

MongoDB

Studio 3T

MongoDB is a high performance, flexible, and scalable NoSQL database system designed to efficiently manage a variety of data types and structures, providing an adaptive and intuitive solution for modern data-driven applications

Task 4.1

_id	fkg_id	name	address	contact	location	local_authority
Sd44c5a3098c00...	505219	HOPE B ANC...				Cammarthenshire
Sd44c5a3098c00...	515732	Hope B Ancho...				Pembrokeshire
Sd44c5a3098c00...	515952	Hopkinstown ...				Flounda Cyn...
Sd44c5a3098c00...	524166	Horse B Gro...				Valle of Glam...
Sd44c5a3098c00...	511466	Horse B Gro...				Merthyr Tydfil
Sd44c5a3098c00...	515733	Horse B Jocky...				Pembrokeshire
Sd44c5a3098c00...	517862	Horse B Jocky...				Powys
Sd44c5a3098c00...	521385	Horse And Jec...				Wrexham
Sd44c5a3098c00...	512080	Horsehoe Inn				Torfaen
Sd44c5a3098c00...	514238	Hot Rocks				Newport
Sd44c5a3098c00...	517870	Hundred House				Powys
Sd44c5a3098c00...	517871	Hundred House				Powys
Sd44c5a3098c00...	497061	Hunters Lodge				Strigmond
Sd44c5a3098c00...	512083	Hunters Moss				Monmouthshire
Sd44c5a3098c00...	521828	Isle				Somerset
Sd44c5a3098c00...	505236	ISCLINE RH				Cammarthenshire
Sd44c5a3098c00...	502338	Isle in the Strick				Cammarthenshire
Sd44c5a3098c00...	512080	Isle Between				Monmouthshire
Sd44c5a3098c00...	495545	Isorwerth				Valle of Angl...
Sd44c5a3098c00...	515730	Isle Duke Hotel				Pembrokeshire
Sd44c5a3098c00...	496221	Isomide RFC				Blanaau Gwent
Sd44c5a3098c00...	496222	Isomides				Blanaau Gwent
Sd44c5a3098c00...	514247	Isord Tufem				Newport
Sd44c5a3098c00...	496295	Isorwyll				Caerphilly
Sd44c5a3098c00...	496296	Isorwyll Maes...				Caerphilly
Sd44c5a3098c00...	496298	Isor Arms				Caerphilly
Sd44c5a3098c00...	500584	Isor Davies				Candff
Sd44c5a3098c00...	518986	Isor Haul House				Flounda Cyn...

Task 4.3

Query

Result

Query Code

Explain

Documents 1 to 14

Table View

• _id	• fsa_id	• name	• address	• city (address.city)	• local_authority
5d34c59d098c00...	496704	Brackla Snooke...	{ 1 fields }	Bridgend	Bridgend
5d34c59f098c00...	519623	Cue Snooker C...	{ 1 fields }	Aberdare	Rhondda Cymo...
5d34c59f098c00...	505774	Cues Snooker ...	{ 1 fields }	Abergele	Conwy
5d34c5a1098c00...	519791	Frames Snooke...	{ 1 fields }	Pontyclun	Rhondda Cymo...
5d34c5a7098c00...	513206	Mackworth Sn...	{ 1 fields }	Port Talbot	Neath Port Tal...
5d34c5a7098c00...	496273	Mark Williams ...	{ 1 fields }	Tredegar	Blaenau Gwent
5d34c5aa098c00...	524471	Penarth Road S...	{ 1 fields }	Cardiff	Cardiff
5d34c5ab098c00...	523504	Redz Snooker ...	{ 1 fields }	Cwmbran	Torfaen
5d34c5ac098c00...	511630	Scala Pool And...	{ 1 fields }	Merthyr Tydfil	Cardiff
5d34c5ad098c00...	513462	Skewen Snook...	{ 1 fields }	Neath	Cardiff
5d34c5ae098c00...	506555	Snooker 147 Ltd	{ 1 fields }	Llandudno	Conwy
5d34c5ae098c00...	520608	Snooker and C...	{ 1 fields }	Porth	Rhondda Cymo...
5d34c5b4098c00...	503923	TERRY GRIFFIT...	{ 1 fields }	Llanelli	Cardiff

Query

Match all (and)

