Search By Keyword

Search for Products by Keyword

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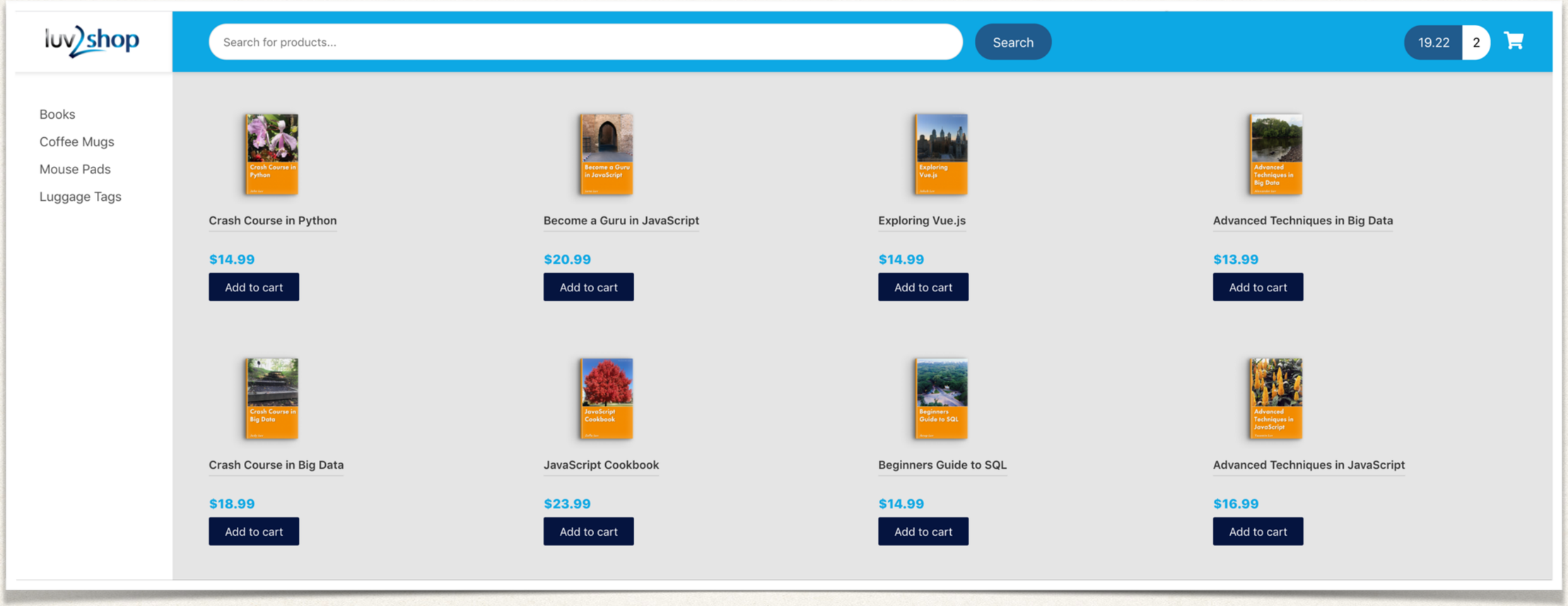
Search for Products by Keyword



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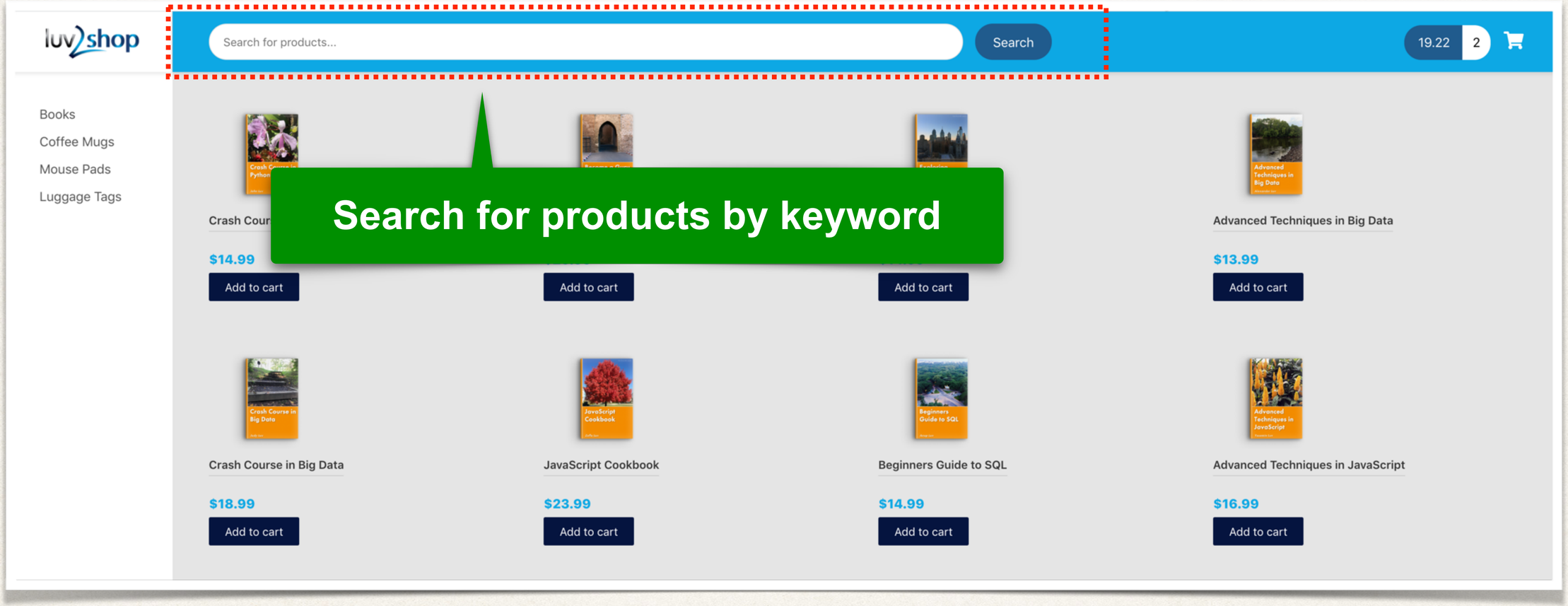
Search for Products by Keyword



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Development Process

Step-By-Step

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Development Process

Step-By-Step

1. Modify Spring Boot app - Add a new search method

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Development Process

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1. Modify Spring Boot app - Add a new search method
2. Create new component for search

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Development Process

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1. Modify Spring Boot app - Add a new search method
2. Create new component for search
3. Add new Angular route for searching

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Development Process

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1. Modify Spring Boot app - Add a new search method
2. Create new component for search
3. Add new Angular route for searching
4. Update SearchComponent to send data to search route

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Development Process

Step-By-Step

1. Modify Spring Boot app - Add a new search method
2. Create new component for search
3. Add new Angular route for searching
4. Update SearchComponent to send data to search route
5. Enhance ProductListComponent to search for products with ProductService

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Development Process

Step-By-Step

1. Modify Spring Boot app - Add a new search method
2. Create new component for search
3. Add new Angular route for searching
4. Update SearchComponent to send data to search route
5. Enhance ProductListComponent to search for products with ProductService
6. Update ProductService to call URL on Spring Boot app

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Step 1: Modify Spring Boot app - Search Method

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- Spring Data REST and Spring Data JPA supports "query methods"

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- Spring will construct a query based on method naming conventions

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Magic!

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Step 1: Modify Spring Boot app - Search Method

- Spring Data REST and Spring Data JPA supports "query methods"
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Magic!

