most accessible and the most documented enterprise database environment right now. This also means that you can learn it a little quicker than most other database environments on the market What is SQL Used for: Using SQL one can create and maintain data manipulation objects such as table, views, sequence etc. These data manipulation objects will be created and stored on the server's hard disk drive, in a tablespace, to which the user has been assigned. Once these data manipulation objects are created, they are used extensively in commercial applications.

DML, DCL, DDL:

- In addition to the creation of data manipulation objects, the actual manipulation of data within these objects is done using SQL. The SQL sentences that are used to create these objects are called DDL's or Data Definition Language.
- The SQL sentences used to manipulate data within these objects are called DML's or Data Manipulation Language.
- The SQL sentences, which are used to control the behavior of these objects, are called DCL's or Data Control Language

Data Type

Built-in data types

- In My Sql, each object (such as column, variable, or parameter) has a related data type, which is an attribute that specifies the type of data that the object can hold.
- User-defined data types My SQL supports user-defined data types too. User-defined data types provide a mechanism for applying a name to a data type that is more descriptive of the types of values to be held in the object.
- Using user-defined data type can make it easier for a programmer or database administrator to understand the intended use of any object defined with the data type.
- The user-defined data types are based on the system data types and can be used to predefine several attributes of a column, such as its data type, length, and whether it supports NULL values.
- To create a user-defined data type, you can use the sp_addtype system stored procedure or you could add one using the Enterprise Manager. When you create a user-defined data type, you should specify the following three properties:
 - Data type's name.
 - Built-in data type upon which the new data type is based.
 - Whether it can contain NULL values.

4.3 Results

This is the website logo “Medeasy-makes it easy”.



Figure 6 Logo of the website

Homepage of this website looks like this. It consists of a search bar where you search for the product. Down below the logo, you can see pages added to the homepage where you find the following pages, ABOUT US, PRODUCTS, BLOG, CONTACT, SIGN IN / SIGN UP.

The screenshot shows the Medeasy website's homepage. At the top, there is a navigation bar with links to HOME, ABOUT US, PRODUCTS, BLOG, CONTACT, and SIGN IN / SIGN UP. Below the navigation bar, there is a sidebar with a 'CATEGORIES' section, currently showing 'Medical' with a 'View All' button. The main content area features a large advertisement for an 'OXYGEN CONCENTRATOR 1B' with a price of ₹29,999/- and a 'Classification Class II' label. To the right of the advertisement is a photograph of the oxygen concentrator. At the bottom of the screen, there is a taskbar with various icons and system status information, including the date (28-10-2021), time (12:40 AM), battery level (21%), and temperature (26°C).

Figure 7 Home page

This is the first OTC drug on our website, Aspirin Oral.

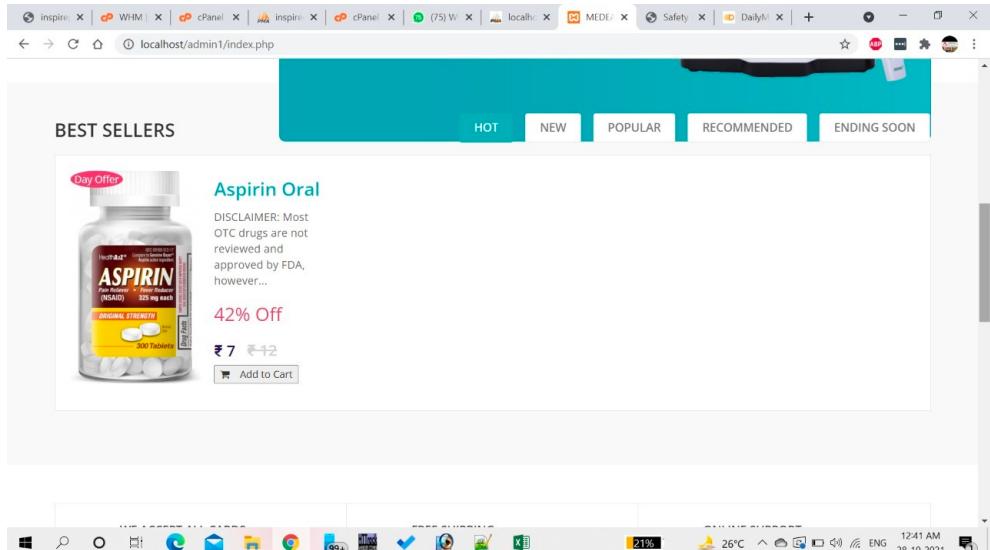


Figure 8 Product 1- Aspirin Oral

The segments above the product show that all cards are accepted , free shipping for orders that cross certain amount as total and the online support where you can reach for support

