



E-commerce Website System

A PROJECT REPORT

Submitted by

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UNDER THE SUPERVISION OF

GUIDE & LECTURER

SUGANDH GUPTA

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For Tops Technologies



Chapter – 1: Overview of Company

1.1 About the Company

Name: Tops Technologies

Address: 407, Mahadev Chowk, Dhara Arcade, opp. Swaminarayan temple, Maruti
Nandan Society, Mota Varachha, Surat, Gujarat 394101

Website:

Phone no.: +91

About:

Tops technologies is a company offering services in the field of Software Development, Website Development, Mobile App Development, Graphic Designing, Digital Marketing, Testing & QA, Bulk SMS & Hosting Provider and IT Consultancy. In Terms of Services, Designing and Coding. Services include customized Software Development, Website Development and Programming, Mobile App Development, Graphic Designing, Digital Marketing, Testing & QA, Bulk SMS & Hosting Provider and IT Consultancy and Maintenance. Company has a vast experience in development for Software/Web and Mobile Application. Our Processes are highly streamlined and proven to ensure fastest delivery of a high-quality solution at a reasonable cost. We understand our client's need and changes over period of time. We have expertise to accommodate changes at any stage of software lifecycle.

Chapter – 2: Introduction

E-commerce (electronic commerce or EC) is the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the internet. These business transactions occur either as business-to-business, business-to consumer, consumer-to-consumer or consumer-to-business.

E-commerce shops have become part of our daily lives. Technological advancement has made it possible for people to sit in the convenience of their homes and still shop online without going to a physical shop. Africans have also joined the trend of e-commerce business, so this project is meant to design an eCommerce online shop so that the people in Ghana (Africa) will be able to purchase their goods and services online.

This project is mainly divided into two main categories: The Administrators and the Customers/Users.

The store manager and the staff members operate as the administrators. They can add, edit, update products or, delete products thus they are able to change the names of products, change prices and, add or remove products.

The customer can search for products selection, update the cart, remove products from the cart and check out from the shop. The customer is also able to update his information such as names, address and other data.

The User is only able to browse the online shop and add a product to the cart. The user is limited to the use of the shop.

2.1 Importance of E-commerce Websites

E-commerce websites have reshaped the traditional brick-and-mortar retail model by enabling businesses to reach a global customer base without physical limitations. Some key reasons why e-commerce websites are essential include:

- a. Global Reach: E-commerce allows businesses to expand their reach beyond geographical boundaries and tap into a worldwide market, reaching potential customers 24/7.
- b. Convenience: Consumers can shop anytime, anywhere, eliminating the need to visit physical stores. E-commerce websites provide a seamless and user-friendly shopping experience, enabling customers to browse, compare, and purchase products with ease.

c. Cost-Effectiveness: E-commerce eliminates the need for physical stores, reducing overhead costs associated with rent, utilities, and staffing. This cost-saving benefit can often be passed on to customers, resulting in competitive pricing.

d. Personalization: E-commerce platforms leverage customer data and analytics to personalize the shopping experience, providing tailored product recommendations and offers based on individual preferences and browsing history.

2.2 Key Features of E-commerce Websites

Successful e-commerce websites share common features that contribute to their effectiveness. Some prominent features include:

- Product CatLog
- Shopping Cart and Checkout.
- Payment Gateway Integration
- Inventory Management.
- Customer Reviews and Ratings

2.3 Benefits for Businesses and Consumers

E-commerce websites offer numerous benefits for both businesses and consumers:

- Benefits for Businesses
- Benefits for Consumers

E-commerce websites have reshaped the traditional brick-and-mortar retail model by enabling businesses to reach a global customer base without physical limitations. Some key reasons why e-commerce websites are essential include:

2.4 Technology

2.5.1 PYTHON

2.5.2 DJANGO

2.5.2 DBBROWSER(MySQL)

2.4.1 PYTHON

Introduction with Python

Python is a widely used general-purpose, high level programming language. It was created by Guido van Rossum in 1991 and further developed by the Python Software Foundation. It was designed with an emphasis on code readability, and its syntax allows programmers to express their concepts in fewer lines of code.

Python is a programming language that lets you work quickly and integrate systems more efficiently.

There are two major Python versions: Python 2 and Python 3. Both are quite different

Why Python?

Python is a popular programming language that is widely used in the development of web applications. It is easy to learn, has a large and active community, and is supported by a wealth of libraries and frameworks.

Here's a fun fact: Python is the top preferred language for data science and research. Since its syntax is easily understandable and adaptable, people with little-to-no development experience can easily learn Python and use it to manipulate data for research, reporting, predictable or regression analyses, and more.

Features of Python

1. Free and Open Source
2. Easy to code
3. Easy to Read
4. Object-Oriented Language
5. GUI Programming Support
6. High-Level Language
7. Extensible feature
8. Easy to Debug
9. Python is a Portable language
10. Python is an integrated language
11. Interpreted Language
12. Large Standard Library

- 13. Dynamically Typed Language
- 14. Frontend and backend development
- 15. Allocating Memory Dynamically

OOPS in Python

- Class
- Objects
- Polymorphism
- Encapsulation
- Inheritance
- Data Abstraction

Python Class

A class is a collection of objects. A class contains the blueprints or the prototype from which the objects are being created. It is a logical entity that contains some attributes and methods.

Python Objects

The object is an entity that has a state and behaviour associated with it. It may be any real-world object like a mouse, keyboard, chair, table, pen, etc. Integers, strings, floating-point numbers, even arrays, and dictionaries, are all objects.

Creating an Object

The Python self

The Python __init__ Method

Creating a class and object with class and instance attributes

Creating Classes and objects with methods

Python Inheritance

Types of Inheritance:

Single Inheritance:

Multilevel Inheritance:

Hierarchical Inheritance:

Multiple Inheritance:

Python Polymorphism

Polymorphism in Python:

This code demonstrates the concept of inheritance and method overriding in Python classes. It shows how subclasses can override methods defined in their parent class to provide specific behaviour while still inheriting other methods from the parent class.

Python Encapsulation

Encapsulation is one of the fundamental concepts in object-oriented programming (OOP). It describes the idea of wrapping data and the methods that work on data within one unit. This puts restrictions on accessing variables and methods directly and can prevent the accidental modification of data. To prevent accidental change, an object's variable can only be changed by an object's method. Those types of variables are known as private variables.

Data Abstraction

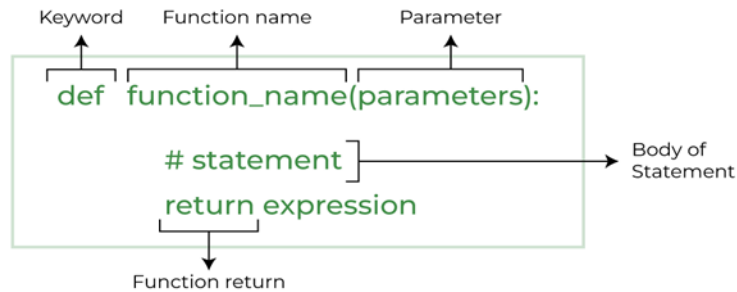
It hides unnecessary code details from the user. Also, when we do not want to give out sensitive parts of our code implementation and this is where data abstraction came.

Data Abstraction in Python can be achieved by creating abstract classes.

Python Function Declaration

- Python Built-in Functions.
- Python Recursion Functions.
- Python Lambda Functions.

Python Function Declaration



2.5.2 DJANGO

What is Django?

Django is a high-level web framework for building web applications using the Python programming language. It follows the Model-View-Controller (MVC) architectural pattern, which promotes the separation of concerns and the reusability of code.

Django provides a set of tools and libraries that simplify the process of building web applications. It includes an Object-Relational Mapping (ORM) layer, which allows developers to interact with databases using Python code, abstracting away the underlying database-specific details. This makes it easier to work with databases and switch between different database engines.

