Medicine Database (MedboX)

A Project Report

Submitted by

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HERITAGE INSTITUTE OF TECHNOLOGY, KOLKATA

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An autonomies Institute under
Maulana Abul Kalam Azad University of Technology
Formerly Known as
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BONAFIDE CERTIFICATE

Certified that this project report **Medicine Database (Medbox)** is the bonafide work of **Ankush Pandit, Abhishek Banerjee, Sovan Ghosh, Parthasarathi Patra** who carried out this project under my supervision

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Prof. Smritikona Barai

PROJECT GUIDE

Asst. Professor
Department of Computer Science and Engineering

EXAMINER

ACKNOWLEDGEMENT

We deem in an opportunity to present this project report on name. We express our sincere and heartiest gratitude to our esteemed guide Mrs. Smritikona Barai for providing us this opportunity to develop our knowledge on database application, web design and machine learning.

We will also be thankful to Heritage Institute of Technology for providing us the right platform towards the fulfilment of this project.

DECLARATION

All the statements and facts mentioned in this project report are true to the best of our knowledge and we have made claims of acquired competencies in good faith. This project report is written in our own words and is a true representation of our personal competence in the field of Computer Science Engineering and written English.

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PROJECT SYNOPSIS

MedboX is an online database of various medicines and related products where users can view different available medicines along with their prices. The main goal of this application is to suggest an alternative set of medicines in the event of any particular medicine being out of stock.

This website is written in PHP language and MySQL database is used for storage purpose.

Main features of this database application are as follows:

- Users can purchase medicines from this website.
- Users have to upload prescriptions in order to purchase medicines.
- In the event of a particular medicine being out of stock, similar medicines will be recommended to the user.
- This recommendation will be done considering the composition of different medicines.
- A machine learning model will recommend medicines to users for common diseases like fever, cough, cold etc.

So, MedboX is basically a platform to buy medicines from.

PROPOSED ARCHITECTURE

1. **Data Collection:** We will follow the ER diagram shown in the later part to implement relations among different entities in the database. To create the database, we will look into different websites and scrape the data using python.
2. **Front-end Design:** We have developed this project using the below technology
   - HTML: Page layout has been designed in HTML
   - CSS: CSS has been used for all the designing part
3. **Back-end Design:**
   - PHP is used as the scripting language
   - MySQL has been used as the Database management system
   - Apache web server has been used for web hosting
4. **Machine Learning model:** We aim to use supervised learning in order to implement our model. Using Neural Network is a very popular method to do so. While judging the nature of disease, we will not only consider the symptoms given by user, but we will also consider user's age, gender, physical condition as input. User's description of symptoms may be ambiguous sometimes, so we must use some standardization or filtering before feeding the input to the model.

SOFTWARE REQUIREMENT SPECIFICATION:

LANGUAGE:-

HTML s used as scripting language for web designing. Hypertext Markup Language (HTML) is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages. PHP is used to perform database actions like update, insertion, deletion in backend.

DATABASE:-

MySQL is used as the database.

WEB SCRAPING: -

Selenium and beautiful soup were used to extract the data. Python programming language was used.

Machine Learning Model:-

TensorFlow tool has been used to implement the neural network model. Python programming language was used.

FUNCTIONALITIES OF MEDBOX

1) MedboX is an online website where users can view different medicines and other related products along with their price and quantity.

2) The composition of the various medicines is also shown to the user.

3) Doctor's prescription has to be uploaded by the user in order to purchase medicines.

4) MedboX provides a unique feature, where, in the event of a particular medicine being unavailable or out of stock, a list of alternative medicines is recommended to the user on the basis of the symptoms and the composition of the previously requested medicine.

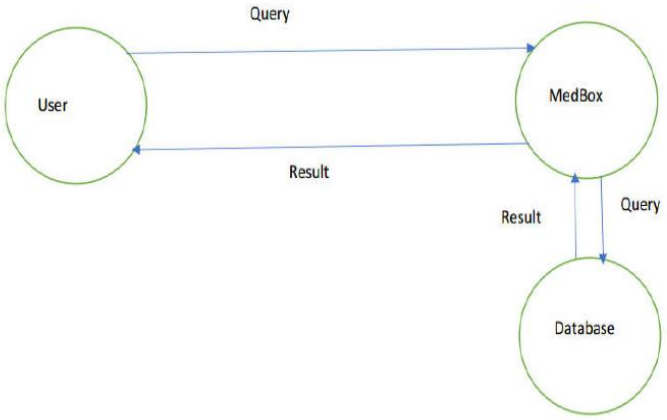
5) MedboX uses state of the art machine learning techniques to recommend similar medicines to the user in the event of the circumstances described above.

6) Users can make payment through Paytm.

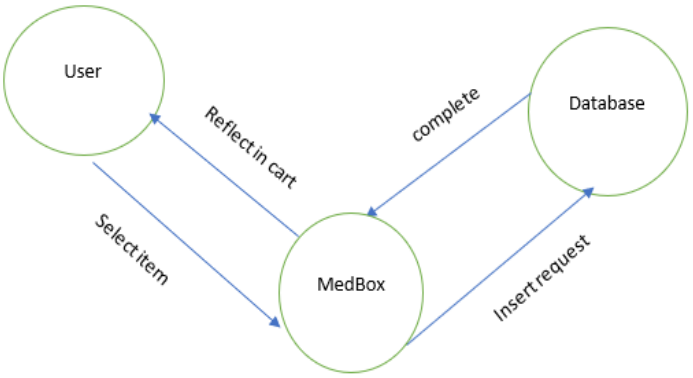
7) Users can provide their feedback after using the application.

