

TECHNOLOGY



Project Session 03: End User Web Pages and Data Structure for End User

You Already Know

Before we begin, let's recall what we have covered so far:



HTML



CSS



SQL



A Day in the Life of a Full Stack Developer

As a full stack web developer, our key role is to develop both client and server software.



Angular can be used to build the front end of the web page.



Spring Boot and MySQL or MongoDB can be used to build the back end.



A Day in the Life of a Full Stack Developer

Now, Bob needs to create web page and database for end user Web App to further proceed with his project.

Let us use previously discussed technologies to create the web page and database for the end user web app.



In this lesson, we will learn HTML and CSS skills to design and develop web pages in the previously created Angular project. We will also use SQL commands to create tables in the database for the end-user web app, helping Bob complete his task effectively and quickly.

Learning Objectives

By the end of this lesson, you will be able to:

- 👁️ Develop the web page templates for end-user web app
- 👁️ Develop the CSS for styling the web pages and configure routing
- 👁️ Use SQL commands to create tables for the end-user web app
- 👁️ Create primary and foreign key relationships within tables for data integrity



Angular Component Templates for End User

Modules

In this project, various modules will be managed, such as:



Web Page Templates

For basic operations, the web page templates are developed, using:



Web Page for Authentication Login Component

Develop a login page for the end user to sign in and enter the home page.

E-COMMERCE STORE

Login

Email

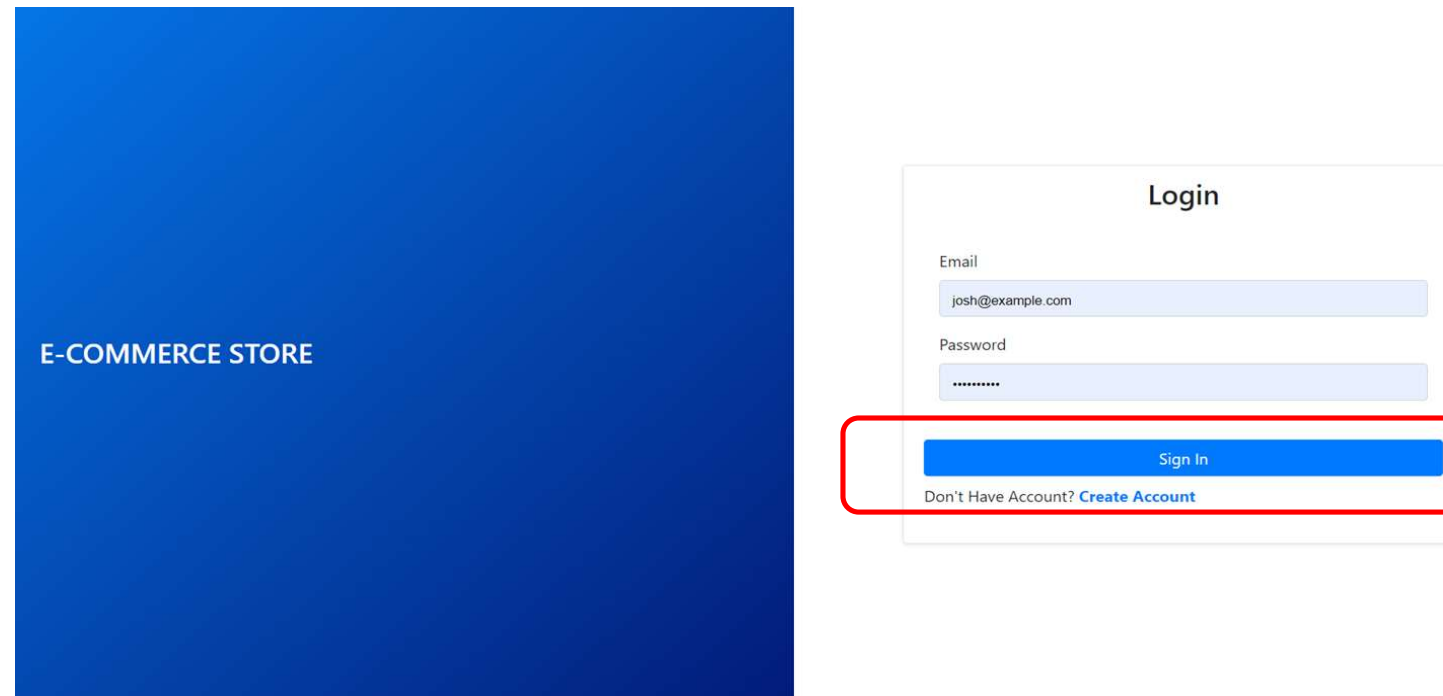
Password

Don't Have Account? [Create Account](#)

Login page

Web Page for Authentication Login Component

Design the login page with the email, password, and a login button.



The image shows a wireframe for a web page. On the left, there is a large blue rectangle with the text "E-COMMERCE STORE" in white. To the right of this is a white rectangular box representing a login form. The form is titled "Login" at the top. It contains two input fields: "Email" with the placeholder text "josh@example.com" and "Password" with masked characters "*****". Below these fields is a blue button labeled "Sign In". Underneath the button is a link that says "Don't Have Account? [Create Account](#)". A red rectangle highlights the "Sign In" button and the "Create Account" link.