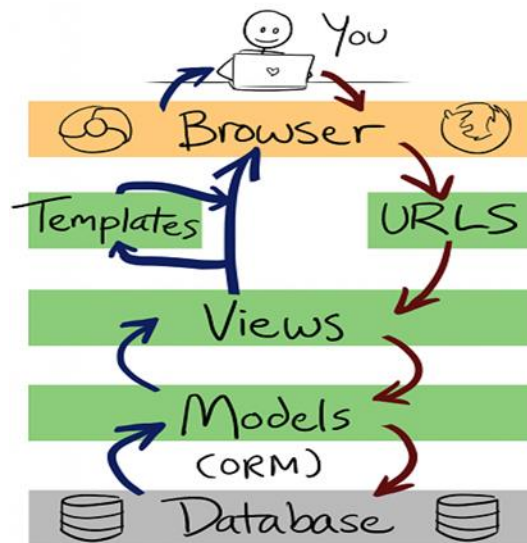
Django is a free and open-source web application framework, written in Python. A web framework is a set of components that helps you to develop websites faster and easier.

When you're building a website, you always need a similar set of components: a way to handle user authentication (signing up, signing in, signing out), a management panel for your website, forms, a way to upload files, etc.

How It Works?

Django works based on the Model-View-Controller (MVC) architectural pattern, although it refers to it as Model-View-Template (MVT) due to some differences in its implementation. Here's a high-level overview of how Django works:

- When a request comes to a web server, it's passed to Django which tries to figure out what is actually requested.
- It takes a web page address first and tries to figure out what to do. This part is done by Django's URL resolver (note that a website address is called a URL –Uniform Resource Locator – so the name URL resolver makes sense).
- It is not very smart – it takes a list of patterns and tries to match the URL. Django checks patterns from top to bottom and if something is matched, then Django passes the request to the associated function (which is called view).



Django Installation

To install Django, you'll need to have Python already installed on your system. Here are the steps to install Django:

1. Open a command prompt or terminal window.
2. (Optional) It is recommended to create a virtual environment for your Django project to keep your project dependencies isolated. You can create a virtual environment by running the following command:

python3 -m venv myenv

Replace myenv with the name you want to give to your virtual environment.

3. Activate the virtual environment (if you created one). On Windows, the commands:

myenv\Scripts\activate

On macOS and Linux, the command is:

bash

source myenv/bin/activate

4. Install Django by running the following command:

pip install Django

This will download and install the latest stable version of Django from the Python Package Index (PyPI).

5. Once the installation is complete, you can verify that Django is installed by running the following command:

CSS

Django-admin --version

It should display the version number of Django installed on your system.

Congratulations! Django is now installed on your system. You can start creating Django projects and applications by following the official Django documentation and tutorials. Remember to activate your virtual environment (if you created one) whenever you work on your Django project.

2.5.2 DBBROWSER(MySQL)

What is MySQL Browser?

The MySQL Query Browser is a graphical tool provided by MySQL AB for creating, executing, and optimizing queries in a graphical environment

MySQL Browser refers to a graphical user interface (GUI) tool that allows users to interact with MySQL databases visually. It provides an intuitive interface for managing and manipulating databases, tables, queries, and data within MySQL.

There are several popular MySQL browser tools available, including:

- MySQL Workbench
- phpMyAdmin:
- Navicat for MySQL

Uses of SQLite Browser

MySQL Browser, or a MySQL GUI tool, offers several uses and benefits for working with MySQL databases. Here are some common uses of MySQL Browser:

- Database Management:
- Data Manipulation
- Query Execution
- Visual Query Builders
- Data Visualization
- Database Administration

How to Install MySQL browser?

Step 1: Browse to the official MySQL Website.



Step 2: There you will find the Download button.



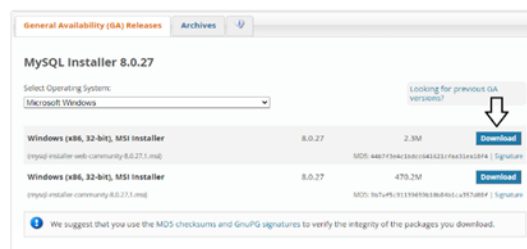
Step 3: Scroll down & click on MySQL Community (GPL) Downloads.

[Learn More »](#)
[Customer Download »](#) (Select Patches & Updates Tab, Product Search)
[Trial Download »](#)

[MySQL Community \(GPL\) Downloads »](#) 

Step 4: Click on MySQL Installer For Windows.

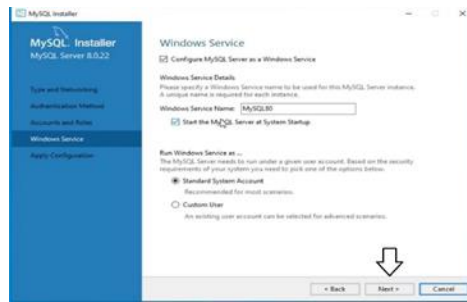
Step 5: Click on the first Download Link.



Step 6: Then click, No Thanks, Just Start My Download.



Step 7: Click on All Next.....Next... button.

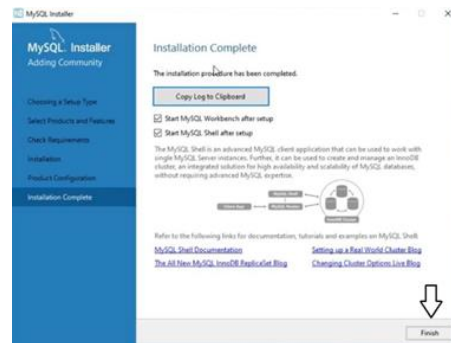


Step 15: Click on Execute.

Step 25: Click on Finish.

Step 26: Click on Next.

Step 27: Click on Finish



Step 28: Then Automatically MySQL Workbench Window will open.



Follow these steps to install in windows

When you open MySQL Workbench for the first time, you'll be prompted to set up a new connection. Enter the necessary information, such as the host, port, username, and password, to connect to your MySQL server. If you're running MySQL on your local machine, the default host is usually "localhost" and the default port is "3306".

Once you've established a connection, you can start using MySQL Workbench to browse your databases, execute queries, manage tables, and perform various other tasks.

Chapter – 3: Project Management

Project Planning

- Requirement Gathering: Conduct thorough research and gather detailed requirements for the e-commerce website, considering aspects such as product catalog, shopping cart functionality, payment gateways, user registration, security measures, and search engine optimization (SEO).
- Work Breakdown Structure (WBS): Create a WBS to break down the project into manageable tasks, subtasks, and deliverables. Define dependencies and assign responsibilities to team members.
- Project Timeline: Develop a realistic project timeline with clear milestones, task durations, and deadlines. Consider factors such as resource availability, dependencies, and potential risks to create an achievable schedule.
- Resource Allocation: Allocate resources effectively, ensuring that team members have the necessary time, tools, and support to fulfill their assigned tasks. Consider the need for external vendors or contractors if required.

Communication and Collaboration

- Communication Plan
- Regular Meetings
- Change Management

Risk Management

- Risk Identification
- Risk Assessment and Mitigation:
- Monitoring and Control

Quality Assurance and Testing

- **Testing Plan:** Develop a comprehensive testing plan to ensure the e-commerce website functions as intended
- **User Acceptance Testing (UAT):** Involve stakeholders and end-users in the UAT process to validate the website's usability, functionality, and user experience.
- **Continuous Quality Improvement:** Implement processes to monitor and improve the website's performance, security, and user experience even after the launch.

Launch and Post-Launch Activities

- **Deployment:** Coordinate the deployment of the e-commerce website on the chosen hosting platform or server. Ensure a smooth

Chapter – 4: System Requirement

System Requirements for an E-commerce Website

Developing an e-commerce website requires careful consideration of the system requirements to ensure optimal performance, security, and scalability. Here are some key system requirements to consider:

- **Hosting Environment:**
Reliable and secure web hosting with sufficient bandwidth and storage capacity to handle website traffic and data storage.
Support for the required programming languages, frameworks, and databases.
Scalability options to accommodate future growth and increased website traffic.
- **Operating System:**
Choose an operating system that supports the technologies and frameworks you plan to use for website development.
Common choices include Linux-based systems (such as Ubuntu or CentOS) or Windows Server.
- **Web Server:**
Select a web server software that supports the chosen programming language and framework (e.g., Apache, Nginx, or Microsoft IIS).
Configure the web server for optimal performance, including caching mechanisms and compression settings.

