

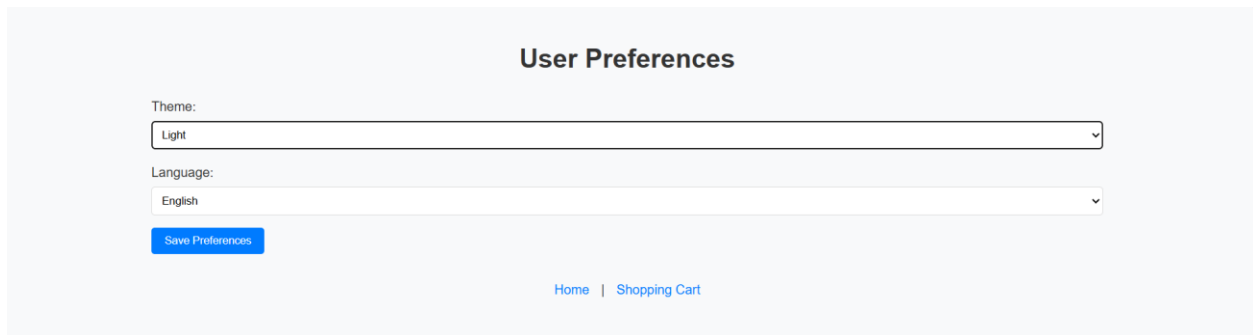
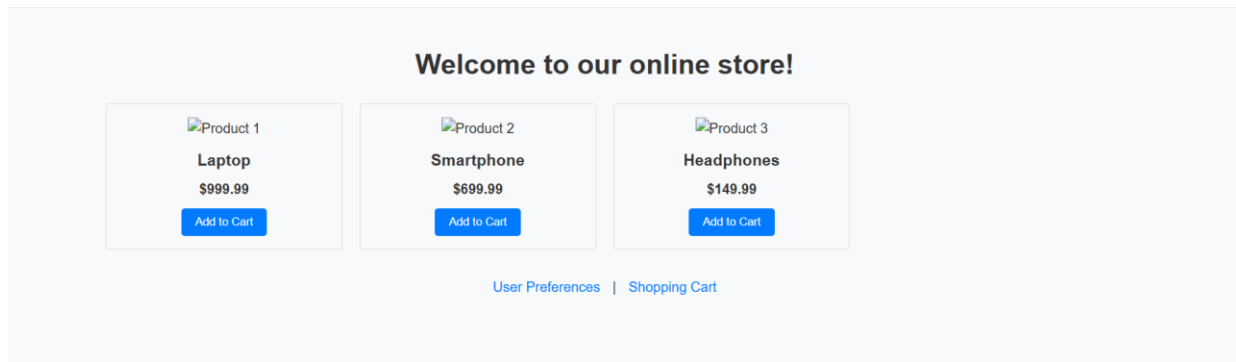
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## Lab 9

### Task 1: Understanding Cookies

1. Run the application and navigate to the User Preferences page.



## 2. Change the theme and language settings.

### User Preferences

Your preferences have been updated successfully!

Theme:  
Dark

Language:  
English

Save Preferences

[Home](#) | [Shopping Cart](#)

### User Preferences

Your preferences have been updated successfully!


Theme:  
Blue


Language:  
English


Save Preferences

[Home](#) | [Shopping Cart](#)

## Chào mừng đến với cửa hàng trực tuyến của chúng tôi!

Product 1  
**Laptop**  
\$999.99  
[Add to Cart](#)

Product 2  
**Smartphone**  
\$699.99  
[Add to Cart](#)

Product 3  
**Headphones**  
\$149.99  
[Add to Cart](#)

[User Preferences](#) | [Shopping Cart](#)

## 3. Observe how the preferences persist across page refreshes and when navigating to different pages.

When navigating to different pages, or refreshing, the preferences are still remaining.