Click on the login button to validate the user and navigate to the home page, which will have a navigation bar with various options.

Web Page for Authentication Login Component

In the directory: src/app/pages/login/

login.component.css

CSS goes here to design the page and forms.

login.component.html

HTML code is written in this template file.

login.component.ts

Logic will be written in typescript file.



Web Page for User Registration Component

A new user needs to register.

E-COMMERCE STORE

Register

Name

eg: John Peterson

Email

eg: abc@example.com

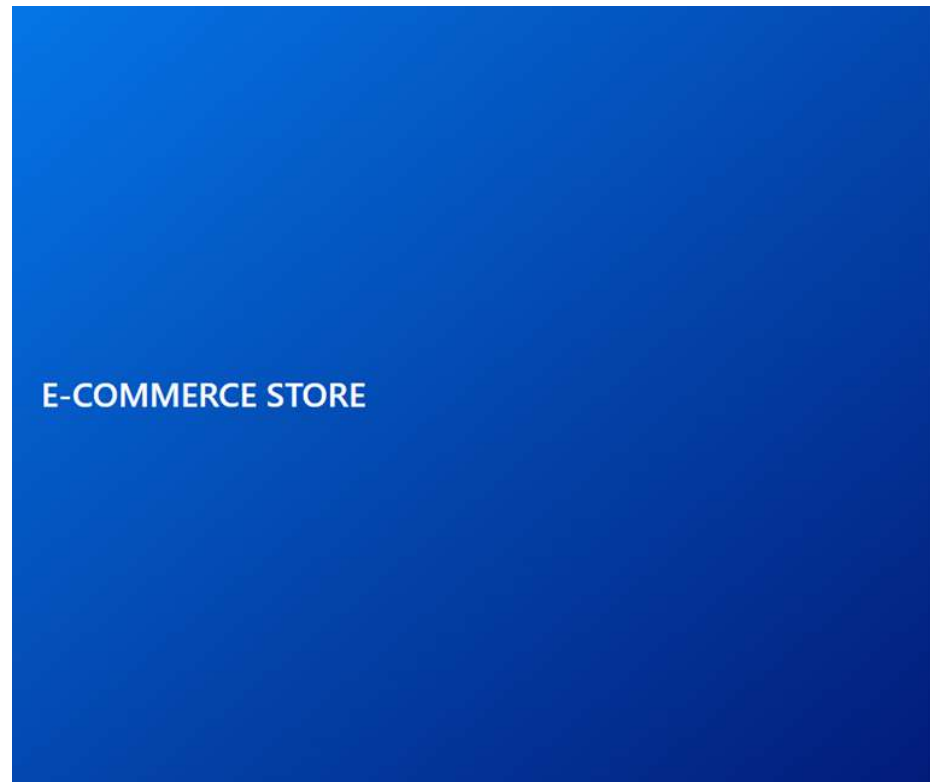
Password

Sign Up

Already Have Account? [Sign In](#)

Web Page for User Registration Component

Design the register component to take the name, email, and password as input to register the user on the e-store web app.

A white rectangular form titled "Register" with a red border. It contains three input fields: "Name" with the placeholder "eg: John Peterson", "Email" with the placeholder "eg: abc@example.com", and "Password" with the placeholder "*****". Below the fields is a blue "Sign Up" button. At the bottom, it says "Already Have Account? [Sign In](#)".

After registration, navigate to the home page which will have a navigation bar with various options.

Web Page for User Registration Component

In the directory: src/app/pages/register/

register.component.css

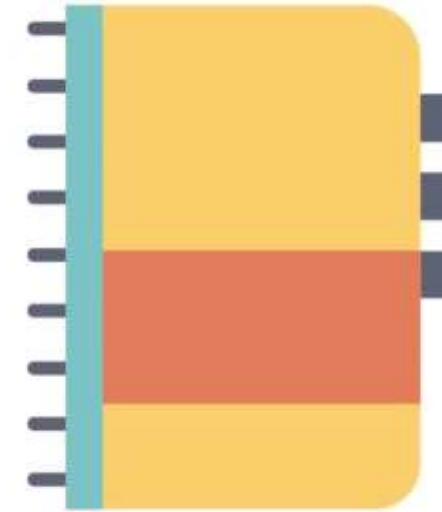
CSS goes here to design the page and forms.

register.component.html

HTML code is written in this template file.

register.component.ts

Logic will be written in typescript file.



Web Page for Profile Component

User should be able to manage their profile by navigating to the profile component on navigation bar.

ESTORE Products Shopping-cart **3** Wishlist **4** My Orders **My Profile**

My account

User information

Username
jones.jessica

Email address
jessica@example.com

First name
Jessica

Last name
Jone

Contact information

Address
Bld Mihail Kogalniceanu, nr. 8 Bl 1, Sc 1, Ap 09


City
New York

Country
United States

Postal code
Postal code

About me

About Me
A beautiful Dashboard for Bootstrap 4. It is Free and Open Source.



Jessica Jones, 27
Bucharest, Romania

© 2022 Estore

Web Page for Profile Component

The web page should have details of the user. The user should be able to manage contact information, which includes the address for delivering the order.