- **Programming Languages and Frameworks:**
Determine the programming languages and frameworks based on your development preferences and requirements.
Common choices include HTML, CSS, JavaScript for front-end development, and PHP, Python, or Ruby for server-side scripting.
Frameworks like Laravel, Django, or Ruby on Rails provide structure and libraries for efficient development.
- **Database Management System (DBMS):**
Choose a reliable and scalable DBMS to store and manage product data, user information, and transactional data.
Popular options include MySQL, PostgreSQL, MongoDB, or Microsoft SQL Server, depending on your specific needs.
- **Payment Gateways and Security:**
Implement secure payment gateway integrations to enable online transactions. Popular options include PayPal, Stripe, or Braintree.
Implement SSL/TLS encryption to ensure secure communication between the website and users, protecting sensitive information.

Chapter – 5: System Design

5.1 Target Users

The target users of the SF-HRMS project may include:

1. **HR Managers:** They would use the system to manage and monitor employee information, attendance, leave, performance, and other related tasks.
2. **Employees:** They can use the system to check their own attendance, leave balances, pay stubs, and other personal information.
3. **Sales and Marketing Teams:** They would use the Sales-Sprout module to manage and track sales leads, opportunities, and performance.

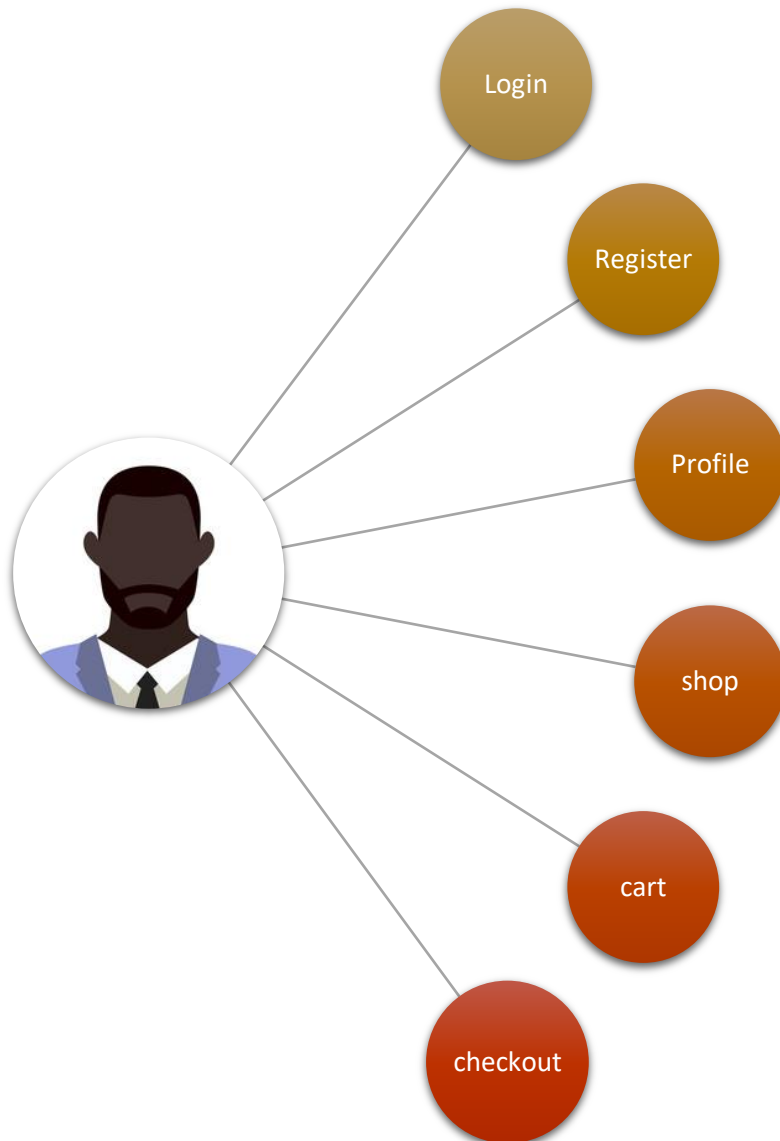
4. Inventory Managers: They would use the Inventory Management module to monitor and manage stock levels, orders, and purchase orders.

5. Finance Teams: They would use the Expense Management module to track and manage expenses, reimbursements, and budgets.

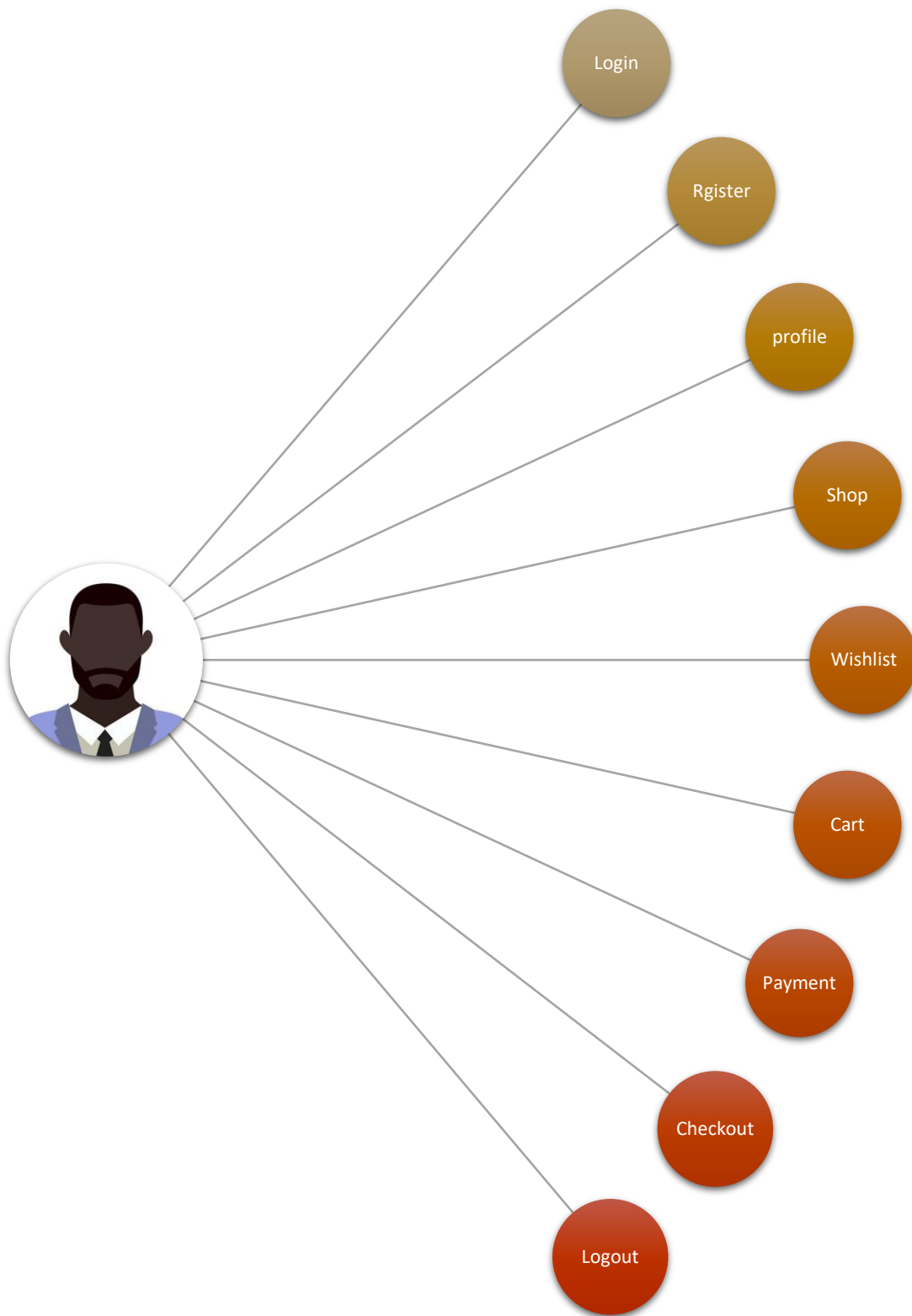
6. Managers and Supervisors: They would use the Scheduler module to schedule employee shifts, assign tasks, and manage workloads.