4. Use browser developer tools to examine the cookies created by the application.

language	vi	localhost	/	2025-05-...	10						Medium
theme	blue	localhost	/	2025-05-...	9						Medium

5. Delete the cookies and observe what happens when you refresh the page.

When deleting the cookies, the preferences return by default.

User Preferences

Theme:

Light

Language:

English

Save Preferences

Home

 | 

Shopping Cart

Task 2: Exploring Session Management

1. Add products to your shopping cart.

Shopping Cart

Product	Price	Quantity	Subtotal	Action
Laptop	\$999.99	3	\$2999.97	<a href="#">Remove</a>
Smartphone	\$699.99	1	\$699.99	<a href="#">Remove</a>
Headphones	\$149.99	2	\$299.98	<a href="#">Remove</a>

Total: \$3999.94

Update Cart

[Clear Cart](#) [Checkout](#)

Continue Shopping

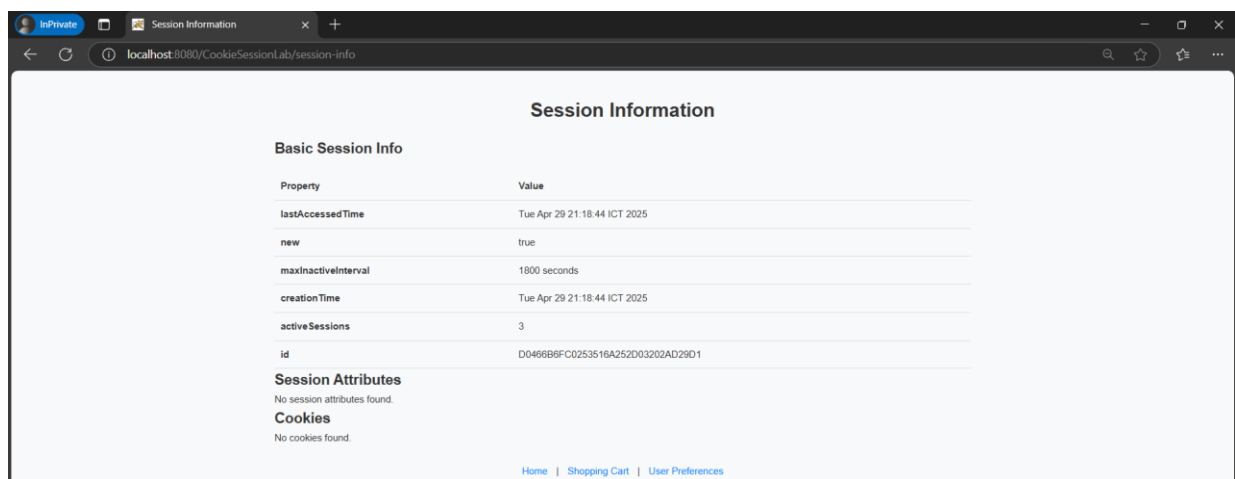
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User Preferences

2. Navigate to the Session Info page to see what information is stored in your session.

Session Information	
Basic Session Info	
Property	Value
lastAccessedTime	Tue Apr 29 21:15:22 ICT 2025
new	false
maxInactiveInterval	1800 seconds
creationTime	Tue Apr 29 21:00:09 ICT 2025
activeSessions	1
id	FCED3C70AE62DA9D85A3C1E862708B82
Session Attributes	
Name	Value
cart	[com.weblab.model.Product@20, com.weblab.model.Product@21, com.weblab.model.Product@22]
Cookies	

3. Open a new browser or use incognito/private mode to see that the shopping cart is empty (new session)..



4. Observe how the cart persists when navigating between pages in the same browser session.

**When navigating between pages in the same browser session, the cart still remain the value of product, including the quantity after added to cart, not return to initial.**

**When navigating to different pages, or refreshing, the preferences are still remaining.**

- 5. Wait for the session timeout (set to 30 minutes by default) or close and reopen the browser to see the session expire.**

**It expired.**