MongoDB Data Analytics Portfolio

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Student ID: C2650218
Course: Computer Science (Year 2)
Assignment: Relational and NO SQL Databases (Task 2)

Topic 1: Start Here - Intro to MongoDB

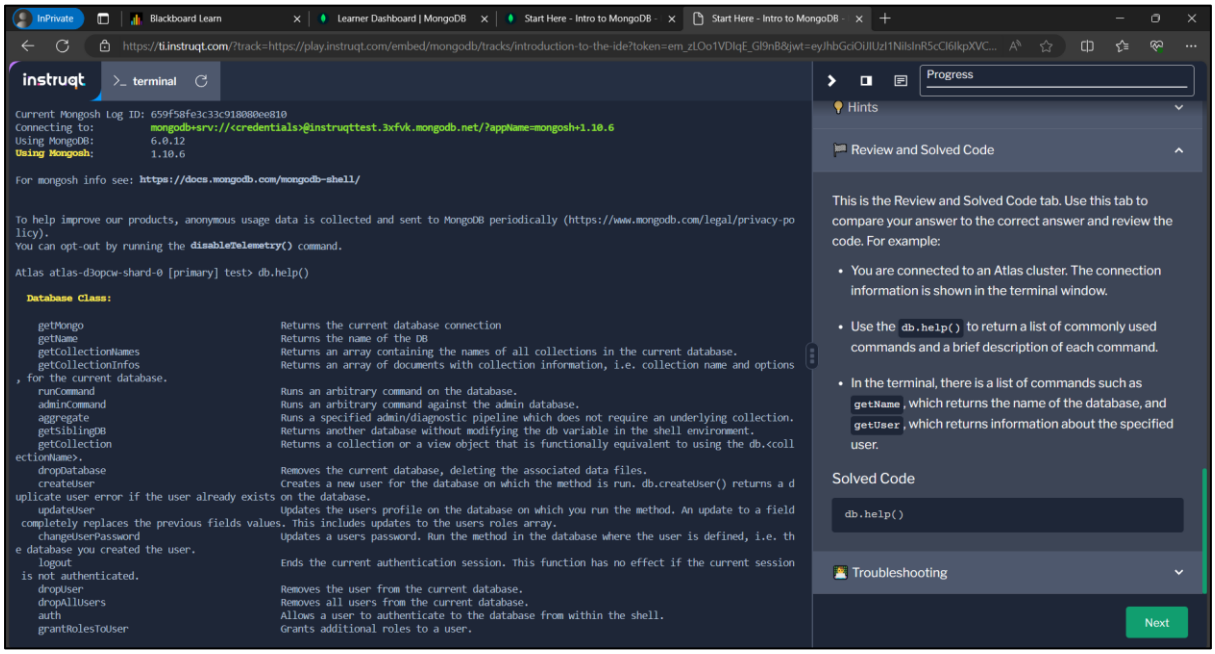

Figure 1: Introducing MongoDB Lab

Using the online MongoDb lab and using the ‘db.help()’ function to view the list of commands available.