Overall, the Crowd funding System is designed to cater to the needs of HR departments, sales and marketing teams, inventory and finance departments, and managers who need to manage and monitor employee and business-related tasks efficiently

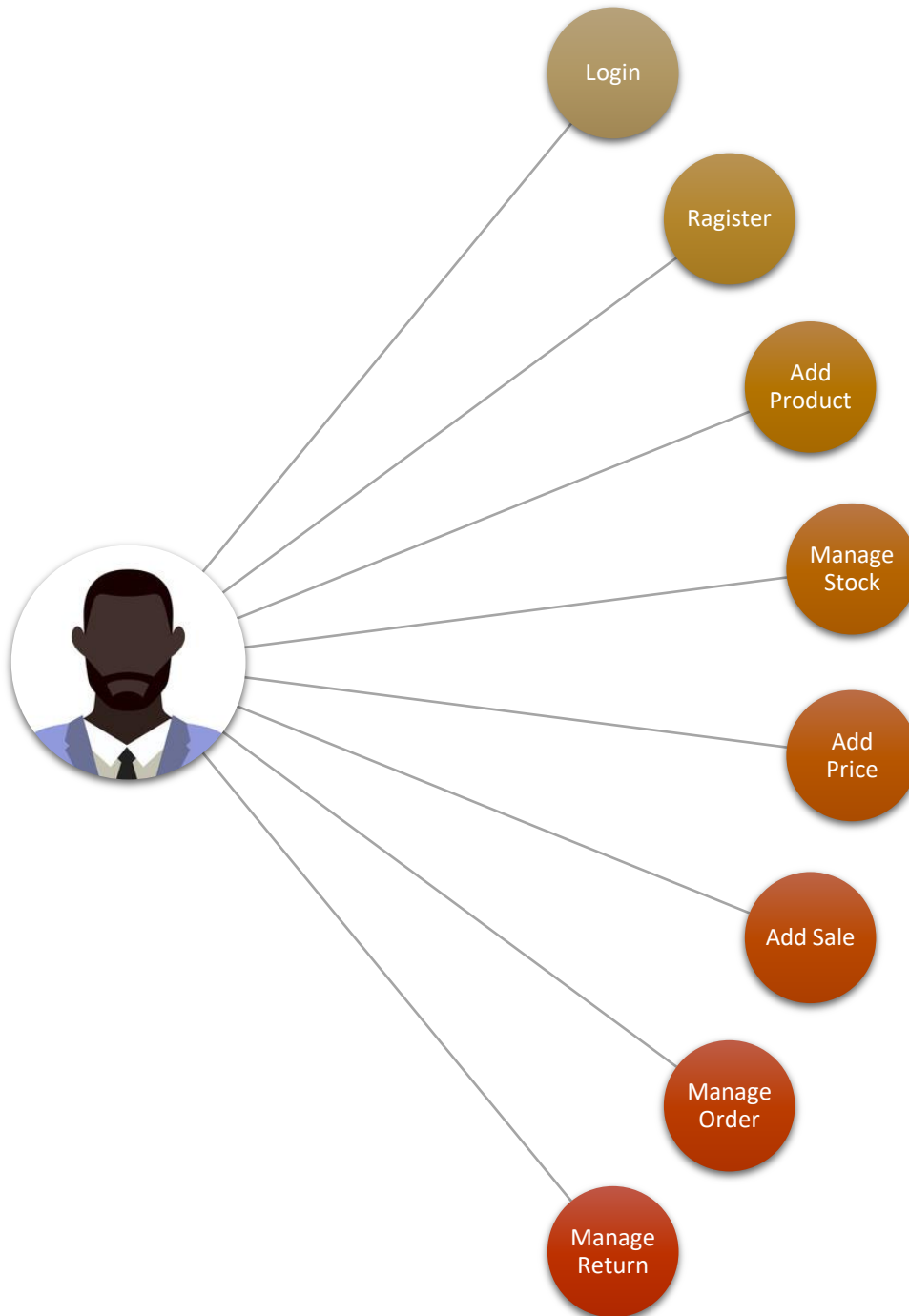
5.2 Use Case diagram



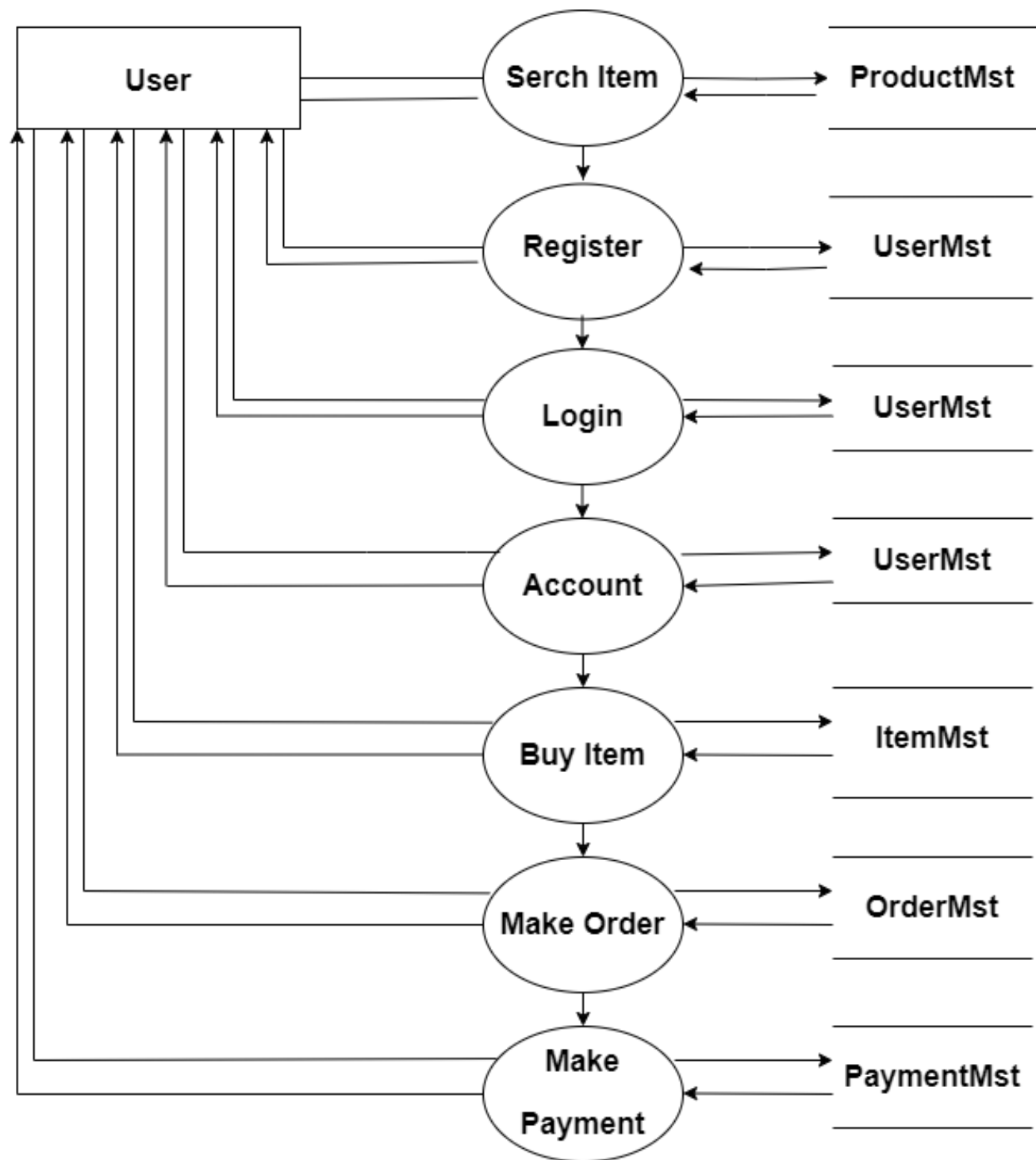
Admin Panel



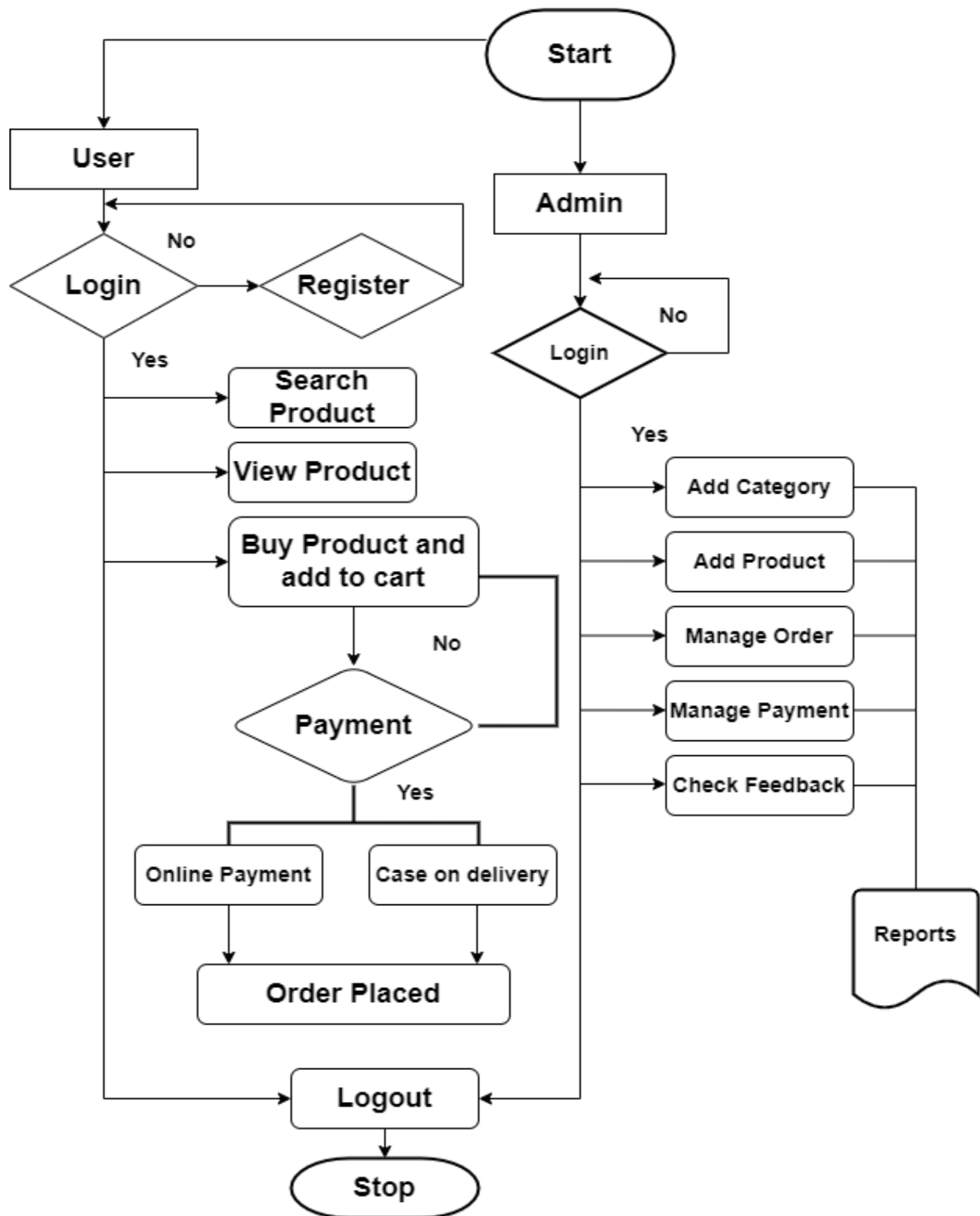
Buyer Panel



Seller Panel



DFD Diagram



Flowchart

Chepter-6: Implementation

7.1 Technologies Implementation Environment

Front-end Technologies:

- HTML, CSS, and JavaScript for creating web pages