DATA FLOW DIAGRAM

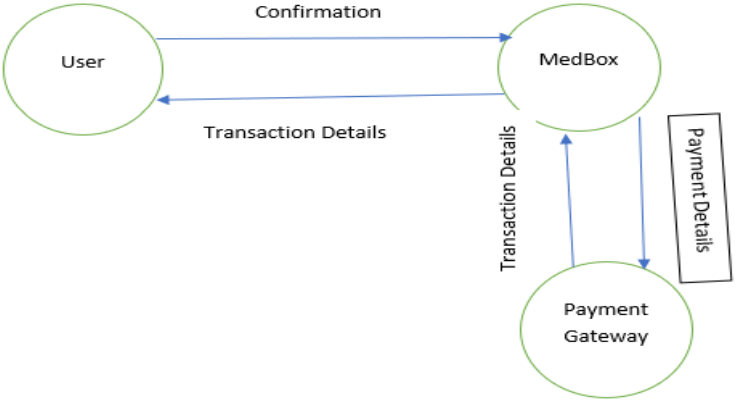
Search:



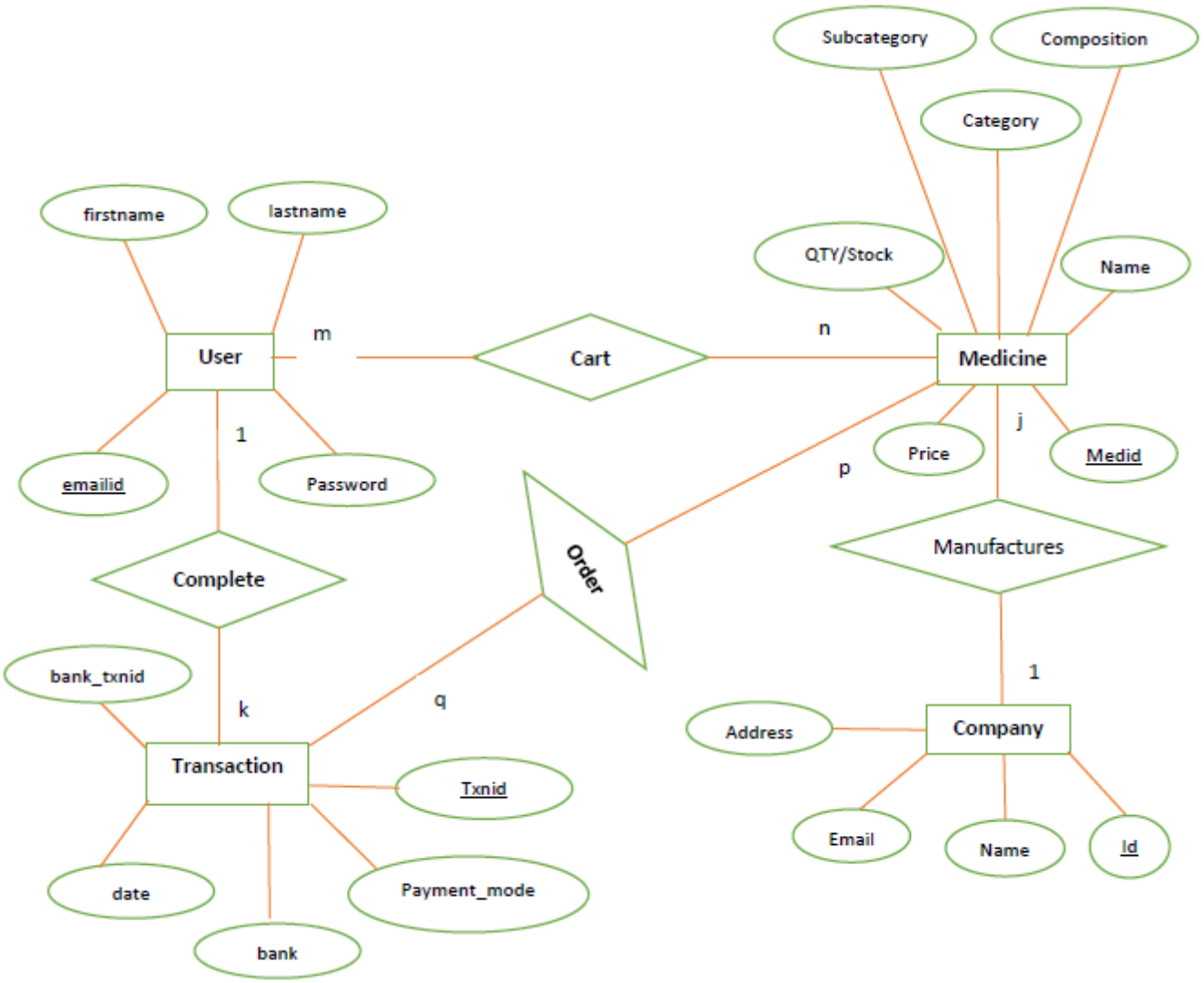
Cart:



Payment



ER Diagram


Subcategory
Composition
Category
QTY/Stock
Name
firstname
lastname
User
m
Cart
n
Medicine
1
j
emailid
Password
Price
Medid
p
Order
Manufactures
Complete
bank_txnid
k
q
1
Address
Company
Transaction
Txnid
Email
Name
Id
date
Payment_mode
bank

