NBIT-Project Receipt Processing System Manual

Description: The NBIT-Project Receipt Processing System is a web-based application that simplifies the management and analysis of receipt data. It utilises an AI model trained with YOLO (You Only Look Once) and Tesseract OCR to extract information from uploaded receipt images. The system stores the extracted data, including item names, prices, quantities, merchant names, dates, and receipt numbers, in a centralised database.

Key features of the system include:

- User authentication and individual user profiles for secure data access and management
- Inline editing of receipt data within the web interface
- Interactive dashboard with visualisations (pie charts, bar charts) of receipt data by merchant and item prices
- Customisation plot styles using predefined themes

The NBIT-Project Receipt Processing System aims to provide a user-friendly and efficient solution for organising and analysing receipt information, enabling users to gain insights into their spending patterns and make data-driven decisions.

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Installation

Prerequisites

Before proceeding with the installation, ensure you have the following:

- Python 3.x
- pip (Python package installer, usually included with Python)

Steps

1. **Clone the repository**:

   Open your terminal or command prompt and execute the following command.

   ```
   git clone https://github.com/matthewJamesAbbott/NBIT-Project
   ```

2. **Navigate to the project directory**:

   Change your current directory to the project directory by running:

   ```
   cd NBIT-Project
   ```

3. **Install dependencies**:

   Install the required dependencies by executing:

   ```
   pip install -r requirements.txt
   ```

4. **Run the application**:

   Make the startup script executable:

   ```
   chmod +x start_server.sh
   ```

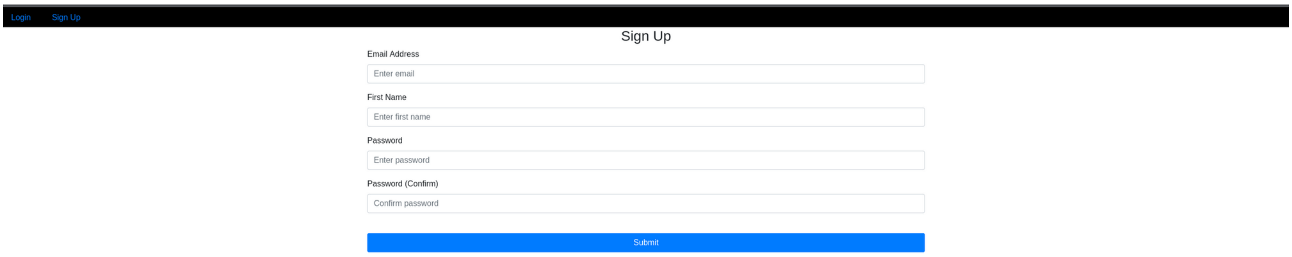
   Start the server:

   ```
   ./start_server.sh
   ```

Note

Before allowing outside access to the web application, ensure to modify the IP address and/or port number in the `start_server.sh` script as needed. It is not advised to expose the application directly using the current setup with Python Flask. Instead, it is recommended to use a WSGI server to run the application.

Registration Instructions



To register for an account, follow these steps:

1. **Access the Sign Up Page**:

   Navigate to the home page of the application. On the left side of the header menu, locate the "Sign Up" link and click on it.

2. **Fill Out the Registration Form**:

   Once you're on the Sign Up page, you'll see a form requesting the following details:

   - Email Address
   - First Name
   - Password
   - Password (Confirm)

   Enter your information accurately into the respective fields.

3. **Submit the Form**:

   After filling out all the required fields, click the "Submit" button to send your registration information.

4. **Verify Your Information**:

   Upon submission, the system will verify the provided information. If everything is correct and meets the required criteria, you'll be successfully registered.