File: ProductRepository.java

```
public interface ProductRepository extends JpaRepository<Product, Long> {

    Page<Product> findByNameContaining(@RequestParam("name") String name, Pageable pageable);

    ...

}
```


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Step 1: Modify Spring Boot app - Search Method

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- Find products based on name

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"Containing" ... similar to SQL: "LIKE"

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Behind the scenes, Spring will execute a query similar to this

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SELECT * FROM Product p
WHERE
p.name LIKE CONCAT('%', :name ,'%')
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http://localhost:8080/api/products/search/findByNameContaining?name=Python

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To pass data to REST API

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To pass data to REST API

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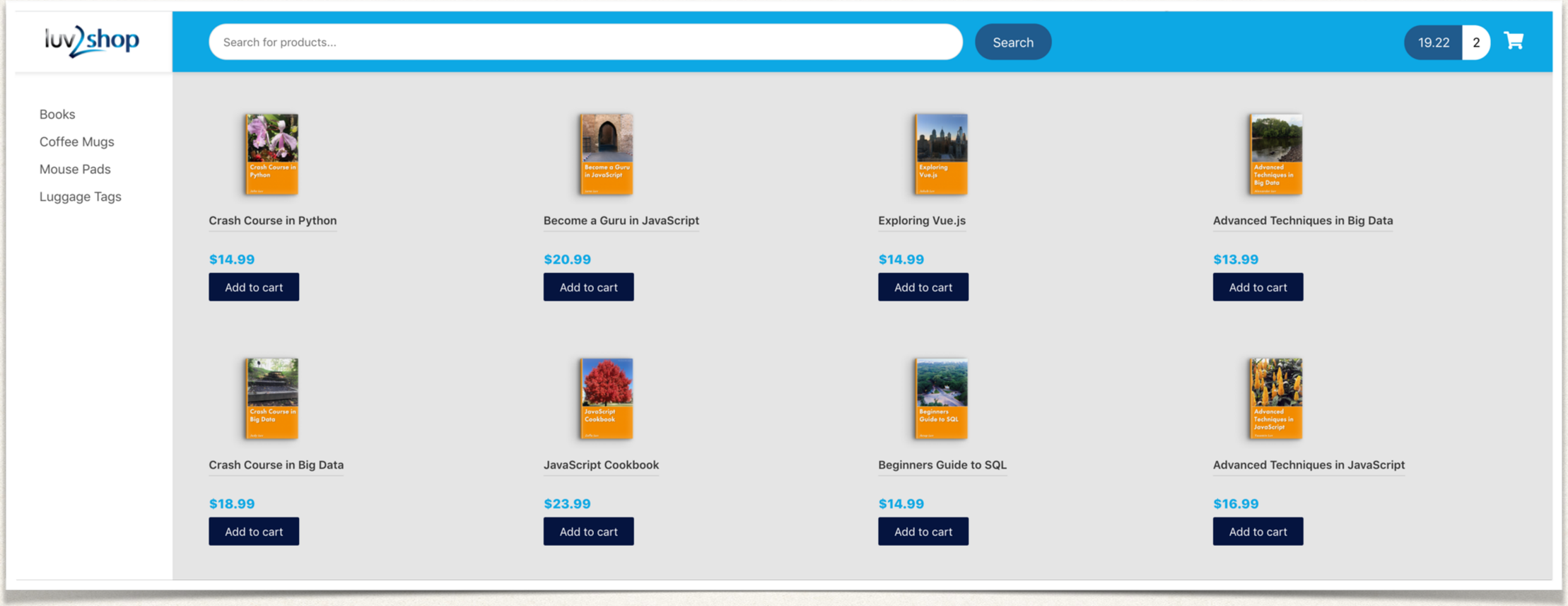
Step 2: Create new component for Search



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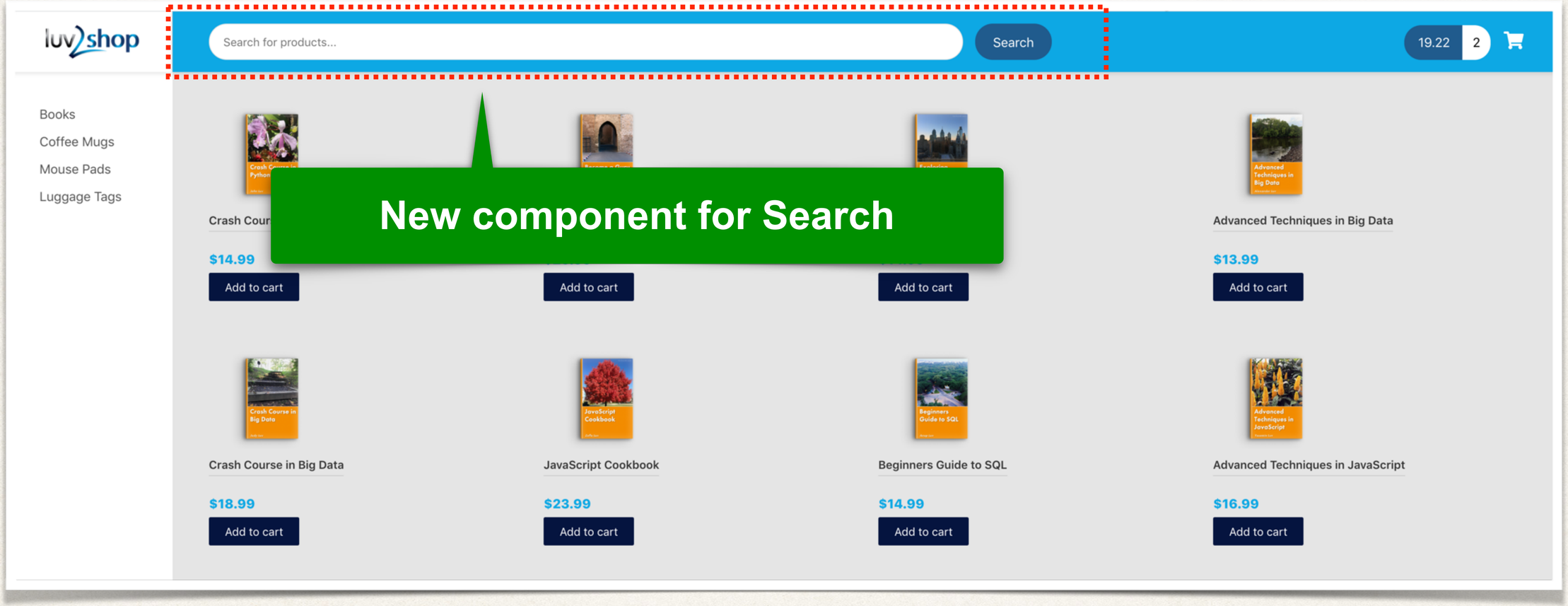