Tables in Database

PURCHASE
PURCHASEID (PRIMARY KEY)
EMAILID(FOREIGN KEY)
MEDID(FOREIGN KEY)
QUANTITY
DATE

COMPANY
ID (PRIMARY KEY)
EMAIL
NAME

MEDICINE
MEDID (PRIMARY KEY)
NAME
COMPOSITION
QUANTITY
COMPANY (FOREIGN KEY)
PACK SIZE
CATEGORY
SUB-CATEGORY

USER
EMAILID (PRIMARY KEY)
PASSWORD
FIRSTNAME
LASTNAME

TRANSACTION
TRANSACTION ID (PRIMARY KEY)
DATE
BANK
PAYMENT MODE
EMAIL (FOREIGN KEY)
BANKTXNID

CART
EMAILID (FOREIGN KEY)
MEDID (FOREIGN KEY)

ORDERS
MEDID (FOREIGN KEY)
TRANSACTION ID (FOREIGN KEY)

SAMPLE PROGRAM CODES:

Loginserver.php

C:\Users\DEMO\Downloads\loginserver.php - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

loginserver.php

```php
<!DOCTYPE html>
<html>
  <head>
    <title></title>
  </head>
  <body>
    <br>
    <?php
      session_start();
      $email = $_POST['email'];
      $pass = $_POST['psw'];
      $con = mysqli_connect("localhost", "root", "", "projectdb");
      if(mysqli_connect_error())
      {
        echo "unable to connect.......".mysqli_connect_error();
      }
      else {
      $sql = "SELECT * FROM user WHERE email = '$email' AND password = '$pass'";
      $res = mysqli_query($con, $sql);
      $row=mysqli_num_rows($res);
      $query = "SELECT fname FROM user WHERE email = '$email' AND password = '$pass'";
      $data = mysqli_query($con, $query);
      $temp = mysqli_fetch_assoc($data);
      if($row > 0)
      {
        $_SESSION['user'] = $temp['fname'];
        header("refresh:3; url = userHome.php");
      }
      else {
        echo "Invalid Credentials";
        header("refresh:2; url = login.php");
      }
    }
     ?>
  </body>
```

Line 28, Column 8 — Tab Size: 4 — PHP

Type here to search — ENG IN 17:53 18-12-2019

Med_scrapping_sel.py:

med_scrapping_sel.py - C:\Users\Ankush\Desktop\final_year proj\Model\med_scrapping_sel.py (3.6.6rc1)

File Edit Format Run Options Window Help

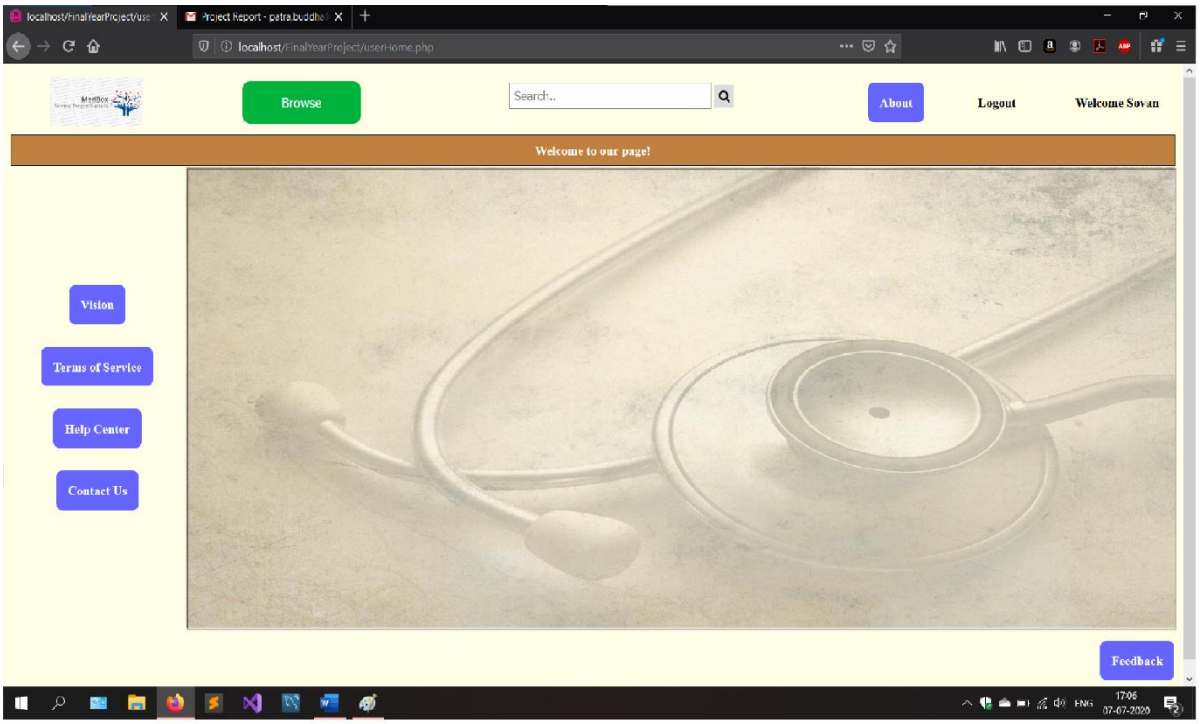
```python
from selenium.common.exceptions import NoSuchElementException
from selenium.common.exceptions import ElementClickInterceptedException
from selenium.common.exceptions import StaleElementReferenceException
from bs4 import BeautifulSoup
import re
#import urllib.request as urllib2
from urllib.request import Request, urlopen
import pandas as pd


medlink='https://www.medplusmart.com/drugsCategory/MEDICINES/Supplements-n-Adjuvant-Therapy/10119/10125'

driver=webdriver.Chrome("C:\\Users\\Ankush\\Desktop\\study\\project\\chromedriver.exe")
driver.get(medlink)
i=0
prev=-1
table_data = [['Name','Composition','Company','Pack size','Price']]
while i <30:
    try:
        if prev!=i:
            prev=i
            page_source = driver.page_source
            soup=BeautifulSoup(page_source,'html.parser')
            abc=soup.find('table', id="brandProductTable")

            for  row in abc.find_all('tr'):
                row_text = []
                j=0
                for data in row.find_all('td'):
                    if j==0 :
                        #s=child.text.translate(None, '\t\n ')
                        row_text.append(data.find('a').text)
                        row_text.append(data.find('small').get('title'))
                    elif j>0 and j<4:
                        #s=re.sub('\s+',' ',data.text.strip())
                        s=data.text
                        if s!='Add to Cart' or s!='OutOfStock':
                            row_text .append(s)
                    j=j+1

                table_data.append(row_text)
```