Topic 2: Getting Started with MongoDB Atlas

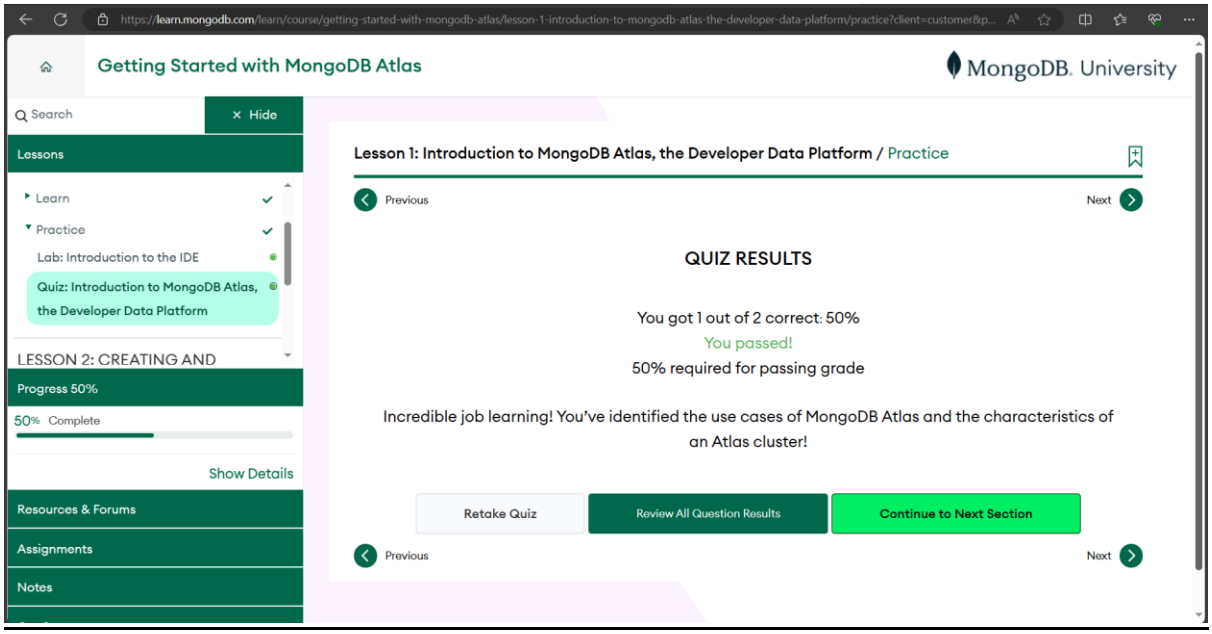

Figure 2.1: Quiz 1 results in Topic 2

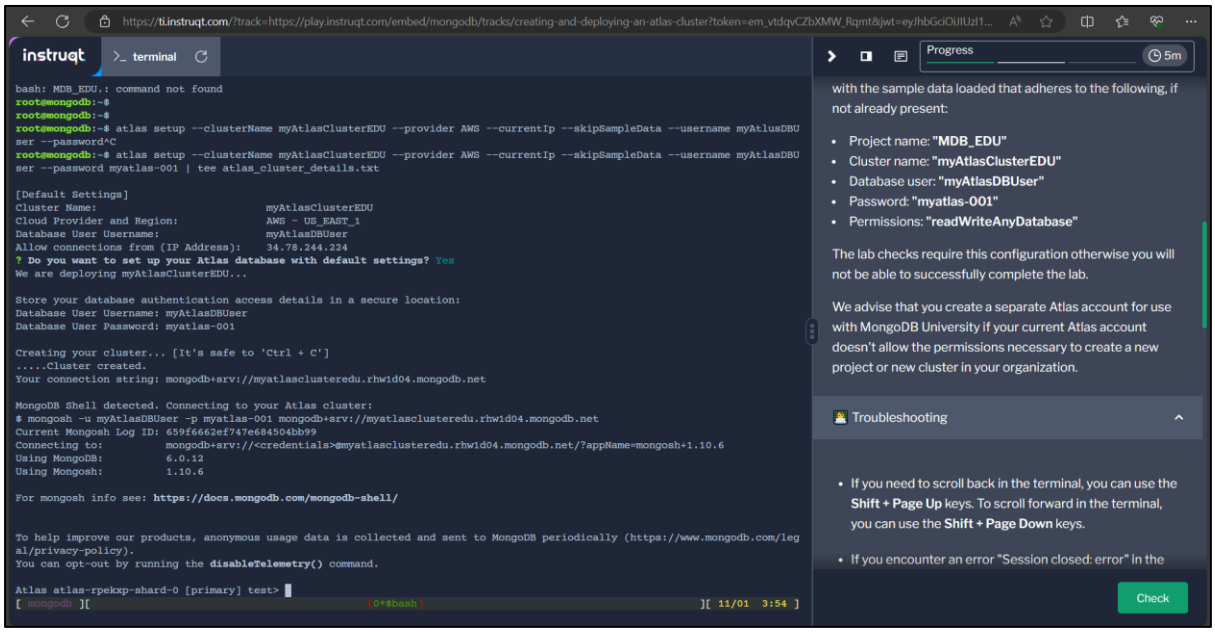

Figure 2.2: Lab on Creating a Cluster

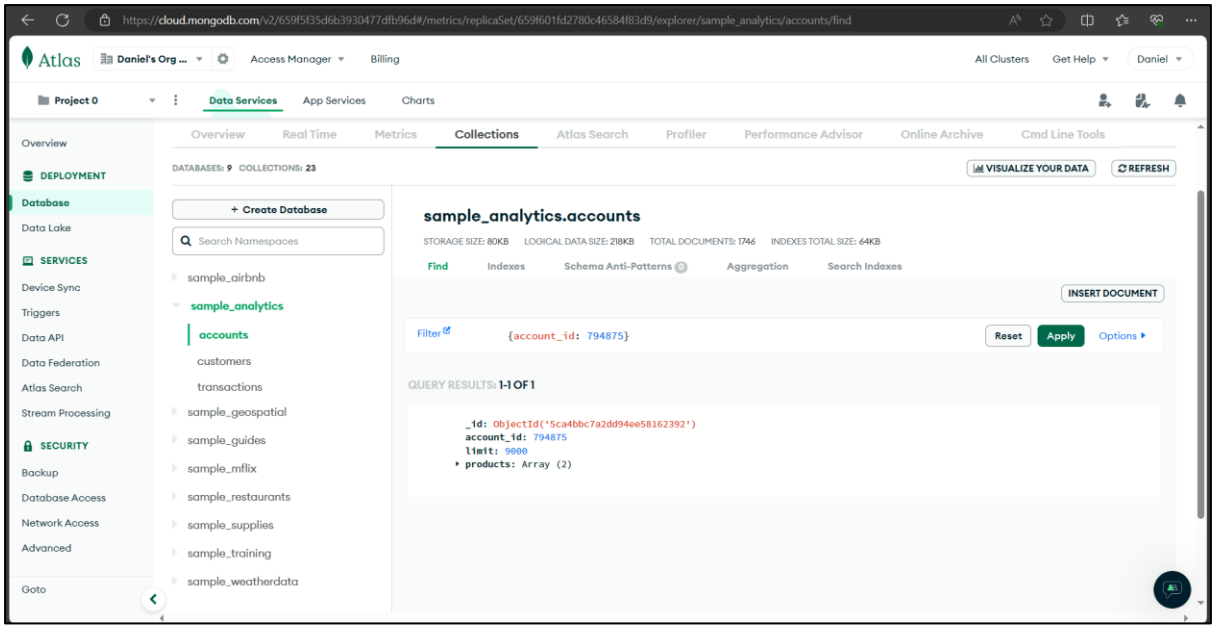

Figure 2.3: Explore sample data with Atlas Data Explorer

Figure 2.4: Topic 2 Proof of Completion

Topic 3: MongoDB and the Document Model

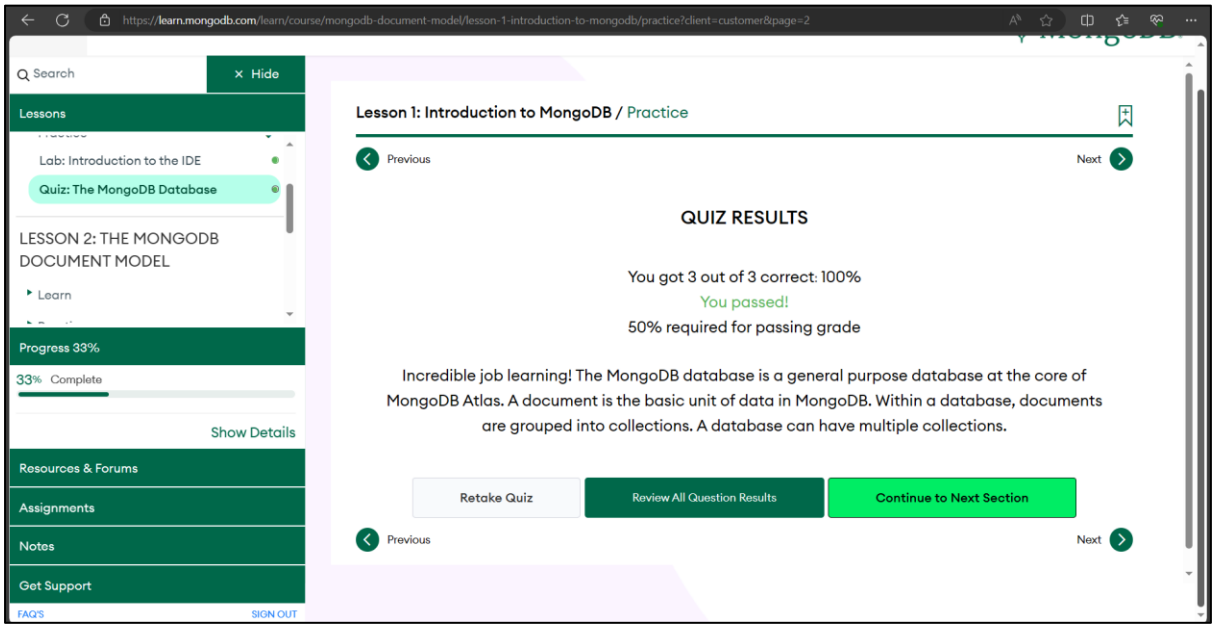

Figure 3.1: Quiz 1 results for Topic 3

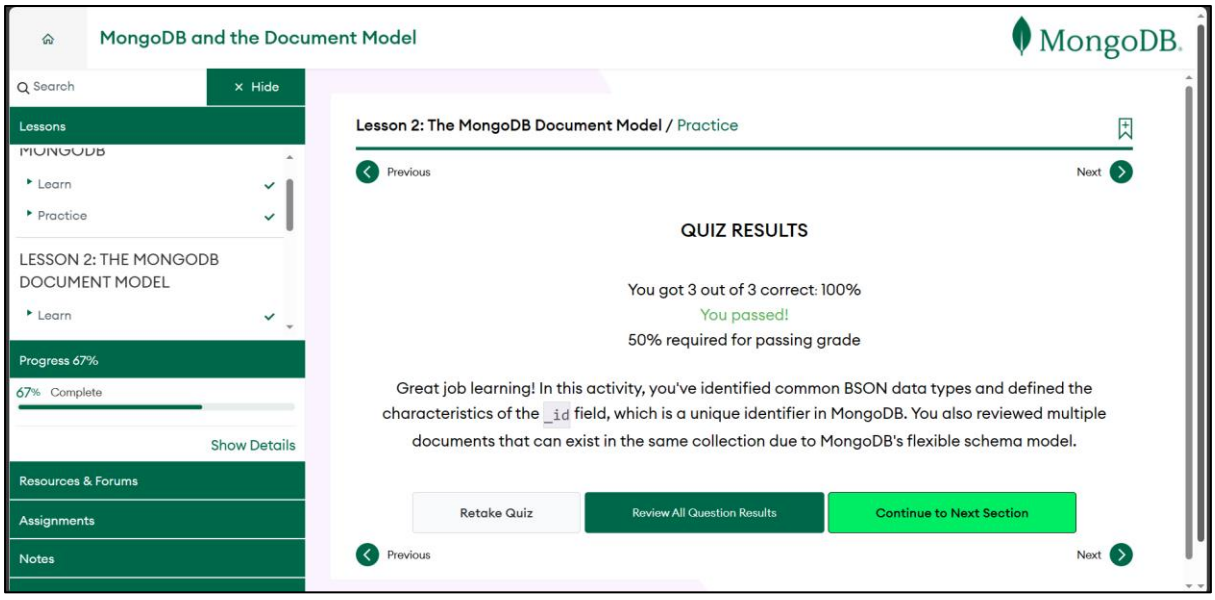

Figure 3.2: Quiz 2 results for Topic 3

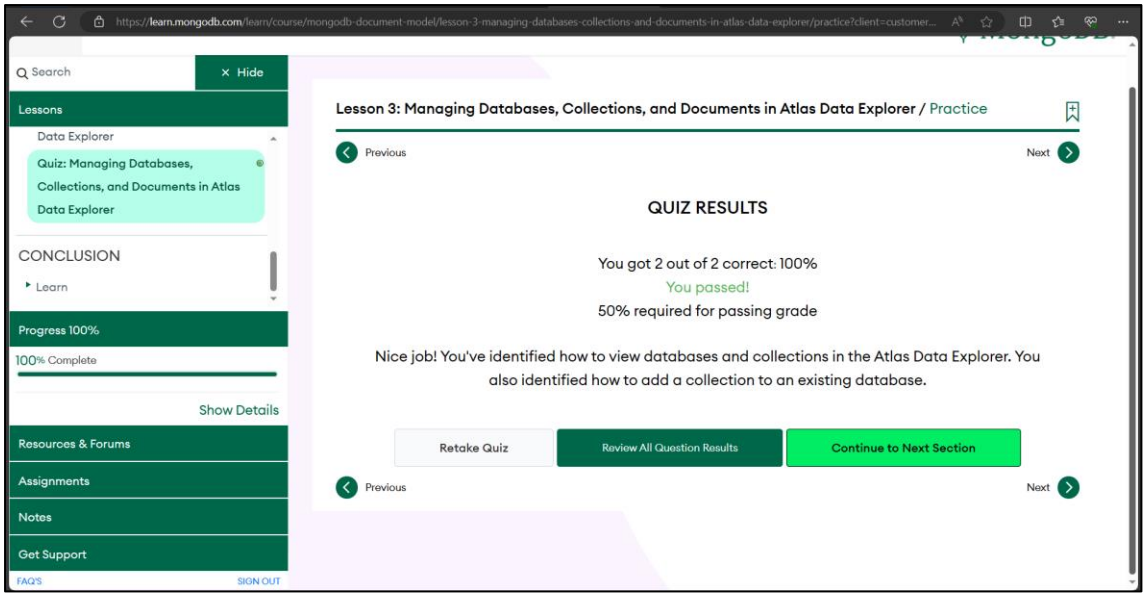

Figure 3.3: Quiz 3 results for Topic 3

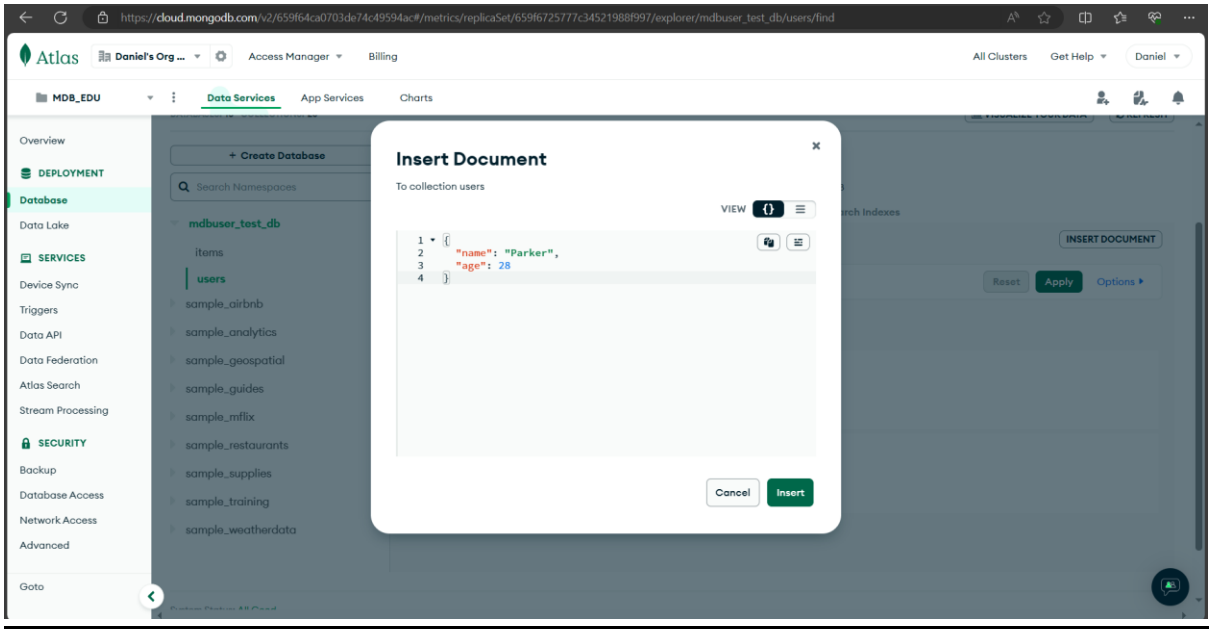

Figure 3.4: Inserting document into a database

Figure 3.5: Topic 3 Proof of Completion

Topic 4: Connecting to a MongoDB Database

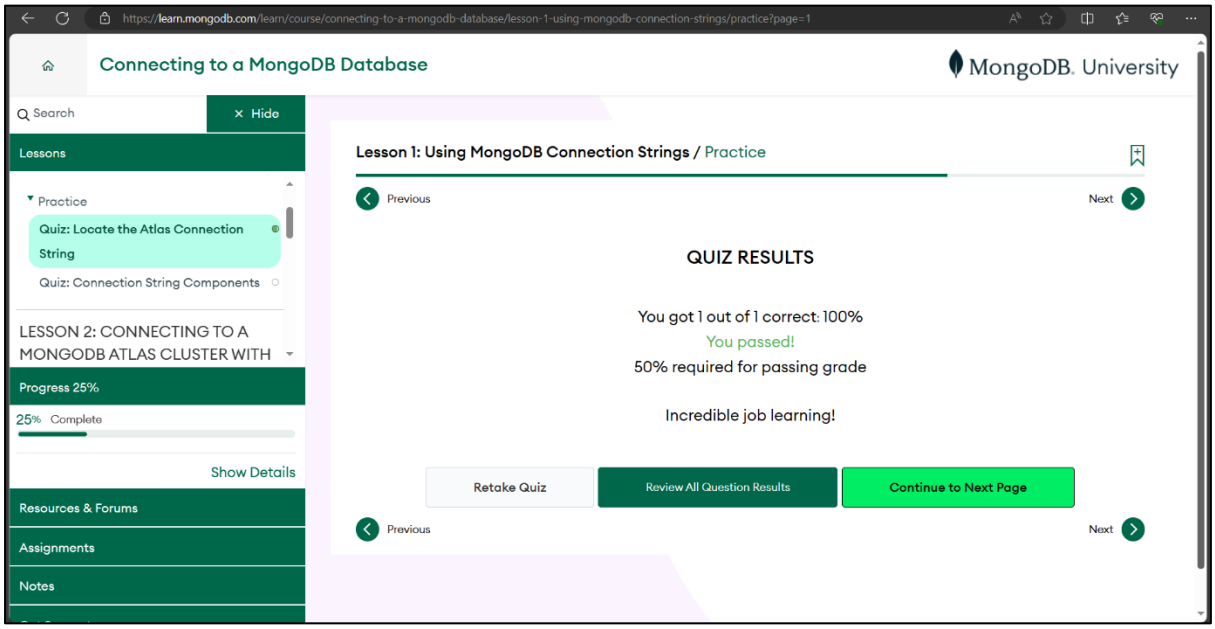

Figure 4.1: Quiz 1 results for Topic 4

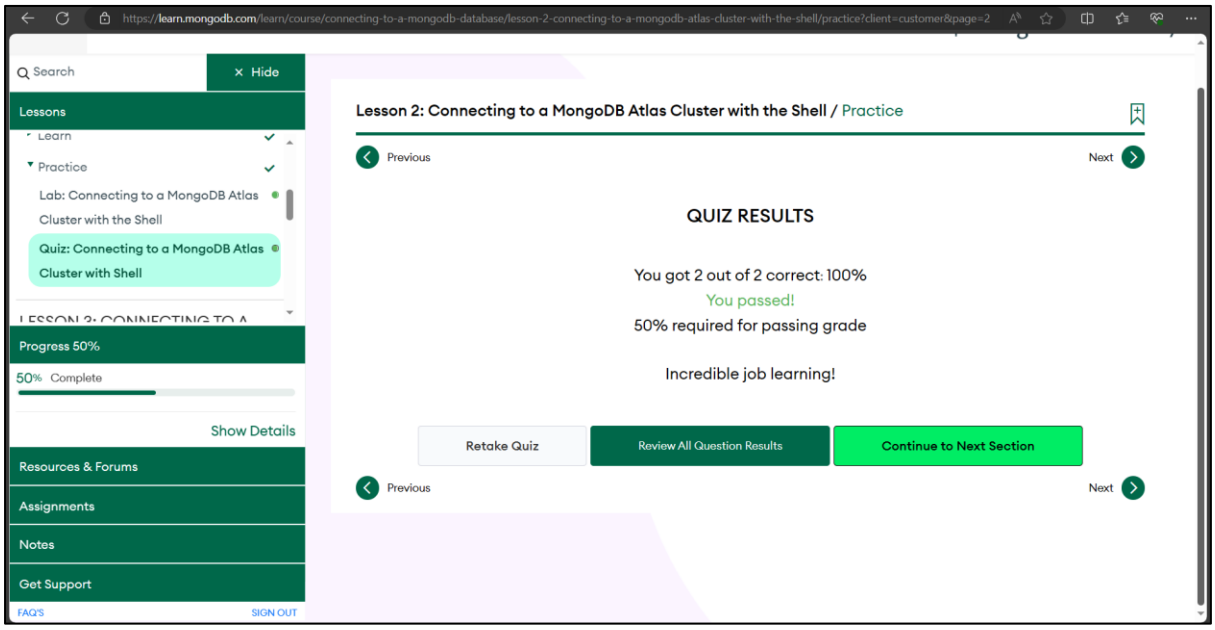