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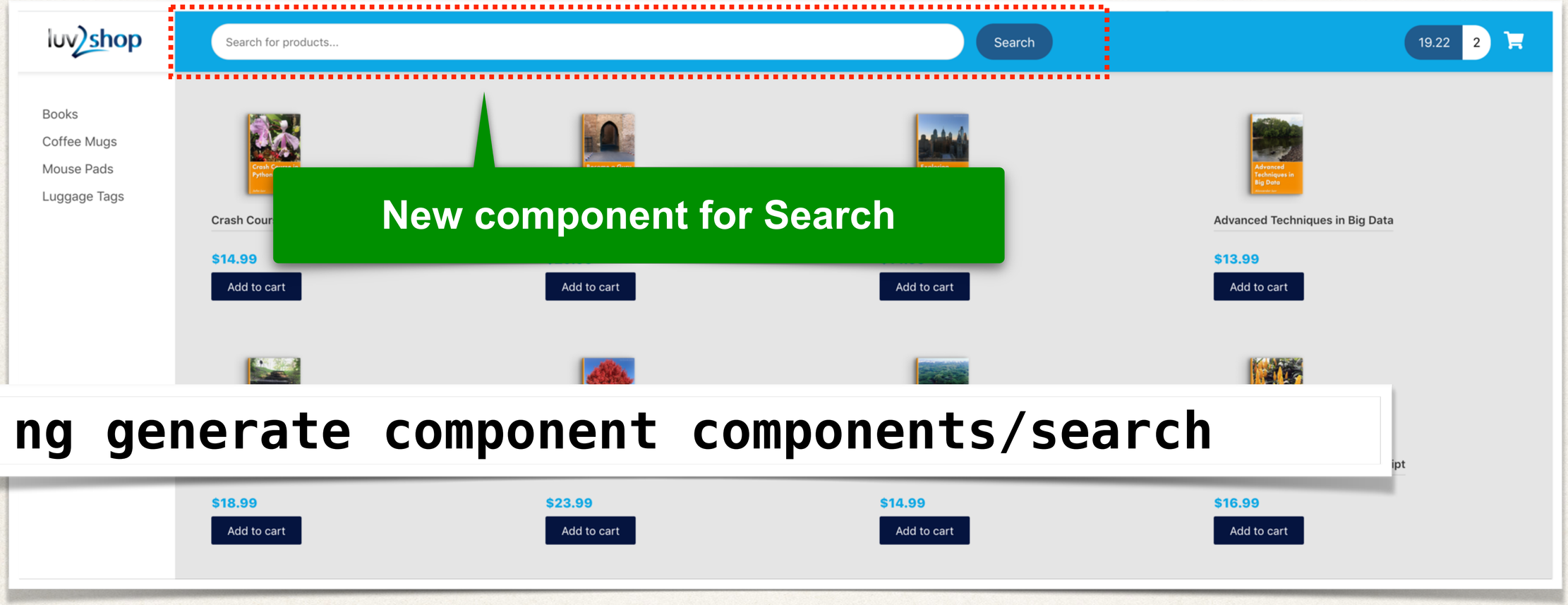


```
> ng generate component components/search
```


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Step 3: Add new Angular route for searching

File: app.module.ts

```
...
  {path: 'search/:keyword', component: ProductListComponent},
...
```


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Step 3: Add new Angular route for searching