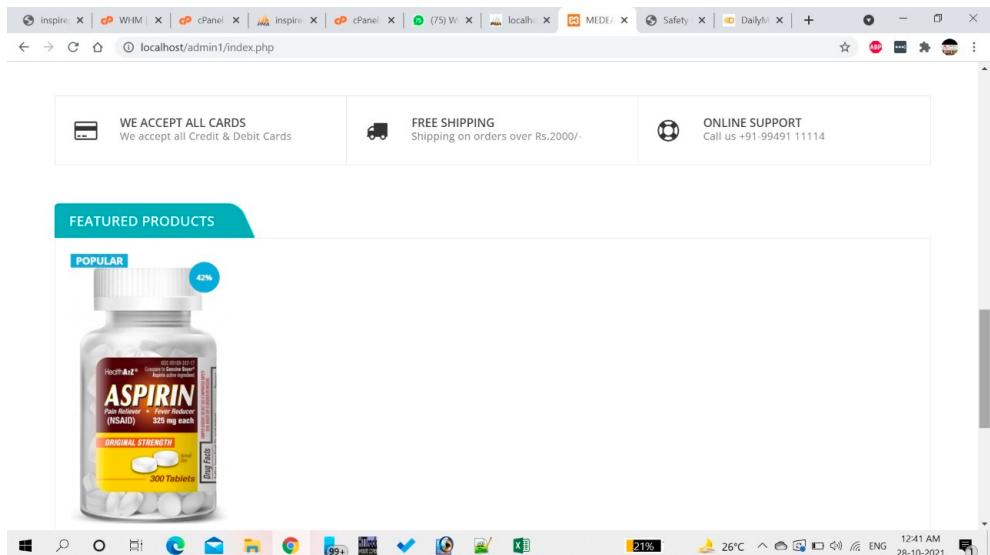


Figure 9 Info segments above product

Below the product, there are further more links for contacting the admin, Faq and the product list.

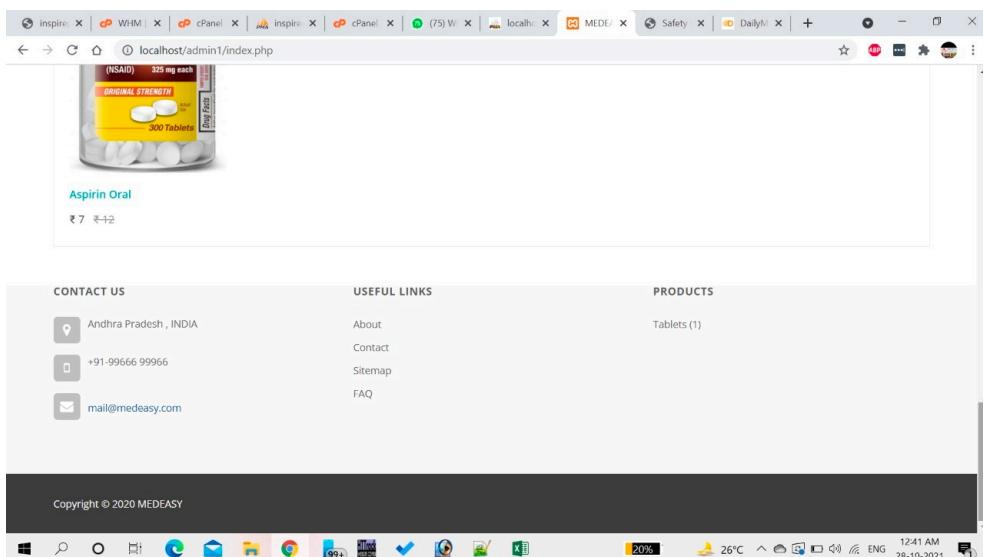


Figure 10 Page links below product

The quantity is mentioned and then you add the product to the cart.

