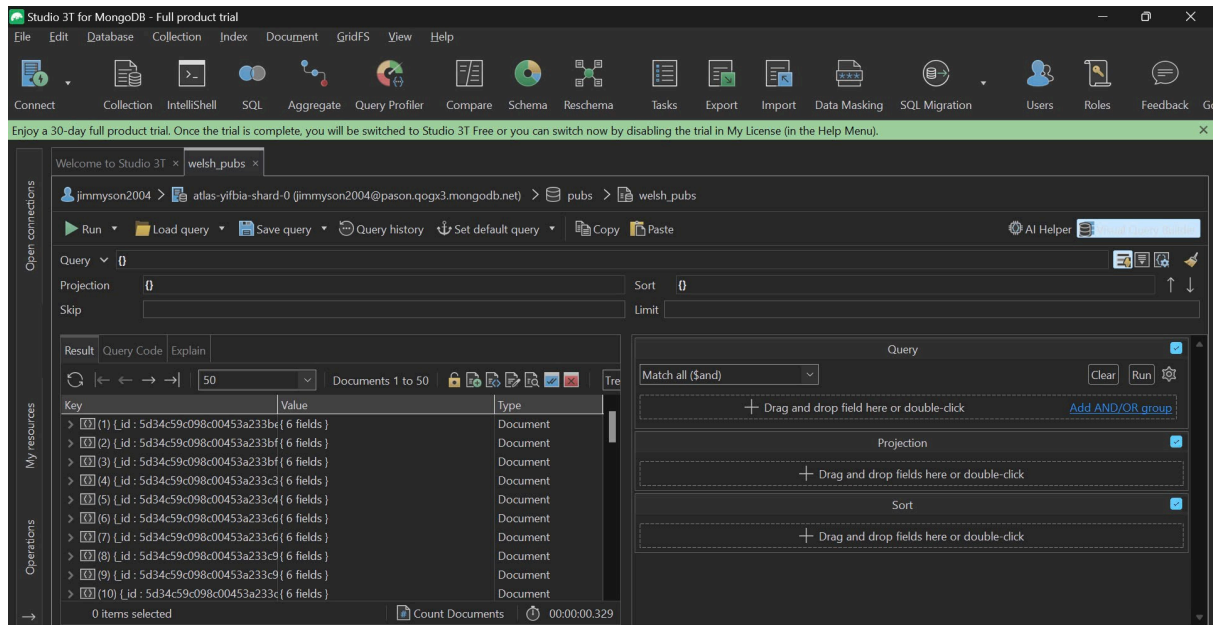


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# lesson 4 exercise 1



## lesson 4 exercise 3

The screenshot shows the MongoDB Studio 3T interface. The left sidebar displays the database structure with 'pubs' and 'welsh\_pubs' collections. The main workspace shows a query for the 'welsh\_pubs' collection. The query is: `{ "name": ".*snooker.*", "local_authority": { "$ne": "Caerphilly" } }`. The projection is: `{ "fsa_id": 1, "name": 1, "address.city": 1, "local_authority": 1 }`. The sort is: `"address.city": 1`. The result is displayed in a table view with 14 documents. The right sidebar shows the 'Match all (\$and)' filter and the 'Projection' section.

fsa_id	name	address	city (address.city)	local_authority
5d34c5b4098c0...	TERRY GRIFFITH...	(1 fields)	Llanelli	Cardamarthenshire
5d34c5ae098c00...	SNOOKER WOR...	(1 fields)	Ammanford	Cardamarthenshire
5d34c5ae098c00...	Snooker and Cu...	(1 fields)	Porth	Rhondda Cynon...
5d34c5ae098c00...	Snooker 147 Ltd	(1 fields)	Llandudno	Conwy
5d34c5ad098c00...	Skewen Snooke...	(1 fields)	Neath	Neath Port Talbot
5d34c5ad098c00...	Scala Pool And ...	(1 fields)	Merthyr Tydfil	Merthyr Tydfil
5d34c5ab098c00...	Redz Snooker CL...	(1 fields)	Cwmbran	Torfaen
5d34c5aa098c00...	Penarth Road S...	(1 fields)	Cardiff	Cardiff
5d34c5a7098c0...	Mark Williams S...	(1 fields)	Tredegar	Blaenau Gwent

# lesson 5 exercise 3

Studio 3T for MongoDB - Full product trial

File Edit Database Collection Index Document GridFS View Help

Connect Collection IntelliShell SQL Aggregate Query Profiler Compare Schema Reschema Tasks Export Import Data Masking SQL Migration Users Roles Feedback