File: app.module.ts

```
...
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```

Parameter

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Quick Discussion

Event Binding

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Quick Discussion - Event Binding

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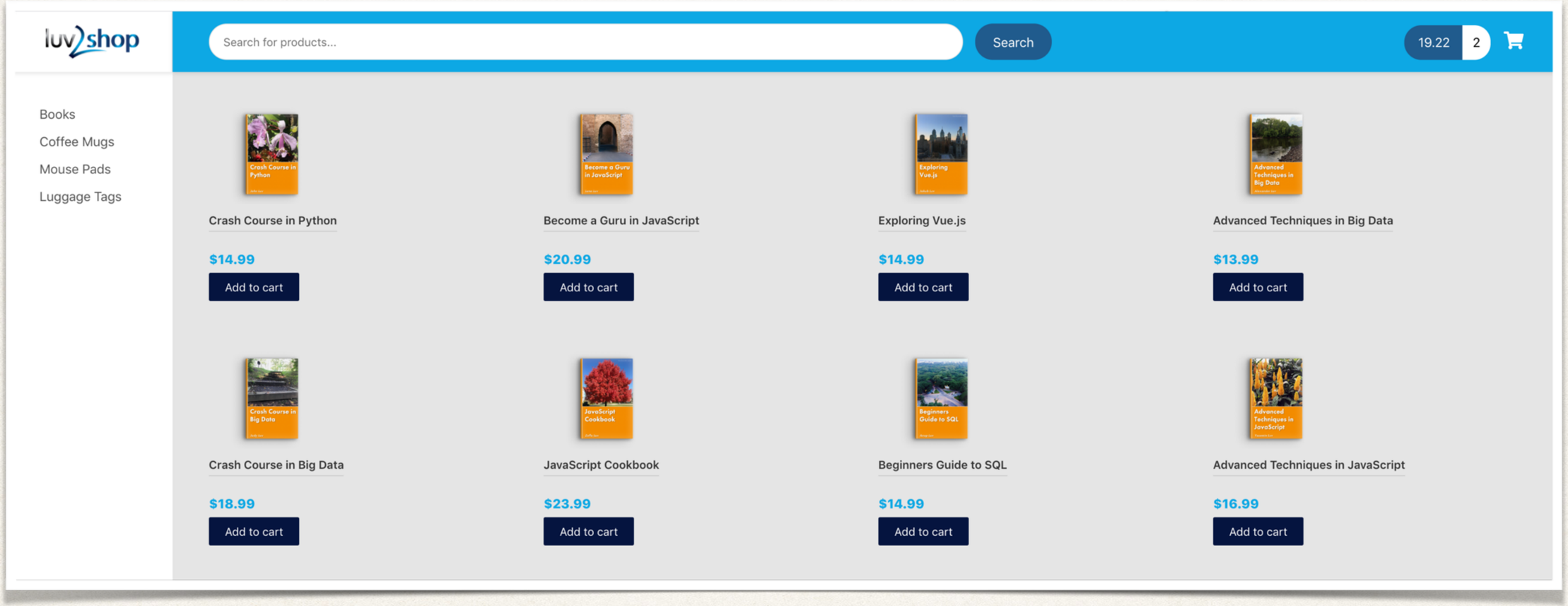

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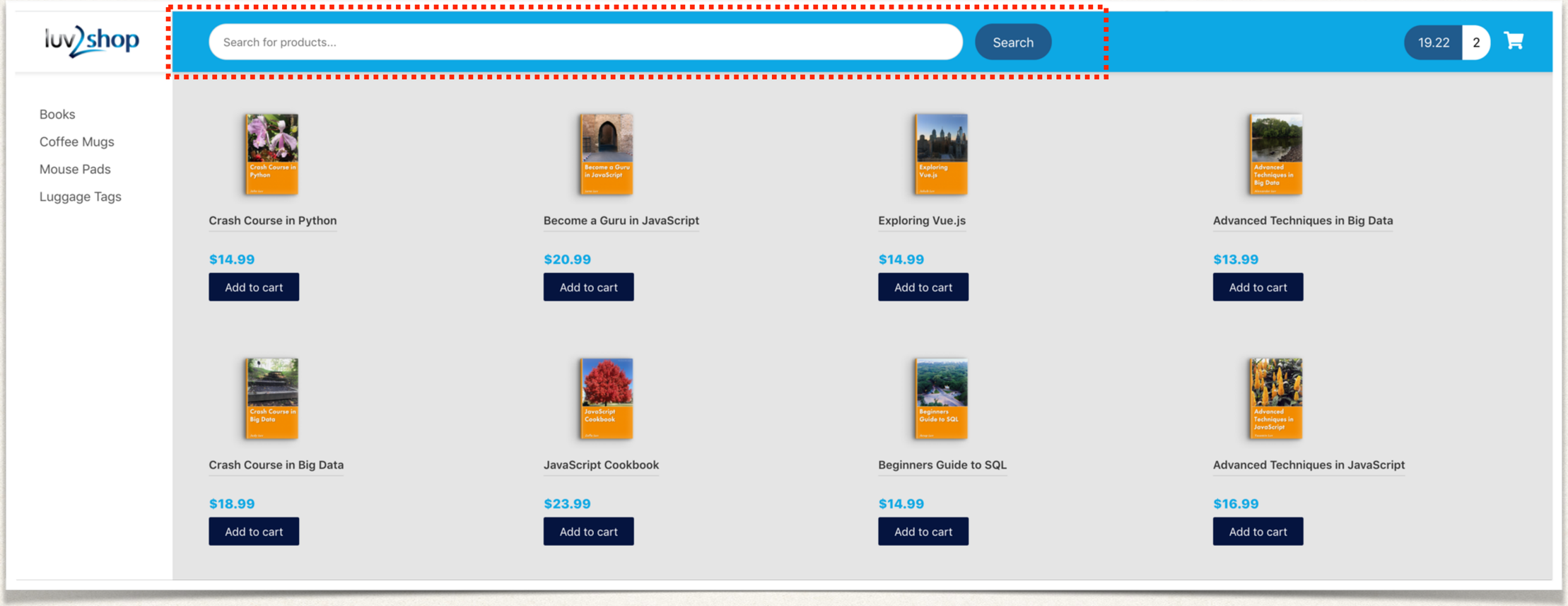
Quick Discussion - Event Binding



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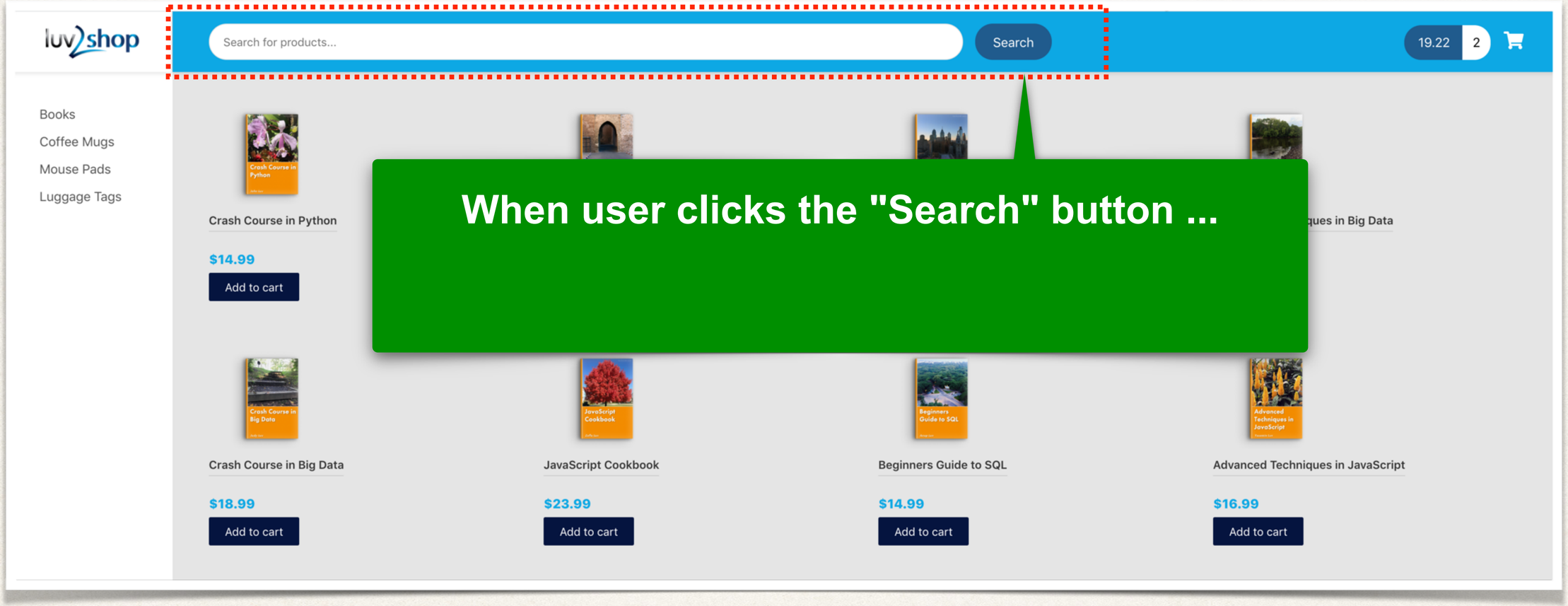
Quick Discussion - Event Binding



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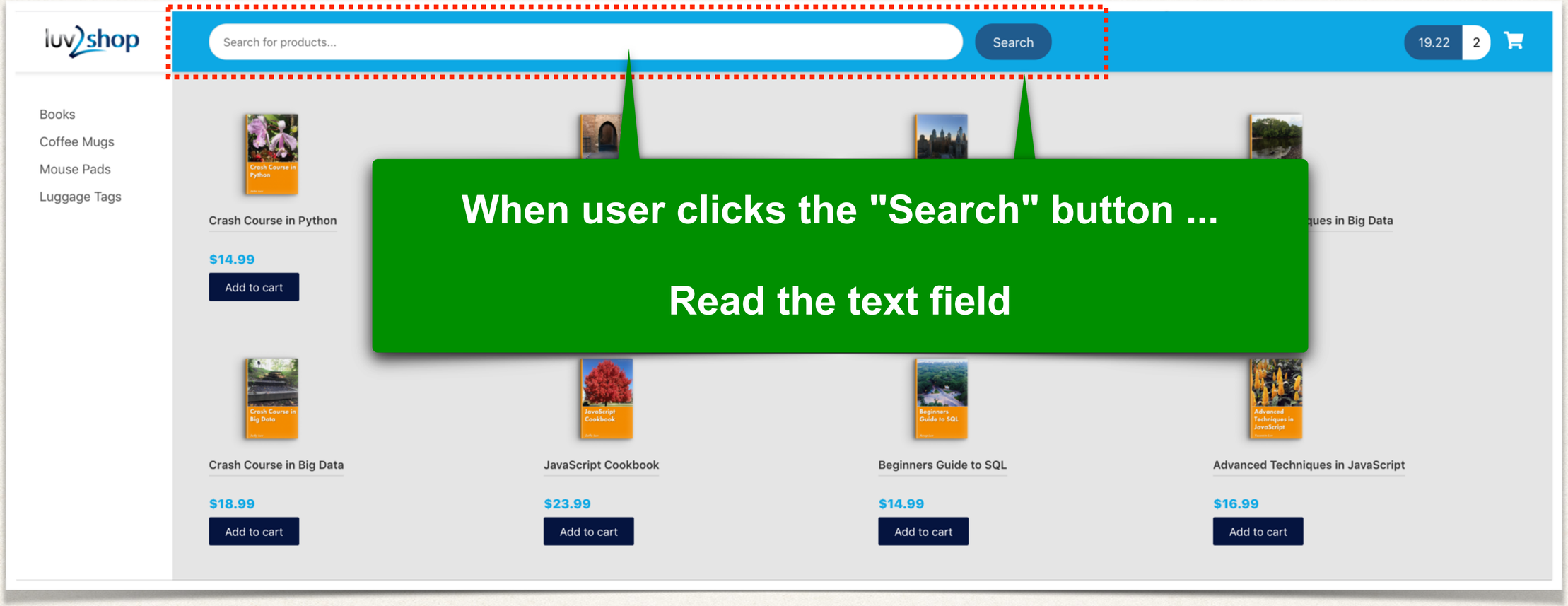
Quick Discussion - Event Binding



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Event Binding

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Event Binding

- In Angular, you can listen for events with "event binding"

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Event Binding

- In Angular, you can listen for events with "event binding"
- In other languages/frameworks, also known as "event handling"

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```
<button (click)="doMyCustomWork()">Search</button>
```


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<button (click)="doMyCustomWork()">Search</button>
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Listen for "click" event

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```

Listen for "click" event

Call a method in our Angular component code

Can be any method name we define

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Event Binding - Example

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Event Binding - Example

Call a method in our Angular component code

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Listen for "click" event

```
export class SearchComponent implements OnInit {

  doMyCustomWork() {
    console.log(`Hey! You pushed my button!`);
 }

  ...
}
```


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Reading User Input

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Reading User Input

```
<input #myInput type="text"
       (keyup.enter)="doMyCustomWork(myInput.value)"  />
```


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Reading User Input

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<input #myInput type="text"
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Listen for the "enter" key

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Reading User Input

 # symbol
Template reference variable

Provides access to the element

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<input #myInput type="text"
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Listen for the "enter" key

