

Name: Jayaprakash

Experiment no: 6

Uid: 23BAI70240

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" }  
  
    }}  
])
```

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