User Module

User can sign up and log in into the website. They can view the medicines available in different categories and also can purchase these.

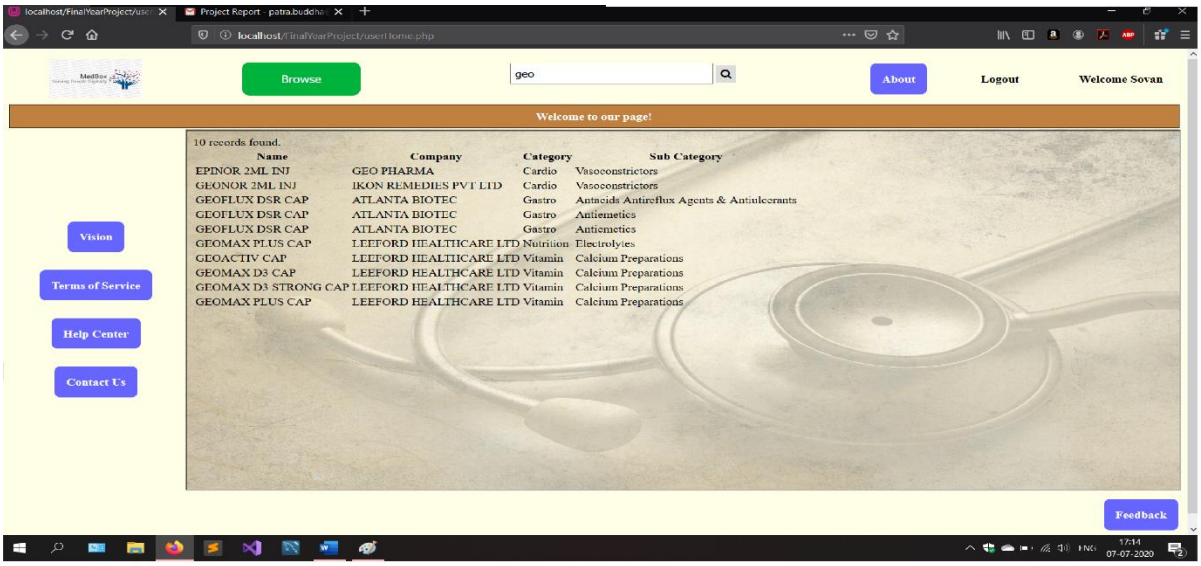
User can also provide feedback using their email id in the feedback tab about their queries and suggestions.

Below is a screenshot of the index page:

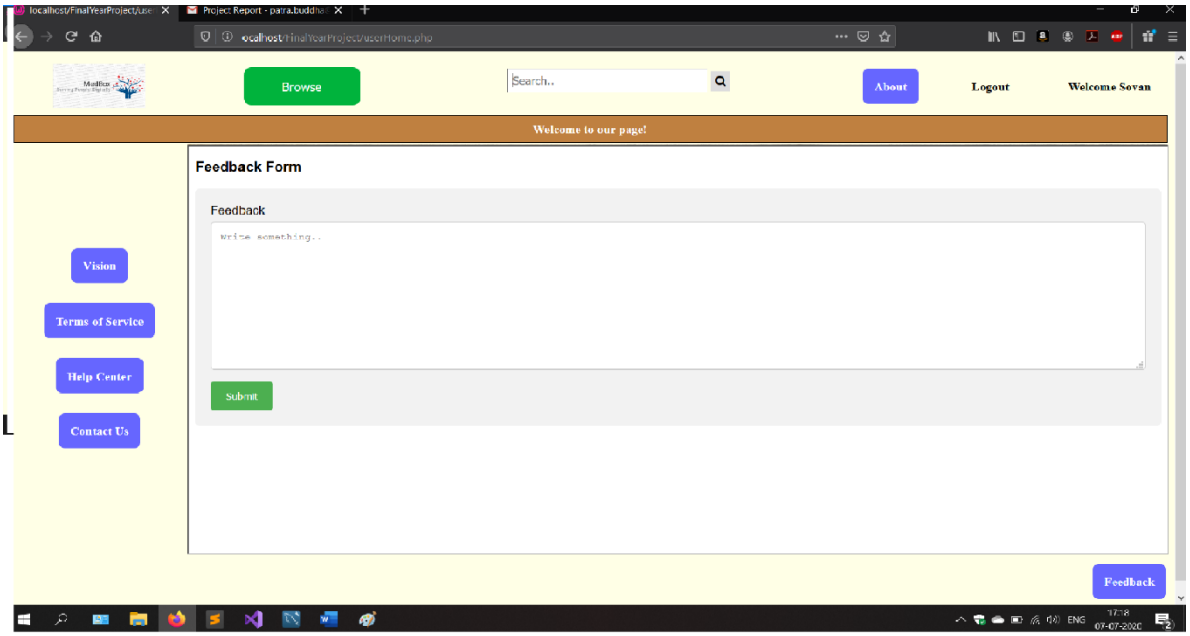


User can search or browse the medicines using names or the categories provided.