Figure 4.2: Quiz 2 results for Topic 4

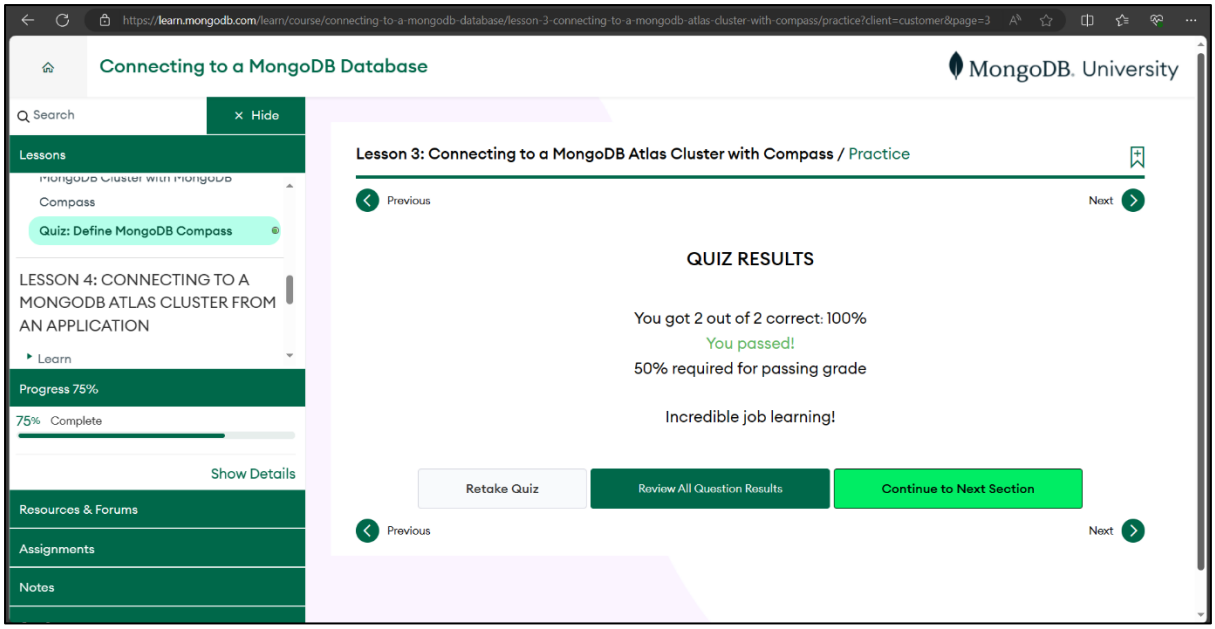

Figure 4.3: Quiz 3 results for Topic 4

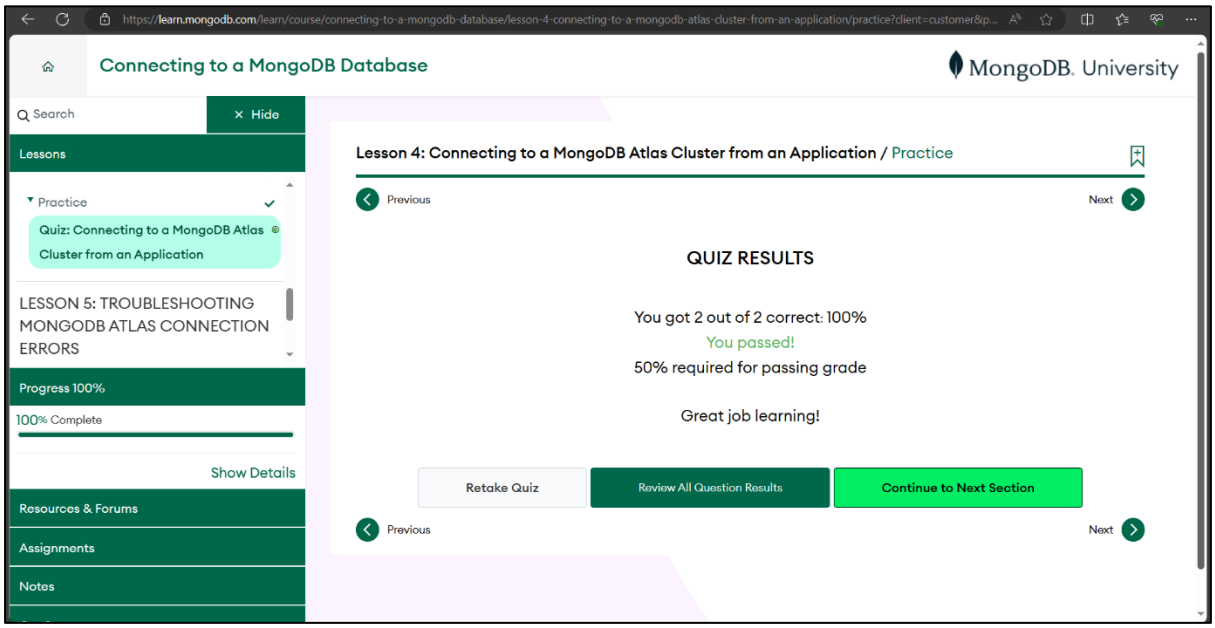

Figure 4.4: Quiz 4 results for Topic 4

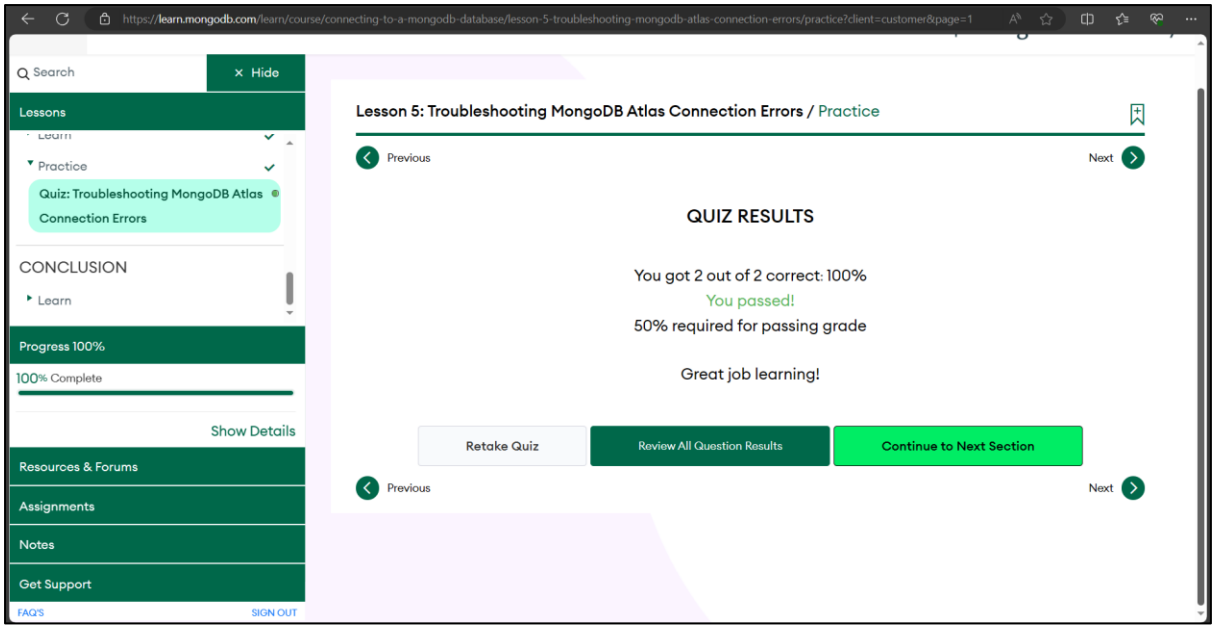

Figure 4.5: Quiz 5 results for Topic 4

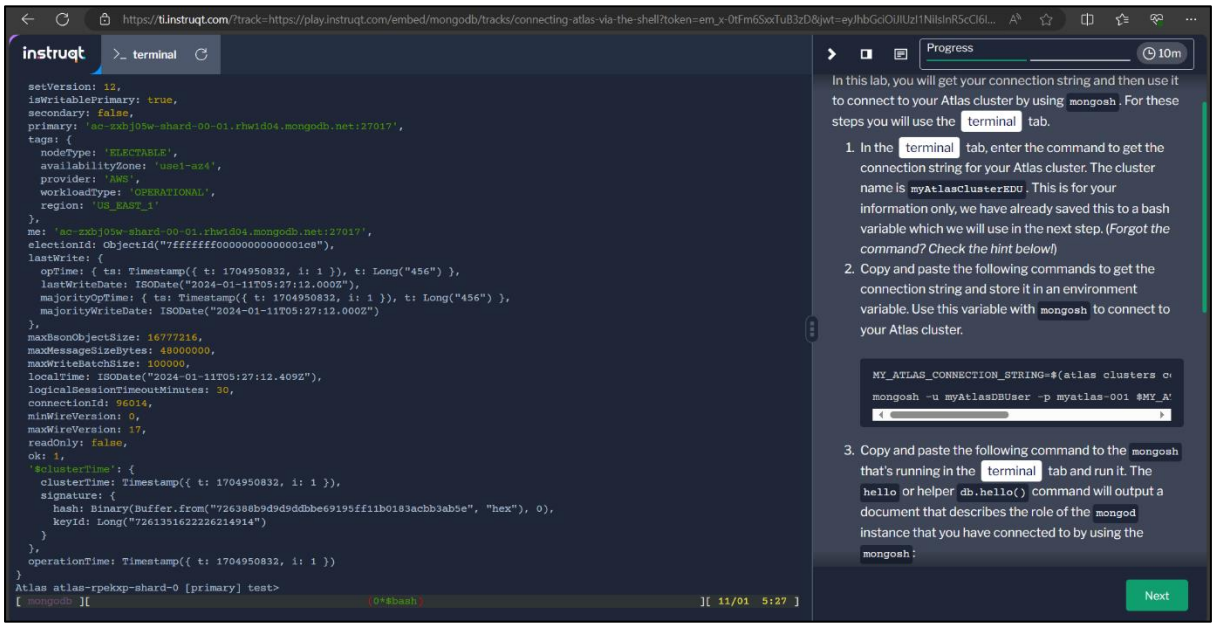

Figure 4.6: Lab on Connecting to your Atlus Cluster

Entering the command ‘db.hello()’ will then output a document that describes the role of the instance that you have just connected to.

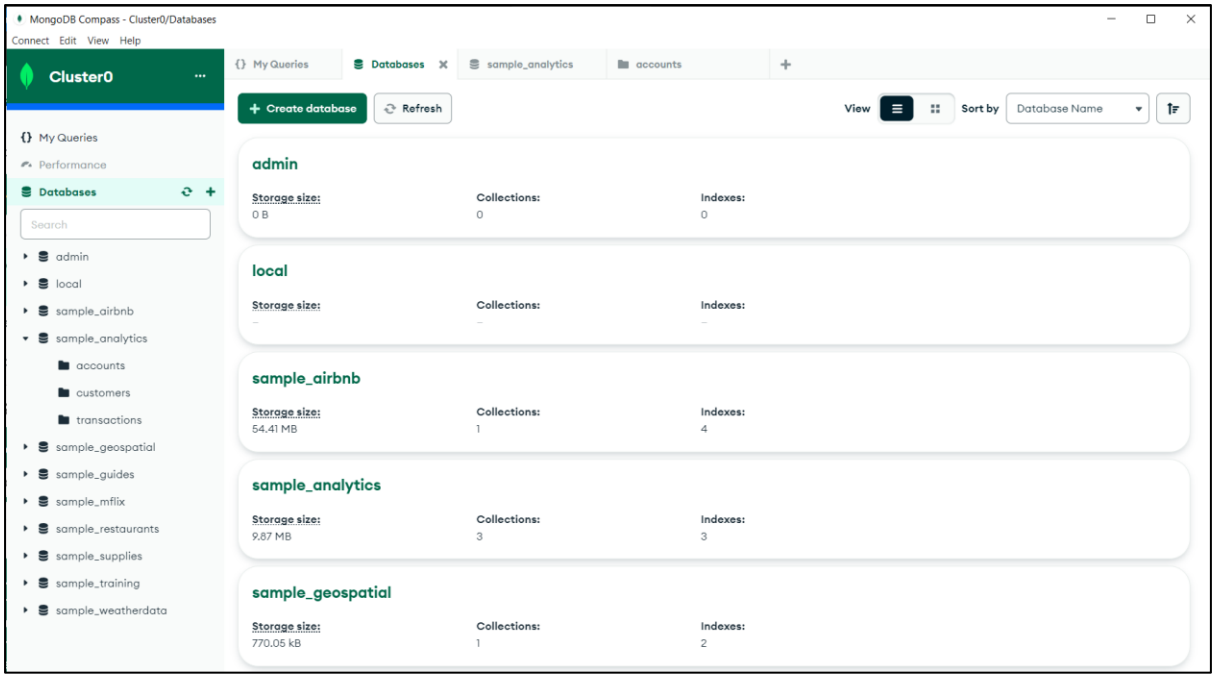

Figure 4.7: Download MongoDB Compass and Connect Cluster to it

Figure 4.8: Topic 4 Proof of Completion

Topic 5: MongoDB CRUD Operations: Insert and Find Documents

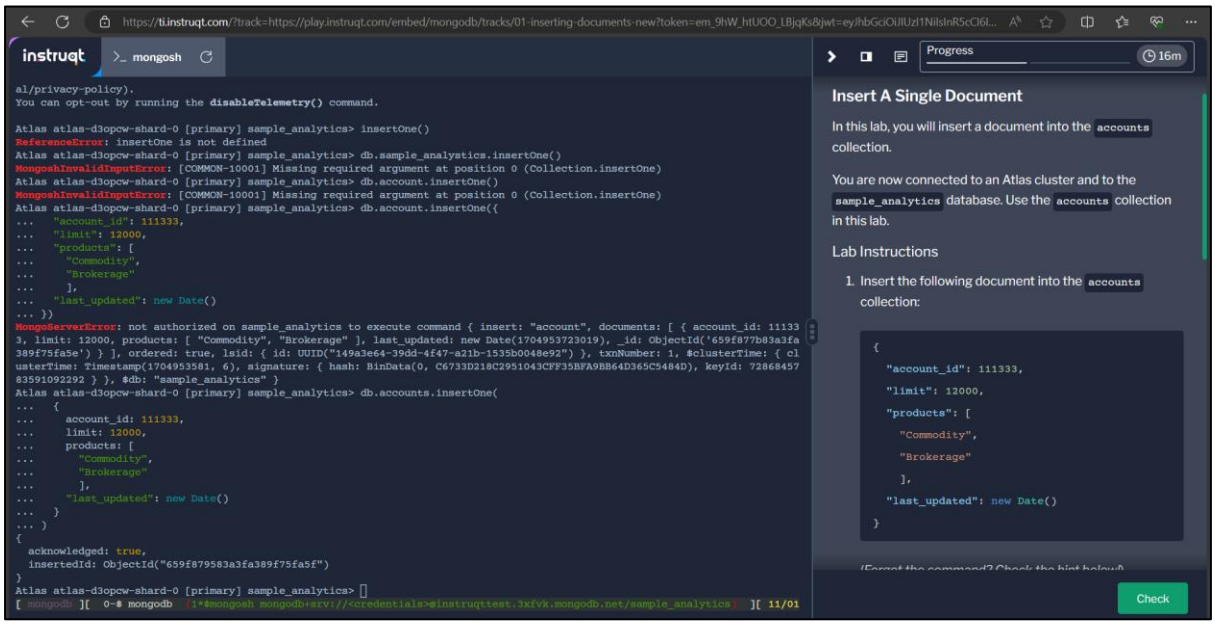

Figure 5.1: Inserting One Document with insertOne()

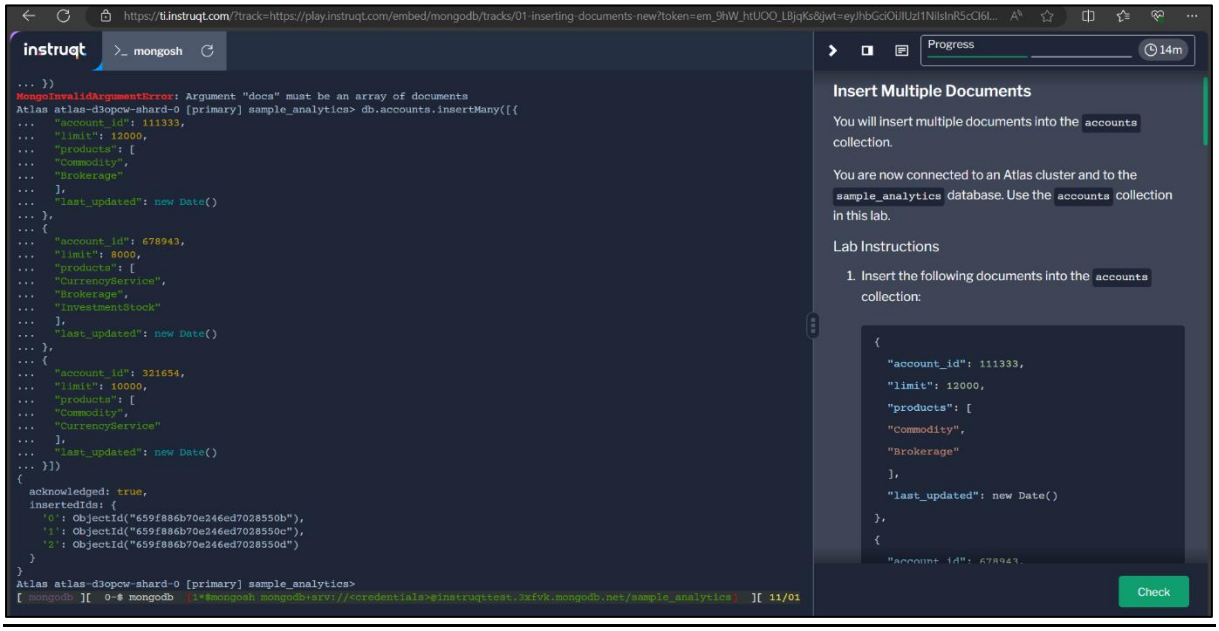

Figure 5.2: Inserting Many Documents with insertMany()