ESTORE

Products

Shopping-cart 3

Whishlist 4

My Orders

My Profile

My account

User information

Username

jones.jessica

Email address

jessica@example.com

First name

Jessica

Last name

Jone

Contact information

Address

Bld Mihail Kogalniceanu, nr. 8 Bl 1, Sc 1, Ap 09

City

New York

Country

United States


Postal code

Postal code

About me

About Me

A beautiful Dashboard for Bootstrap 4. It is Free and Open Source.



Jessica Jones, 27

Bucharest, Romania

© 2022 Estore

Web Page for Profile Component

In the directory: `src/app/pages/user-profile/`

`user-profile.component.css`

CSS goes here to design the page and forms.

`user-profile.component.html`

HTML code is written in this template file.

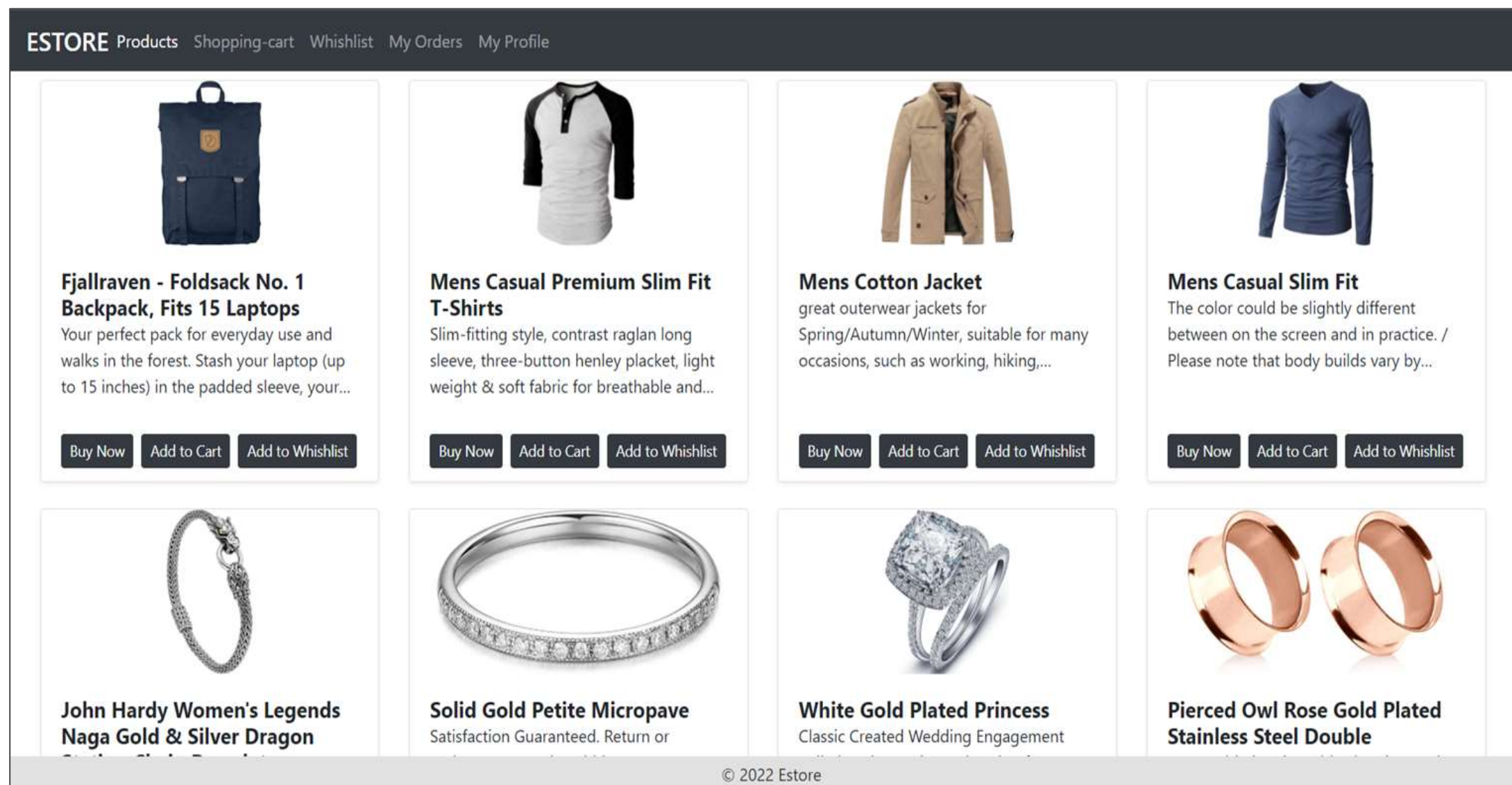
`user-profile.component.ts`

Logic will be written in typescript file.



Web Page for Products Component


UI should be developed to show the various products added by the admin.



Web Page for Products Component


All the products should be listed with options to buy the product, add it to the cart, or add it to the Whishlist.

ESTORE [Products](#) [Shopping-cart](#) [Whishlist](#) [My Orders](#) [My Profile](#)




Fjallraven - Foldsack No. 1 Backpack, Fits 15 Laptops
Your perfect pack for everyday use and walks in the forest. Stash your laptop (up to 15 inches) in the padded sleeve, your...

