

# **Manju Graded Coding Project 3**

## **Web Development using Flask**

### **House Loan eligibility check application**

#### **1. Project Objective:**

- 1.1. This is a standard supervised classification task. A classification problem where we have to predict whether a customer is eligible for loan or not based on a given set of independent variable(s).
- 1.2. To build a Python Flask ML application where a user has to get registered by entering the username and password and login to the website and then enter their details to check whether they are eligible for loan or not.

#### **2. Model Building and saving the model using Pickle**

The python model building is attached as a python jupiter notebook below:

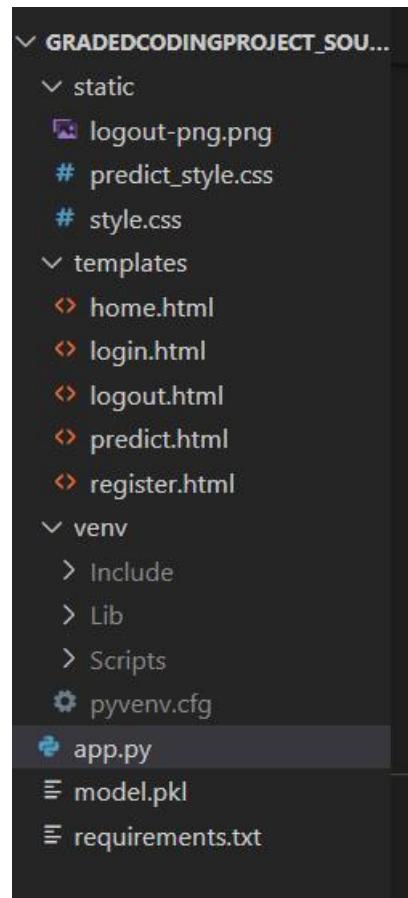


Manju\_CodingAssignment3\_PythonF

#### **3. Python Flask Application development**

The below screen prints represent the working of the application flow.

### 3.1. Project Structure



### 3.2. Database before starting the application

MySQL Workbench - Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator: MySQL\_Query

SCHEMAS: house\_loan

CREATE DATABASE IF NOT EXISTS `house\_loan`;

USE `new\_device\_mgmt`;

CREATE TABLE IF NOT EXISTS `accounts` (

id int NOT NULL AUTO\_INCREMENT,

username varchar(50) NOT NULL,

password varchar(255) NOT NULL,

PRIMARY KEY (`id`) AUTO\_INCREMENT=1;

SELECT \* FROM house\_loan.accounts;

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell

	id	username	password
*	NULL	NULL	NULL

### 3.3. Home page

The screenshot shows a web browser window with the URL 127.0.0.1:5000/home. The title bar reads "House Loan Eligibility Prediction". The main content area has a header "Home Page" and a message box containing "Welcome to house loan eligibiity prediction". Navigation links at the top right include "Home", "Login", and "Logout".

### 3.4. Try to login without register

The screenshot shows a web browser window with the URL 127.0.0.1:5000/login. A modal dialog box is displayed with the message "Please login/Signup to check loan eligibility". Below it is a "Login" form with tabs for "Login" and "Register". The "Login" tab is selected. The form fields show a placeholder "Manju" in the username field and "....." in the password field. A large blue "Login" button is at the bottom.

Incorrect username/password!

### 3.5. Register the user without username

Already have an account ? please login.

Register

Login Register

Username

..... Please fill out this field.

Register

### 3.6. Register the user without password

Already have an account ? please login.

Register

Login Register

Manju

Password Please fill out this field.

Register

### 3.7. Register the user with proper values

① 127.0.0.1:5000/register

Already have an account ? please login.

## Register

Login   **Register**

Name:

Password:

**Register**

① 127.0.0.1:5000/register

House Loan Eligibility Prediction

Home   Login   Logout

**Home Page**

Welcome to house loan eligibility prediction

Registered successfully !! Please login to check loan eligibility.

### 3.8. Database after registration

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree, which includes the 'house\_loan' schema. Under 'house\_loan', there is a 'Tables' node, which contains an 'accounts' table. The 'Columns' node under 'accounts' lists 'id', 'username', and 'password'. The 'MySQL\_Query' tab at the top contains the following SQL code:

```
1 • CREATE DATABASE IF NOT EXISTS `house_loan`;
2
3 • USE `new_device_mgmt`;
4
5 • CREATE TABLE IF NOT EXISTS `accounts` (
6     `id` int NOT NULL AUTO_INCREMENT,
7     `username` varchar(50) NOT NULL,
8     `password` varchar(255) NOT NULL,
9     PRIMARY KEY (`id`) AUTO_INCREMENT=1;
10
11 • SELECT * FROM house_loan.accounts;
```