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Listen for the "enter" key

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export class SearchComponent implements OnInit {

  doMyCustomWork(info: string) {
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Other Events

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Other Events

Name	Description
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https://developer.mozilla.org/en-US/docs/Web/Events

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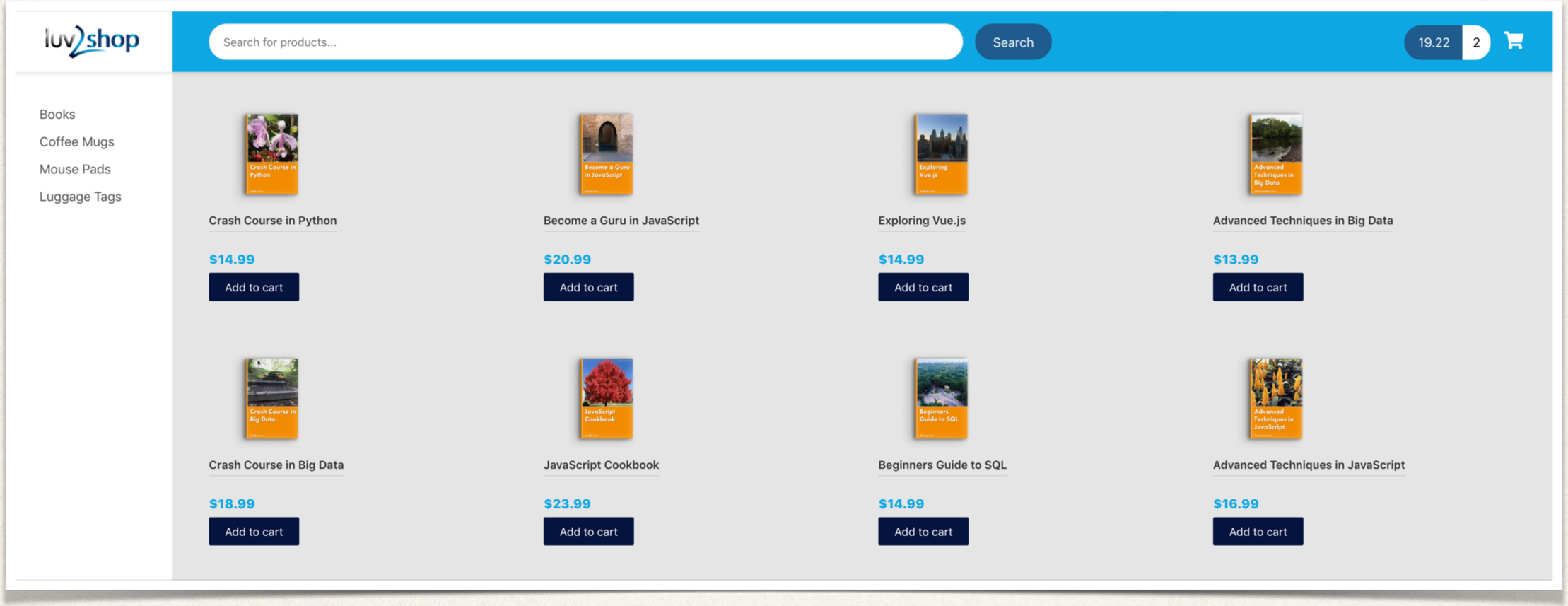
Step 4: Update SearchComponent to send data to search route



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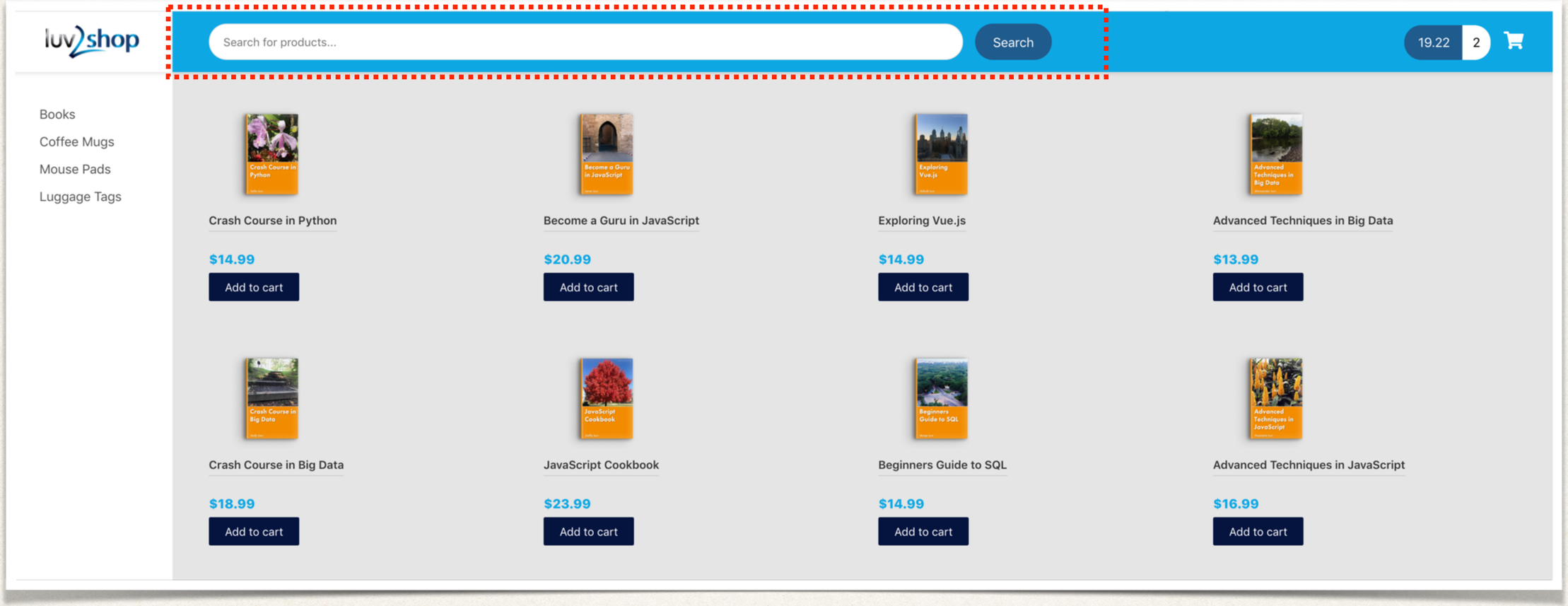