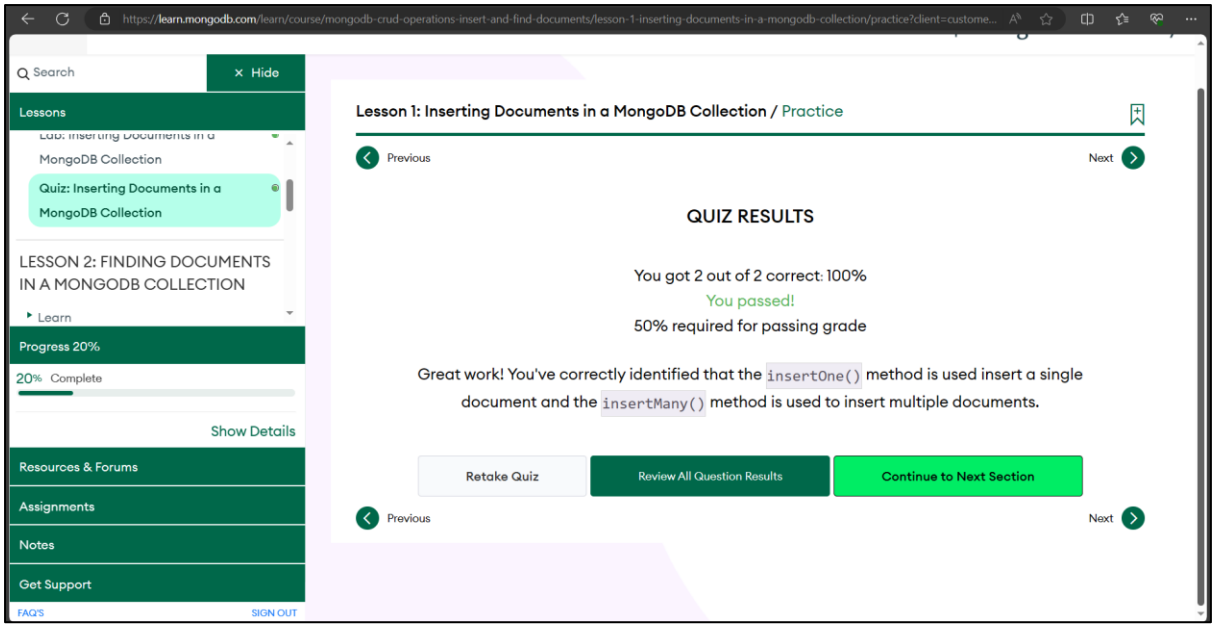

Figure 5.3: Quiz 1 Results for Topic 5

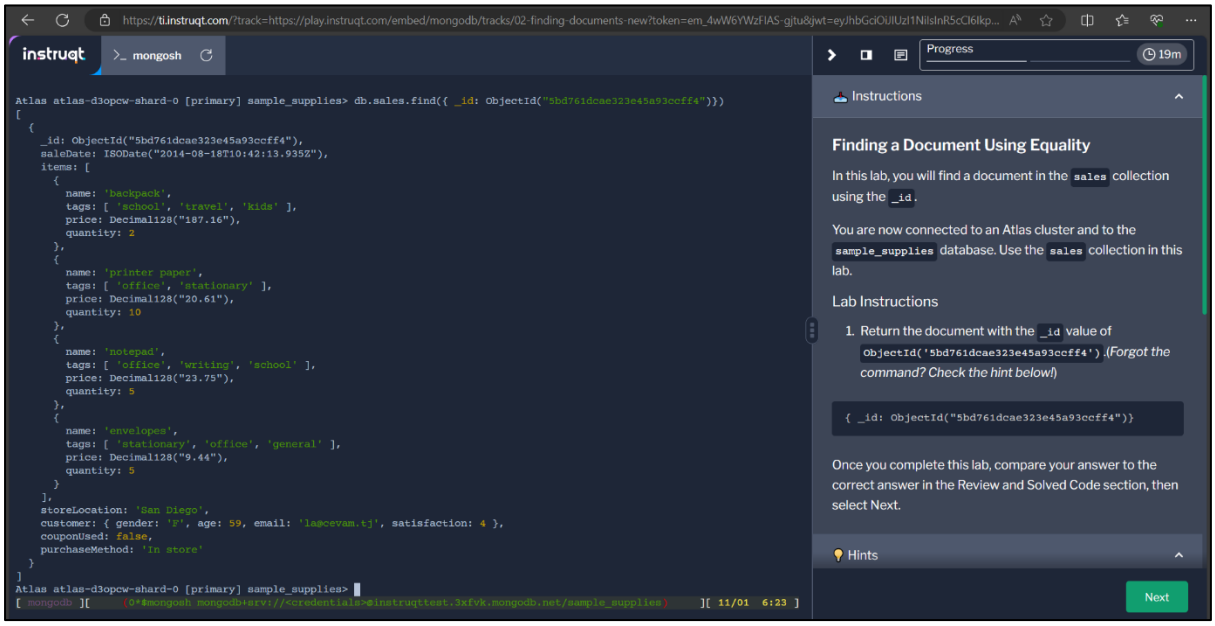

Figure 5.4: Finding a Document Using Equality

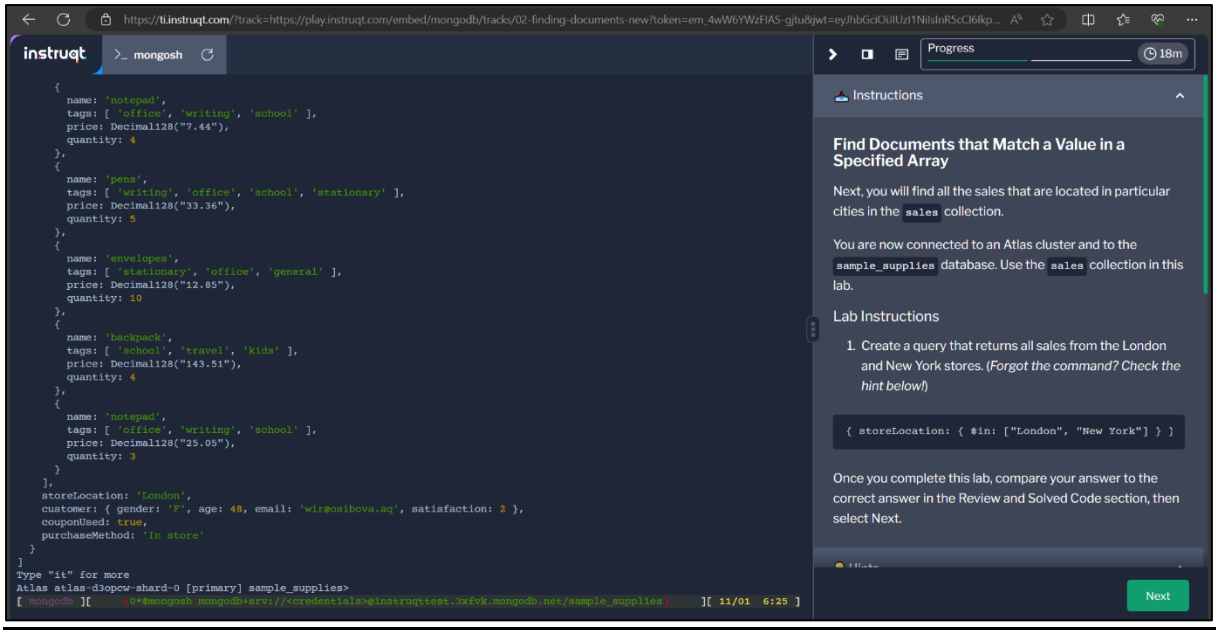

Figure 5.5: Finding a Document with Matching Values Using $in

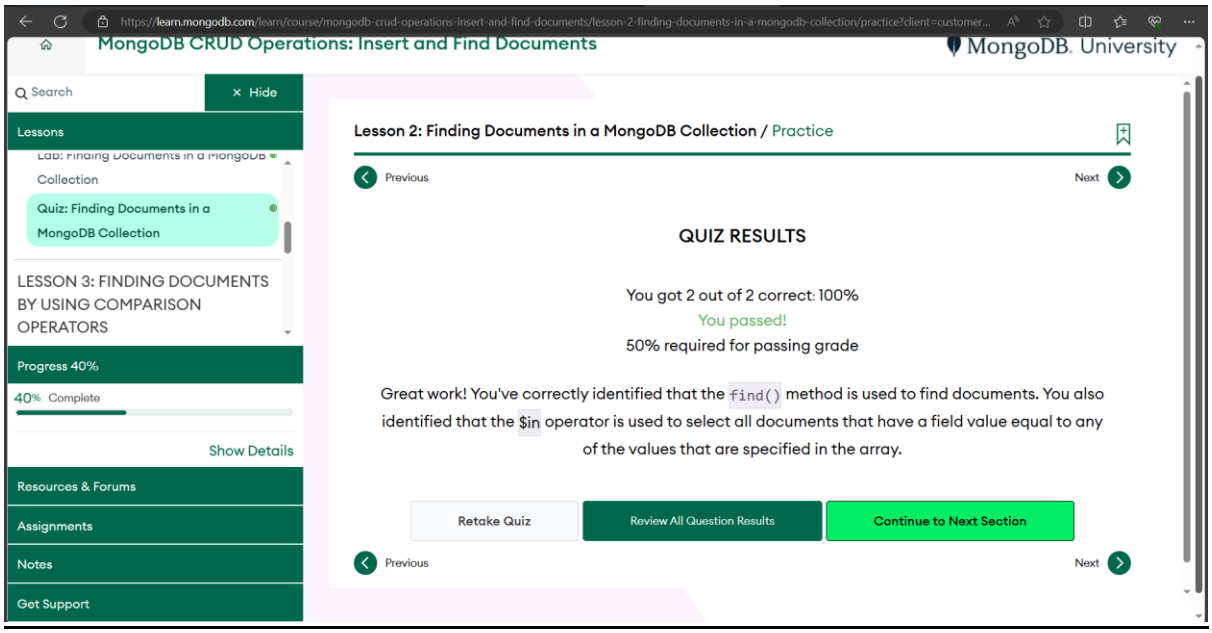

Figure 5.6: Quiz 2 Results for Topic 5

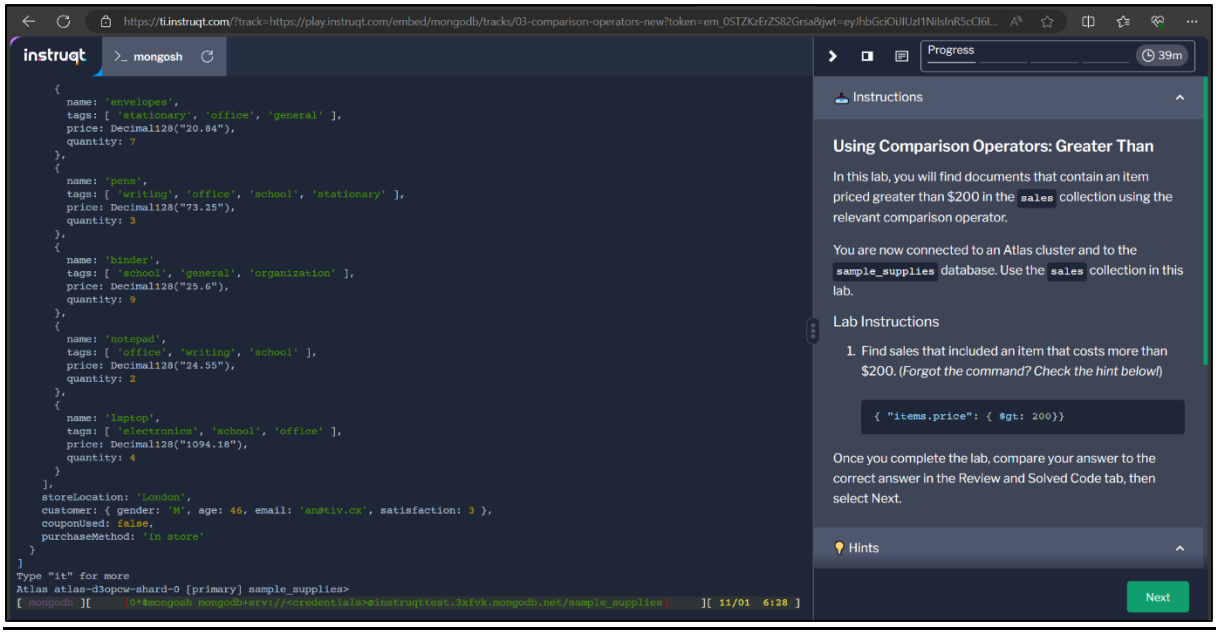

Figure 5.7: Using Greater Than Operator $gt

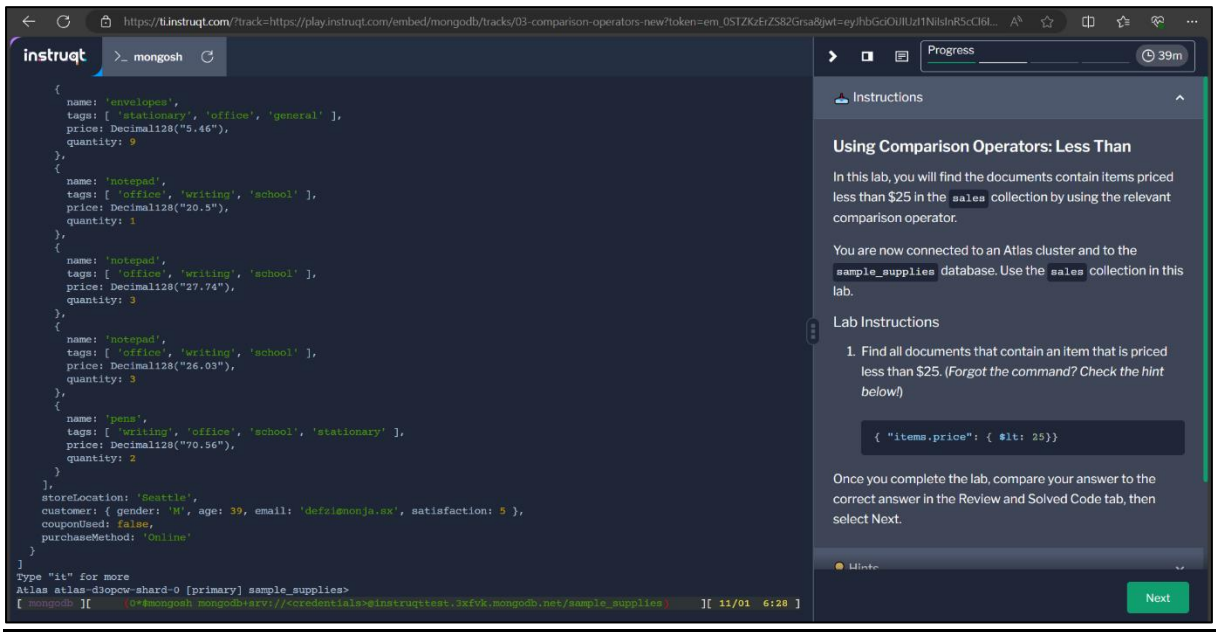

Figure 5.8: Using Less Than Operator $lt

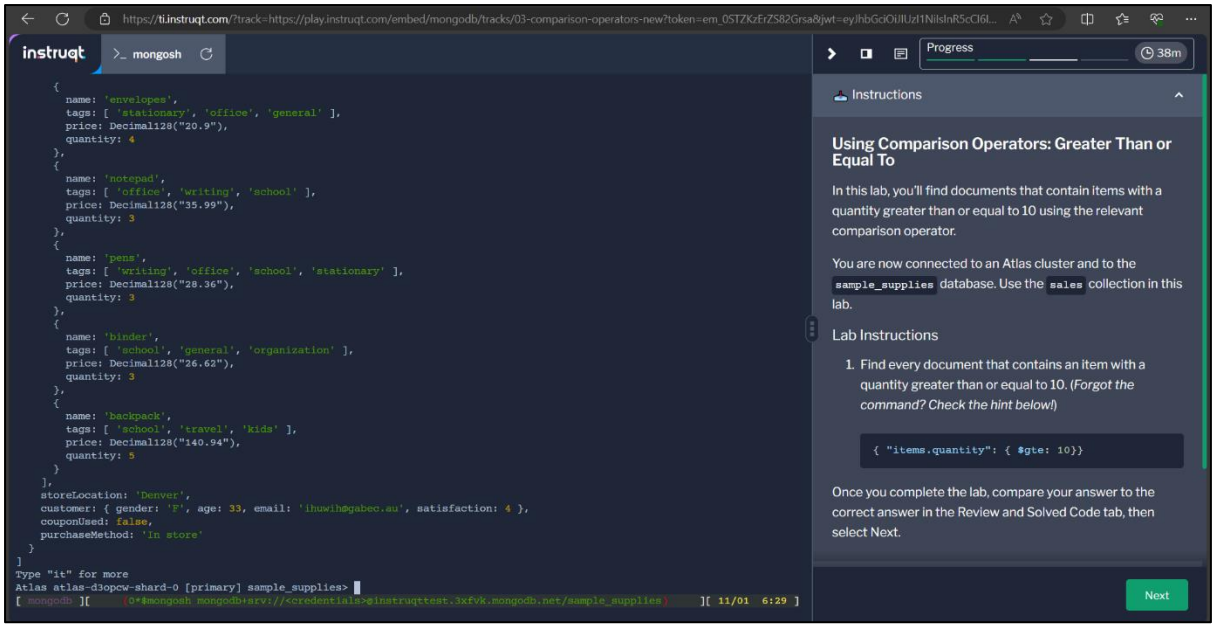