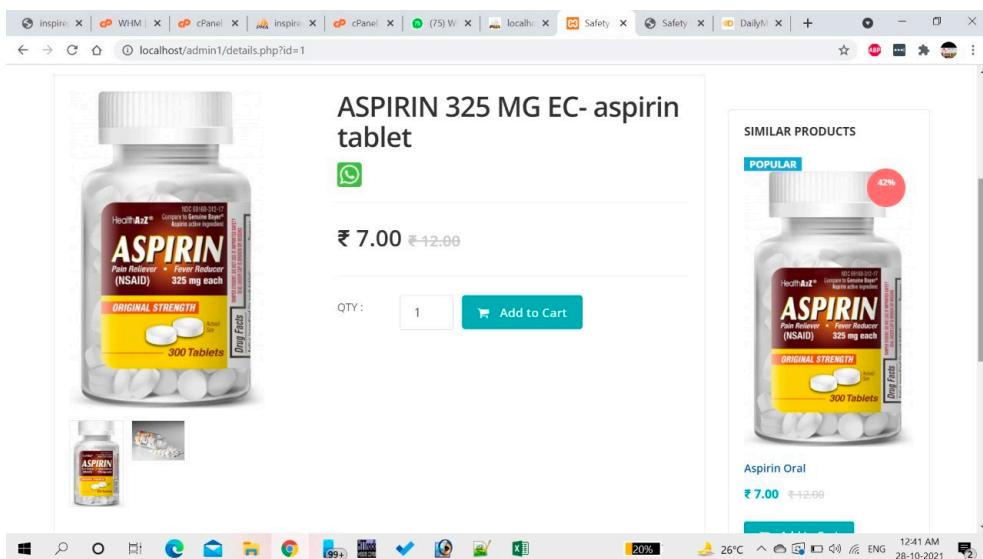


Figure 11 Product count to add cart

The description and feature box below the product display details, features and pros or cons of the product. Here in the figure below, there's a disclaimer mentioned about the product being an OTC drug

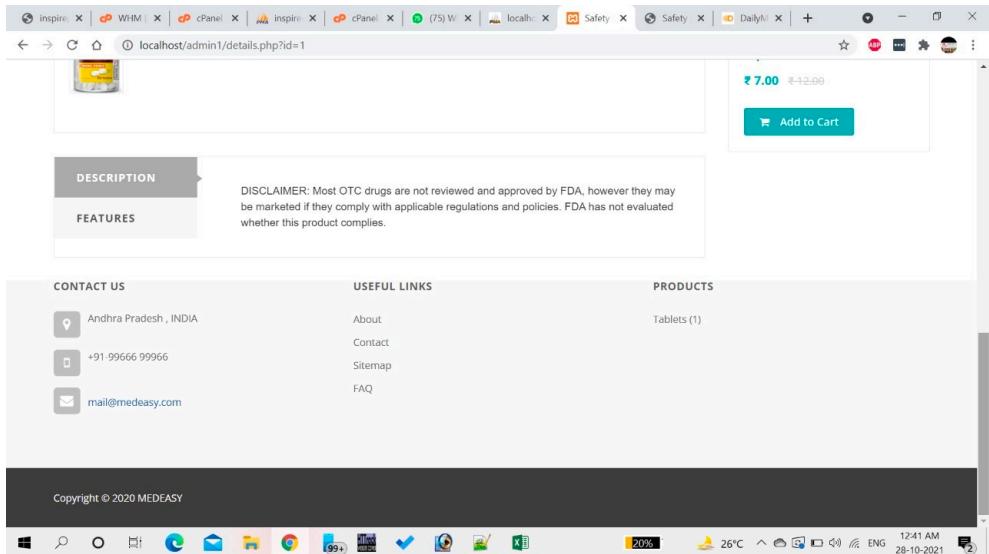


Figure 12 Description and feature box below product

The contact page has a contact form where name, email, contact number and comments can be mentioned.