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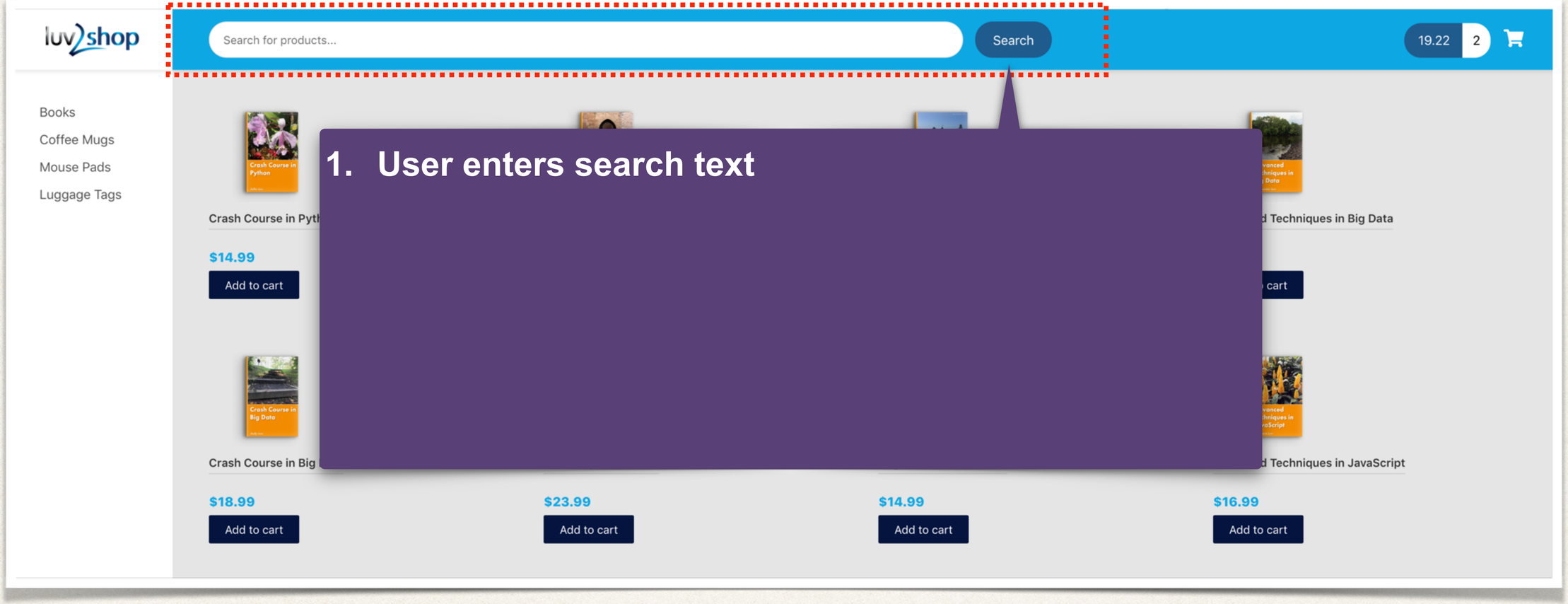

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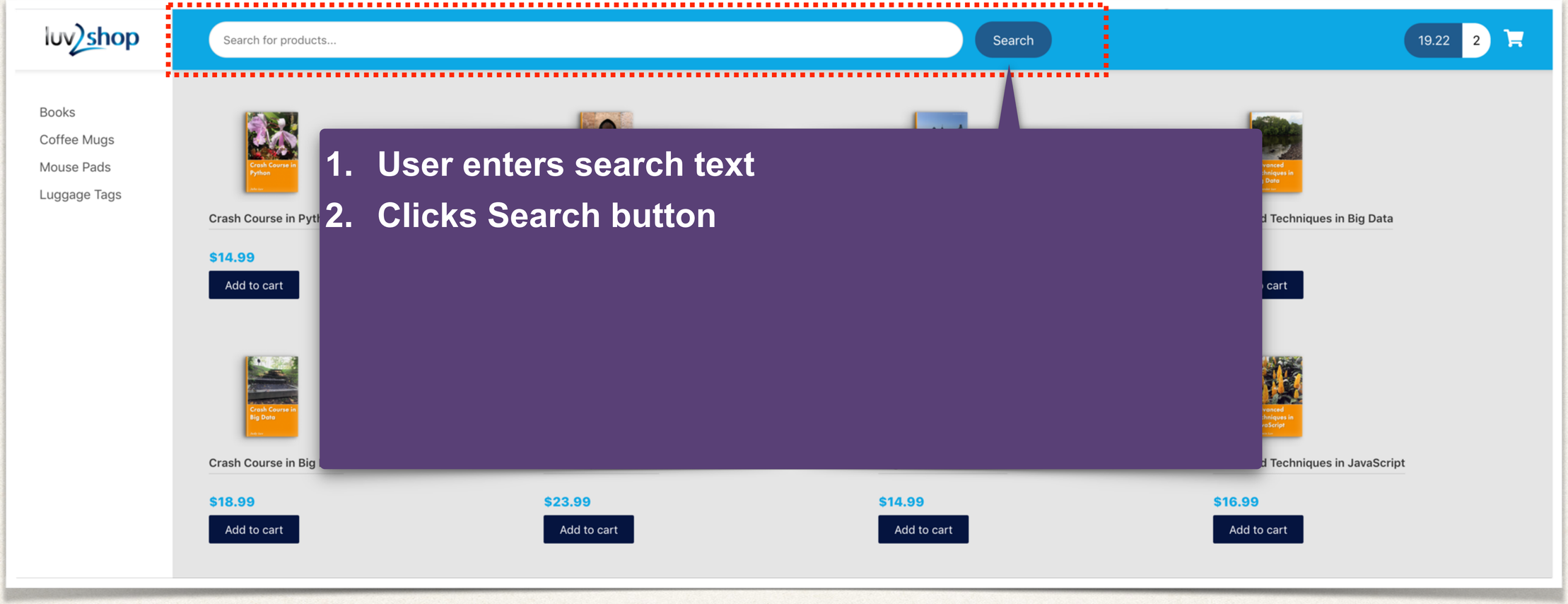

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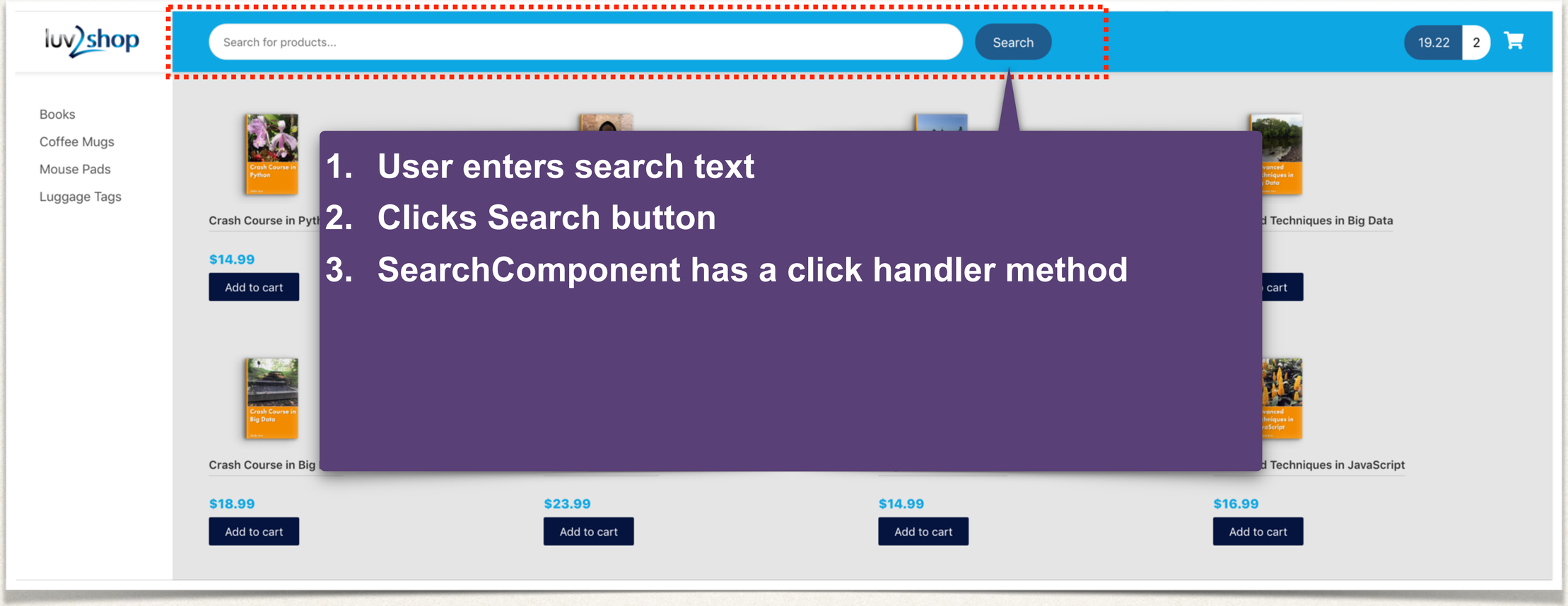