[Buy Now](#) [Add to Cart](#) [Add to Whishlist](#)




Mens Casual Premium Slim Fit T-Shirts
Slim-fitting style, contrast raglan long sleeve, three-button henley placket, light weight & soft fabric for breathable and...

[Buy Now](#) [Add to Cart](#) [Add to Whishlist](#)




Mens Cotton Jacket
great outerwear jackets for Spring/Autumn/Winter, suitable for many occasions, such as working, hiking,...

[Buy Now](#) [Add to Cart](#) [Add to Whishlist](#)




Mens Casual Slim Fit
The color could be slightly different between on the screen and in practice. / Please note that body builds vary by...


[Buy Now](#) [Add to Cart](#) [Add to Whishlist](#)




John Hardy Women's Legends Naga Gold & Silver Dragon



Solid Gold Petite Micropave
Satisfaction Guaranteed. Return or



White Gold Plated Princess
Classic Created Wedding Engagement

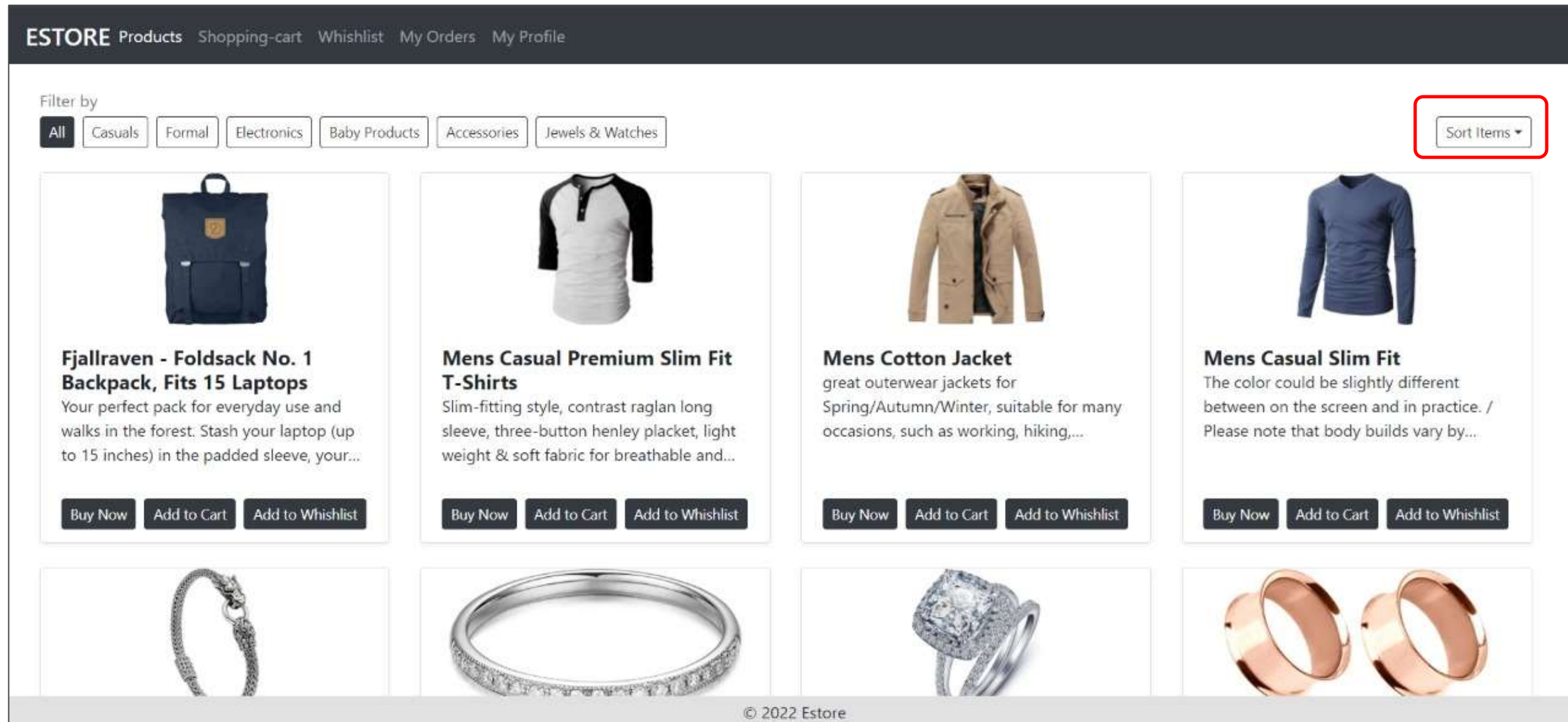


Pierced Owl Rose Gold Plated Stainless Steel Double

© 2022 Estore

Web Page for Products Component

Search, sort, and filter operations can also be implemented on the same web page.



Web Page for Products Component

In the directory: src/app/pages/products/

products.component.css

CSS goes here to design the page and forms.

products.component.html

HTML code is written in this template file.

products.component.ts


Logic will be written in typescript file.



Web Page for Whishlist Component

User should be able to mark any product as favorite by moving it to the Whishlist.