Figure 5.9: Using Greater Than or Equal Operator $gte

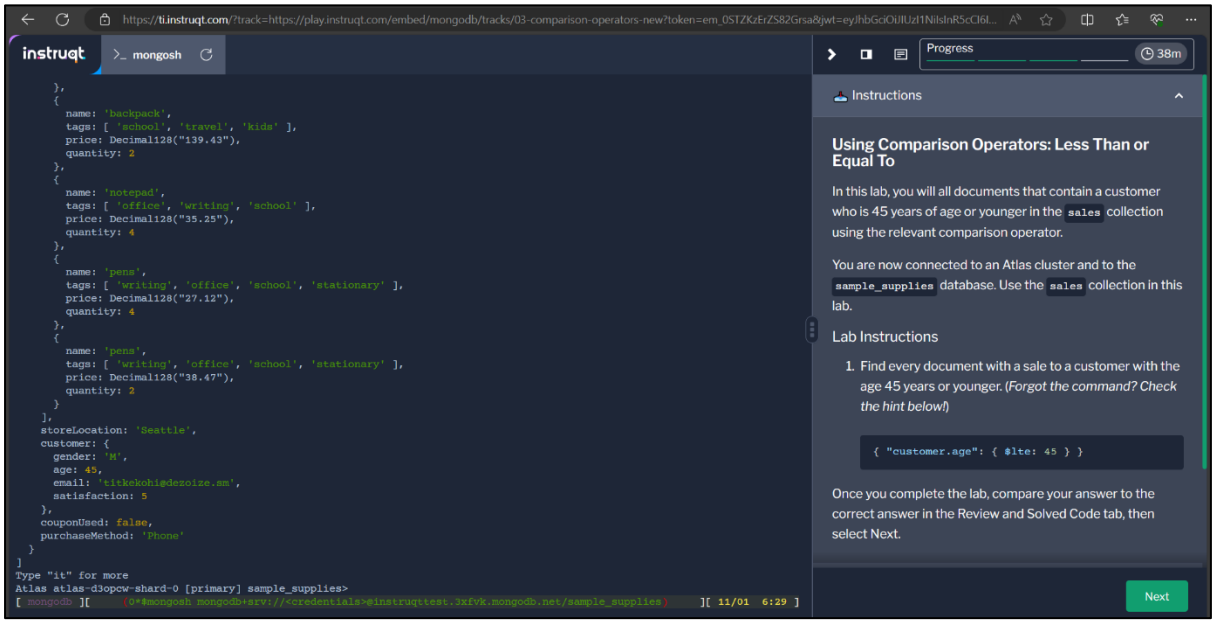

Figure 5.10: Using Less Than or Equal Operator $lte

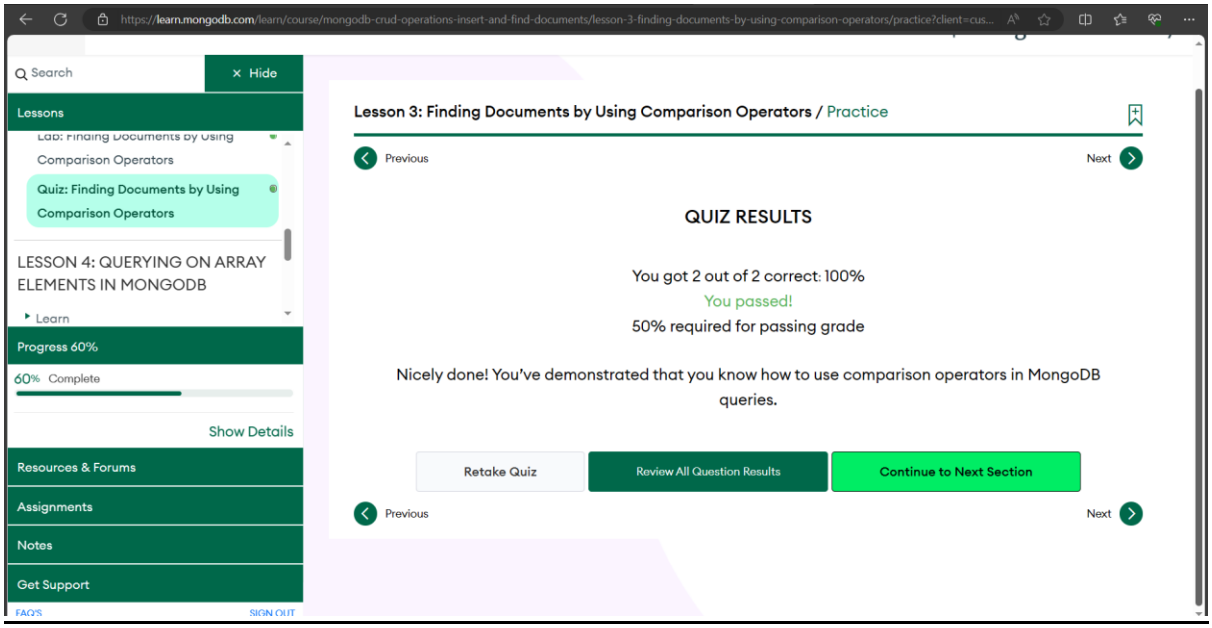

Figure 5.11: Quiz 3 Result for Topic 5

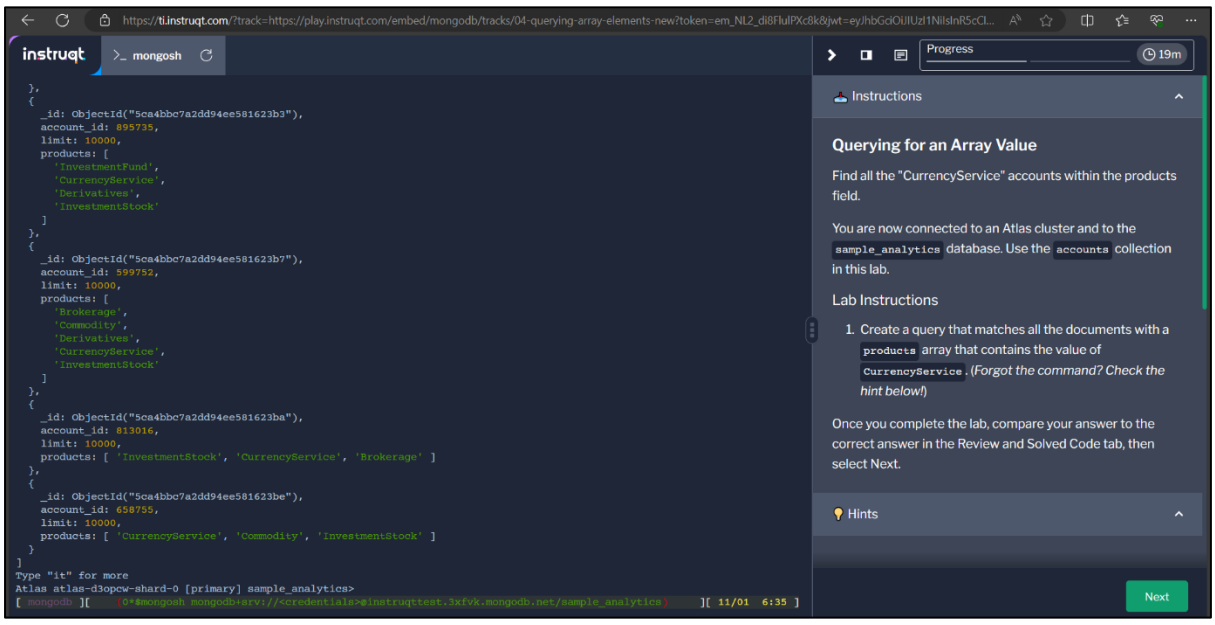

Figure 5.12: Querying for an Array Value

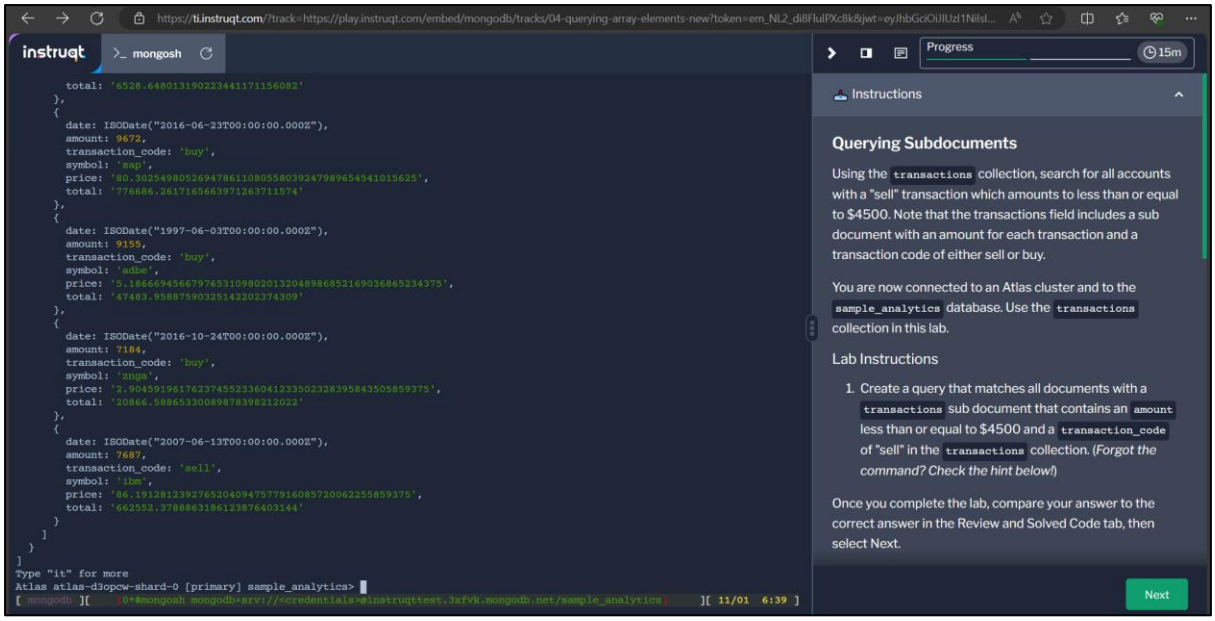

Figure 5.13: Querying Subdocuments

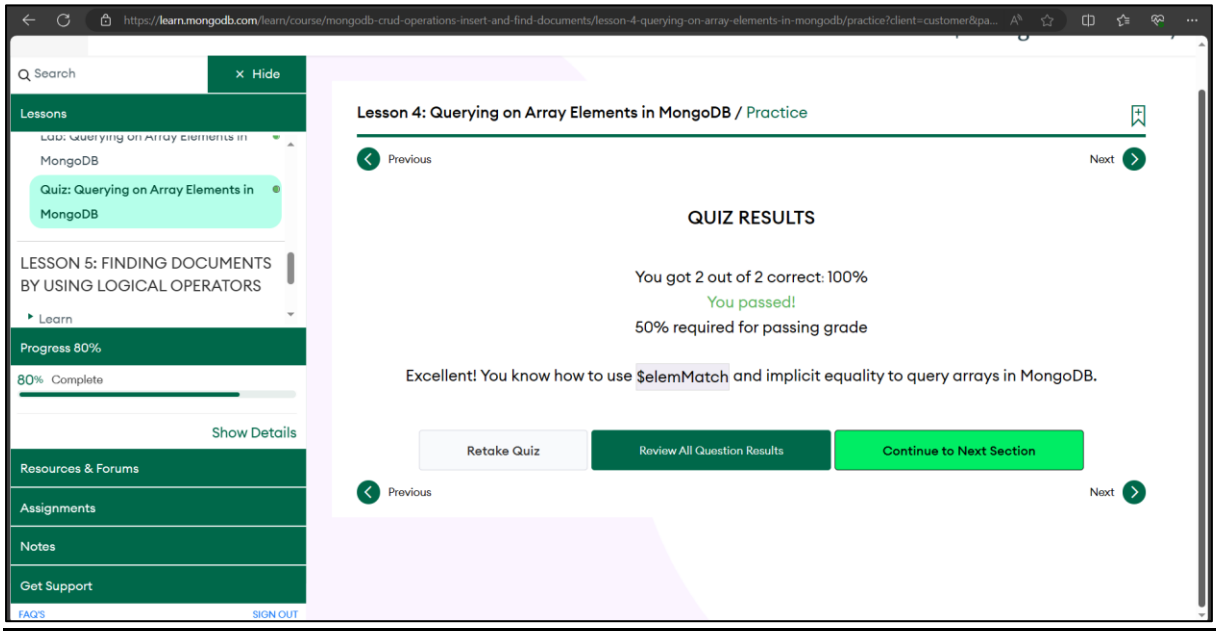

Figure 5.14: Quiz 4 Results for Topic 5

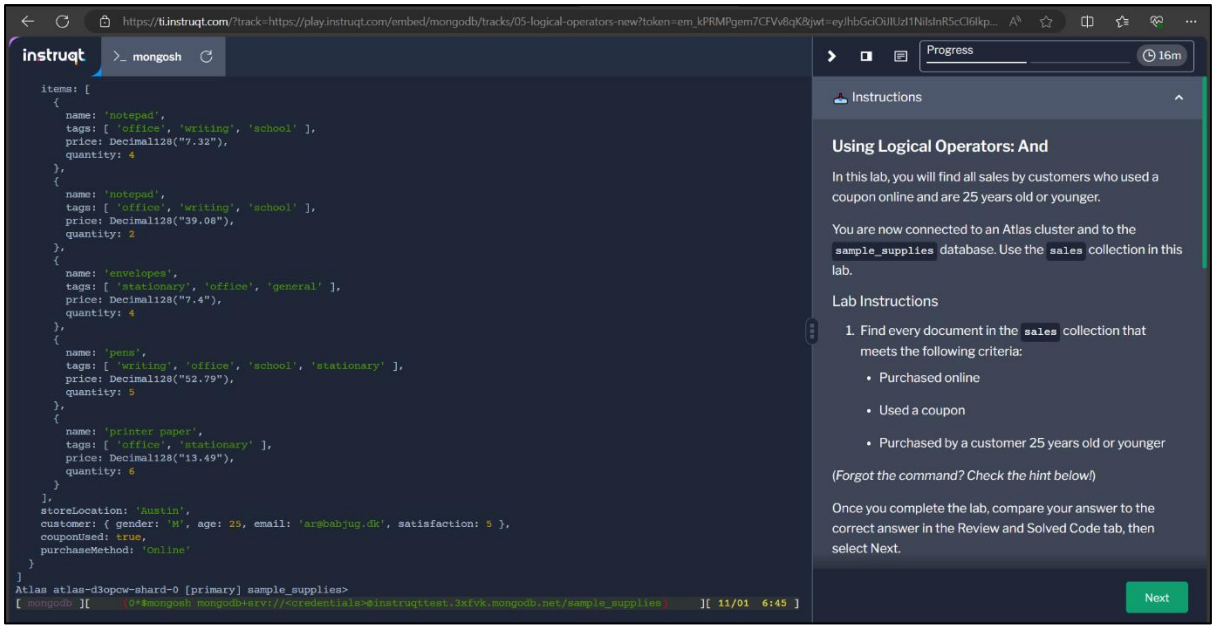

Figure 5.15: Using And Logical Operator $and

