

Problem Statement: MERN Product Management Application

This application is a full-stack MERN (MongoDB, Express, React, Node.js) solution to manage a product catalog.

Functional Requirements:

- Display all products in a Material UI table with pagination.
- Provide a search bar to filter products based on their name.
- Style the table header with a custom blue background and bold white font.
- Add a new backend API route `/api/products/search?name=...` for server-side search.
- Ensure the frontend supports paginated filtering based on live search input.

Features:

- Search by partial match on product name (e.g., 'lap' shows 'Laptop').
- Pagination options (10, 25, 50, 100).
- Dynamic rendering using React hooks and Axios.
- Styled using Material UI components.

Test Case:

- A Playwright test is added to validate that searching 'cam' returns 5 rows.

Screenshots

Default product list with table header styling and pagination.

MERN Pagination Table

React App

localhost:3000

Product List

Search Products by Name

Name	Price	Category	In Stock
UltraSharp Monitor	\$627.5	Electronics	Yes
Gaming Laptop	\$1194.62	Electronics	No
Bluetooth Keyboard	\$1063.61	Electronics	Yes
Wireless Mouse	\$1491.15	Electronics	No
4K Smart TV	\$518.1	Accessories	Yes
Portable SSD	\$391.7	Appliances	No
USB-C Hub	\$774.24	Wearables	Yes
Smartphone Stand	\$162.13	Appliances	No
Noise Cancelling Headphones	\$654.95	Appliances	Yes
Ergonomic Chair	\$166.08	Appliances	No

Rows per page: 10 1-10 of 50

Pagination dropdown options enabled via Material UI.

MERN Pagination Table

React App

localhost:3000

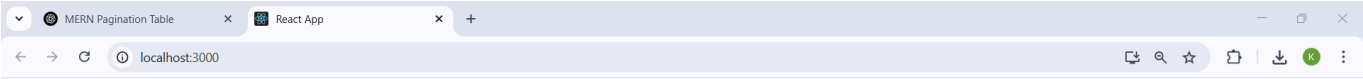
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Rows per page: 10 25 50 100 1-10 of 50

Search result for 'Lap' filtering relevant laptop products.



Product List

Search Products by Name
Lap

Name	Price	Category	In Stock
Gaming Laptop	\$1194.62	Electronics	No
Laptop Cooling Pad	\$1282.46	Accessories	Yes
Laptop Stand	\$748.32	Accessories	Yes

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