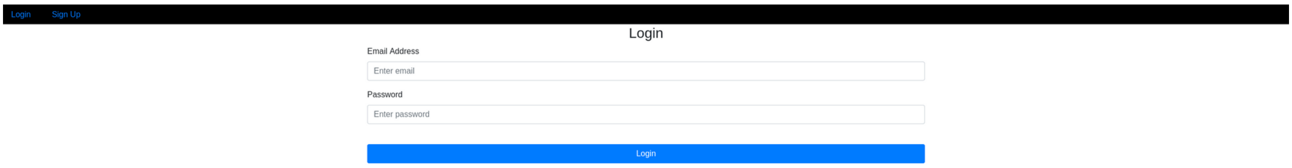
5. **Login Credentials**:

   After successful registration, you'll be logged into the system automatically. You'll receive a username and password which you can use for future logins.

6. **Access Your Account**:

   You can now access your account using the provided credentials for future logins. Simply navigate to the login page and enter your username and password to access the system.

Login Process



Introduction

The login process allows users to access their accounts within the web application. Users must provide valid credentials (username and password) that are associated with their registered account.

Steps

Access the Login Page:

Upon entering the web application, users are presented with a login page. This page typically contains:

- A form with fields for entering the username (email address) and password.
- A "Sign Up" link or button for new users to register an account.
- A "Login" button to submit the login form.

Enter Credentials:

- Users should enter their email address (used as the username during registration) and password into the respective fields of the login form.

Submit Form:

After entering their credentials, users click the "Login" button to submit the form.

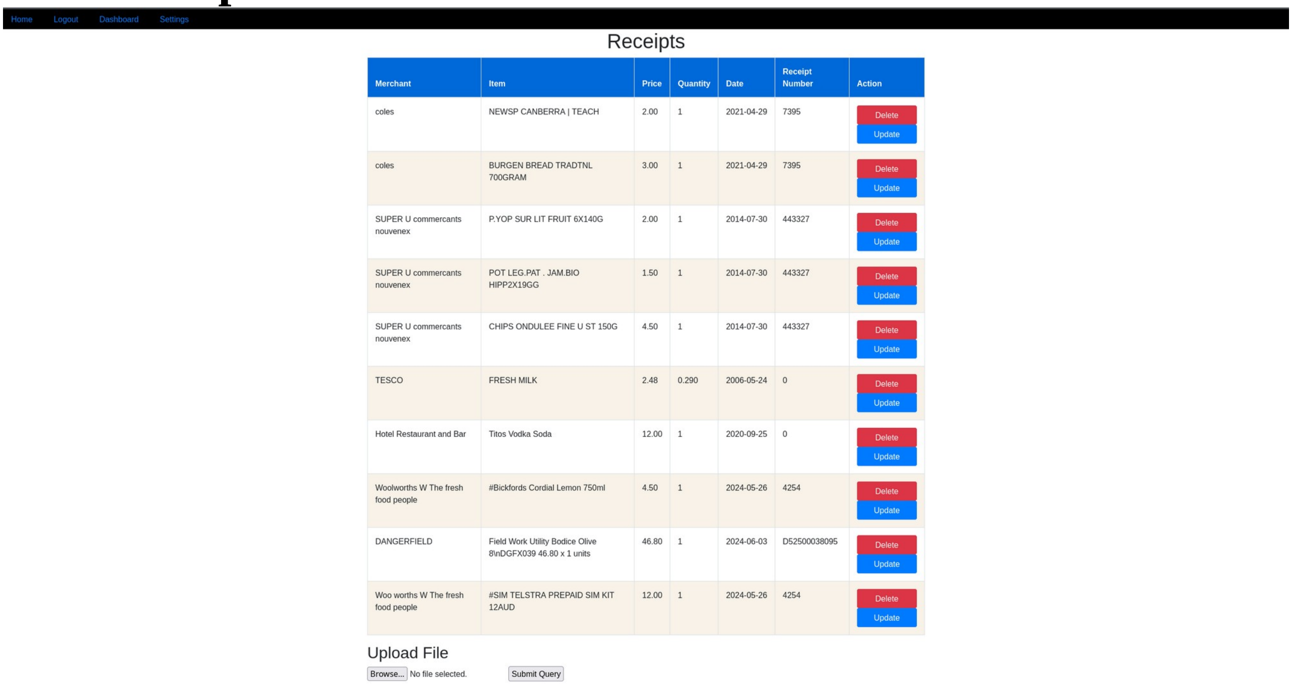
Validation:

- If the entered credentials are correct and match those associated with a registered account, the user is successfully logged in and granted access to their account.
- If the entered credentials are incorrect, the user is notified with a message indicating "Incorrect account details", and the login form is reset for them to try again.