Screenshot of search procedure



Screenshot of feedback form provided to users

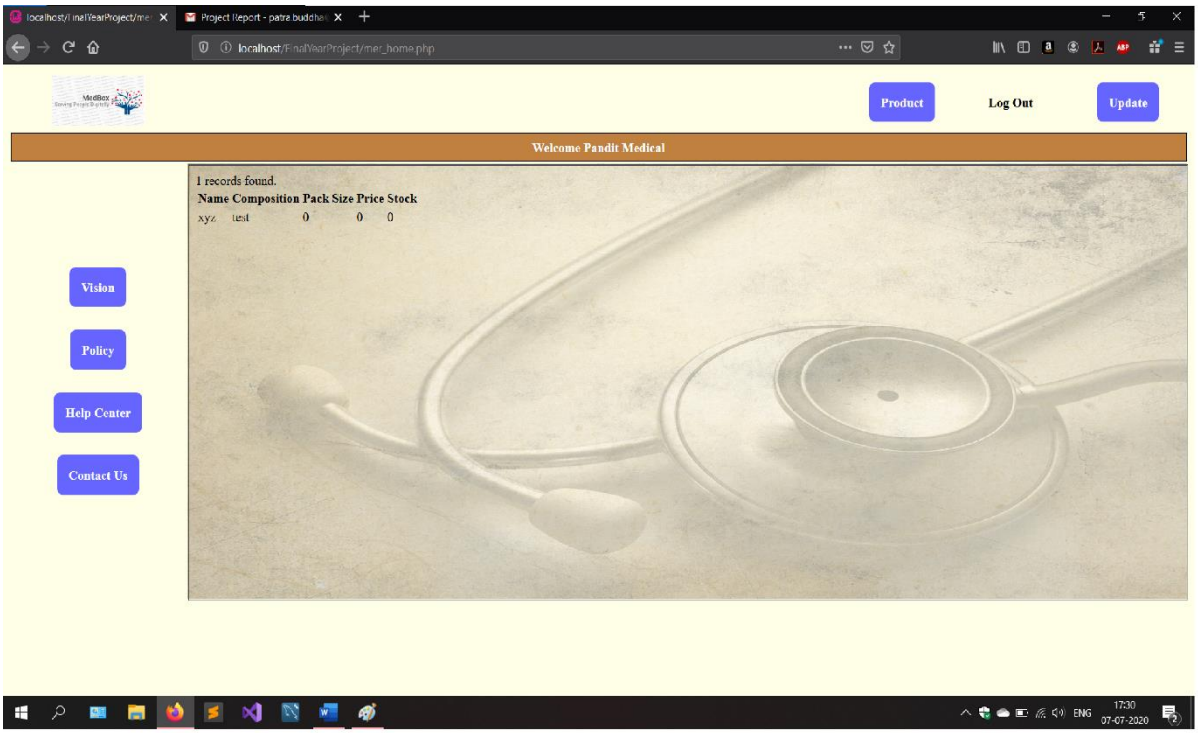


Merchant Module

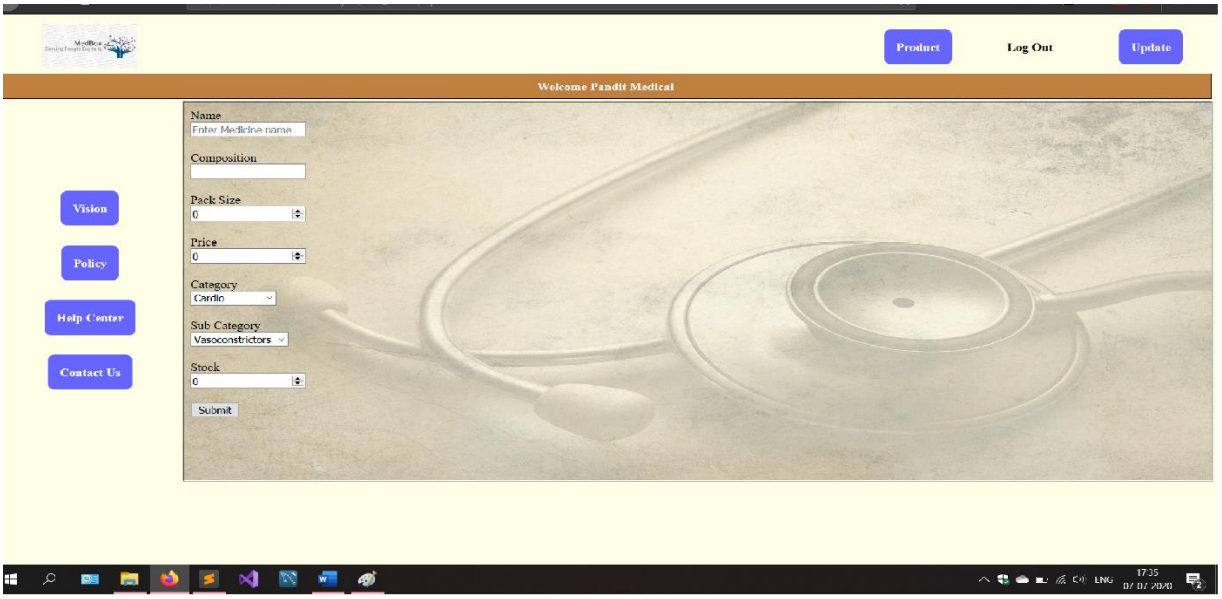
Merchants are the provider of the medicines. They can view their products from the website and also can update the stock or add a new product if they wish.