ESTORE Products Shopping-cart **2** **Whishlist 3** My Orders My Profile



White Gold Plated Princess
Classic Created Wedding Engagement Solitaire Diamond Promise Ring for Her. Gifts to spoil your love more for Engagement, Wedding, Anniversary, Valentine's Day...

Price: ₹9.99


Add to Cart Remove



SanDisk SSD PLUS 1TB Internal SSD - SATA III 6 Gb/s
Easy upgrade for faster boot up, shutdown, application load and response (As compared to 5400 RPM SATA 2.5" hard drive; Based on published specifications and internal benchmarking tests using PCMark vantage scores) Boosts burst write performance, making it ideal for typical PC workloads The perfect balance of performance and reliability Read/write speeds of up to 535MB/s/450MB/s (Based on internal testing; Performance may vary depending upon drive capacity, host device, OS and application.)

Price: ₹109.00

Add to Cart Remove



Samsung 49-Inch CHG90 144Hz Curved Gaming Monitor (LC49HG90DMNXZA) – Super Ultrawide Screen QLED
49 INCH SUPER ULTRAWIDE 32:9 CURVED GAMING MONITOR with dual 27 inch screen side by side QUANTUM DOT (QLED) TECHNOLOGY, HDR support and factory calibration provides stunningly realistic and accurate color and contrast 144HZ HIGH REFRESH RATE and 1ms ultra fast response time work to eliminate motion blur, ghosting, and reduce input lag

Price: ₹999.99


Add to Cart Remove

© 2022 Estore


Web Page for Whishlist Component

The Whishlist component should show the list of products that a user may buy in the future.


ESTORE Products Shopping-cart 2 Whishlist 3 My Orders My Profile



White Gold Plated Princess
Classic Created Wedding Engagement Solitaire Diamond Promise Ring for Her. Gifts to spoil your love more for Engagement, Wedding, Anniversary, Valentine's Day...
Price: ₹9.99
[Add to Cart](#) [Remove](#)



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Price: ₹109.00
[Add to Cart](#) [Remove](#)




Samsung 49-Inch CHG90 144Hz Curved Gaming Monitor (LC49HG90DMNXZA) – Super Ultrawide Screen QLED
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Price: ₹999.99
[Add to Cart](#) [Remove](#)

© 2022 Estore

Web Page for Whishlist Component

There should be a button to move the product to cart by clicking the same appearing on the product item.

ESTORE Products Shopping-cart **2** Whishlist **3** My Orders My Profile




White Gold Plated Princess

Classic Created Wedding Engagement Solitaire Diamond Promise Ring for Her. Gifts to spoil your love more for Engagement, Wedding, Anniversary, Valentine's Day...

Price: ₹9.99

Add to Cart

Remove




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Price: ₹109.00

Add to Cart

Remove



Samsung 49-Inch CHG90 144Hz Curved Gaming Monitor (LC49HG90DMNXZA) – Super Ultrawide Screen QLED

49 INCH SUPER ULTRAWIDE 32:9 CURVED GAMING MONITOR with dual 27 inch screen side by side QUANTUM DOT (QLED) TECHNOLOGY, HDR support and factory calibration provides stunningly realistic and accurate color and contrast 144HZ HIGH REFRESH RATE and 1ms ultra fast response time work to eliminate motion blur, ghosting, and reduce input lag

Price: ₹999.99

Add to Cart

Remove

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Web Page for Whishlist Component

In the directory: src/app/pages/Whishlist/

Whishlist.component.css

CSS goes here to design the page and forms.

Whishlist.component.html

HTML code is written in this template file.

Whishlist.component.ts


Logic will be written in typescript file.



Web Page for Cart Component

The navigation bar is used to navigate to the cart tab, where users should see a list of the products along with their quantities and prices.


ESTORE [Products](#) [Shopping-cart 2](#) [Whishlist 3](#) [My Orders](#) [My Profile](#)



Mens Casual Premium Slim Fit T-Shirts
Slim-fitting style, contrast raglan long sleeve, three-button henley placket, light weight & soft fabric for breathable and comfortable wearing. And Solid stitched shirts with round neck made for durability and a great fit for casual fashion wear and diehard baseball fans. The Henley style round neckline includes a three-button placket.

Qty. : 3
Price: ₹22.30

[Add to Whishlist](#) [Remove](#)



Mens Cotton Jacket
great outerwear jackets for Spring/Autumn/Winter, suitable for many occasions, such as working, hiking, camping, mountain/rock climbing, cycling, traveling or other outdoors. Good gift choice for you or your family member. A warm hearted love to Father, husband or son in this thanksgiving or Christmas Day.

Qty. : 1
Price: ₹55.99

[Add to Whishlist](#) [Remove](#)

Summary

Total Items	4
Total Price	₹122.89

[Proceed Next](#)

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Web Page for Cart Component

A summary of the products to be placed should be shown along with the option to buy, which is to place an order.

ESTORE


Products

Shopping-cart 2

Whishlist 3

My Orders

My Profile



Mens Casual Premium Slim Fit T-Shirts


Slim-fitting style, contrast raglan long sleeve, three-button henley placket, light weight & soft fabric for breathable and comfortable wearing. And Solid stitched shirts with round neck made for durability and a great fit for casual fashion wear and diehard baseball fans. The Henley style round neckline includes a three-button placket.