Search open connections (Ctrl+F)

Open connections

- Collections (2)
- british\_pubs
- welsh\_pubs
- GridFS Buckets (0)
- System (0)
- Views (0)

Operations

- 2024-10-10 16:49:20: Export - Unsaved Task
- Exporting 1 unit finished: 1 completed suc
- Total time: 00:00:02.479
- 2024-10-10 16:47:59: Export - Unsaved Task
- Exporting 1 unit finished: 1 completed suc
- Total time: 00:00:02.483

My resources

Quickstart x Welcome to Studio 3T x welsh\_pubs x Aggregation: welsh\_pubs\* x CSV Import\* x british\_pubs x Export\* x

jimmyson2004 > atlas-yifbi...a-shard-0 > pubs > welsh\_pubs > \$group\*

Run Load query Save query Query history Copy Paste AI Helper Options

Pipeline + Add stage

Operator: \$match Stage 1 Rename stage

Stage 1: \$match

1 {

2 "name" : /.\*/i

3 }

Lin 1, Col 1

Pipeline output Stage input/output Query Code Explain

Stage 1: Input

Stage 1: Output

Output > fsa\_id

id	fsa_id	name	address	address (address.adr...
525017	525017	Black Horse	(4 fields)	Black Horse Inn...
5d34c59d098c0...	502620	BLACK HORSE	(4 fields)	Black Horse Inn...
5d34c59d098c0...	502621	BLACK HORSE L...	(4 fields)	Pentre-Cwrt, Ula...
5d34c59e098c0...	511916	Coach & Horses	(4 fields)	41 Cross Street, ...
5d34c59e098c0...	517390	Coach & Horses	(4 fields)	Cwmcrawnon R...

1 document selected

Count Documents 00:00:00.099

Studio 3T for MongoDB - Full product trial

File Edit Database Collection Index Document GridFS View Help

Connect Collection IntelliShell SQL Aggregate Query Profiler Compare Schema Reschema Tasks Export Import Data Masking SQL Migration Users Roles Feedback

Search open connections (Ctrl+F)

Open connections

- pubs
- Collections (1)
- welsh\_pubs
- GridFS Buckets (0)
- System (0)
- Views (0)

My resources

Quick Share requests (0)

Shared folder invites (0)

Local resources

- My connections (1)
- My SQL connections (0)
- My queries (1)

Operations

Quickstart x Welcome to Studio 3T x welsh\_pubs x Aggregation: welsh\_pubs\* x

jimmyson2004 > atlas-yifbi...a-shard-0 > pubs > welsh\_pubs > \$group\*

Run Load query Save query Query history Copy Paste AI Helper Options

Pipeline + Add stage

Operator: \$project Stage 3 Rename stage

Stage 1: \$match

Stage 2: \$group

Stage 3: \$project

Stage 4: \$sort

1 {

2 "local\_authority" : "\$id.local\_authority",

3 "amount" : {

4 \$sum: "\$address.address\_adr...

5 }

6 }

Lin 1, Col 1

Pipeline output Stage input/output Query Code Explain

Stage 3: Input

Stage 3: Output

Output > amount

local_authority	amount
Blaenau Gwent	2
Rhondda Cynon ...	1
Vale of Glamorgan	7
Bridgend	3
Newport	2
Cwmcrawnon R...	2

1 document selected

Count Documents 00:00:00.056

Studio 3T for MongoDB - Full product trial

FileEditDatabaseCollectionIndexDocumentGridFSViewHelp

ConnectCollectionIntelliShellSQLAggregateQuery ProfilerCompareSchemaReschemaTasksExportImportData MaskingSQL MigrationUsersRolesFeedback

QuickstartWelcome to Studio 3Twelsh\_pubsAggregation: welsh\_pubsCSV Import\*british\_pubsExport\*

jimmyson2004atlas-yifbi...a-shard-0pubswelsh\_pubs\$group\*

RunLoad querySave queryQuery historyCopyPasteAI HelperOptions

PipelineAdd stageOperator: \$sortStage 4Rename stage

Stage 1: \$match

Stage 2: \$group

Stage 3: \$project

Stage 4: \$sort

1 {

2 "amount" : NumberInt(-1)

3 }

Lin 1, Col 1

Pipeline outputStage input/outputQuery CodeExplain

Stage 4: InputStage 4: Output

Output > amount

local_authority	amount
Powys	9
Vale of Glamorgan	7
Monmouthshire	5
Wrexham	3
Pembrokeshire	3
Bridgend	3

1 document selectedCount Documents00:00:00.049

Open connections

Search open connections (Ctrl+F)