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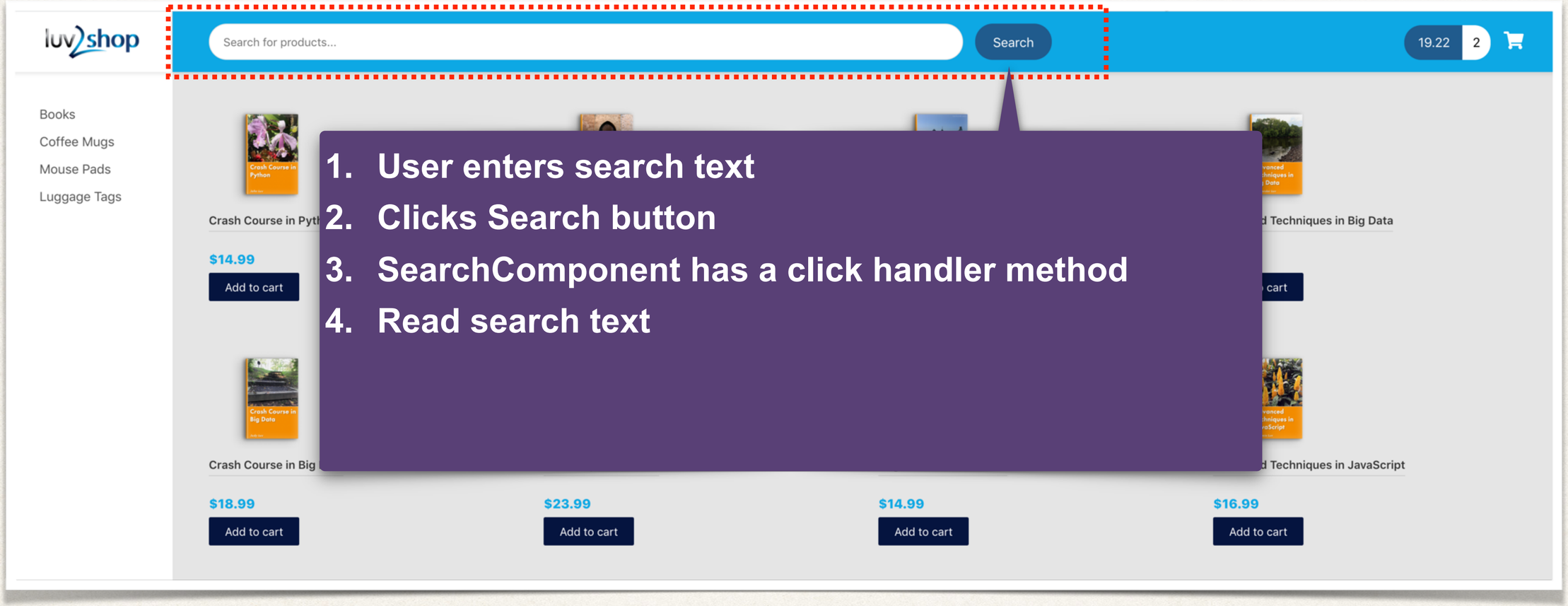

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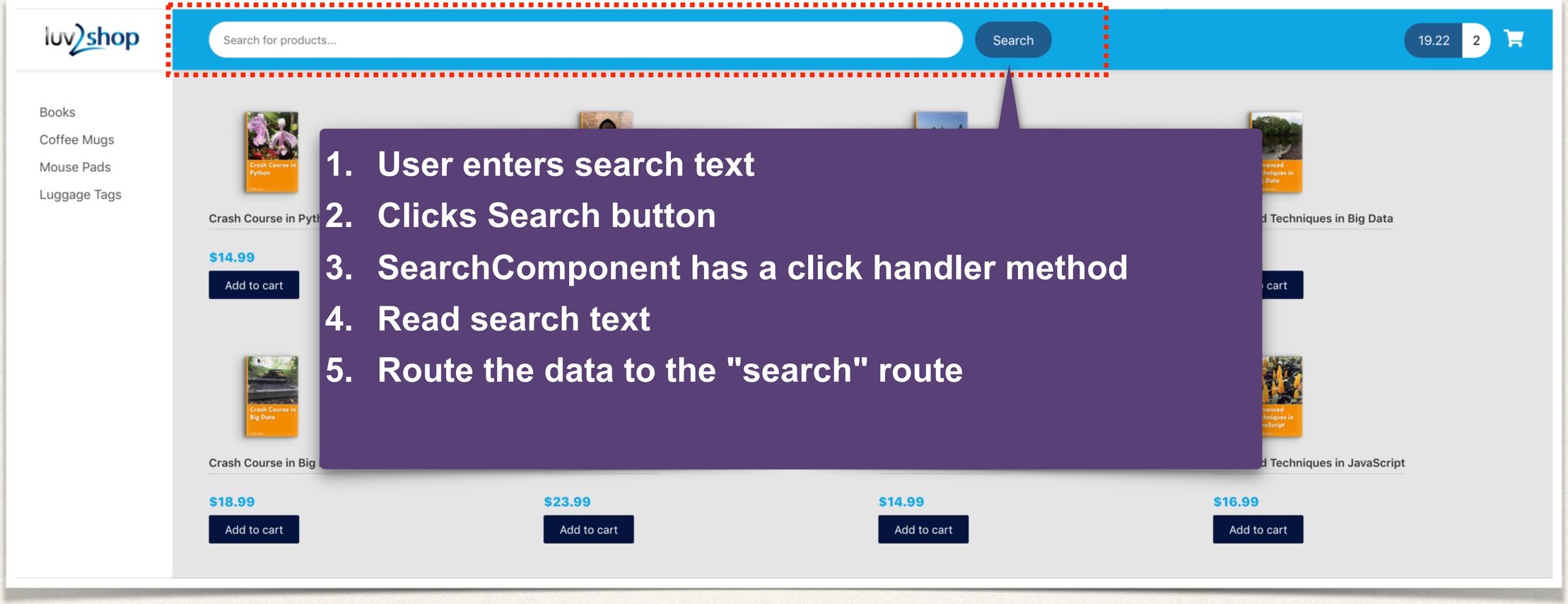

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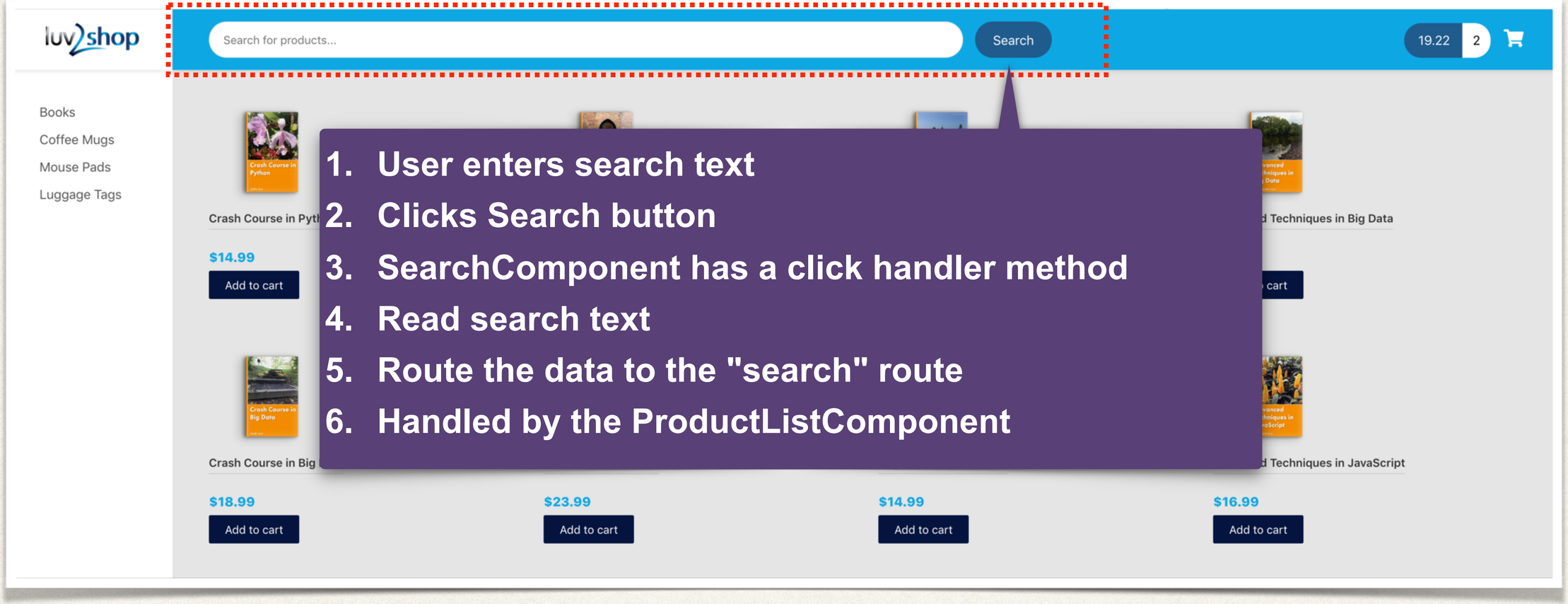

