UNIVERSITY of INFORMATION TECHNOLOGY and MANAGEMENT
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FACULTY OF APPLIED INFORMATION TECHNOLOGY

Field Of Study: Information Technology

Specialty: Programming

Project

Course: PROJECT_Programowanie (Programming)

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Clothing Store Web Application Documentation

Overview

The Clothing Store Web Application is a Flask-based web application designed to provide users with a seamless online shopping experience. The application incorporates various technologies to ensure robust functionality, secure user authentication, and efficient database connectivity.

Technologies Used

Flask

Flask is the web framework that forms the core of the application. It simplifies the process of building web applications in Python, providing tools for handling HTTP requests, routing, and structuring the application.

SQLAlchemy

SQLAlchemy serves as the Object-Relational Mapping (ORM) library, enabling interaction between the application and the database. It allows developers to work with database entities as Python objects, enhancing code readability and maintainability.

SQLite Database

The application employs an SQLite database to store user information securely. SQLite is a serverless, lightweight database engine well-suited for small to medium-sized applications. It seamlessly integrates with Flask through SQLAlchemy.

bcrypt

User passwords are securely hashed using the bcrypt library before being stored in the database. Bcrypt is a robust password hashing library that enhances security by slowing down the hashing process, making it resistant to brute-force attacks.

JSON Web Tokens (JWT)

JSON Web Tokens are utilized for user authentication. JWTs facilitate secure transmission of information between parties, allowing the application to verify user identity without storing sensitive data on the client side.

Database Configuration

The application is configured to use SQLite as its database engine. The database URI is set as follows:

app.config['SQLALCHEMY_DATABASE_URI'] = 'sqlite:///database.db'

The SQLite database is initialized and tables are created based on the defined models.

User Authentication

User passwords are hashed using bcrypt during the registration process, enhancing security. JWTs are generated for user authentication and verified during login.

python

Copy code

```
def generate_token(email):
 payload = {'email': email}
 token = jwt.encode(payload, app.secret_key, algorithm='HS256')
 return token

def verify_token(token):
 try:
 payload = jwt.decode(token, app.secret_key, algorithms=['HS256'])
 return payload['email']
 except jwt.ExpiredSignatureError:
 return None
 except jwt.InvalidTokenError:
 return None
```

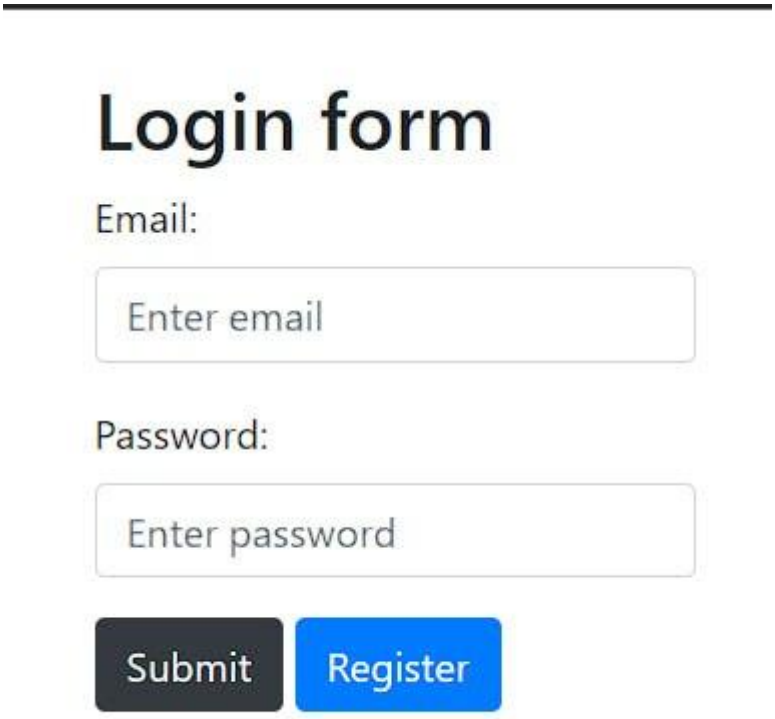
Home Page

The home page (`index.html`) provides a simple and welcoming interface for users to navigate through the application.