Merchants are provided with default user id and password, so there is no need to sign up for a merchant.

Screenshot of merchant home page and their products



Screenshot of medicine stock modification form

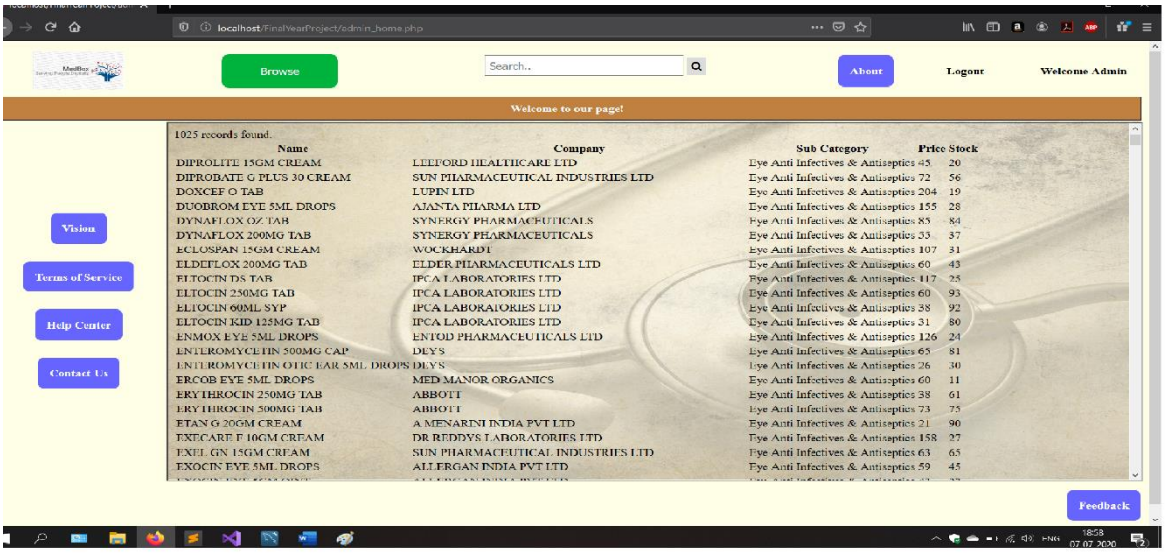


Using the above mentioned form merchants can update or modify the medicine stocks and prices accordingly. They can also add new medicines which will be updated directly on the medicine table in the database.

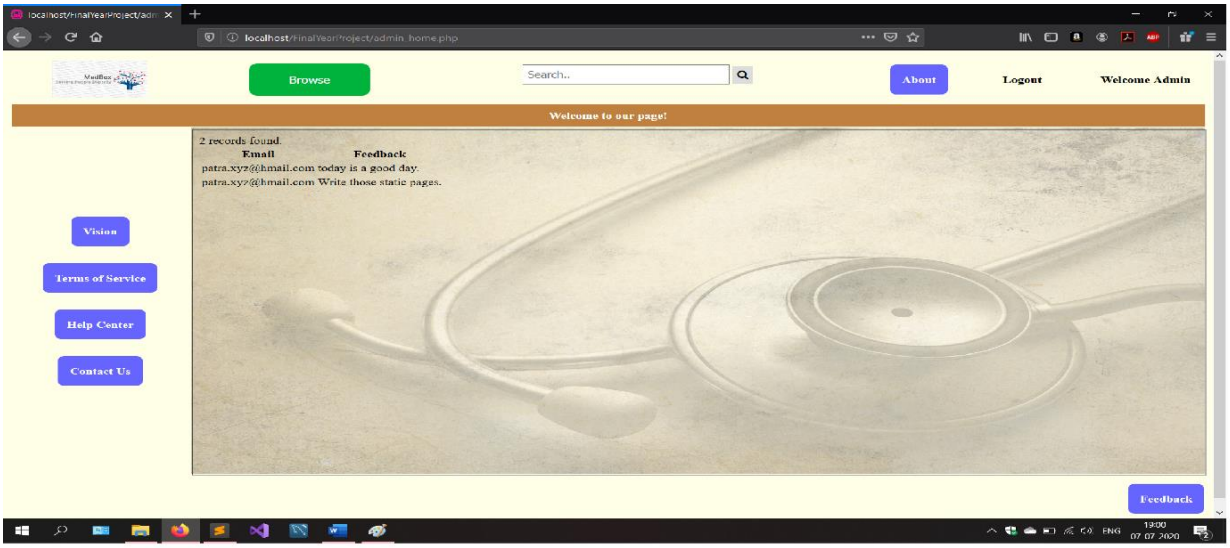
Admin Module

Admin module is used by the admin to keep track of the current stock, price and information about the medicines and the merchants. Also admin can view and analyse the feedbacks given by the users to improve the functionalities of the website.