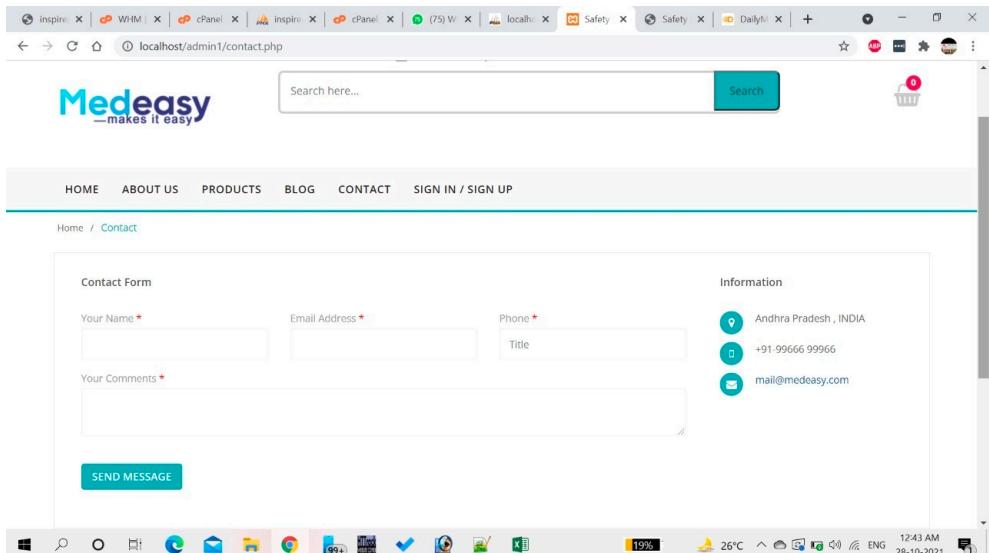


Figure 13 Contact for queries and questions

This is the admin page that has dashboard where you manage users and also view orders

The screenshot shows the Medeasy Admin Dashboard. On the left, there's a sidebar with various menu items: Dashboard, BLOG, FAQ, Contact Us, Change Password, CATEGORIES, Offer Time, Ship, Add Product, and View Product. The main area is titled "Dashboard". It features two main sections: "Manage Users" (with a green user icon) and "View Orders" (with a red order icon). Both sections have brief descriptions and "View More" links. The status bar at the bottom shows system information like battery level (19%), temperature (26°C), and date/time (28-10-2021).

Figure 14 Dashboard

Category of the product can be if the product is an OTC drug or non OTC drug or vitamins, toiletries etc..

The screenshot shows the "MANAGE CATEGORIES" page. The sidebar includes the same set of menu items as Figure 14. The main content area is titled "MANAGE CATEGORIES" and contains a sub-section titled "Add Category". It has fields for "Category Name" and "Under Category" (set to "No Parent"). Below this is a "Cat" table:

Cat	Parent		
Medical			
Tablets	Medical		

The status bar at the bottom is identical to Figure 14.

Figure 15 manage or add categories

To add products its title, category, price, discounted price, brand and respective YouTube link are mentioned.