The 'Result Grid' tab at the bottom shows the data for the 'accounts' table:

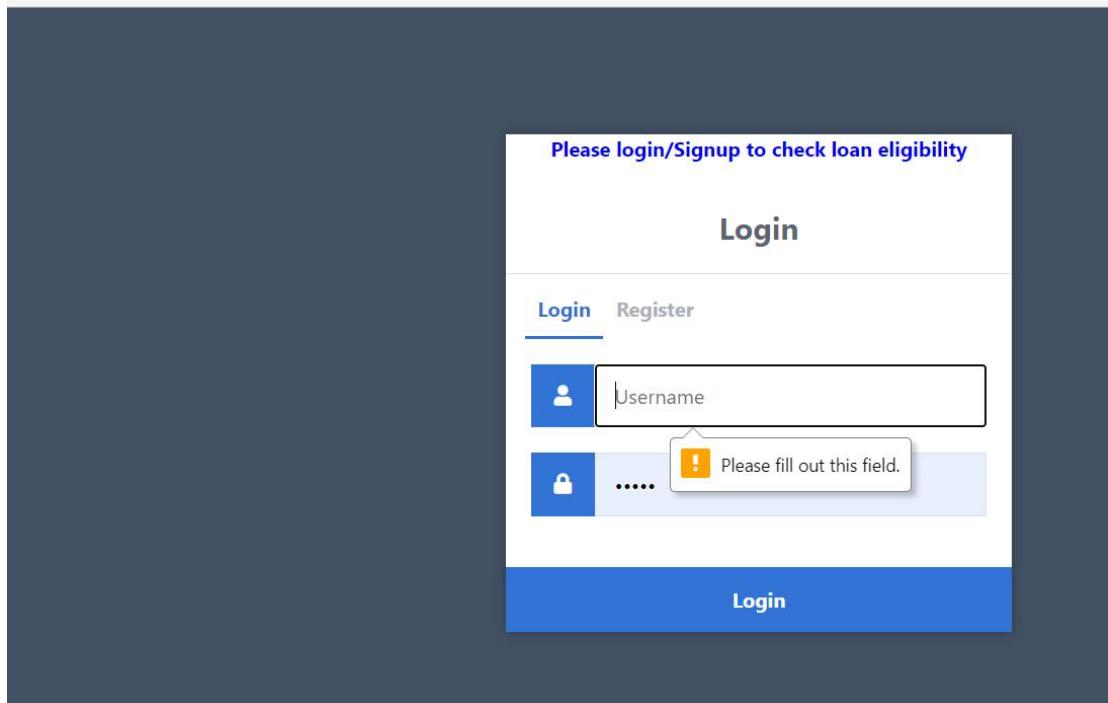
	id	username	password
▶	1	Manju	bWFuanU=
*	NULL	NULL	NULL

### 3.9. Register the user who has already registered

The screenshot shows a web browser with the URL 127.0.0.1:5000/register. The page displays the message: "User already registered !! Please go to HOME page to login."