Where

And

Projection

Sort

Task 4.4

welsh_pubs > local_authority						
• _id	• fsa_id	• name	• address	• city (address.city)	• local_authority	
5d34c59d098c00...	496704	Brackla Snooke...	{ 1 fields }	Bridgend	Wales Snooker	
5d34c59f098c00...	519623	Cue Snooker C...	{ 1 fields }	Aberdare	Wales Snooker	
5d34c59f098c00...	505774	Cues Snooker ...	{ 1 fields }	Abergele	Wales Snooker	
5d34c5a1098c00...	519791	Frames Snooke...	{ 1 fields }	Pontyclun	Wales Snooker	
5d34c5a7098c00...	513206	Mackworth Sn...	{ 1 fields }	Port Talbot	Wales Snooker	
5d34c5a7098c00...	496273	Mark Williams ...	{ 1 fields }	Tredegar	Wales Snooker	
5d34c5aa098c00...	524471	Penarth Road S...	{ 1 fields }	Cardiff	Wales Snooker	
5d34c5ab098c00...	523504	Redz Snooker ...	{ 1 fields }	Cwmbran	Wales Snooker	
5d34c5ac098c00...	511630	Scala Pool And...	{ 1 fields }	Merthyr Tydfil	Wales Snooker	
5d34c5ad098c00...	513462	Skewen Snook...	{ 1 fields }	Neath	Wales Snooker	
5d34c5ae098c00...	506555	Snooker 147 Ltd	{ 1 fields }	Llandudno	Wales Snooker	
5d34c5ae098c00...	520608	Snooker and C...	{ 1 fields }	Porth	Wales Snooker	
5d34c5ae098c00...	503823	TERRY GRIFFIT...	{ 1 fields }	Ammanford	Wales Snooker	
5d34c5b4098c00...	503923	TERRY GRIFFIT...	{ 1 fields }	Llanelli	Wales Snooker	

Task 5.1

```
1 select *
2 from welsh_pubs;
3 select local_authority
4 from welsh_pubs
5 group by local_authority
6 order by count(*) desc;
```