Screenshot of the admin home page



Screenshot of the feedback analysis



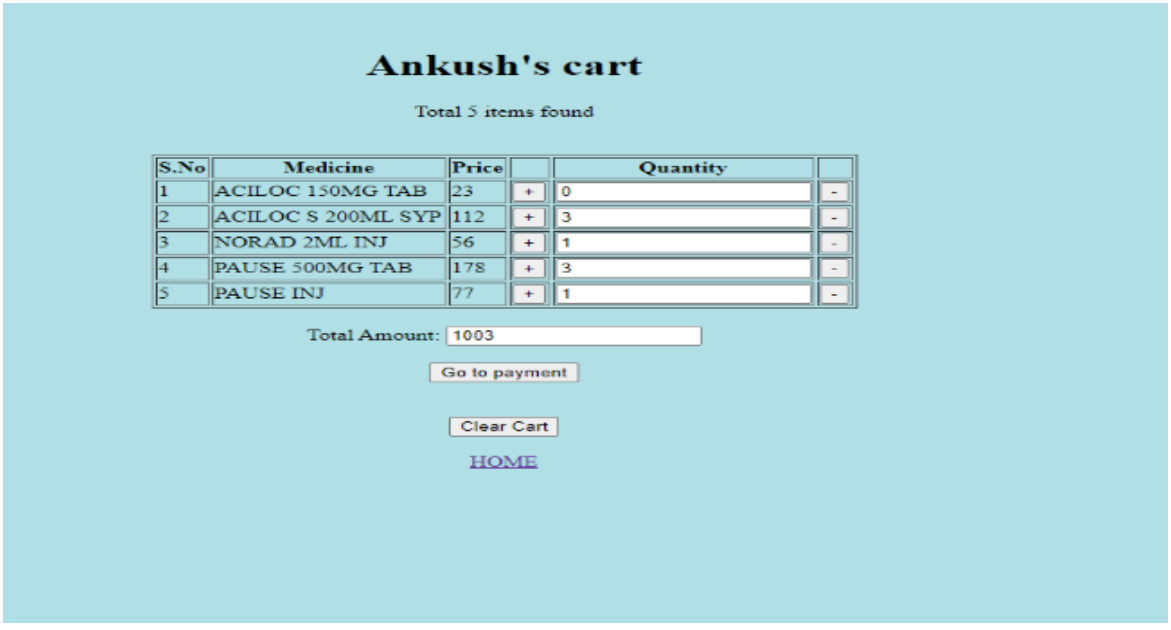
Cart Module

Cart functionality allows user to add their selected medicine in the cart. They can delete and add elements into the cart, and they can proceed to the payment from cart.

Workflow:

1. The ‘Add to cart’ button is present to the right of the medicine name. User click it to add items into the cart, a ‘Remove’ button is also provided in case an item is no longer required.
2. User can visit the ‘cart’ any time from home screen.
3. In the cart, user can change the quantities of the medicines he or she wants to purchase.
4. The individual and total prices are available in the cart so that user can adjust the value. The total price gets updated dynamically as user updates the quantities, no need to refresh the page.
5. Once user is happy with the selection, he or she can proceed to payment page from the link available in ‘cart’ page.

Below is a screenshot of cart page:



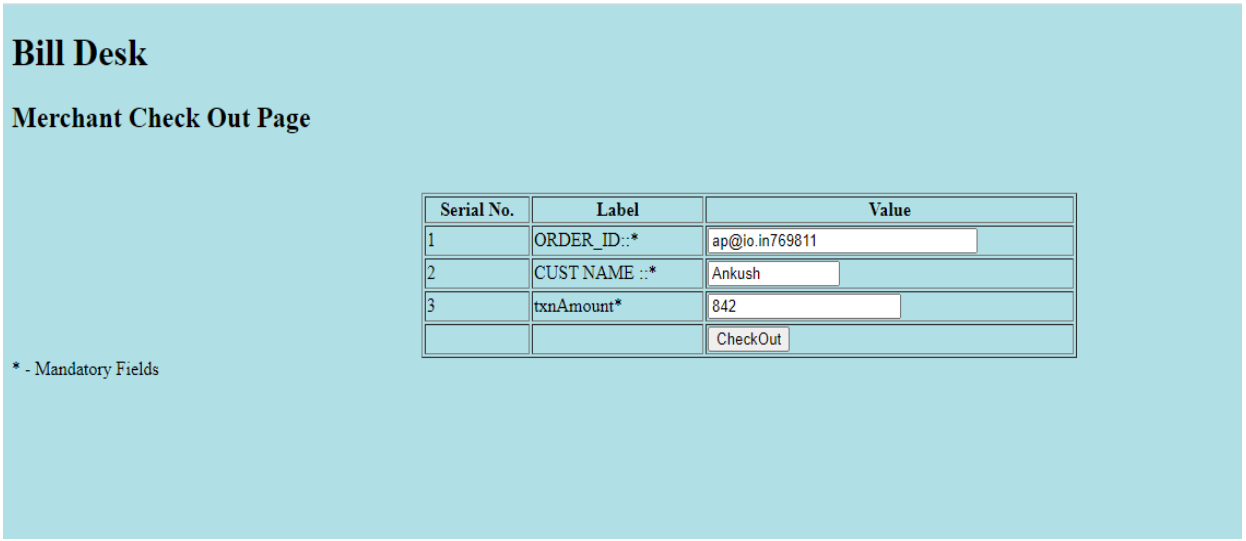
Payment Module

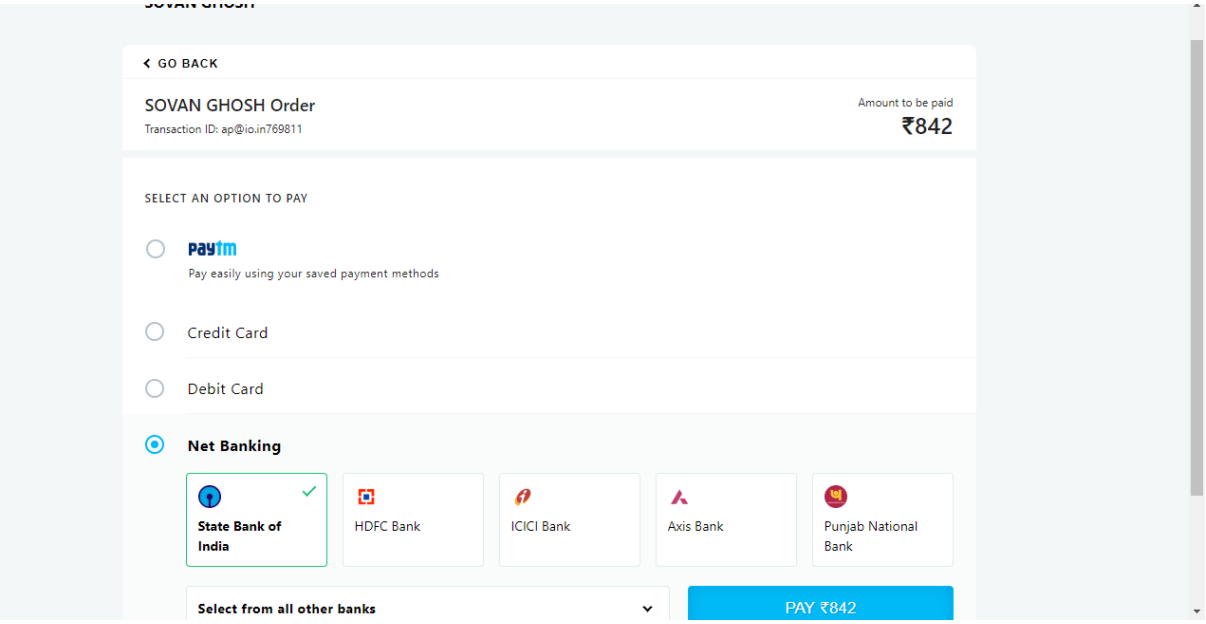
Payment functionality enables user to pay for the items in order and finalize their order.

Workflow:

1. Payment option can be accessed from the link in ‘cart’ page. By clicking ‘confirm’ in cart user can proceed to ‘checkout’ page.
2. In the ‘checkout’ page user can see details like: transaction id, order id, total payable price none of which are editable. User can return back to ‘cart’ page or go to ‘payment’ confirmation.
3. Upon confirmation, the page redirects to Paytm payment gateway, where different payment options like net banking, debit or credit card are available.
4. The payment gateway, provided by Paytm is a free version with limited features.
5. Once payment is complete, a page with transaction details appear, with a print option. User can see the history of this transaction in ‘order’ section of home page.

Images of different stages of payment:





Checksum matched and following are the transaction details:
Transaction status is success

ORDERID = ap@io.in769811
TXNID = 20200706111212800110168863001684637
TXNAMOUNT = 842.00
PAYMENTMODE = NB
CURRENCY = INR
TXNDATE = 2020-07-06 22:55:22.0
STATUS = TXN_SUCCESS
RESPMSG = Txn Success
GATEWAYNAME = SBI
BANKTXNID = 12746242688
BANKNAME = SBI

Click the button to print the current page (Print this as your Bill)

PRINT
HOME

Disease Predictor Module

This module predicts simple diseases like fever, gastric problem based on the symptoms provided by the user.

1. The model is a neural network model.
2. The input is a vector of symptoms along with person's age and gender.
3. The dataset has been collected from the patients coming in a medicine shop.

Here is a screenshot of the output of actual versus derived value:

```
[0.00804747 0.00784237 0.98656828 0.00617406] [0. 0. 1. 0.]
[0.01637071 0.01851101 0.01139048 0.97362617] [0. 0. 0. 1.]
[0.01637071 0.01851101 0.01139048 0.97362617] [0. 0. 0. 1.]
[0.01637071 0.01851101 0.01139048 0.97362617] [0. 0. 0. 1.]
[0.01691529 0.0120839  0.00867977 0.9830887 ] [0. 0. 0. 1.]
[0.01691529 0.0120839  0.00867977 0.9830887 ] [0. 0. 0. 1.]
[0.01637071 0.01851101 0.01139048 0.97362617] [0. 0. 0. 1.]
[0.01637071 0.01851101 0.01139048 0.97362617] [0. 0. 0. 1.]
[0.01691529 0.0120839  0.00867977 0.9830887 ] [0. 0. 0. 1.]
[0.01637071 0.01851101 0.01139048 0.97362617] [0. 0. 0. 1.]
>>>
```

FUTURE WORK OF MEDBOX

Future work of this project are as follows:

1) Email service can be added to verify and maintain the user accounts properly.
2) The disease prediction model using machine learning can be further improved by adding multiple health conditions and factors as input to predict medicine more accurately
3) A pdf reader to read prescriptions in pdf format will be integrated

BIBLIOGRAPHY

- Wikipedia
- https://www.crummy.com/software/BeautifulSoup/bs4/doc/
- https://www.npmjs.com/package/selenium-webdriver
- https://www.medplusmart.com/