### **3.10. Login the user without user name**

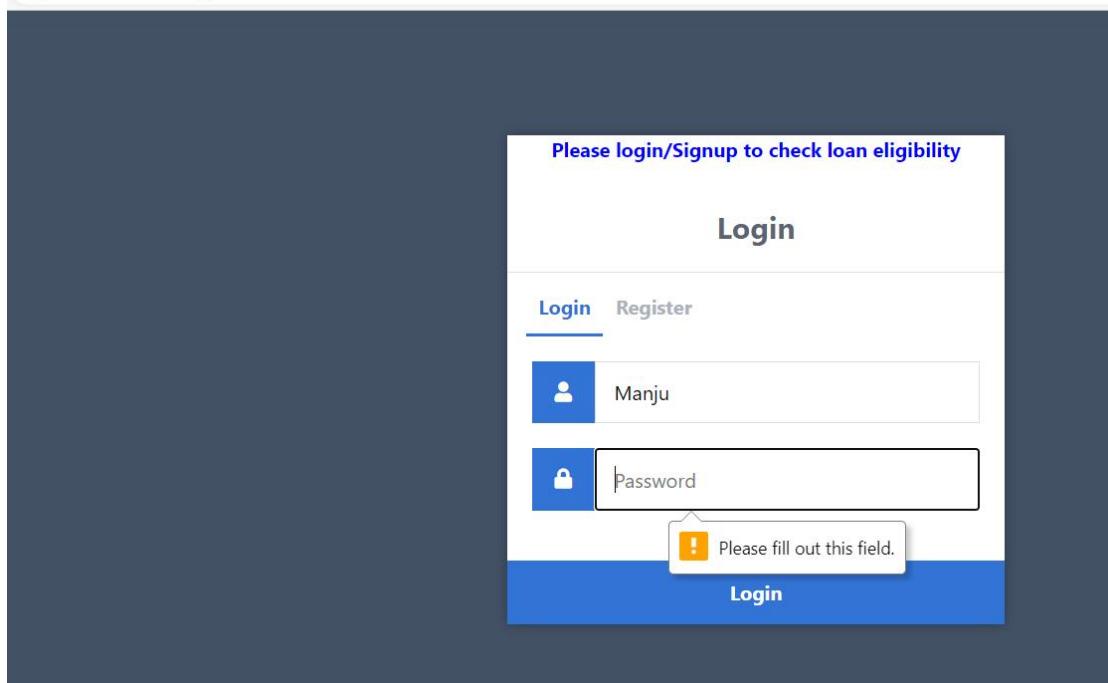
① 127.0.0.1:5000/login



The screenshot shows a login interface with a dark blue header bar containing the URL "127.0.0.1:5000/login". Below the header is a white login form. At the top of the form is a message: "Please login/Signup to check loan eligibility". The form has two tabs: "Login" (which is selected) and "Register". The "Login" tab features two input fields: a blue placeholder icon for "Username" and a blue placeholder icon for ".....". A tooltip message "Please fill out this field." with an exclamation mark icon is displayed next to the password field. At the bottom of the form is a large blue "Login" button.

### **3.11. Login the user without password**

① 127.0.0.1:5000/login



The screenshot shows a login interface with a dark blue header bar containing the URL "127.0.0.1:5000/login". Below the header is a white login form. At the top of the form is a message: "Please login/Signup to check loan eligibility". The form has two tabs: "Login" (selected) and "Register". The "Login" tab features two input fields: a blue placeholder icon for "Manju" and a blue placeholder icon for "Password". A tooltip message "Please fill out this field." with an exclamation mark icon is displayed next to the password field. At the bottom of the form is a large blue "Login" button.

### **3.12. Login the user without register**

The screenshot shows the MySQL Workbench interface. The left sidebar displays the Navigator with the following schema structure:

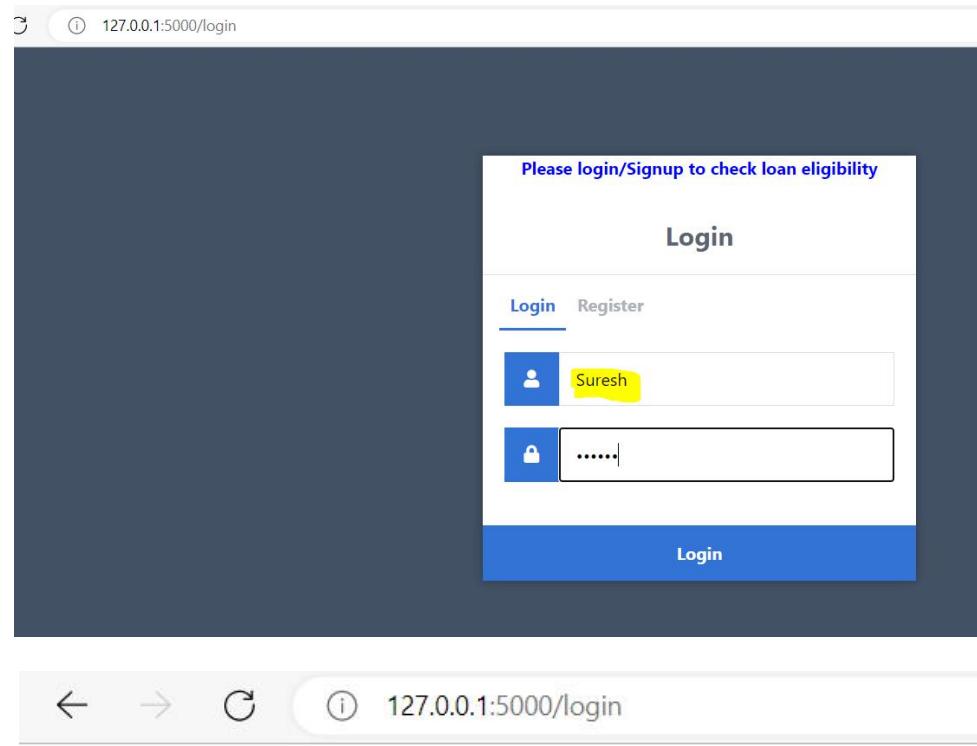
- SCHEMAS
  - electronics
  - house\_loan
    - Tables
      - accounts
        - Columns
          - id
          - username
          - password
        - Indexes
        - Foreign Keys
        - Triggers
      - Views
      - Stored Procedures
      - Functions
  - new\_device\_mgmt
  - sakila
  - sys
  - world