- Bootstrap for responsive design and layout
- Angular Material for UI components

Back-end Technologies:

- Python
- Django
- DB Browser(SQLite)
- MYSQL

Development Tools:

- Visual Studio IDE for coding and debugging
- GitLab for version control and source code management
- Postman for API testing

7.2 Security Features

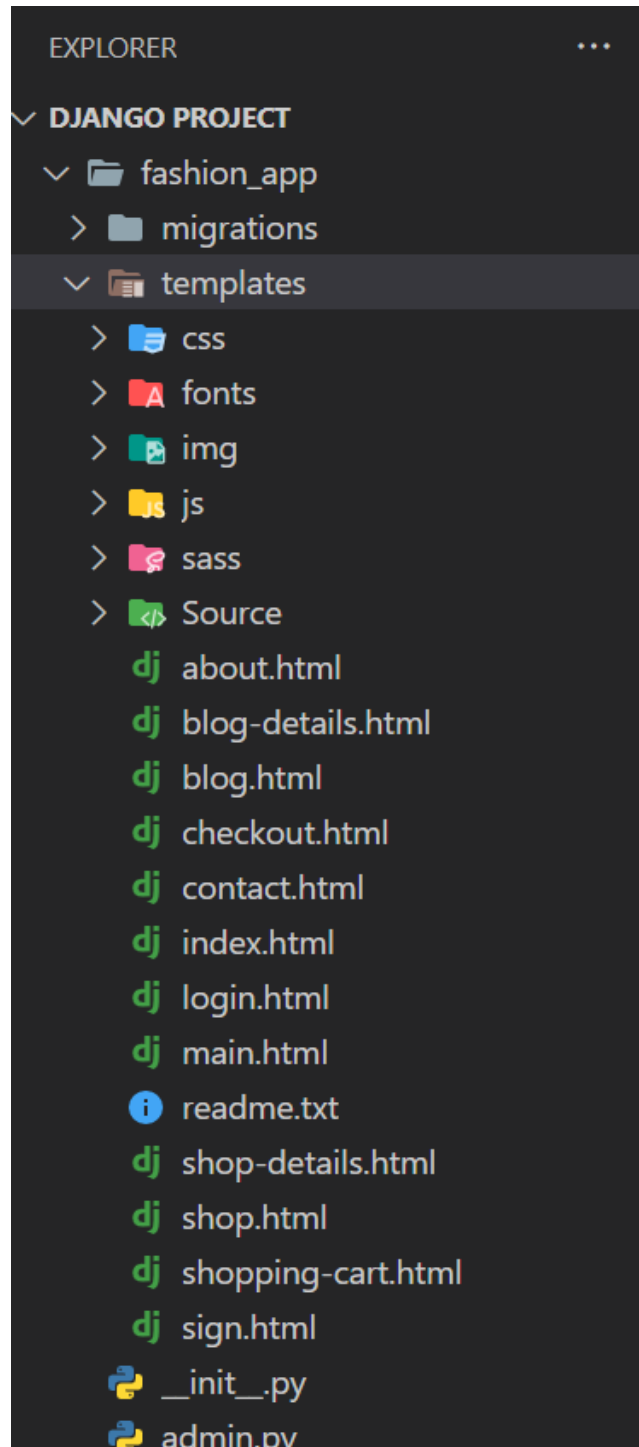
1. Role-based access control: User roles can be defined and assigned varying levels of access to different modules and features within the system. This ensures that users can only view and modify data that is relevant to their job functions.