Qty. : 3

Price: ₹22.30

Add to Whishlist

Remove



Mens Cotton Jacket

great outerwear jackets for Spring/Autumn/Winter, suitable for many occasions, such as working, hiking, camping, mountain/rock climbing, cycling, traveling or other outdoors. Good gift choice for you or your family member. A warm hearted love to Father, husband or son in this thanksgiving or Christmas Day.

Qty. : 1

Price: ₹55.99

Add to Whishlist

Remove

Summary

Total Items

4

Total Price

₹122.89

Proceed Next

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Web Page for Cart Component

Payment's method page can also be implemented.

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Products

Shopping-cart 2

Whishlist 3

My Orders

My Profile



Mens Casual Premium Slim Fit T-Shirts


Slim-fitting style, contrast raglan long sleeve, three-button henley placket, light weight & soft fabric for breathable and comfortable wearing. And Solid stitched shirts with round neck made for durability and a great fit for casual fashion wear and diehard baseball fans. The Henley style round neckline includes a three-button placket.

Qty. : 3

Price: ₹22.30

Add to Whishlist

Remove



Mens Cotton Jacket

great outerwear jackets for Spring/Autumn/Winter, suitable for many occasions, such as working, hiking, camping, mountain/rock climbing, cycling, traveling or other outdoors. Good gift choice for you or your family member. A warm hearted love to Father, husband or son in this thanksgiving or Christmas Day.

Qty. : 1

Price: ₹55.99

Add to Whishlist

Remove

Summary


Total Items

4

Total Price

₹122.89

Proceed Next



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Web Page for Cart Component

In the directory: src/app/pages/shopping-cart/

shopping-cart.component.css

CSS goes here to design the page and forms.

shopping-cart.component.html

HTML code is written in this template file.

Shopping-cart.component.ts

Logic will be written in typescript file.



Web Page for Checkout Component

From the Cart, user should navigate to the final checkout page.

ESTORE

Products

Shopping-cart 6

Whishlist

My Orders

My Profile

Payment Method

Add Debit/Credit/ATM Card

You can save your Mastercard and VISA cards as per new RBI guidelines

VISA

RuPay

Netbanking

For faster payment and instant refund, please use UPI

Other UPI

Pay on Delivery

Pay digitally with SMS Pay Link. Cash may not be accepted in COVID restricted areas.

Order Summary

Order Total

₹1,251.46

Shipping Address

Street

16, 1st Floor., Agboat Wala Bldg., Abdulrehman Street No 282, Nr Islami Hotel, Abdul Rehman Street

City

Mumbai

State

Maharashtra

Postal Code

400003

Place order

© 2022 Estore

Web Page for Checkout Component

User should choose the payment method and address for the confirmation.

ESTORE

Products

Shopping-cart 6

Whishlist




My Orders

My Profile

Payment Method

Add Debit/Credit/ATM Card

You can save your Mastercard and VISA cards as per new RBI guidelines



Netbanking

For faster payment and instant refund, please use UPI

Other UPI

Pay on Delivery

Pay digitally with SMS Pay Link. Cash may not be accepted in COVID restricted areas.

Order Summary

Order Total

₹1,251.46

Shipping Address

Street

16, 1st Floor., Agboat Wala Bldg., Abdulrehman Street No 282, Nr Islami Hotel, Abdul Rehman Street

City

Mumbai

State

Maharashtra

Postal Code

400003

Place order

© 2022 Estore

Web Page for Checkout Component

Finally, click on the place order button, and a successful order creation message will be shown to the user.

ESTORE

Products

Shopping-cart 6

Whishlist




My Orders

My Profile

Payment Method

Add Debit/Credit/ATM Card

You can save your Mastercard and VISA cards as per new RBI guidelines



Netbanking

For faster payment and instant refund, please use UPI

Other UPI

Pay on Delivery

Pay digitally with SMS Pay Link. Cash may not be accepted in COVID restricted areas.

Order Summary

Order Total ₹1,251.46

Shipping Address

Street

16, 1st Floor., Agboat Wala Bldg., Abdulrehman Street No 282, Nr Islami Hotel, Abdul Rehman Street

City

Mumbai

State

Maharashtra

Postal Code

400003

Place order

© 2022 Estore

Web Page for Checkout Component

In the directory: src/app/pages/checkout/

checkout.component.css

CSS goes here to design the page and forms.

checkout.component.html

HTML code is written in this template file.

checkout.component.ts

Logic will be written in typescript file.



Web Page for Orders Component: View Orders

As the user places an order from their account, the list of orders should be displayed to them for reference purposes with order status.

ESTORE

Products

Shopping-cart

Whishlist

My Orders

My Profile

Order Placed

03 December 2021

Total


₹839.60

Ship To

John Watson

Order ID: #3456789345


[View Order Details](#)



John Hardy Women's Legends Naga Gold & Silver Dragon Station Chain Bracelet

From our Legends Collection, the Naga was inspired by the mythical water dragon that protects the ocean's pearl. Wear facing inward to be bestowed with love and abundance, or outward for protection.