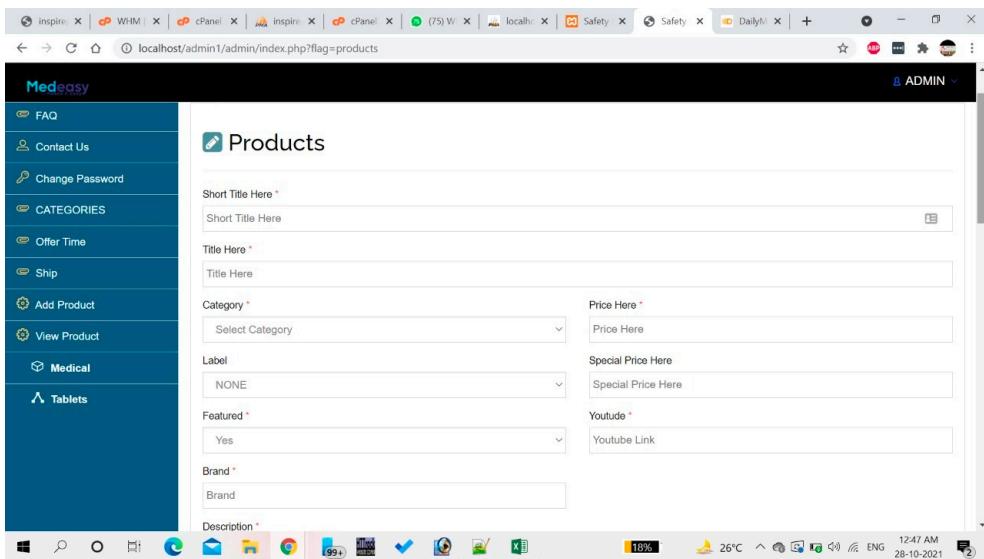


Figure 16 Add product to the website

The description box below is where the descriptive details of the product are mentioned.

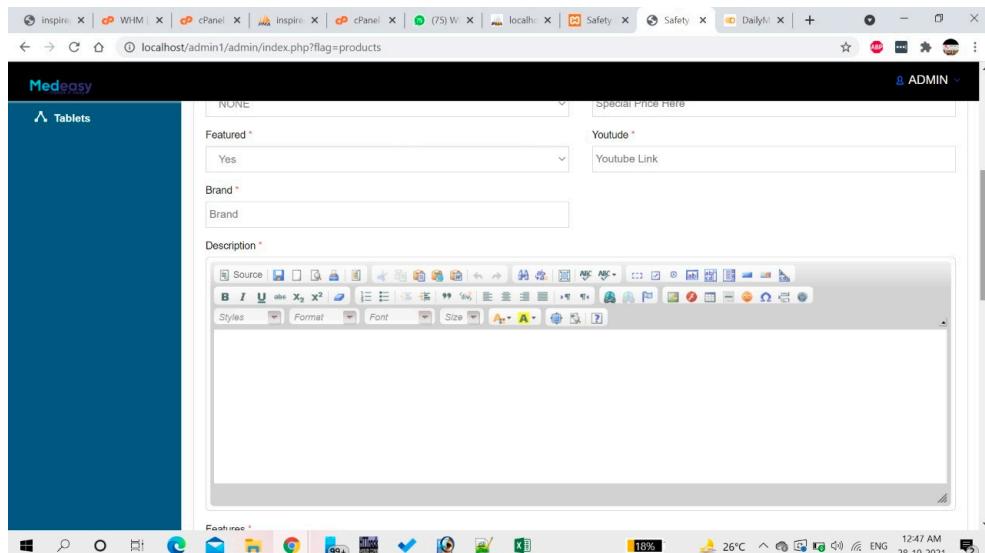


Figure 17 Description box

The feature box is where features of the product are mentioned.

