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Aim:

To design a MongoDB-based e-commerce catalog using nested documents and aggregation.

CODE:

Product Schema:

```
const mongoose = require('mongoose');
```

```
const productSchema = new mongoose.Schema({
```

```
  name: String,
```

```
  categories: [String],
```

```
  variants: [{
```

```
    color: String,
```

```
    size: String,
```

```
    price: Number,
```

```
    stock: Number
```

```
  }],  
  
  reviews: [{  
  
    user: mongoose.ObjectId,  
  
    rating: { type: Number, min: 1, max: 5 },  
  
    comment: String  
  }]  
  
});  
  
module.exports = mongoose.model('Product',  
  productSchema);  
  
Aggregation Query (Average Rating):  
  
const result = await Product.aggregate([  
  
  { $match: { _id: productId } },  
  
  { $unwind: "$reviews" },  
  
  { $group: {  
  
    _id: null,  
  
    avgRating: { $avg: "$reviews.rating" }  
  }}  
])
```

]);