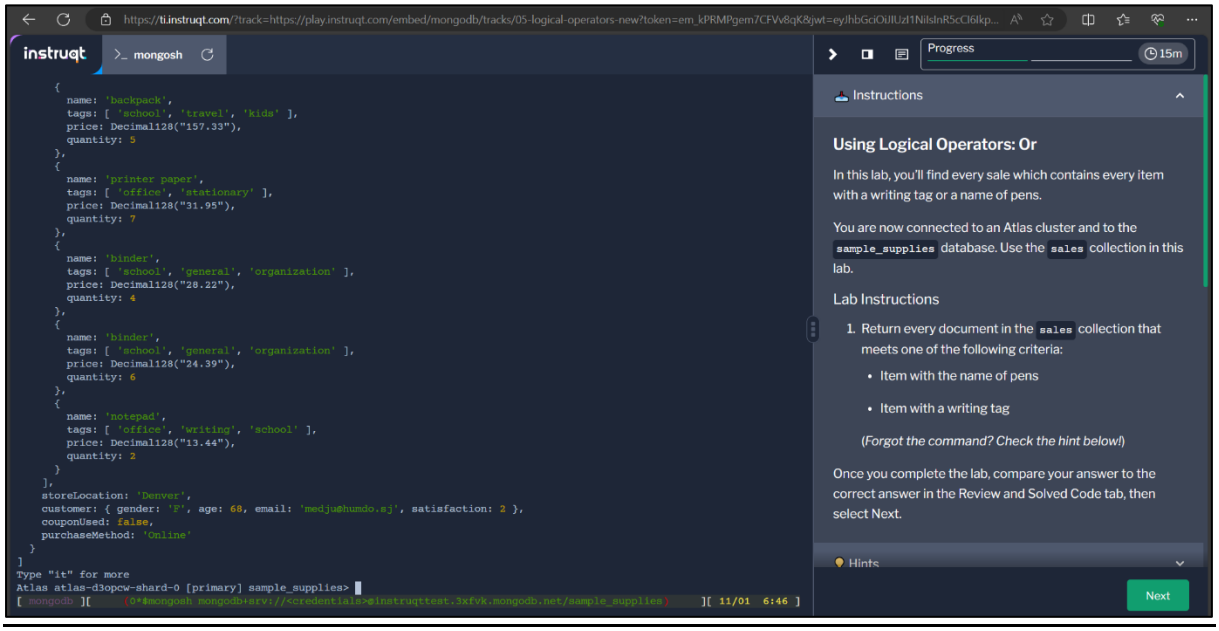

Figure 5.16: Using Or Logical Operator $or

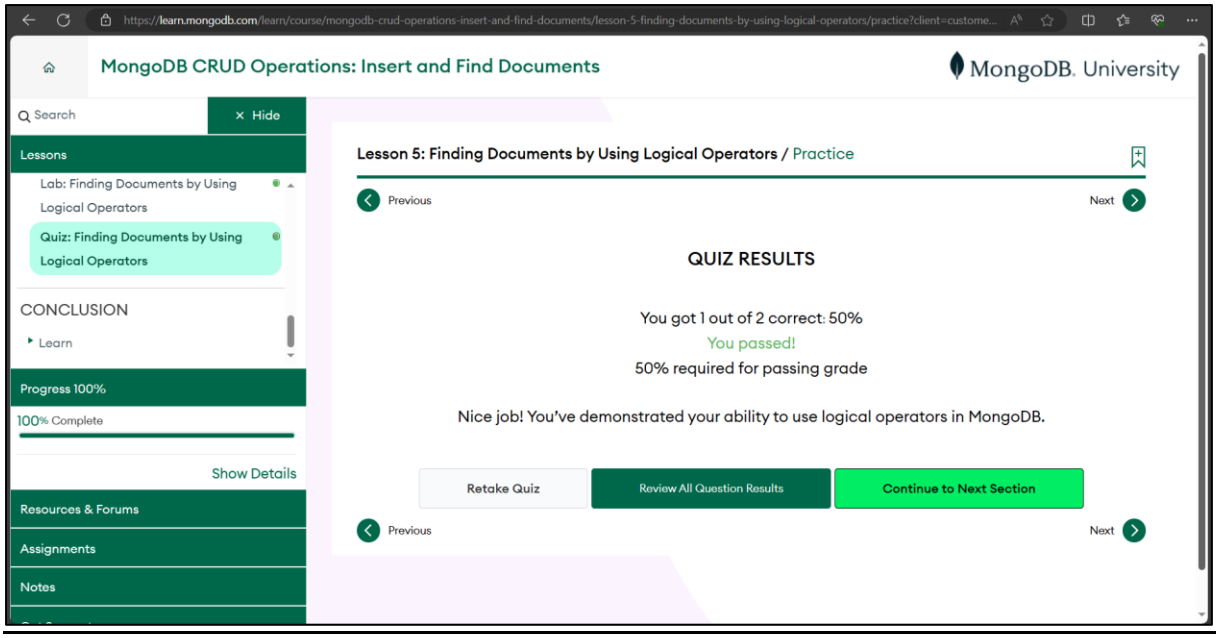

Figure 5.17: Quiz 5 Results for Topic 5

Figure 5.18: Topic 5 Proof of Completion

Topic 6: MongoDB CRUD Operations: Replace and Delete Documents

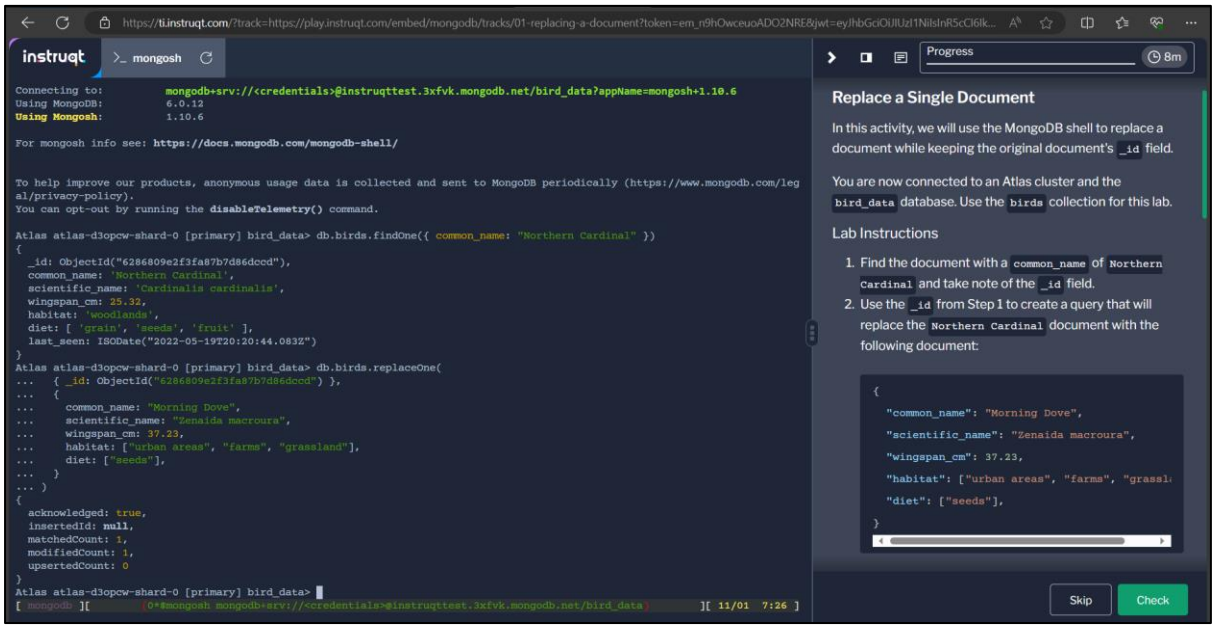

Figure 6.1: Replacing a Single Document Using replaceOne()

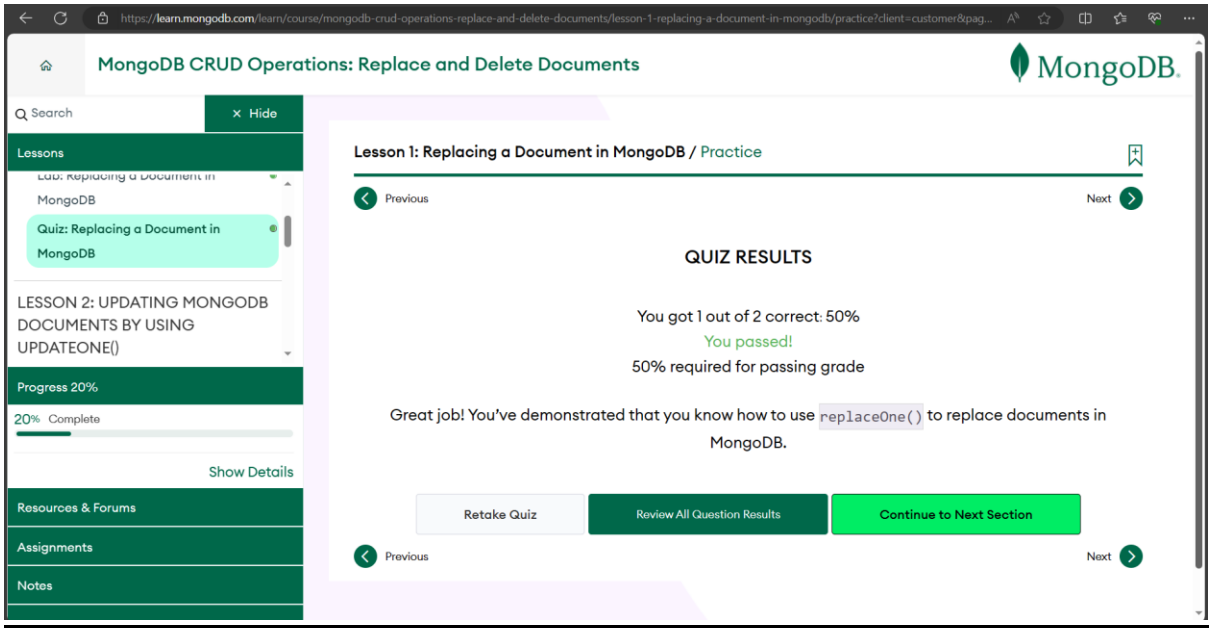

Figure 6.2: Quiz 1 Results for Topic 6

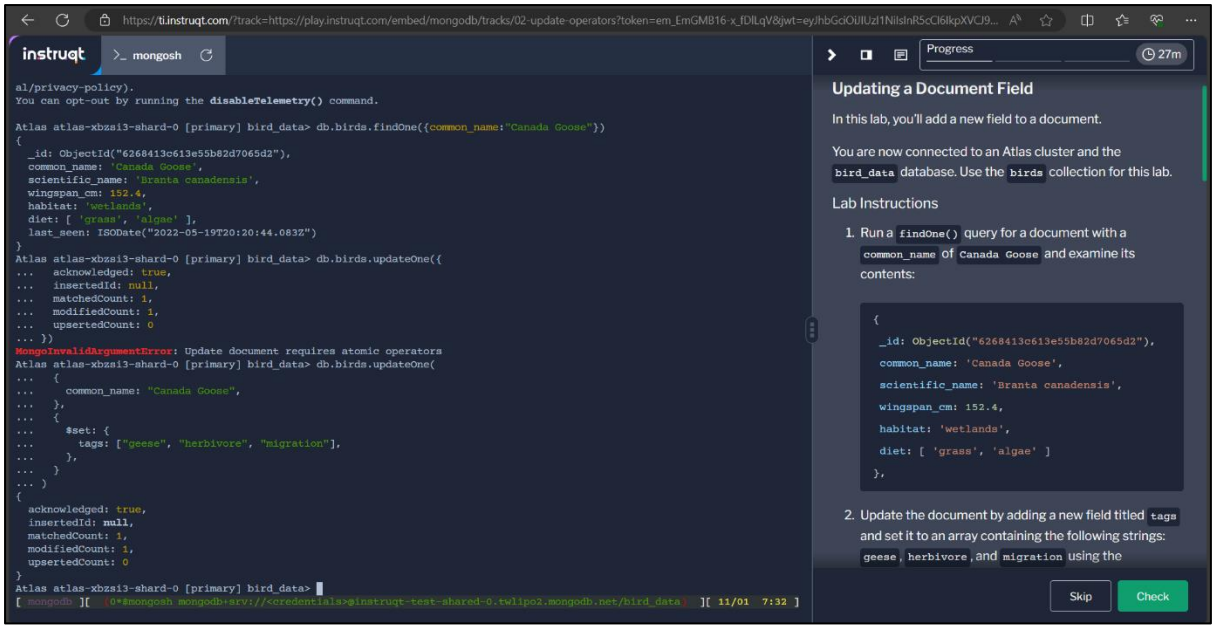

Figure 6.3: Updating a Document Field with updateOne()