2. Authentication: Require user to enter valid login credentials to access the system, such as a username and password. Use strong password policies, such as minimum length and complexity requirements, to ensure that user accounts are secure.
3. Encryption: Encrypt sensitive data, such as passwords, credit card information, and personal identification numbers (PINs), to protect them from unauthorized access. Use industry-standard encryption algorithms and keys to ensure that the data cannot be easily decrypted.
4. Input validation: Validate all input data to prevent injection attacks, such as SQL injection and cross-site scripting (XSS). Use server-side validation to check for invalid characters and data types to prevent malicious code from executing.
5. Error handling: Implement error handling to prevent attackers from exploiting system vulnerabilities by intercepting error messages. Provide clear and concise error messages that do not reveal sensitive system information.
6. Session management: Manage user sessions securely to prevent session hijacking and replay attacks. Implement session timeouts and use secure session IDs to ensure that sessions are not hijacked.
7. Audit logging: Record all system activities, such as login attempts, data modifications, and system events, to track user actions and detect suspicious behavior. Monitor logs regularly to identify potential security threats.
8. Regular updates and patches: Keep the system up-to-date with the latest security patches and updates to prevent known vulnerabilities from being exploited.

By implementing these security features, the SF-HRMS project can ensure that sensitive data is protected and user access is secure.

7.2 Security Features

1. File and Folder Structure: Use a consistent and logical file and folder structure that makes it easy to navigate and find file. Use naming conventions that are descriptive and easy to understand.



File and Folder Structure

2. Indentation and Spacing: Use consistent indentation and spacing throughout the project. Use two spaces for indentation and avoid using tabs. Use whitespace to make the code more readable and easier to understand.

3. Comments: Use comments to explain the code and make it easier for other developers to understand what the code is doing. Use clear and concise comments that explain what the code is doing, but avoid over-commenting.

4. Naming Conventions: Use descriptive and meaningful names for variables, functions, and classes. Use camelCase for naming variables and functions, and Pascal Case for naming classes.

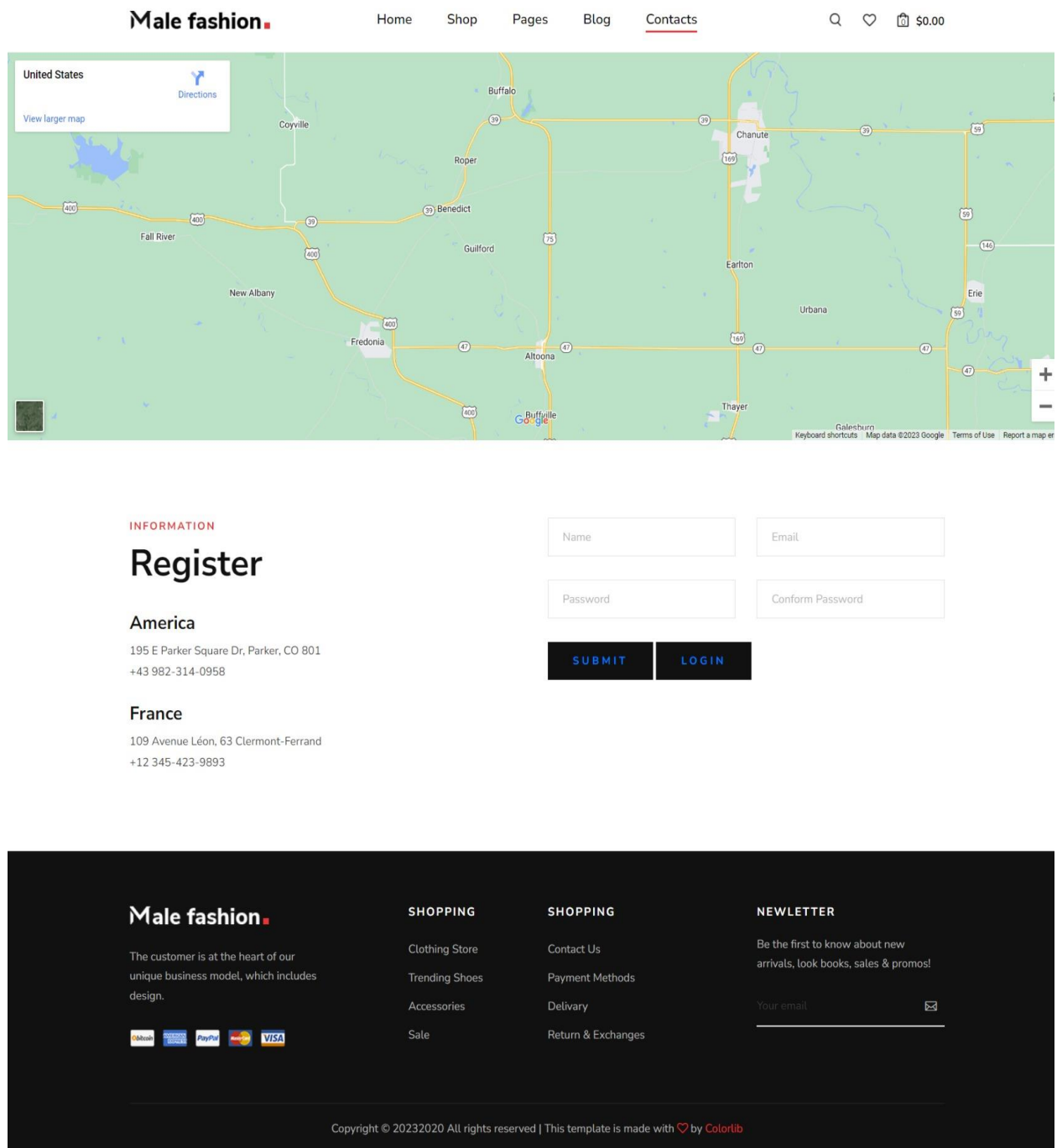
5. Error Handling: Implement proper error handling to prevent unexpected errors from occurring. Use try-catch blocks to catch errors and handle them appropriately.

6. Code Reusability: Write code that is reusable and modular. Use functions and components to break down complex code into smaller, more manageable pieces.

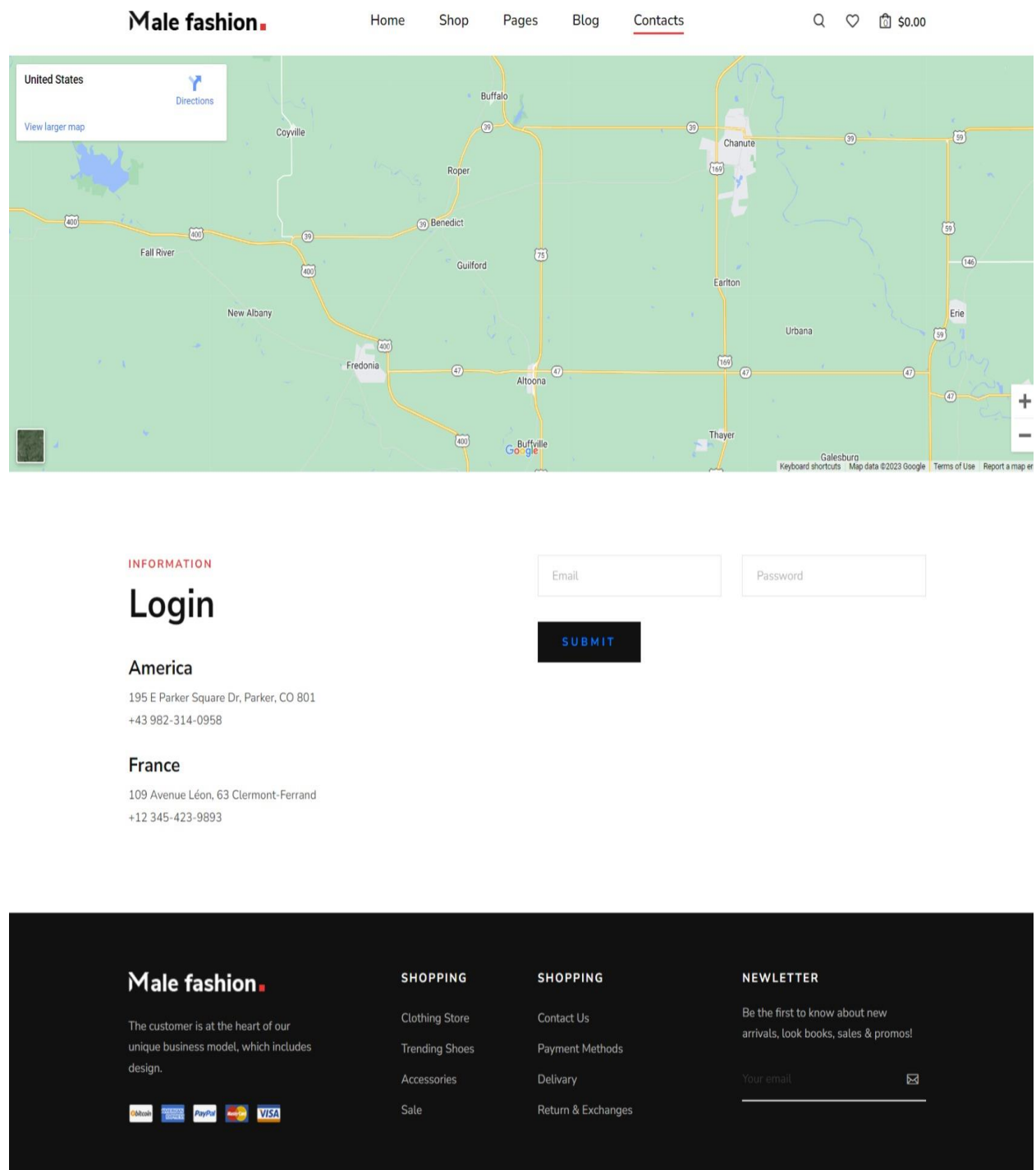
7. Code Formatting: Use a consistent code formatting style throughout the project. Use a tool like prettier to automatically format the code and ensure consistency.

