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➤ NodeJs PRACTISE 5.3

- CODE

catalog.js (Main server):

```
// catalog.js
const mongoose = require('mongoose');
const Product = require('./models/Product');

// MongoDB connection
mongoose.connect('mongodb+srv://alpha:alpha2025@cluster0.gttfsb5.mongodb.net/?retryWrites=true&w=majority&appName=Cluster0')
.then(() => console.log(' Connected to MongoDB'))
.catch(err => console.error(' Error:', err.message));

// Insert sample products
async function seedData() {
  await Product.deleteMany(); // Clear old data

  const products = [
    {
      name: "T-Shirt",
      price: 499,
      category: "Clothing",
      variants: [
        { color: "Red", size: "M", stock: 30 },
        { color: "Blue", size: "L", stock: 25 },
      ]
    }
  ]
}
```

```

    { color: "Black", size: "S", stock: 20 }
  ]
},
{
  name: "Sneakers",
  price: 2999,
  category: "Footwear",
  variants: [
    { color: "White", size: "8", stock: 15 },
    { color: "Black", size: "9", stock: 10 }
  ]
},
{
  name: "Laptop Bag",
  price: 1499,
  category: "Accessories",
  variants: [
    { color: "Gray", size: "Medium", stock: 40 },
    { color: "Blue", size: "Large", stock: 12 }
  ]
}
];

await Product.insertMany(products);
console.log("Sample data inserted successfully!");
process.exit();
}

seedData();

```

/models/Product.js :

```

// models/Product.js
const mongoose = require('mongoose');

const VariantSchema = new mongoose.Schema({
  color: { type: String, required: true },
  size: { type: String, required: true },
  stock: { type: Number, required: true, min: 0 }
});

const ProductSchema = new mongoose.Schema({
  name: { type: String, required: true, trim: true },

```

```
price: { type: Number, required: true, min: 0 },
category: { type: String, required: true, trim: true },
variants: [VariantSchema], // nested array of variant documents
createdAt: { type: Date, default: Date.now }
});

module.exports = mongoose.model('Product', ProductSchema);
```

Example Queries (In MongoDB Atlas Filter):

a) Retrieve all products

```
{ }
```

b) Filter products by category

```
{ category: "Clothing" }
```

c) Find products that have a variant in size “M”

```
{ "variants.size": "M" }
```

OUTPUT

products



Cluster0 > test > products

Documents 3

Aggregations

Schema

Indexes 1

Validation

```
{ } //Retreiving all products
```

[Generate query](#)

Explain

Reset

Find

+ ADD DATA

UPDATE

DELETE

25

1 - 3 of 3



```
_id: ObjectId('68f119fd4fb23cca77cc2aa8')
name: "T-Shirt"
price: 499
category: "Clothing"
variants: Array (3)
createdAt: 2025-10-16T16:14:53.157+00:00
__v: 0
```

```
_id: ObjectId('68f119fd4fb23cca77cc2aac')
name: "Sneakers"
price: 2999
category: "Footwear"
variants: Array (2)
createdAt: 2025-10-16T16:14:53.159+00:00
__v: 0
```

```
_id: ObjectId('68f119fd4fb23cca77cc2aaf')
name: "Laptop Bag"
price: 1499
category: "Accessories"
variants: Array (2)
createdAt: 2025-10-16T16:14:53.160+00:00
__v: 0
```

products



Cluster0 > test > products

Documents 3

Aggregations

Schema

Indexes 1

Validation

```
{ category: "Clothing" } //Filter products by category
```

[Generate query](#)

Explain

Reset

Find

+ ADD DATA

UPDATE

DELETE



25

1 - 1 of 1



```
_id: ObjectId('68f119fd4fb23cca77cc2aa8')
name: "T-Shirt"
price: 499
category: "Clothing"
variants: Array (3)
createdAt: 2025-10-16T16:14:53.157+00:00
__v: 0
```

{ "variants.color": "Blue" } //Filter products by color

Generate query Explain Reset Find

+ ADD DATA UPDATE DELETE ?

25 1 - 2 of 2

<pre>_id: ObjectId('68f119fd4fb23cca77cc2aa8') name: "T-Shirt" price: 499 category: "Clothing" variants: Array (3) createdAt: 2025-10-16T16:14:53.157+00:00 __v: 0</pre>
<pre>_id: ObjectId('68f119fd4fb23cca77cc2aaf') name: "Laptop Bag" price: 1499 category: "Accessories" variants: Array (2) createdAt: 2025-10-16T16:14:53.160+00:00 __v: 0</pre>