Registration Page

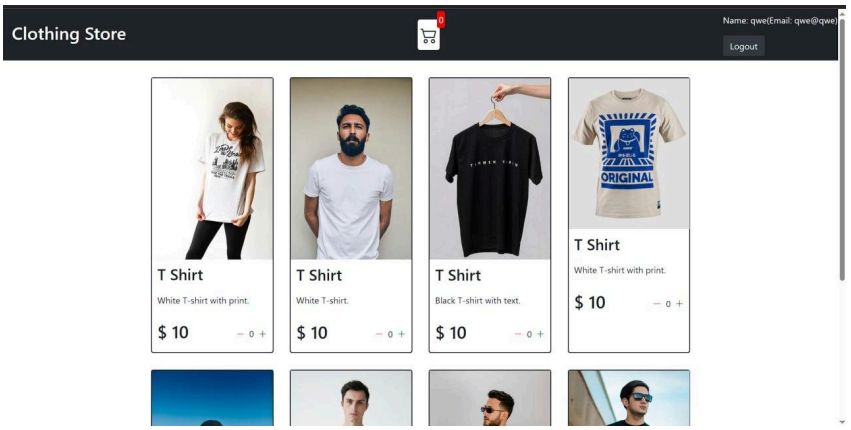
The registration page (`register.html`) allows users to create new accounts by providing their name, email, and password.

Login Page



The login page (`login.html`) enables users to log in with their registered email and password.

Dashboard Page

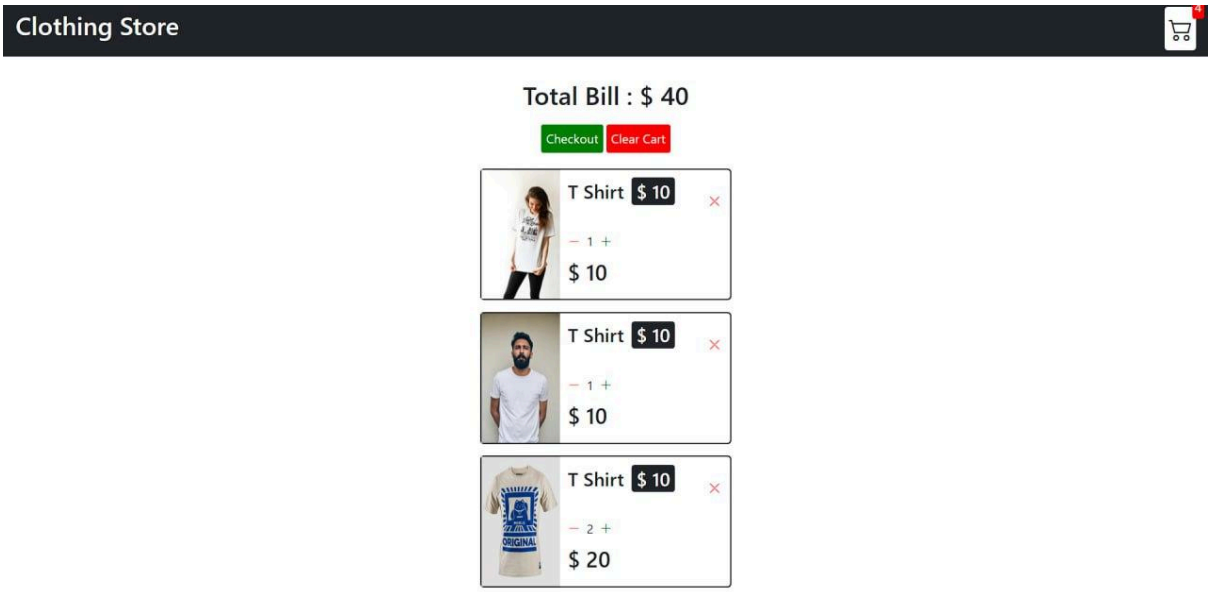


The dashboard page (`dashboard.html`) displays user information upon successful login.

Logout

The logout functionality clears the user's session, ensuring a secure logout process.

Shopping Cart Functionality



The application features a shopping cart with the following functionality:

- Incrementing and decrementing item quantities.
- Dynamic cart updates and total amount calculation.
- Removal of items from the cart.
- Clearing the entire cart.

Shopping cart information is stored in localStorage, providing a seamless and responsive user experience.

Conclusion

The Clothing Store Web Application seamlessly integrates various technologies to deliver a secure and enjoyable online shopping experience. The combination of Flask, SQLAlchemy, bcrypt, and JWTs ensures robust functionality, secure user authentication, and efficient database connectivity. The shopping cart feature enhances user engagement and provides a dynamic shopping experience.