₹695.00



Mens Casual Premium Slim Fit T-Shirts

Slim-fitting style, contrast raglan long sleeve, three-button henley placket, light weight & soft fabric for breathable and comfortable wearing. And Solid stitched shirts with round neck made for durability and a great fit for casual fashion wear and diehard baseball fans. The Henley style round neckline includes a three-button placket.

₹22.30

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Web Page for Orders Component: View Orders

In the future, the detailed model should be opened when connected to the backend with the click of View order details.

ESTORE


ProductsShopping-cartWhishlistMy OrdersMy Profile

Order Placed
03 December 2021

Total
₹839.60

Ship To
John Watson


Order ID: #3456789345
[View Order Details](#)



John Hardy Women's Legends Naga Gold & Silver Dragon Station Chain Bracelet

From our Legends Collection, the Naga was inspired by the mythical water dragon that protects the ocean's pearl. Wear facing inward to be bestowed with love and abundance, or outward for protection.

₹695.00



Mens Casual Premium Slim Fit T-Shirts

Slim-fitting style, contrast raglan long sleeve, three-button henley placket, light weight & soft fabric for breathable and comfortable wearing. And Solid stitched shirts with round neck made for durability and a great fit for casual fashion wear and diehard baseball fans. The Henley style round neckline includes a three-button placket.

₹22.30

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Web Page for Orders Component - View Orders

In the directory: src/app/pages/orders/

order.component.css

CSS goes here to design the page and forms.

order.component.html

HTML code is written in this template file.

order.component.ts

Logic will be written in typescript file.