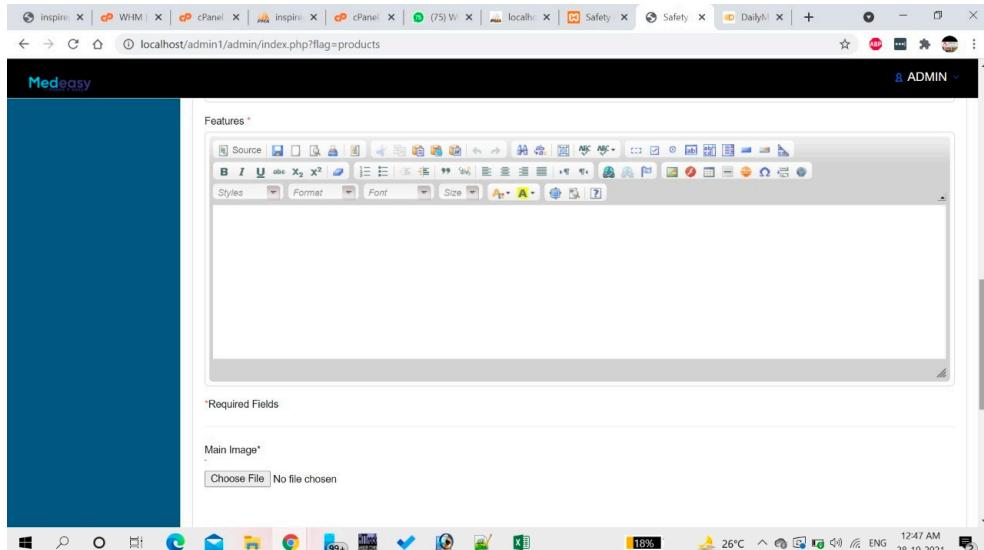


Figure 18 Feature box

Any number of product images can be added.

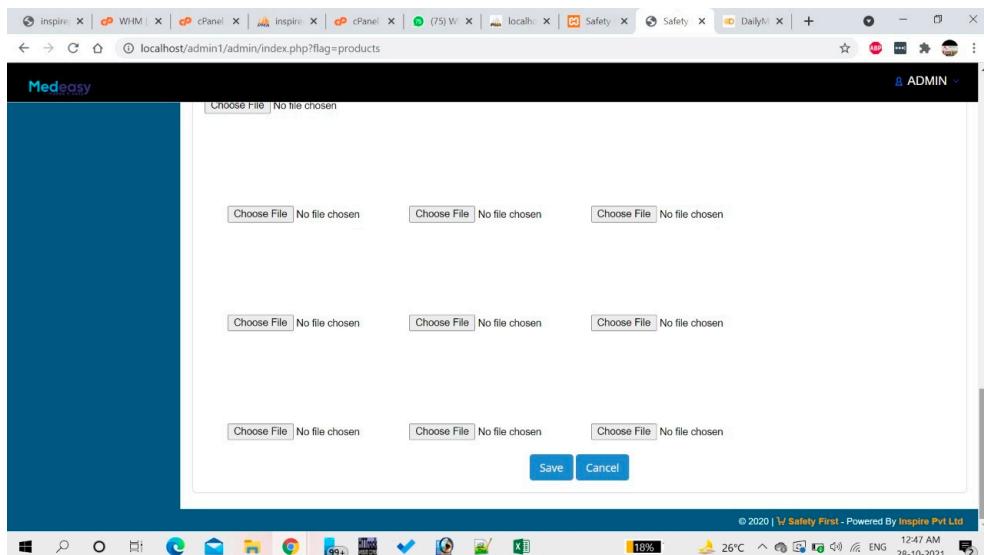


Figure 19 Add image of the product

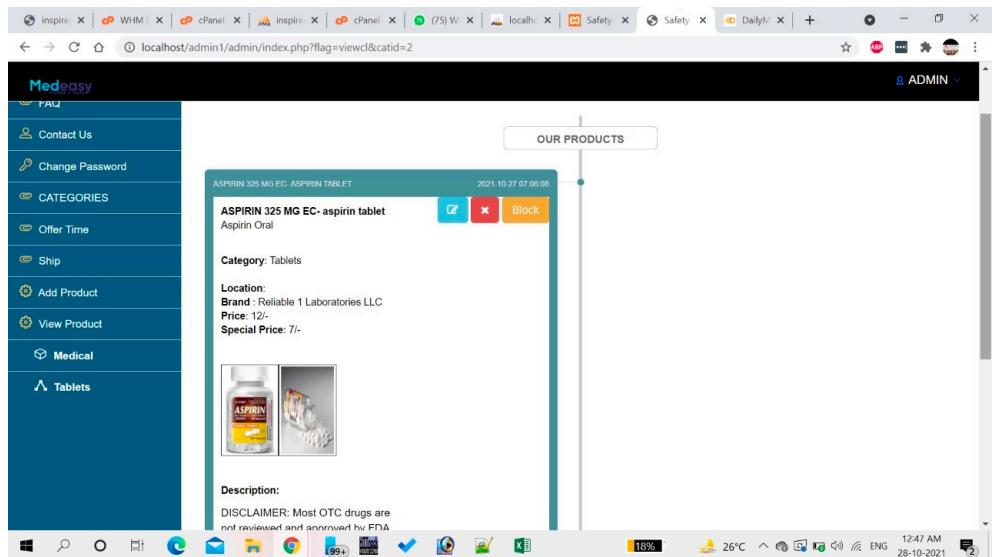


Figure 20 Display after adding product

Discounted price, total price shown. The cart also shows the cart total in the right corner of the page.