Collections (2)  
british\_pubs  
welsh\_pubs  
GridFS Buckets (0)  
System (0)  
Views (0)

Operations

My resources

Operations

2024-10-10 16:49:20: Export - Unsaved Task  
Exporting 1 unit finished: 1 completed suc  
Total time: 00:00:02.479

atlas-yifbia-shard-0 (jimmyson2004@pasc  
Exporting from 1 source done  
Total time: 00:00:02.478

pubs.british\_pubs@atlas-yifbia-shard-0  
Export finished  
4,091 document(s) exported.  
Total time: 00:00:02.227

2024-10-10 16:47:59: Export - Unsaved Task  
Exporting 1 unit finished: 1 completed suc  
Total time: 00:00:02.483

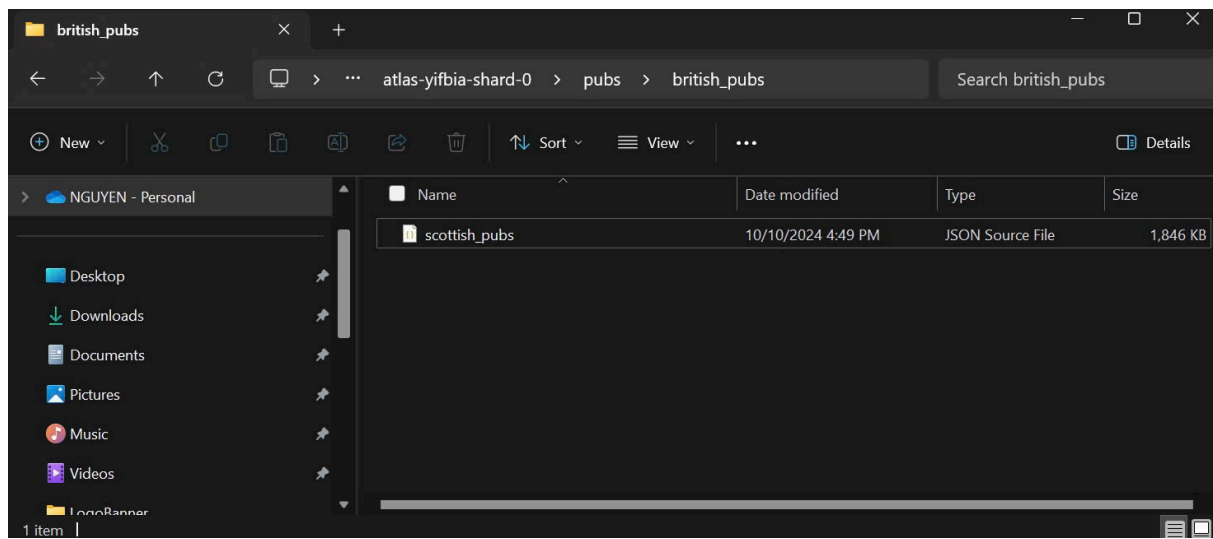
atlas-yifbia-shard-0 (jimmyson2004@pasc

89°F  
Mostly cloudy

Search

4:59 PM  
10/10/2024

## lesson 6 exercise 2



## Conclusion

NoSQL databases are designed to handle large volumes of data that might be unstructured or semi-structured, unlike traditional relational databases which require a predefined schema. NoSQL databases offer flexibility and scalability, making them suitable for modern applications that need to handle large, changing datasets. There are several types of NoSQL databases, including document-based, key-value, column-family, and graph databases.

**MongoDB**, the most popular NoSQL database, is a **document-oriented** database that stores data in **JSON-like documents** (BSON format). MongoDB is schema-flexible, meaning each document in a collection doesn't need to have the same structure, which allows for storing complex data types and relationships in a more fluid manner. Collections are analogous to tables in relational databases, and documents are similar to rows but without strict schema enforcement.

MongoDB's key advantage is its **scalability** and the ability to handle large datasets across distributed systems. MongoDB allows for **horizontal scaling** through sharding, making it a suitable choice for applications with large amounts of unstructured data.

The screenshots show how Studio 3T helps visualize MongoDB data through features like **Visual Query Builder** and **Aggregation Pipelines**. The Visual Query Builder simplifies the querying process by allowing you to drag and drop fields, filter data, and project results. Aggregation pipelines provide an efficient way to process data by using multiple stages like **\$match**, **\$group**, and **\$sort**, making it easier to query and analyze complex datasets.

Overall, MongoDB is a versatile, flexible, and scalable NoSQL database ideal for applications requiring high flexibility and dynamic data handling.