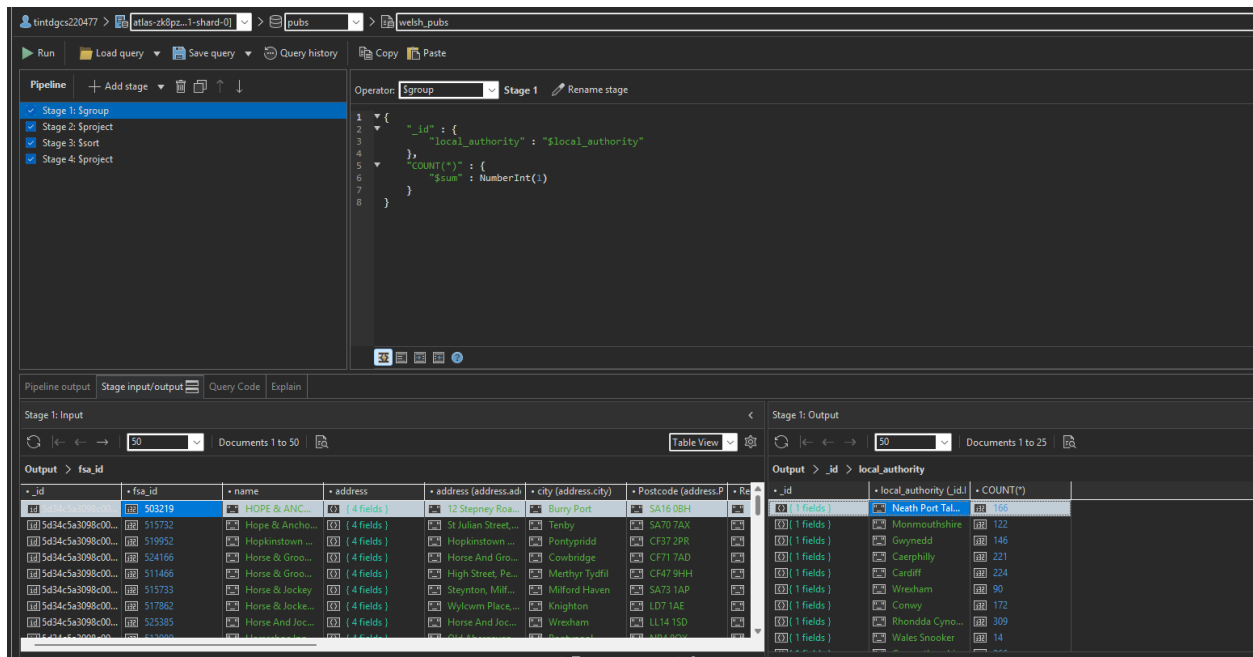
Result SQL Query Query Code Explain

50 Documents 1 to 25

Result > local_authority

local_authority
Rhondda Cynon...
Carmarthenshire
Cardiff
Caerphilly
Swansea
Conwy
Neath Port Talbot
Bridgend
Powys
Pembrokeshire
Gwynedd
Vale of Glamorg...
Monmouthshire
Newport
Blaenau Gwent

Task 5.2



Operator: \$group Stage 1

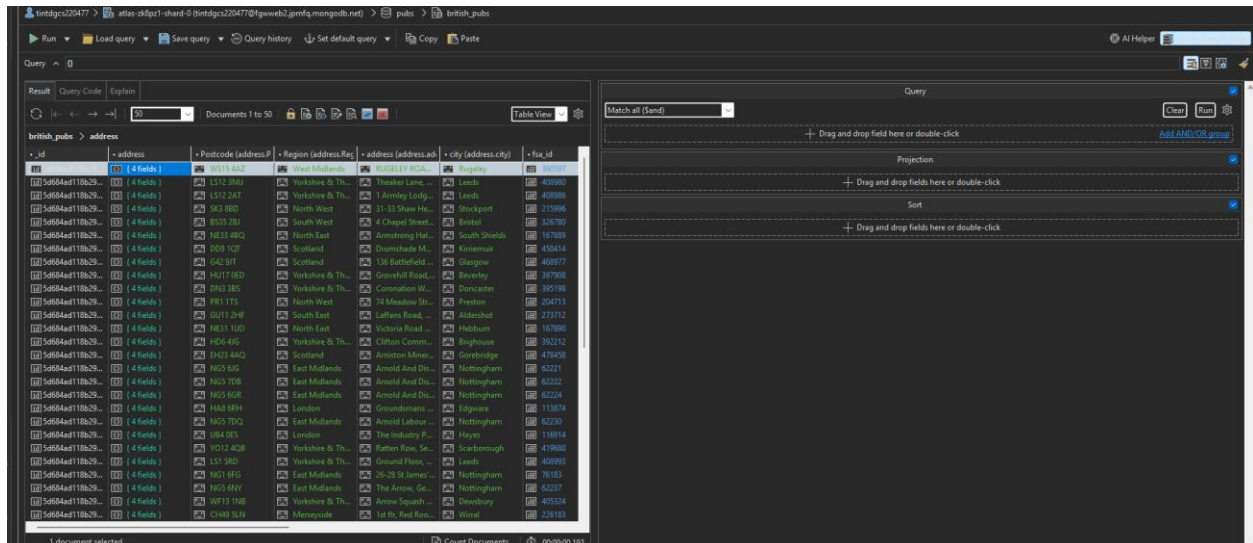
```
1 {
2   "_id": {
3     "local_authority": "$local_authority"
4   },
5   "COUNT(*)": {
6     "$sum": NumberInt(1)
7   }
8 }
```

Stage 1: Input

Stage 1: Output

_id	local_authority (lid)	COUNT(*)
5d34c5a3098c00...	Neath Port Tal...	122
5d34c5a3098c00...	Monmouthshire	146
5d34c5a3098c00...	Gwynedd	221
5d34c5a3098c00...	Cardiff	224
5d34c5a3098c00...	Wrexham	90
5d34c5a3098c00...	Conwy	172
5d34c5a3098c00...	Rhondda Cymo...	309
5d34c5a3098c00...	Wales Snooker	14

Task 5.3



Operator: \$group Stage 1



```
1 {
2   "_id": {
3     "local_authority": "$local_authority"
4   },
5   "COUNT(*)": {
6     "$sum": NumberInt(1)
7   }
8 }
```