BUY

Database Structure for End User



Creating Database in MySQL

MySQL CLI usage to create and work with database

Use database e-commerce

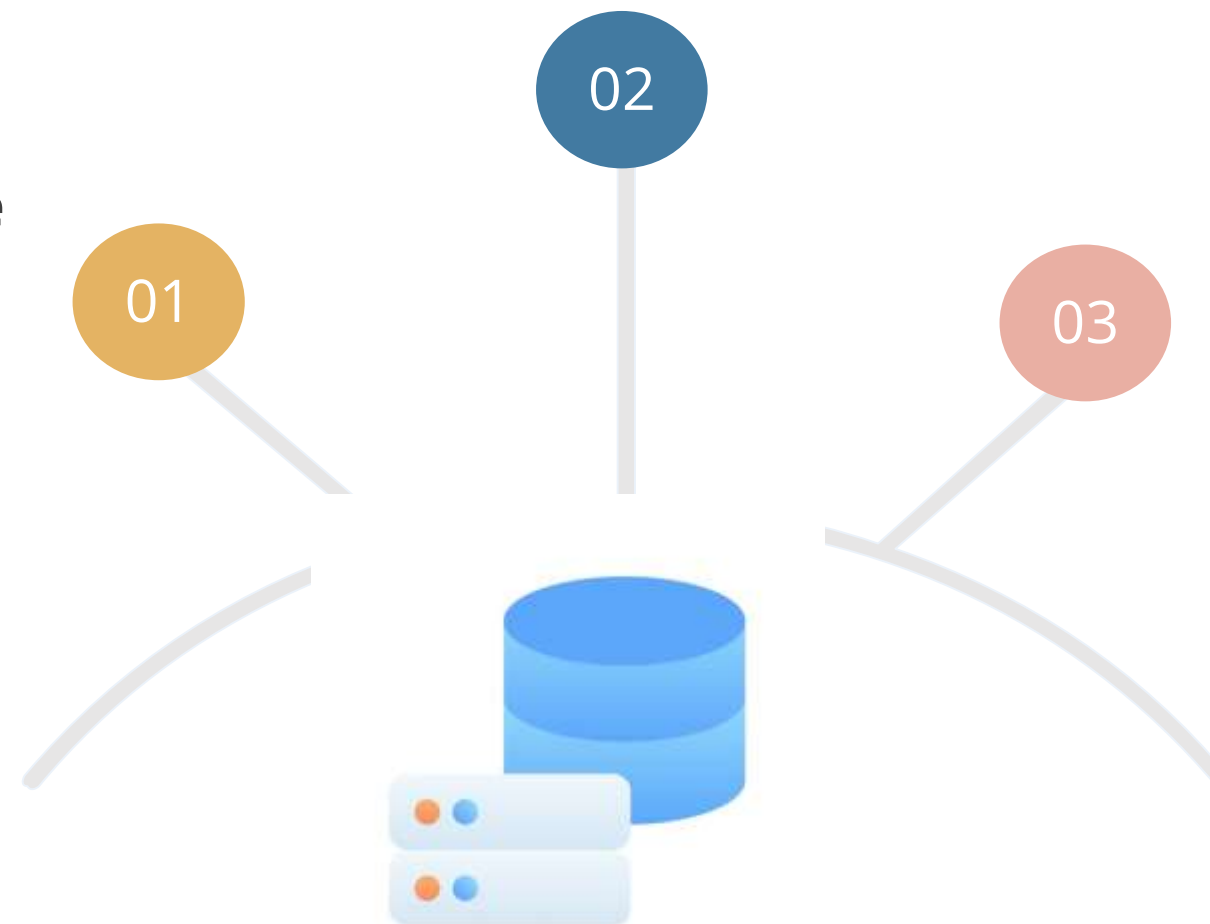
Selects current working database

Create database e-commerce

Creates the database for e-commerce

Show tables

Lists all the tables in the database

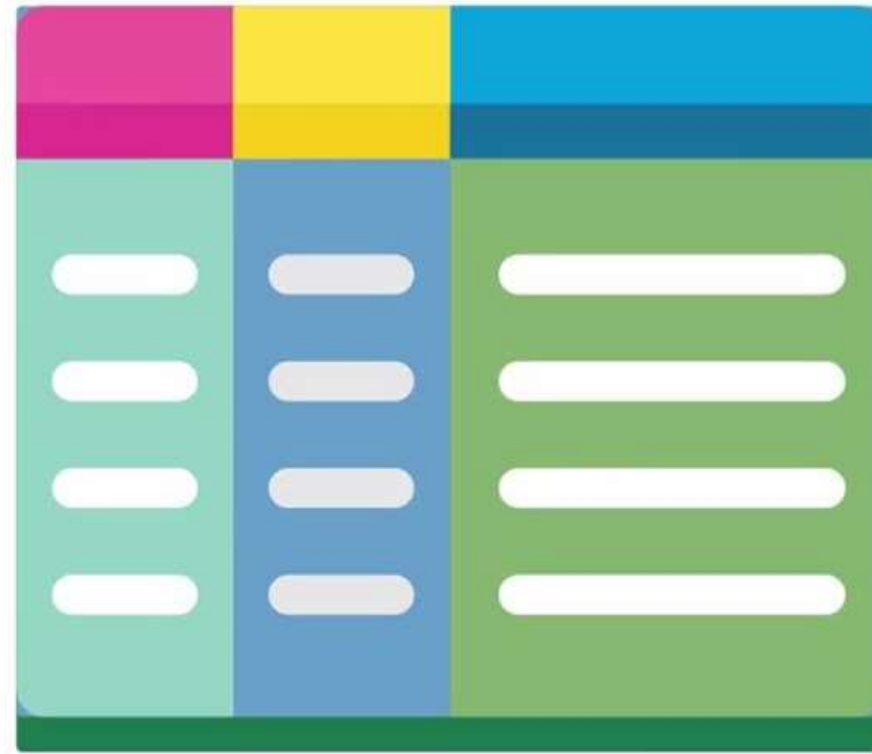


Creating Tables

Creating Table

Many tables are common for the dashboards.
Example: Order Table in Admin will be used by the Web App for end users as well.

Only the Tables required for Cart and the Whishlist should be created.



The rest of the tables are already created during the Admin table structure.

Generating User Table for Login

Ensure the database is selected as ecommerce, or you can execute the command to choose the ecommerce database as follows:

Use database ecommerce;

```
CREATE TABLE USERS (  
    userId          INTEGER NOT NULL PRIMARY KEY AUTO_INCREMENT,  
    email           VARCHAR(50) NOT NULL,  
    password        VARCHAR(50) NOT NULL,  
    fullName        VARCHAR(255) NOT NULL,  
    street          VARCHAR(50) DEFAULT NULL,  
    city            VARCHAR(50) DEFAULT NULL,  
    state           VARCHAR(50) DEFAULT NULL,  
    country         VARCHAR(50) DEFAULT NULL,  
    pincode         INTEGER,  
    image           VARCHAR(1000),  
    contact         BIGINT,  
    addedOn         DATETIME DEFAULT CURRENT_TIMESTAMP  
);  
) NOT NULL,
```

Generating User Table for Login

For the simplicity, one address per user is considered.

In case one user has many addresses, then Address tables are created separately with primary and foreign key relationships.



Generating Whishlist Table

Make sure the database is selected as ecommerce, or you can execute the following command to select the ecommerce database:

Use database ecommerce;

```
CREATE TABLE WHISHLIST {  
    WishlistId          INTEGER NOT NULL PRIMARY KEY AUTO_INCREMENT,  
    productId            INTEGER NOT NULL,  
    userId               INTEGER NOT NULL,  
    FOREIGN KEY (productId) REFERENCES PRODUCTS(productId),  
    FOREIGN KEY (userId) REFERENCES USERS(userId)  
}
```


Generating Cart Table

Make sure the database is selected as ecommerce, or you can execute the following command to make the database selection for ecommerce as :

Use database ecommerce;

```
CREATE TABLE CART {  
    cartId          INTEGER NOT NULL PRIMARY KEY AUTO_INCREMENT,  
    productId        INTEGER NOT NULL,  
    quantity         INTEGER DEFAULT 1,  
    userId           INTEGER NOT NULL,  
    FOREIGN KEY (productId) REFERENCES PRODUCTS(productId),  
    FOREIGN KEY (userId) REFERENCES USERS(userId)  
}
```

Key Takeaways

- For basic operations, the web page templates are developed using HTML and CSS.
- User can manage their profile by navigating to the profile component on the navigation bar.
- UI is developed to show the various products added by the admin.
- The Whishlist component shows the list of products that a user may buy in the future.



Key Takeaways

- The navigation bar is used to navigate to the cart tab, where the user can see a list of the products along with their quantity and price.
- MySQL CLI is used to create and work with database.
- Address table are created separately with primary and foreign key relationship.