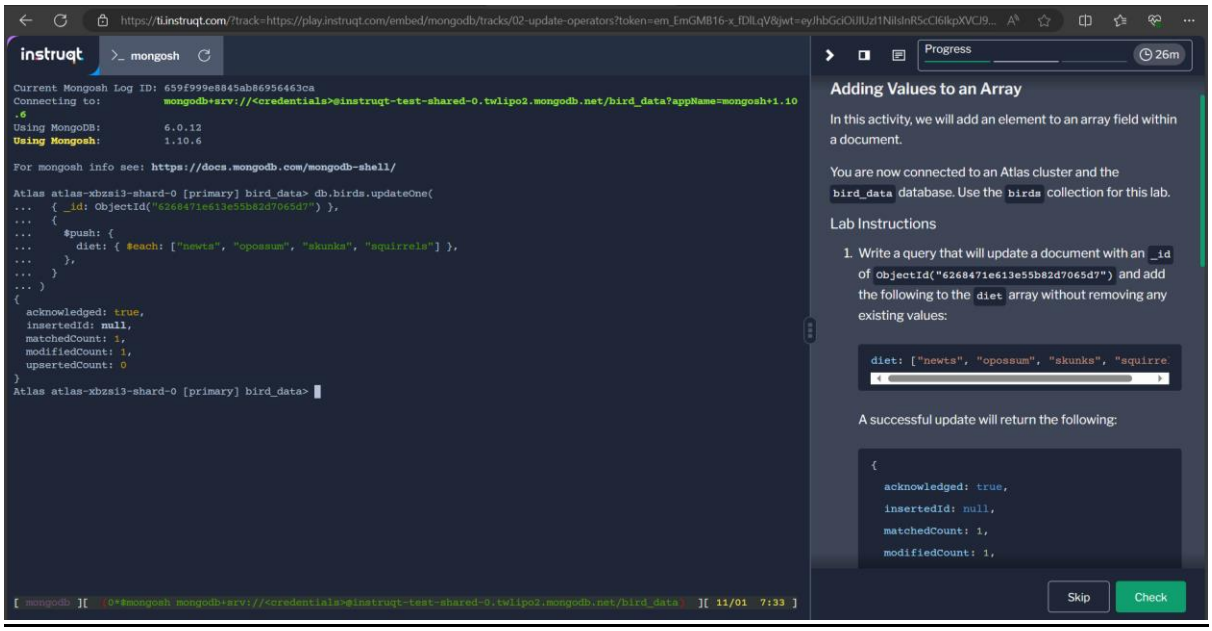

Figure 6.4: Updating a Document Field by Adding Values to an Array

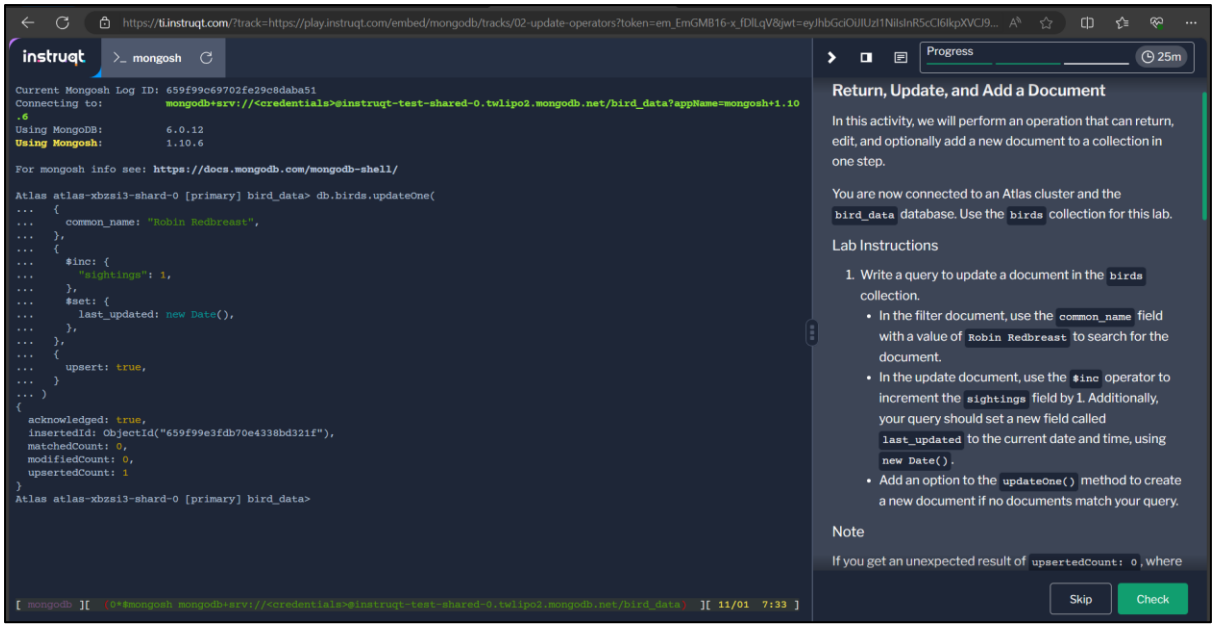

Figure 6.5: Return, Update and Add a Document

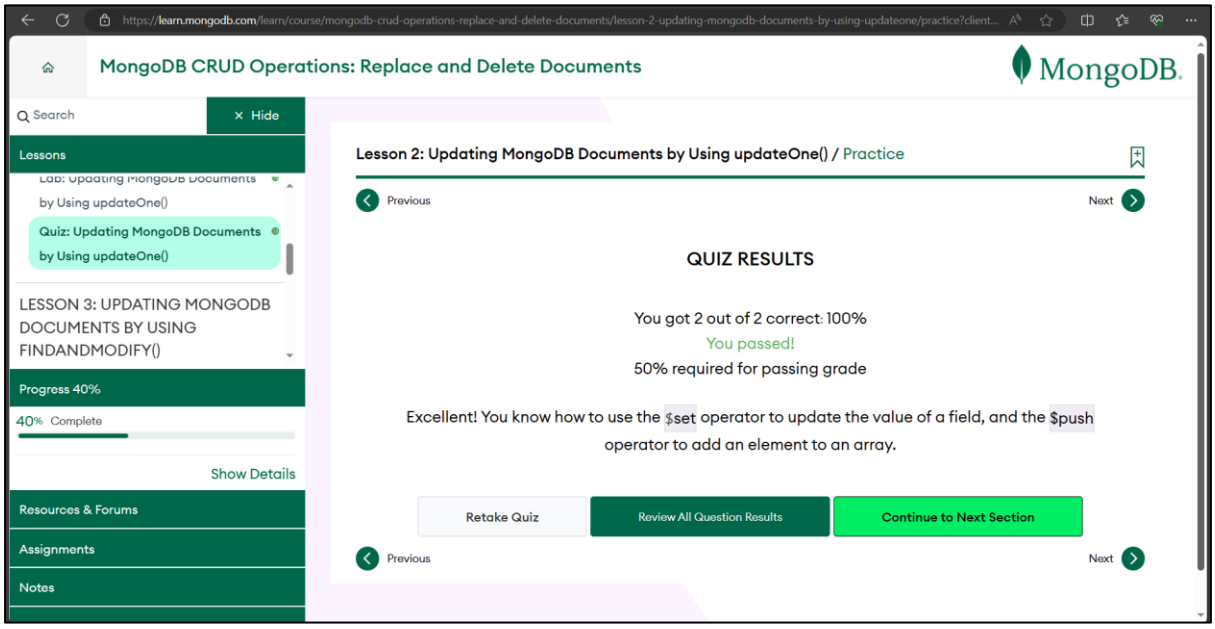

Figure 6.6: Quiz 2 Results for Topic 6

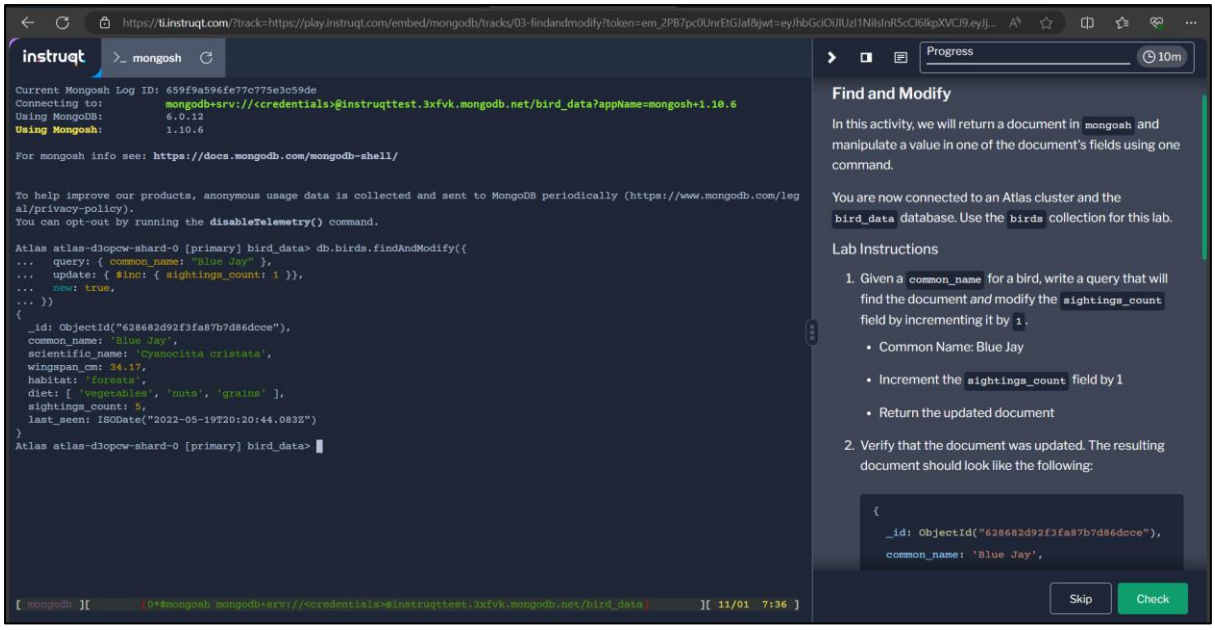

Figure 6.7: Find and Modify Data using findAndModify()

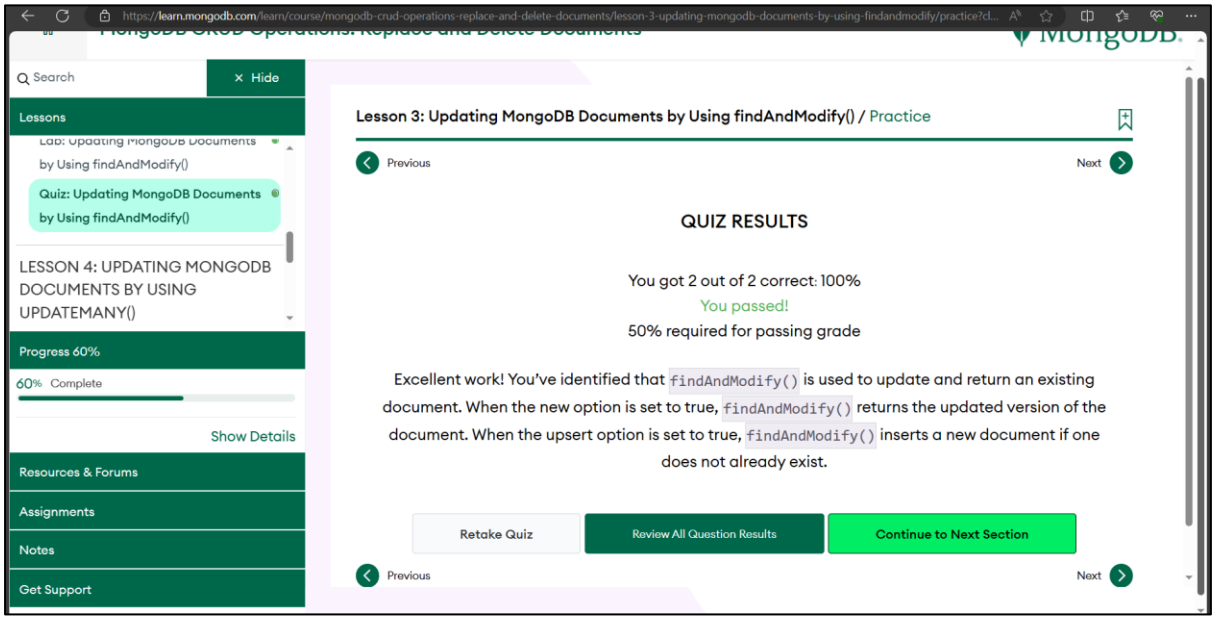

Figure 6.8: Quiz 3 Results for Topic 6

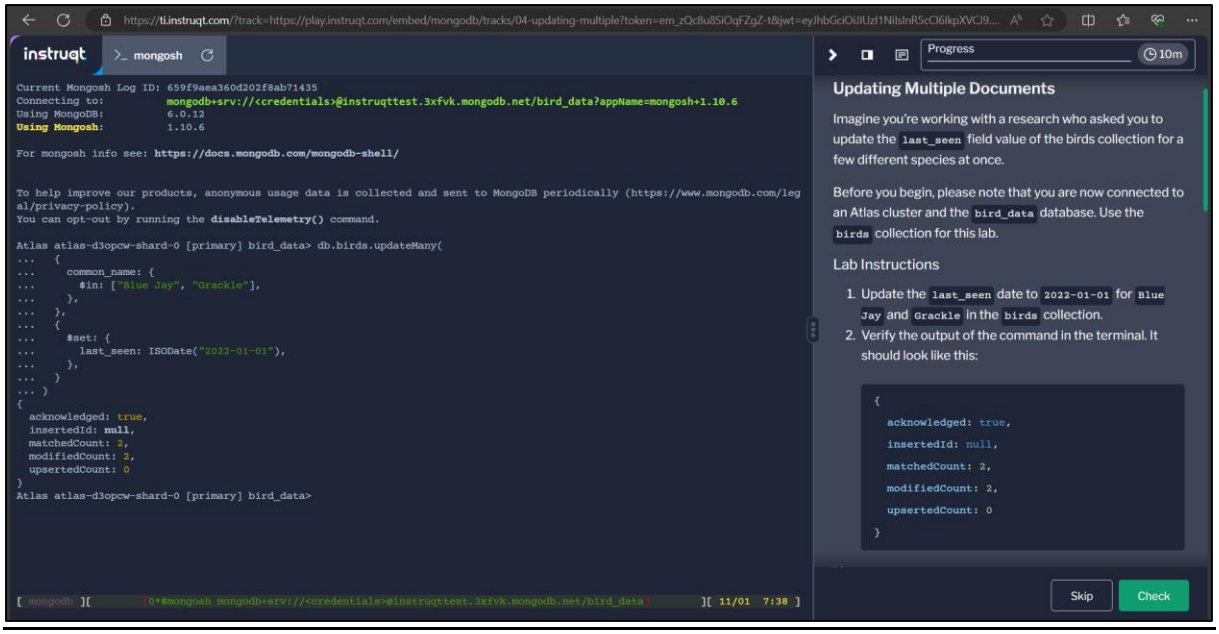

Figure 6.9: Updating Multiple Documents using updateMany()

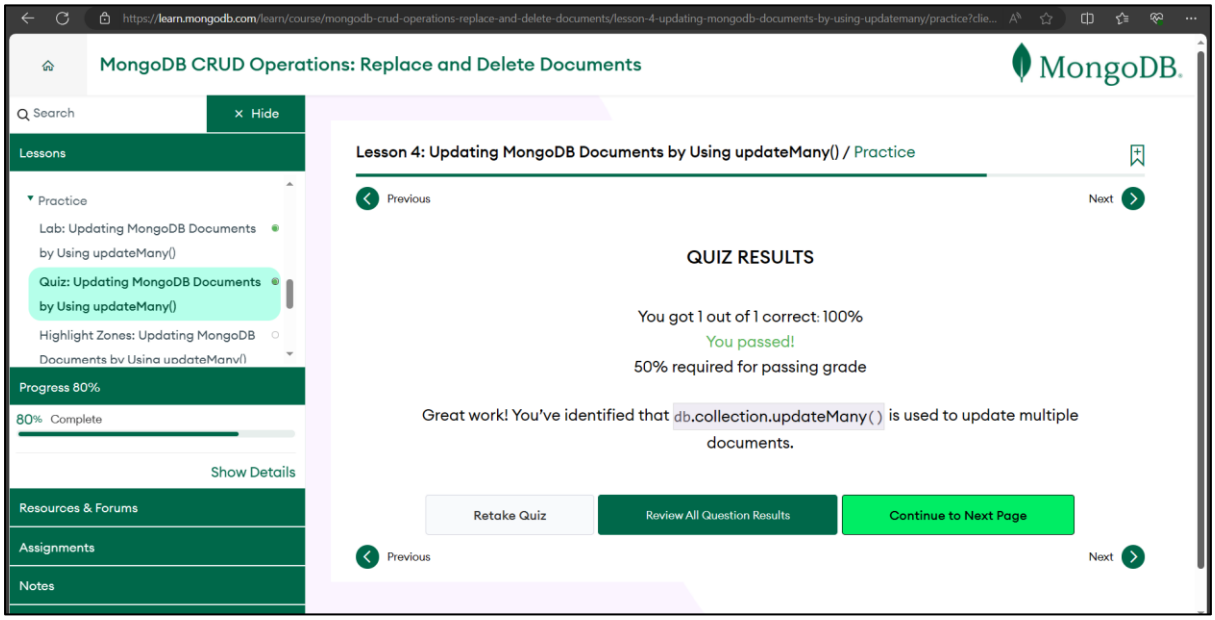

Figure 6.10: Quiz 4 Results for Topic 6

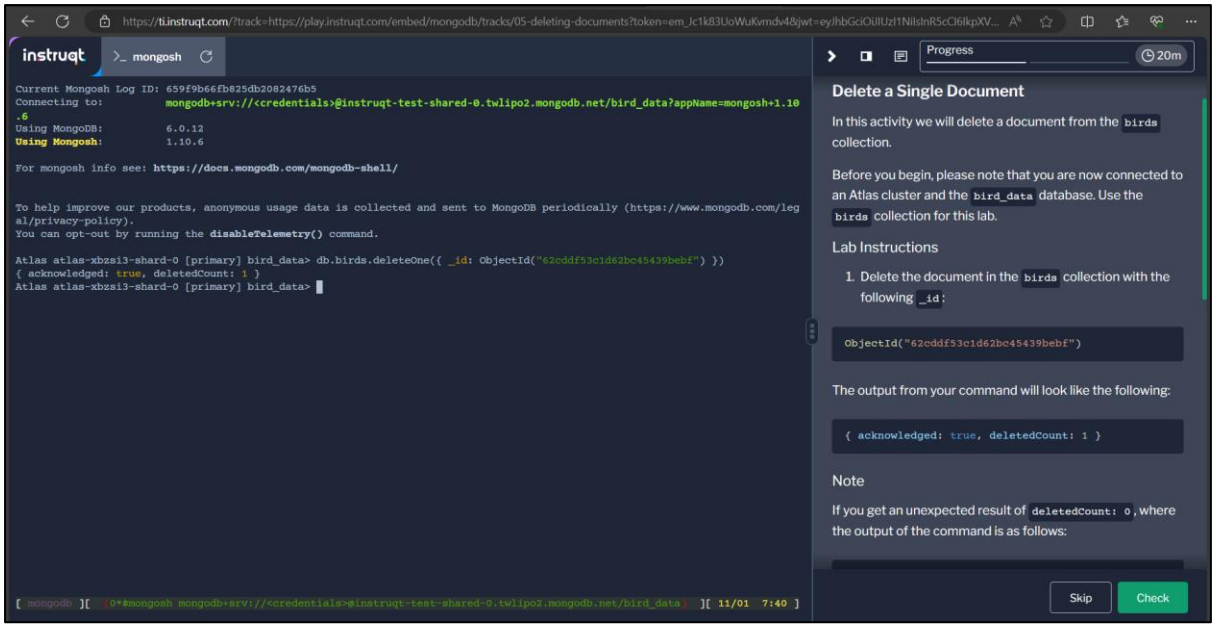

Figure 6.11: Deleting a Single Document using deleteOne()