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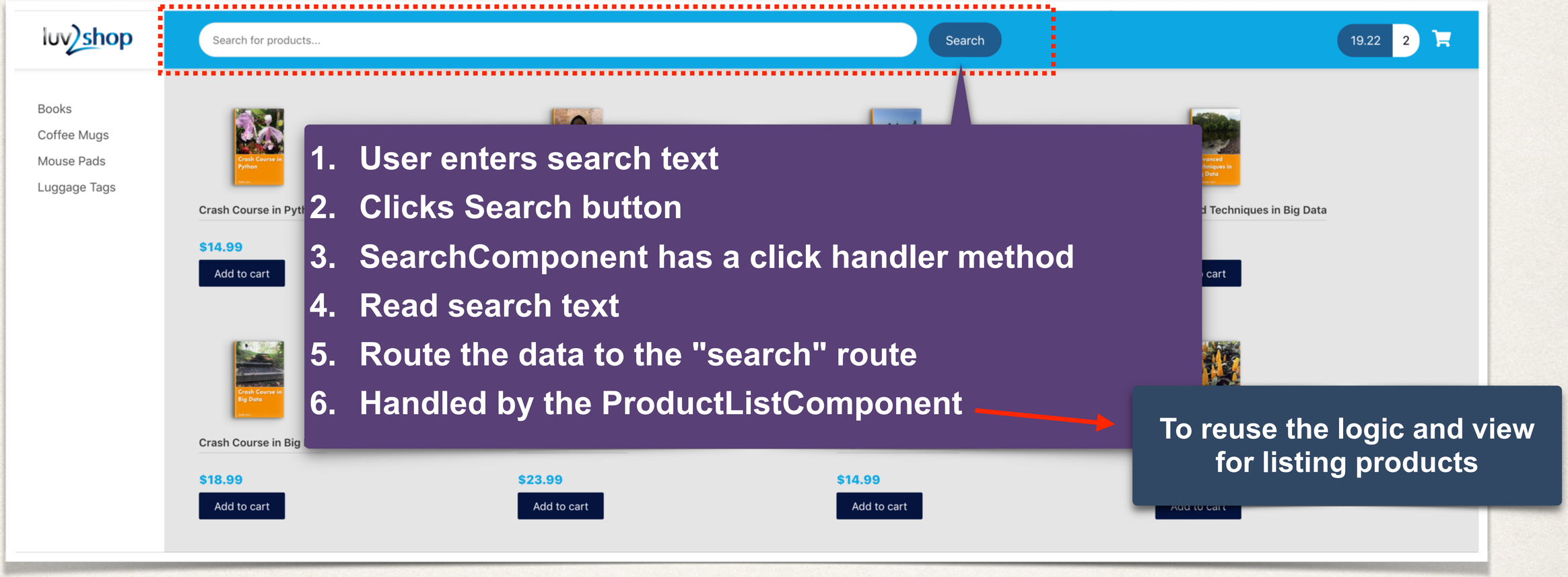

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Step 4: Update SearchComponent to send data to search route

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Step 4: Update SearchComponent to send data to search route

File: search.component.html

```
<div class="form-header">

    <input #myInput type="text"
           placeholder="Search for products ..."
           class="au-input au-input-xl"
           (keyup.enter)="doSearch(myInput.value)"  />

    <button (click)="doSearch(myInput.value)" class="au-btn-submit">
        Search
    </button>

</div>
```


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Step 4: Update SearchComponent to send data to search route

Template reference variable

Provides access to the element

File: search.component.html

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        Search
    </button>

</div>
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Event fired when user clicks the mouse button

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    <button (click)="doSearch(myInput.value)" class="au-btn-submit">
        Search
    </button>

</div>
```

Template reference variable

Provides access to the element

Event fired when user hits the Enter key

Event fired when user clicks the mouse button

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Step 4: Update SearchComponent to send data to search route

File: search.component.html

```
<div class="form-header">

    <input #myInput type="text"
           placeholder="Search for products ..."
           class="au-input au-input-xl"
           (keyup.enter)="doSearch(myInput.value)"  />

    <button (click)="doSearch(myInput.value)" class="au-btn-submit">
        Search
    </button>

</div>
```

Template reference variable

Provides access to the element

Retrieve the value entered by the user

Event fired when user clicks the mouse button

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Step 4: Update SearchComponent to send data to search route

File: search.component.html

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Method defined in our component

We can give it any name

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Step 4: Update SearchComponent to send data to search route

File: search.component.ts

```
export class SearchComponent implements OnInit {

  constructor(private router: Router) { }

  doSearch(value: string) {
    console.log(`value=${value}`);
    this.router.navigateByUrl(`/search/${value}`);
  }

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}
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Route the data to our "search" route

It will be handled by the ProductListComponent

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To reuse the logic and view for listing products

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Step 5: Enhance component to search for products with product service

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Step 5: Enhance component to search for products with product service

File: product-list.component.ts

```
...
    const theKeyword: string = this.route.snapshot.paramMap.get('keyword');

    // now search for the products using keyword
    this.productService.searchProducts(theKeyword).subscribe(
      data => {
        this.products = data;
      }
    )
...
```


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Step 5: Enhance component to search for products with product service

File: app.module.ts

```
...
  {path: 'search/:keyword', component: ProductListComponent},
...
```

File: product-list.component.ts

```
...
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Step 5: Enhance component to search for products with product service

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Passed in from SearchComponent

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Step 5: Enhance component to search for products with product service

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Passed in from SearchComponent

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Step 6: Update product service to call URL on Spring Boot app

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Step 6: Update product service to call URL on Spring Boot app

File: product.service.ts

```
...

  searchProducts(theKeyword: string): Observable<Product[]> {

    // need to build URL based on the keyword
    const searchUrl = `${this.baseUrl}/search/findByNameContaining?name=${theKeyword}`;

    return this.httpClient.get<GetResponseProducts>(searchUrl)
                                .pipe(
                                   map(response => response._embedded.products));

  }

...

interface GetResponseProducts {
  _embedded: {
    products: Product[];
  }
}
```


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Step 6: Update product service to call URL on Spring Boot app

File: product.service.ts

URL for searching products

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Call REST API

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URL for searching products

Call REST API

Returns an observable

Map the JSON data from Spring Data REST to Product array

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URL for searching products

Call REST API

Returns an observable

Map the JSON data from Spring Data REST to Product array

Unwraps the JSON from Spring Data REST _embedded entry

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