The main area is titled "MySQL\_Query" and contains the following SQL code:

```
CREATE DATABASE IF NOT EXISTS `house_loan`;
USE `new_device_mgmt`;
CREATE TABLE IF NOT EXISTS `accounts` (
    `id` int NOT NULL AUTO_INCREMENT,
    `username` varchar(50) NOT NULL,
    `password` varchar(255) NOT NULL,
    PRIMARY KEY (`id`) AUTO_INCREMENT=1;
SELECT * FROM house_loan.accounts;
```

The "accounts" table is displayed in the Result Grid:

	id	username	password
▶	1	Manju	bWFuanU=
*	HULL	HULL	NULL



## **Incorrect username/password!**

### 3.13. Login with proper user

Please login/Signup to check loan eligibility

Login Register

User Name: Manju

Password: .....

Login

Please enter the details in order to check your House Loan Eligibility

Gender: Male

Married: Married

Dependents: [Input Field]

Education: Graduate

Self Employed: Yes

Applicant's Income (\$): [Input Field]

Co Applicant's Income (\$): [Input Field]

Loan amount in thousands (\$): [Input Field]

Loan amount term (in months): [Input Field]

Credit History: Yes

Property Area: Urban

Predict House  
Loan Eligibility

[Logout](#)

### 3.14. Enter the details to check loan eligibility without the required fields

127.0.0.1:5000/login

Please enter the details in order to check your House Loan Eligibility

Gender: Male  
Married: Married  
Dependents:   
Education: Graduate  
Self Employed: Yes  
Applicant's Income (\$)  
Co Applicant's Income (\$)  
Loan amount in thousands (\$)  
Loan amount term (in months)  
Credit History: Yes  
Property Area: Urban

Please fill out this field.

Predict House  
Loan Eligibility

Logout

127.0.0.1:5000/login

Please enter the details in order to check your House Loan Eligibility

Gender: Male  
Married: Married  
Dependents: 3  
Education: Graduate  
Self Employed: Yes  
Applicant's Income (\$)  
Co Applicant's Income (\$)  
Loan amount in thousands (\$)  Please fill out this field.  
Loan amount term (in months)  
Credit History: Yes  
Property Area: Urban

Predict House  
Loan Eligibility

Logout

Please enter the details in order to check  
your House Loan Eligibility

Gender	Male <input type="button" value="▼"/>
Married	Married <input type="button" value="▼"/>
Dependents	3 <input type="text"/>
Education	Graduate <input type="button" value="▼"/>
Self Employed	Yes <input type="button" value="▼"/>
Applicant's Income (\$)	200000 <input type="text"/>
Co Applicant's Income (\$)	<input type="text"/>
Loan amount in thousands (\$)	<input type="text"/> ! Please fill out this field.
Loan amount term (in months)	<input type="text"/>
Credit History	Yes <input type="button" value="▼"/>
Property Area	Urban <input type="button" value="▼"/>

Predict House  
Loan Eligibility

Logout

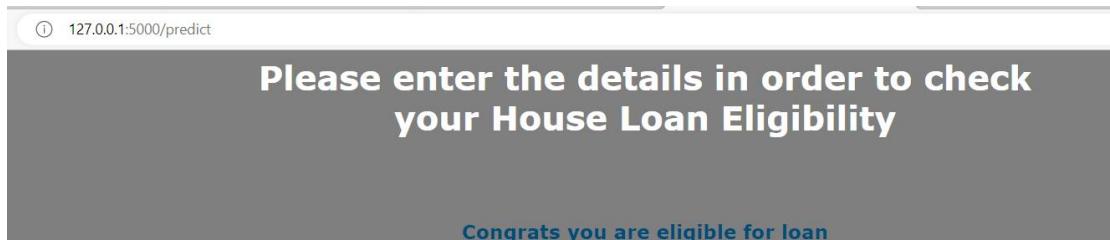
### 3.15. Enter the details to check loan eligibility with all the details filled

Please enter the details in order to check  
your House Loan Eligibility

Gender	Male <input type="button" value="▼"/>
Married	Married <input type="button" value="▼"/>
Dependents	3 <input type="text"/>
Education	Graduate <input type="button" value="▼"/>
Self Employed	Yes <input type="button" value="▼"/>
Applicant's Income (\$)	200000 <input type="text"/>
Co Applicant's Income (\$)	200000 <input type="text"/>
Loan amount in thousands (\$)	1000 <input type="text"/>
Loan amount term (in months)	25 <input type="text"/>
Credit History	No <input type="button" value="▼"/>
Property Area	Rural <input type="button" value="▼"/>

Predict House  
Loan Eligibility

Logout



### 3.16. Log out the application