8. Testing: Write tests to ensure that the code is working as expected. Use a testing framework like Jasmine or Jest to write and run tests.

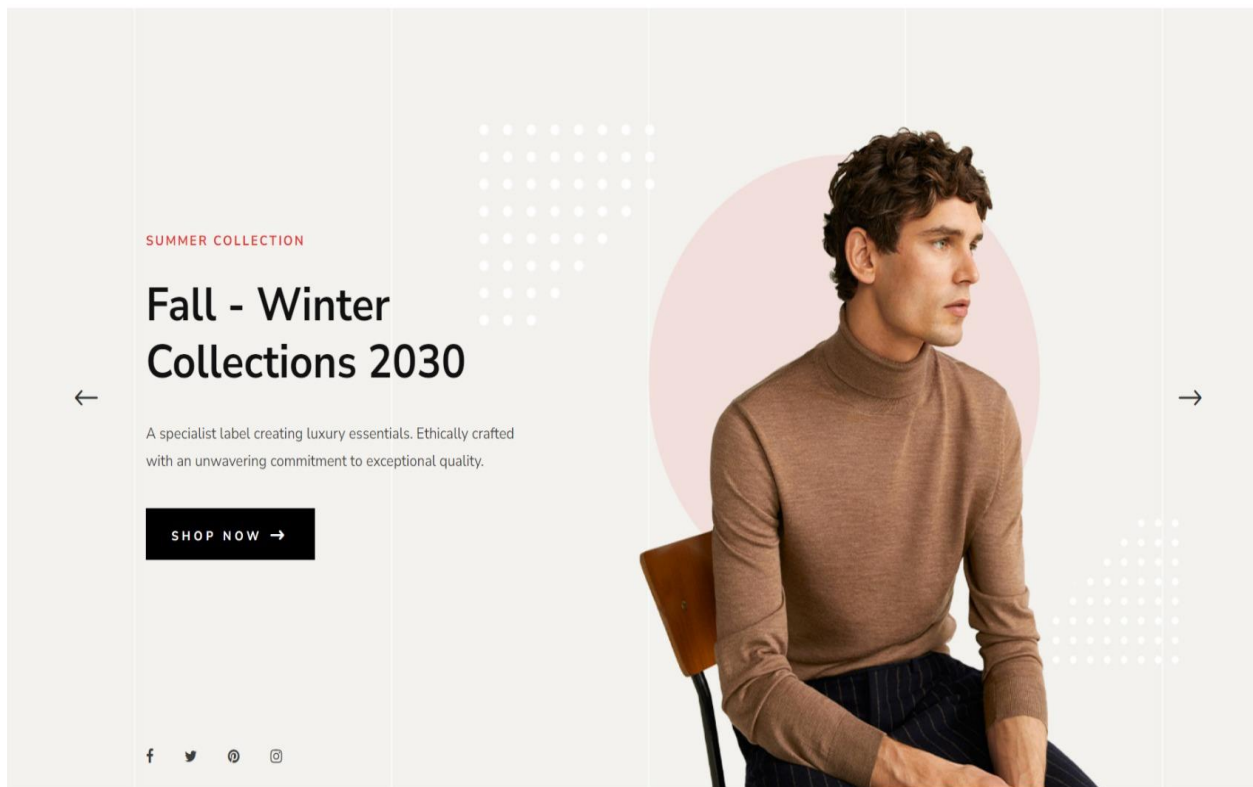
Web Sait Pages



Register Page



Login Page



Home Page

Shop Page

Free shipping, 30-day return or refund guarantee.

SIGN IN FAQs USD ▼

Male fashion.

[Home](#) [Shop](#) [Pages](#) [Blog](#) [Contacts](#)

🔍 ❤️ 🛒 \$0.00

About Us

[Home](#) > [About Us](#)



Who We Are ?

Contextual advertising programs sometimes have strict policies that need to be adhered too. Let's take Google as an example.

Who We Do ?

In this digital generation where information can be easily obtained within seconds, business cards still have retained their importance.

Why Choose Us

A two or three storey house is the ideal way to maximise the piece of earth on which our home sits, but for older or infirm people.

About Us Page

Free shipping, 30-day return or refund guarantee.

SIGN IN FAQs USD ▾

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Home Shop Pages Blog Contacts

🔍 ❤️ 🛒 \$0.00

Home > Shop > Product Details



Hooded thermal anorak

★★★★☆ - 5 Reviews

\$270.00 ~~70.00~~

Coat with quilted lining and an adjustable hood. Featuring long sleeves with adjustable cuff tabs, adjustable asymmetric hem with elastic side tabs and a front zip fastening with placket.

Size: Color: ☒ ☐ ☐ ☐ ☐

1

ADD TO CART

♥ ADD TO WISHLIST ≡ ADD TO COMPARE

Guaranteed Safe Checkout



SKU: 3812912

Categories: Clothes

Tag: Clothes, Skin, Body

Product Details Page

Free shipping, 30-day return or refund guarantee.

SIGN INFAQSUSD





Male fashion.

HomeShopPagesBlogContacts

Q♥🛒\$0.00

Shopping Cart

Home > Shop > Shopping Cart

PRODUCT	QUANTITY	TOTAL	
<div></div> <div>T-shirt Contrast Pocket \$98.49</div>	< 1 >	\$ 30.00	✕
<div></div> <div>Diagonal Textured Cap \$98.49</div>	< 1 >	\$ 32.50	✕
<div></div> <div>Basic Flowing Scarf \$98.49</div>	< 1 >	\$ 47.00	✕
<div></div> <div>Basic Flowing Scarf \$98.49</div>	< 1 >	\$ 30.00	✕

CONTINUE SHOPPING

🔄 UPDATE CART

DISCOUNT CODES

APPLY

CART TOTAL






Subtotal\$ 169.50

Total\$ 169.50

PROCEED TO CHECKOUT

Male fashion.

The customer is at the heart of our unique business model, which includes design.



SHOPPING

Clothing Store

Trending Shoes

Accessories

Sale

SHOPPING

Contact Us


Payment Methods

Delivery

Return & Exchanges

NEWLETTER

Be the first to know about new arrivals, look books, sales & promos!