Error Handling:

- If the user attempts to use anything other than an email address as the username, they are prompted with a message instructing them to use an email address for login.

Home Template



Merchant	Item	Price	Quantity	Date	Receipt Number	Action
coles	NEWSP CANBERRA | TEACH	2.00	1	2021-04-29	7395	Delete Update
coles	BURGEN BREAD TRADTNL 700GRAM	3.00	1	2021-04-29	7395	Delete Update
SUPER U commercants nouvenex	P.YOP SUR LIT FRUIT 6X140G	2.00	1	2014-07-30	443327	Delete Update
SUPER U commercants nouvenex	POT LEG.PAT . JAM.BIO HIPP2X19GG	1.50	1	2014-07-30	443327	Delete Update
SUPER U commercants nouvenex	CHIPS ONDULEE FINE U ST 150G	4.50	1	2014-07-30	443327	Delete Update
TESCO	FRESH MILK	2.48	0.290	2006-05-24	0	Delete Update
Hotel Restaurant and Bar	Titos Vodka Soda	12.00	1	2020-09-25	0	Delete Update
Woolworths W The fresh food people	#Bickfords Cordial Lemon 750ml	4.50	1	2024-05-26	4254	Delete Update
DANGERFIELD	Field Work Utility Bodice Olive 8\nDGFX039 46.80 x 1 units	46.80	1	2024-06-03	D52500038095	Delete Update
Woo worths W The fresh food people	#SIM TELSTRA PREPAID SIM KIT 12AUD	12.00	1	2024-05-26	4254	Delete Update

Upload File

Browse... No file selected. Submit Query

After successful login, users are greeted with a page containing a menu with the following links:

- **Home**: Navigate back to the home page.
- **Logout**: Log out from the current session.
- **Dashboard**: Display a Plot of the Merchant over Price.
- **Settings**: Customise Plot settings.

Receipt Data Table

If the user has any receipts inputted into the system, a dynamic table is displayed containing the following fields:

- **Merchant**: Name of the merchant where the purchase was made.
- **Item**: Description of the purchased item.
- **Price**: Cost of the item.
- **Quantity**: Number of items purchased.
- **Date on Receipt**: Date of the purchase as indicated on the receipt.
- **Receipt Number**: Unique identifier for the receipt.

When fields in the table are selected they become editable and users can change or add data as needed.

Changes made to table are only stored in the database when they have been updated !!!

Each row in the table includes two buttons:

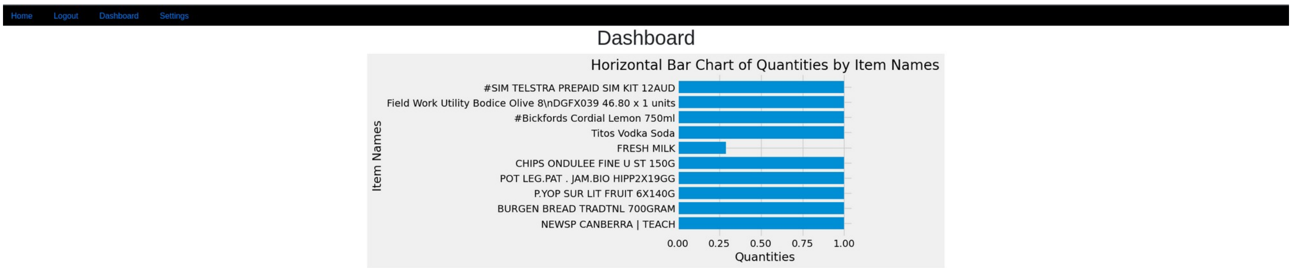
- **Update (Blue)**: Allows the user to update the database with any changes made to the corresponding row.
- **Delete (Red)**: Removes the record from the database, removing it from display in the table.