Image	Product Name	Quantity	Price	Discount	Total	Remove
	ASPIRIN 325 MG EC- aspirin tablet	1	12.00	₹ 5.00	₹ 7.00	

Figure 21 Add product to cart

Total price is shown below.

The screenshot shows a web browser window with multiple tabs open. The active tab displays a shopping cart for a single item: ASPIRIN 325 MG EC- aspirin tablet. The item is shown with a small image of the bottle. The table includes columns for Product, Description, Quantity, Price, Discount, and Total. The quantity is 1, price is 7.00, discount is 5.00, and total is 7.00. Below the table, there is a section labeled 'Totals' with a quantity of 1, a price of 19.00, a discount of 5.00, and a total of 7.00. Further down, there is a section labeled 'SHIPPING' with a price of 50.00. At the bottom right, a large blue button displays the total amount as 57.00. The browser's taskbar at the bottom shows various icons and system status information like battery level (16%), temperature (26°C), and date/time (12:50 AM, 28-10-2021).

Figure 22 Total amount

Delivery options have speed delivery and extra price depending on the place to be delivered.

The screenshot shows a web browser window with multiple tabs open. The active tab displays a shopping cart for a product. A delivery choice dropdown menu is open, listing four options: Rajahmundry Urban (₹ 50), Rajahmundry Rural (₹ 100), Courier (₹ 100), and Above 2000 (₹ 0). Below the dropdown is a 'CONTINUE SHOPPING' button. At the bottom right of the screen, there is a 'PROCEED TO CHECKOUT' button. A message at the bottom says 'Checkout with multiples address!'. The browser's taskbar at the bottom shows various icons and system status information like battery level (50%), temperature (33°C), and date/time (01:59 PM, 28-10-2021).

Figure 23 Delivery choice

Final page where the order is placed and its tracking ID as well as the date when order is placed is shown.

Product	Quantity	Pricing
ASPIRIN 325 MG EC-aspirin tablet	1	Price: 7.00

Order Total 7.00

Figure 24 My orders

Sample code to add product to the cart is shown below.

```

$op_date=date("Y-m-d h:i:s");
$_SESSION['session_id']=1;
$crow=mysql_fetch_array(mysql_query("select * from classifieds where id='".$id."'"));
$type=$row["condition"];
$ship=$row["shipping"];
if($row["price"]>0)
{
$unit=$row["price"];
}
else
{
$unit=$row["price"];
}
$amount=$unit*$qty;

if($flag == "add")
{
 $res=mysql_query("insert into temp_cart values('','".$row["id"]."','".$row["color"]."','".$row["qty"]."','".$row["type"]."','".$row["unit"]."','".$amount."','".$ship."','".$_SESSION['session_id']."'") or die(mysql_error());
}

if($res)
{
 header("location: cart.php?id=$id&qty=$qty&cid=$unit_id");
}

if($flag == 'remove')
{
 $res=mysql_query("delete from temp_cart where p_id='".$op."' and cid='".$row["id']."'") or die(mysql_error());
}

if($res)
{
?
<SCRIPT language="JavaScript">
<!--
window.location="cart.php?op=7&p=$id&qty=$unit_qty";
//-->
</SCRIPT>
?
}

}
else{
?
<SCRIPT language="JavaScript">
<!--
window.location="myaccount.php";
//-->

```

Figure 25 Add to cart code(sample)

5 Chapter: Conclusion and future work

Creating this website is our solution to the problem encountered during the pandemic. This website can also be designed as an app updated with more features. The radius of delivery can be extended to all parts of the country. Non OTC drugs can also be included with permissions.

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