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Shopping Cart Page

🔍 Have a coupon? Click here to enter your code

BILLING DETAILS

First Name*

Last Name*

Country*

Address*

Street Address

Apartment, suite, unit etc (optional)

Town/City*

Country/State*

Postcode / ZIP*

Phone*

Email*

☐ Create an account?

Create an account by entering the information below. If you are a returning customer please login at the top of the page

Account Password*

☐ Note about your order, e.g. special note for delivery

Order notes*

Notes about your order, e.g. special notes for delivery.

YOUR ORDER

Product	Total
01. Vanilla salted caramel	\$ 300.0
02. German chocolate	\$ 170.0
03. Sweet autumn	\$ 170.0
04. Cluten free mini dozen	\$ 110.0
Subtotal	\$750.99
Total	\$750.99

☐ Create an account?
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

☐ Check Payment
☐ Paypal

PLACE ORDER

Check Out Page

Are you one of the thousands of Iphone owners who has no idea

By Deercreative | February 21, 2019 | 8 Comments



SHARE



Hydroderm is the highly desired anti-aging cream on the block. This serum restricts the occurrence of early aging signs on the skin and keeps the skin younger, tighter and healthier. It reduces the wrinkles and loosening of skin. This cream nourishes the skin and brings back the glow that had lost in the run of hectic years.

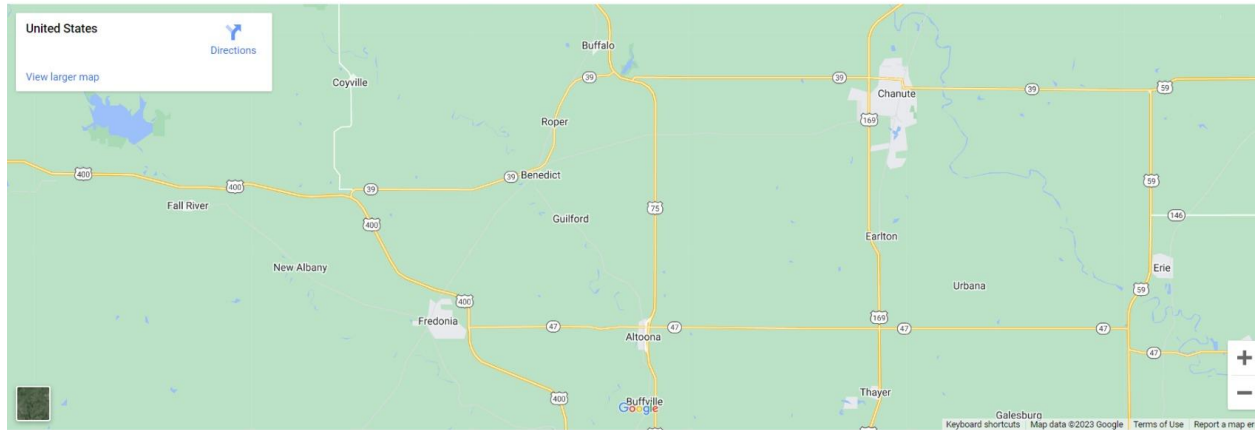
The most essential ingredient that makes hydroderm so effective is Vyo-Serum, which is a product of natural selected proteins. This concentrate works actively in bringing about the natural youthful glow of the skin. It tightens the skin along with its moisturizing effect on the skin. The other important ingredient, making hydroderm so effective is "marine collagen" which along with Vyo-Serum helps revitalize the skin.



"When designing an advertisement for a particular product many things should be researched like where it should be displayed."

— JOHN SMITH —

Blog Page



INFORMATION

Contact Us

As you might expect of a company that began as a high-end interiors contractor, we pay strict attention.

America

195 E Parker Square Dr, Parker, CO 801
+43 982-314-0958

France

109 Avenue Léon, 63 Clermont-Ferrand
+12 345-423-9893

SEND MESSAGE

Male fashion.

The customer is at the heart of our unique business model, which includes design.



SHOPPING

[Clothing Store](#)
[Trending Shoes](#)
[Accessories](#)
[Sale](#)

SHOPPING

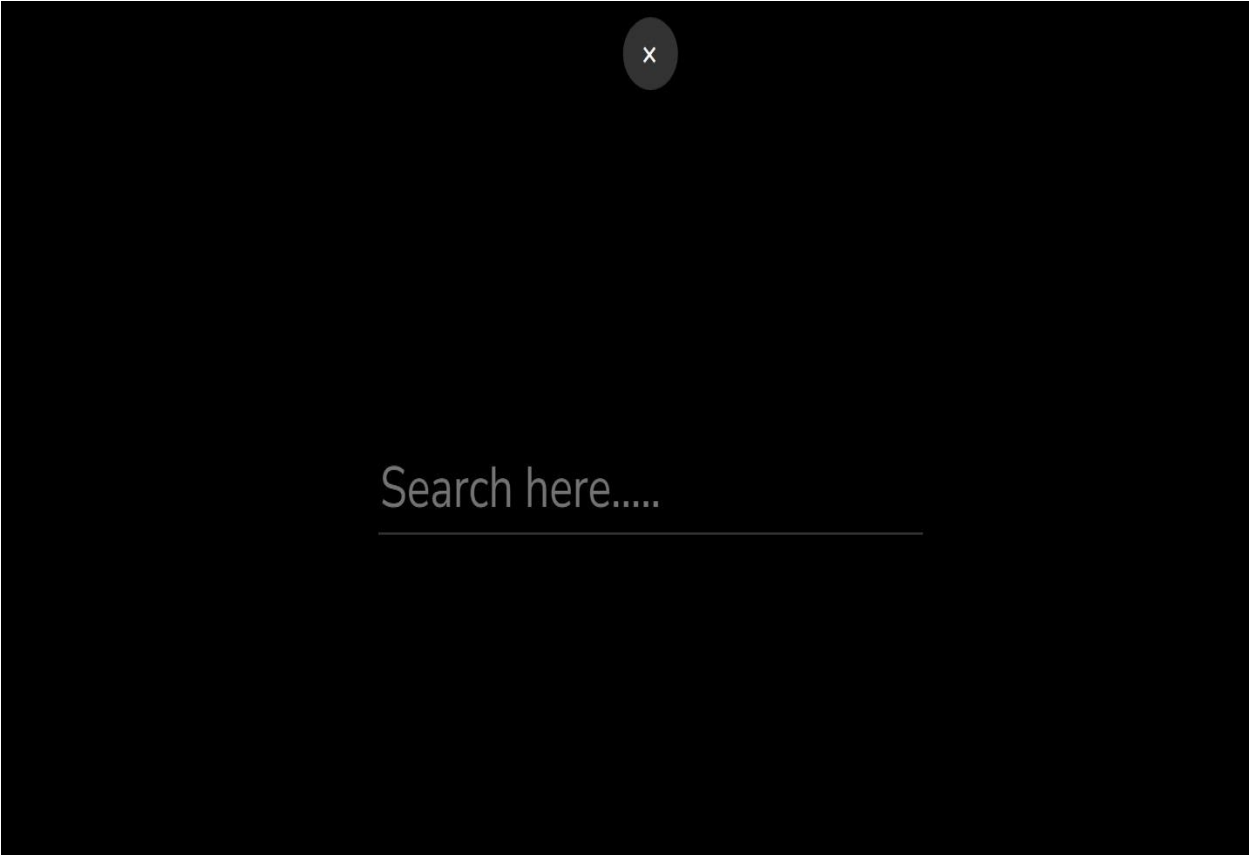
[Contact Us](#)
[Payment Methods](#)
[Delivery](#)
[Return & Exchanges](#)

NEWSLETTER

Be the first to know about new arrivals, look books, sales & promos!



Contact Us Page



Search Page

References

- 1) **Virtual Studio Code:** <https://code.visualstudio.com/>
- 2) **Django:** <https://www.djangoproject.com/>
- 3) **DB Browser (SQLite):** <https://sqlitebrowser.org/dl/>
- 4) **W3Schools:** <https://www.w3schools.com/django/>