Upload File Form

At the bottom of the page, users have the option to upload a file containing an image of a receipt. The process includes:

- **Browse for Receipt Image**: Click the "Browse" button to open a file browser on your computer. This allows you to select the receipt image file you want to upload.
- **Select File**: Once you've found the image file on your computer, click on it to select it. The file name will then be displayed next to the button, indicating that the file location is loaded.
- **Submit File**: After selecting the file, click the "Submit" button to upload the file and process it. This action will add the receipt information to your account.

Dashboard



The dashboard template presents a visual representation of your receipt data with the following features:

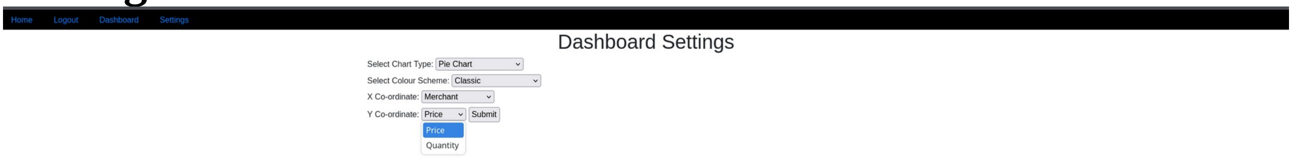
Plot Display

- **Sum of Prices by Merchant**: The dashboard showcases a plot illustrating the sum of prices for each merchant. Each bar represents a merchant, and its height corresponds to the total sum of prices associated with that merchant.

Customisation

- **Settings Configuration**: The dashboard's plot settings are fully customisation and can be configured in the settings template. You can adjust parameters such as:
  - Chart Type: Choose between pie charts, bar charts, and horizontal bar charts.
  - Colour Themes: Select from multiple colour themes to personalise your visualisations.

Settings



The settings template allows for customisation of the dashboard's plotting of receipts.

Configuration Options

- **Chart Type Drop down**: Choose between three chart types: Pie Chart, Bar Chart, and Horizontal Bar Chart.
- **Colour Scheme Drop down**: Select from various colour themes including Classic, Solarized Light2, Dark Background, BHM, Fast, FiveThirtyEight, Ggplot, Grayscale, Tableau-Colorblind10, and Classic Test Patch.
- **X Co-ordinate:** Choose between Merchant Item Date and Receipt Number for X axis plotting.
- **Y Co-ordinate:** Chose between Price and Quantity for Y axis plotting.

Activation

- **Submit Button**: After selecting your preferred chart type and colour scheme, click the "Submit" button located under the drop downs to apply the changes and make them active

Logging Out and User Management

Logging Out

- **Logout Option**: In the top header menu of all templates, there's always an option to log out.
- **Logging Out Process**: When the user selects the "Logout" option, they are instantly logged out of the system then redirected to the login template.

User Management

- **Data Accessibility**: Receipt data is accessible only to the users who uploaded the receipts. This data is securely stored in the database.
- **Data Retrieval**: When a user logs back into the system, their receipt data is retrieved from the database and presented to them, ensuring continuity and accessibility of their information.
- **Lost Passwords:** When user selects the lost password link in the login template they are sent to a template that requests there email address and then sends a temporary password to there email address
- **Change Password:** Once logged in the user can select the User menu item where they will have the option to change there password. Password change requires old password to be entered and then the new password twice to check for typo's
- **Delete Password:** Once logged in the user can select the User menu item where they will have the option to delete there account. Deleted accounts can not be recovered.