Stage 1: Input

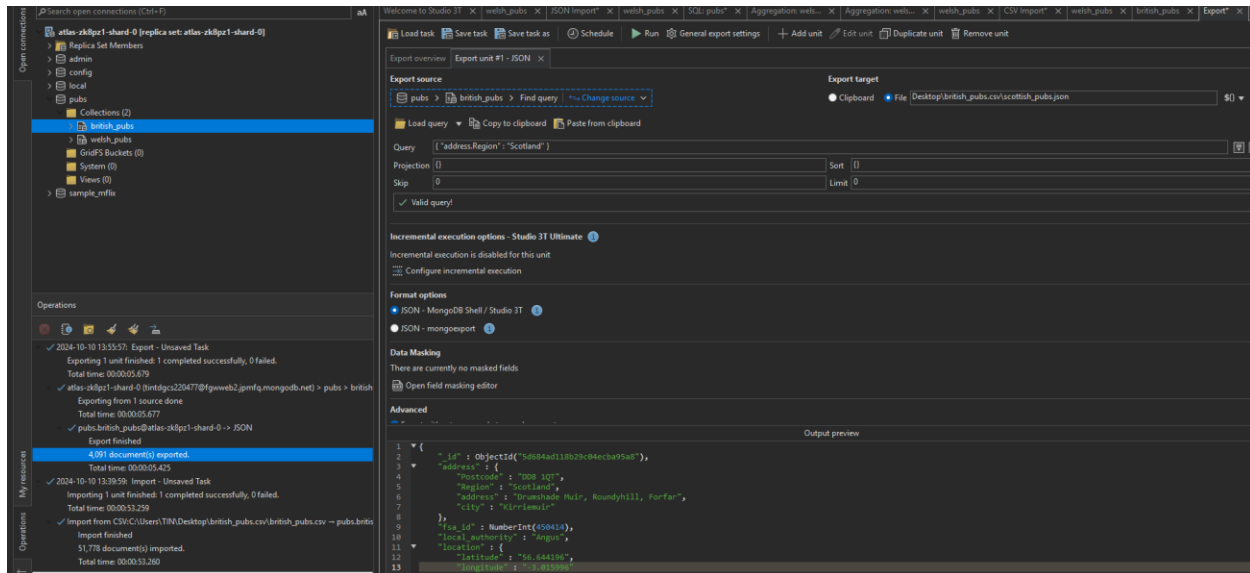
Stage 1: Output

_id	local_authority (lid)	COUNT(*)
5d34c5a3098c00...	Neath Port Tal...	122
5d34c5a3098c00...	Monmouthshire	146
5d34c5a3098c00...	Gwynedd	221
5d34c5a3098c00...	Cardiff	224
5d34c5a3098c00...	Wrexham	90
5d34c5a3098c00...	Conwy	172
5d34c5a3098c00...	Rhondda Cymo...	309
5d34c5a3098c00...	Wales Snooker	14

Task 6.1

 british_pubs.csv	10/25/2019 1:31 PM	Excel.CSV	8,929 KB
 scottish_pubs	10/10/2024 1:55 PM	JSON Source File	1,846 KB

Task 6.2



The screenshot displays the MongoDB Studio 3T Ultimate interface. On the left, the 'Open connections' panel shows a connection to 'atlas-xkfp1-shard-0 [replica set: atlas-xkfp1-shard-0]' with a tree view of databases and collections. The 'Operations' panel on the left shows a list of tasks, including an export task for 'pubs' to 'british_pubs' and an import task for 'pubs' from 'british_pubs'. The main workspace shows the configuration for an export task. The 'Export source' is set to 'pubs' with a query of '["address.Region": "Scotland"]'. The 'Export target' is set to 'File' with the path 'Desktop/british_pubs/scottish_pubs.json'. The 'Format options' are set to 'JSON - MongoDB Shell / Studio 3T'. The 'Data Masking' section indicates there are currently no masked fields. The 'Advanced' section shows the 'Output preview' of the JSON data, which includes fields like '_id', 'address', 'postcode', 'region', 'address', 'city', 'isa_id', 'local_authority', 'location', and 'longitude'.

MongoDB is a super-flexible, document-oriented NoSQL database that stores data in JSON-like structures. It organizes data in a hierarchy, starting with databases, then collections, documents, and finally fields within those documents. The `_id` field is the primary key for every document, and I can even embed documents within documents, treated as Object data types. MongoDB's files are created the first time I add data. It's a powerful tool for handling complex and varied data structures.