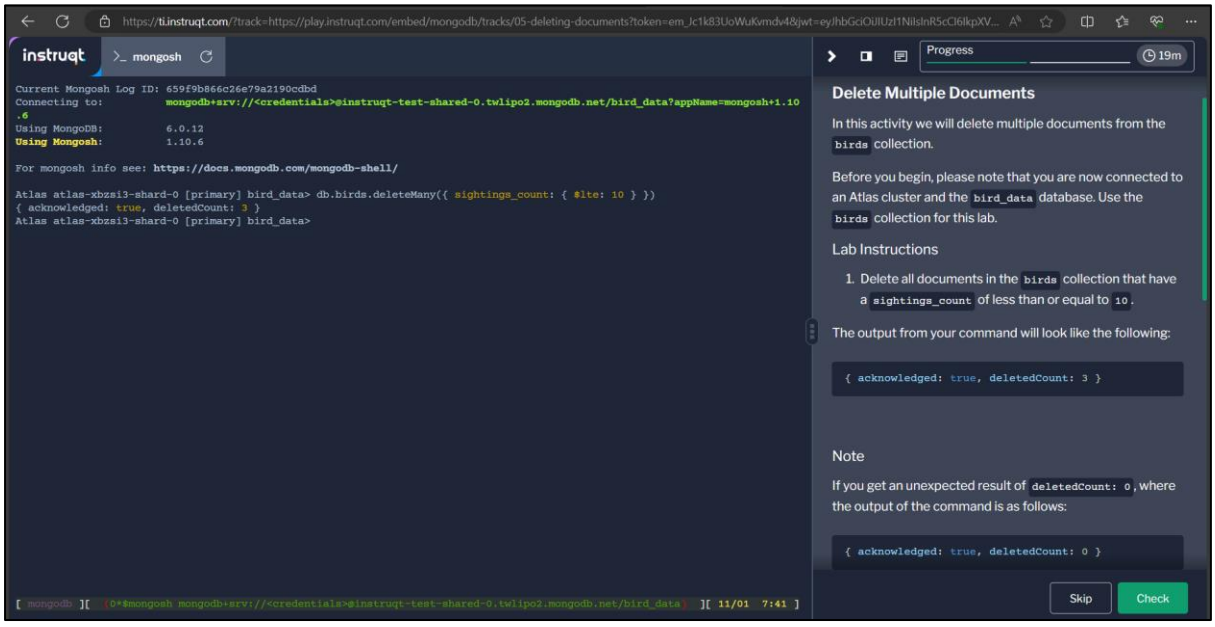

Figure 6.12: Deleting a Multiple Document using deleteMany()

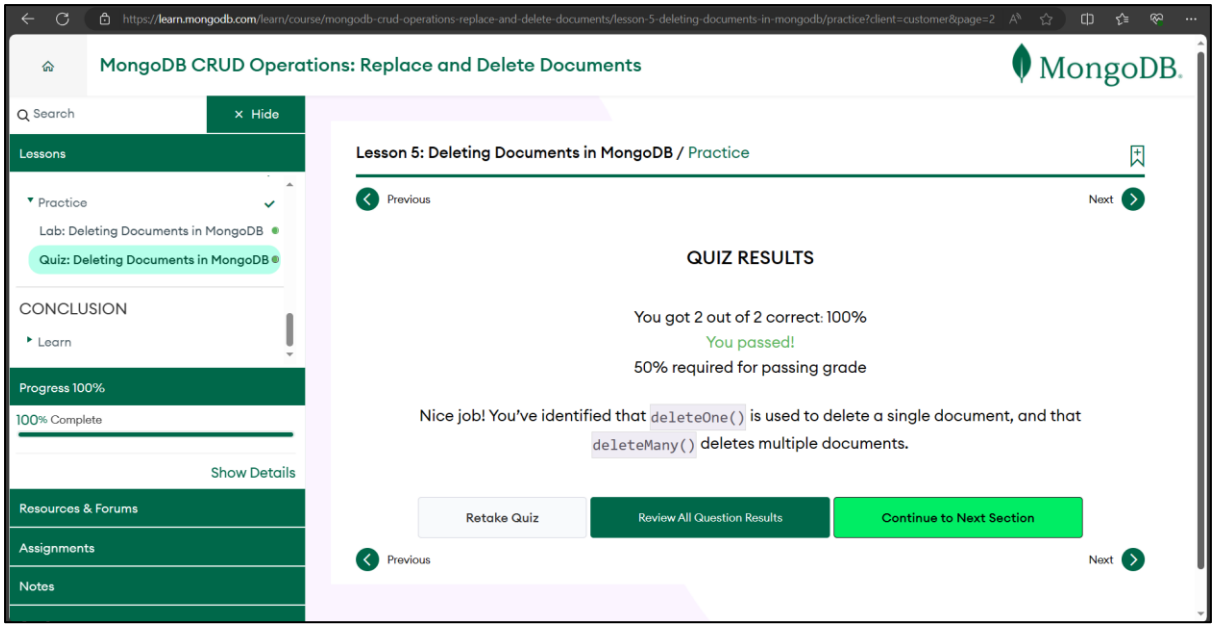

Figure 6.13: Quiz 5 Results for Topic 6

Figure 6.14: Topic 6 Proof of Completion

Topic 7: MongoDB CRUD Operations: Modifying Query Results

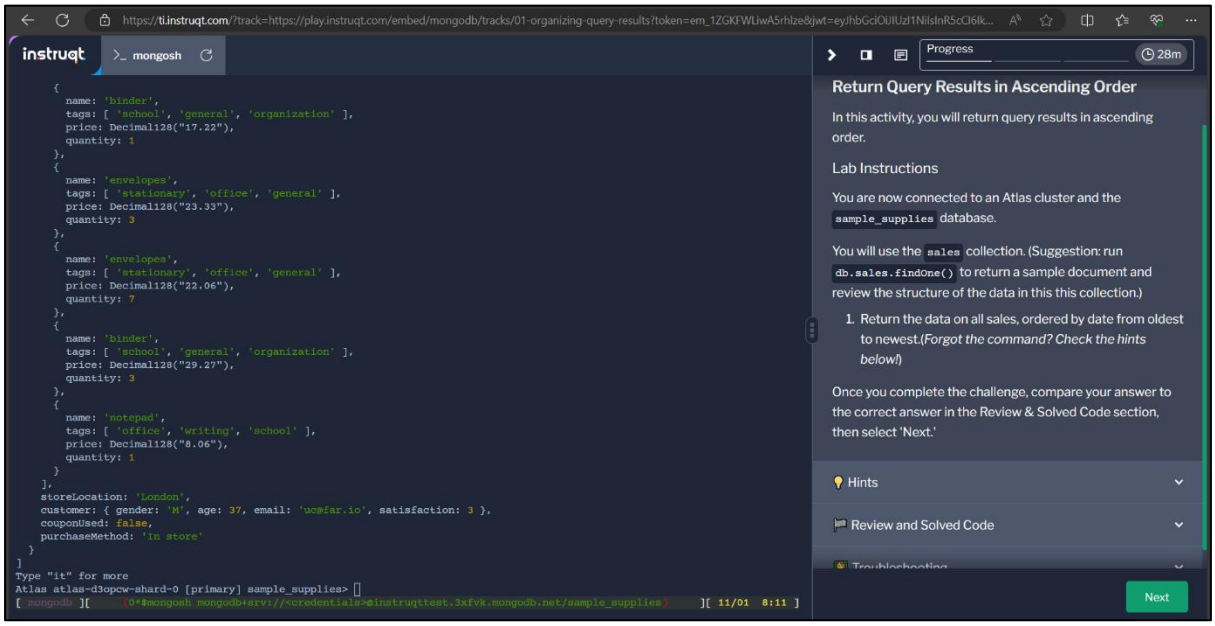

Figure 7.1: Return Query in Ascending Order using sort() where sort() is 1

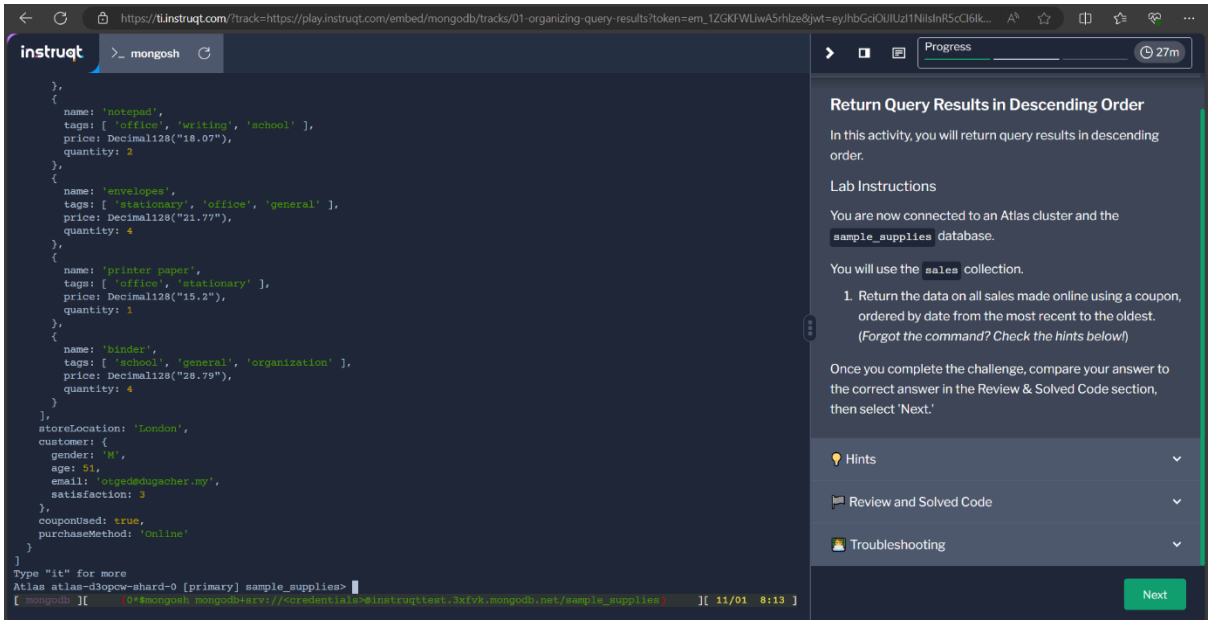

Figure 7.2: Return Query in Descending Order using sort() where sort() is -1

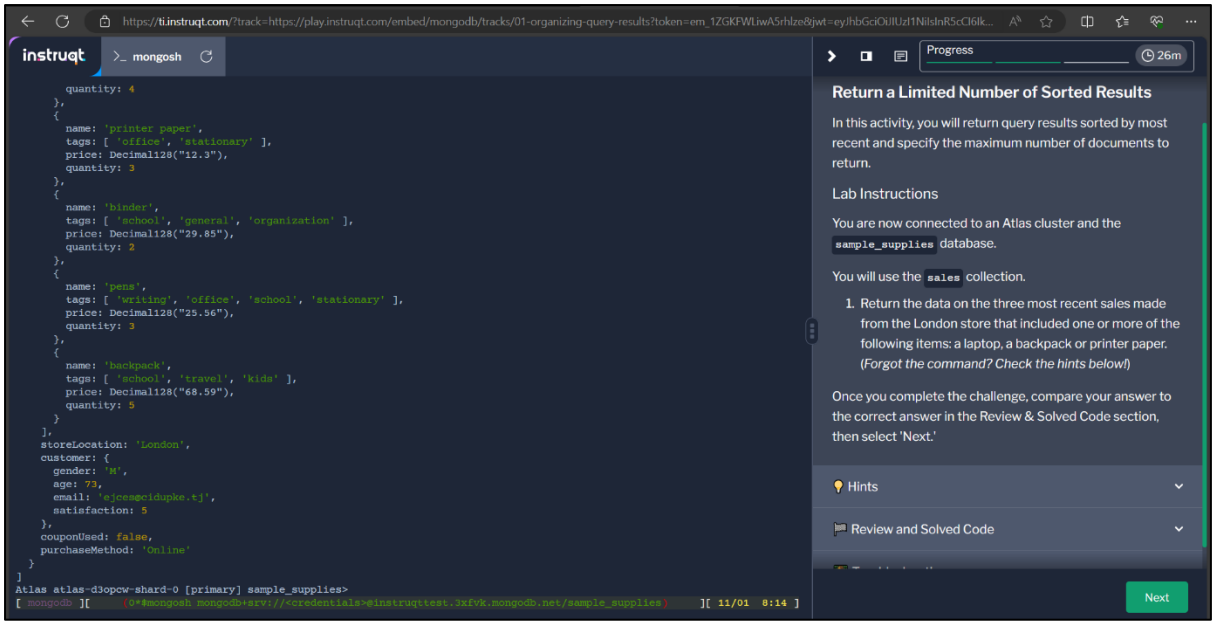

Figure 7.3: Return a Limited Number of Sorted Results using top()

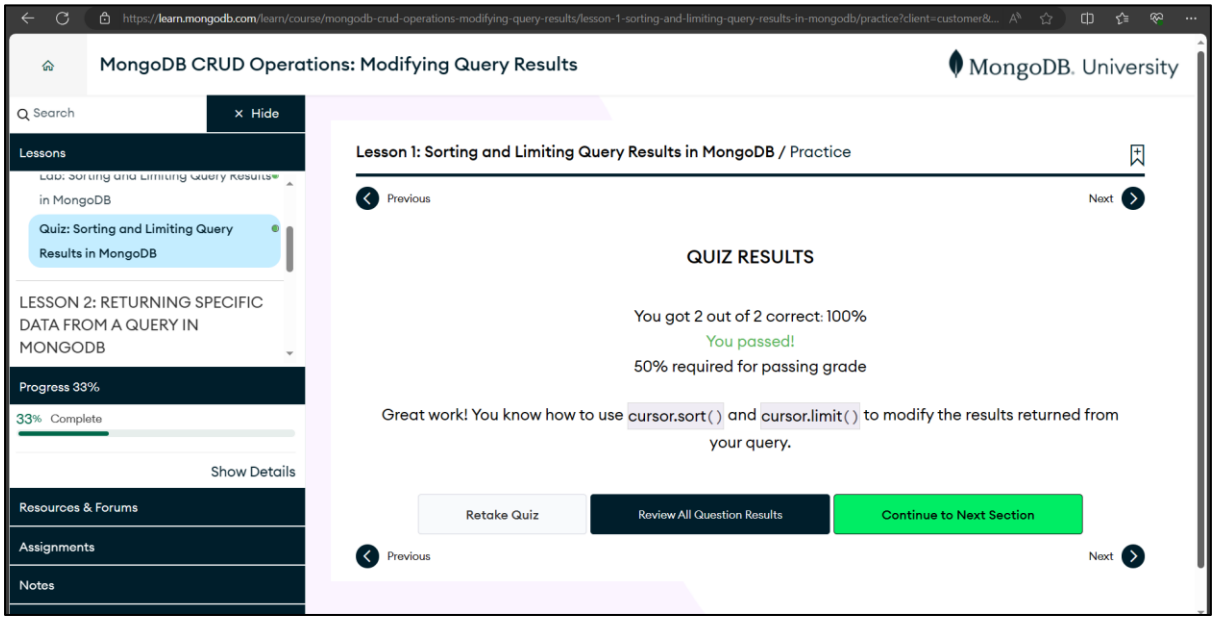

Figure 7.4: Quiz 1 Results for Topic 7

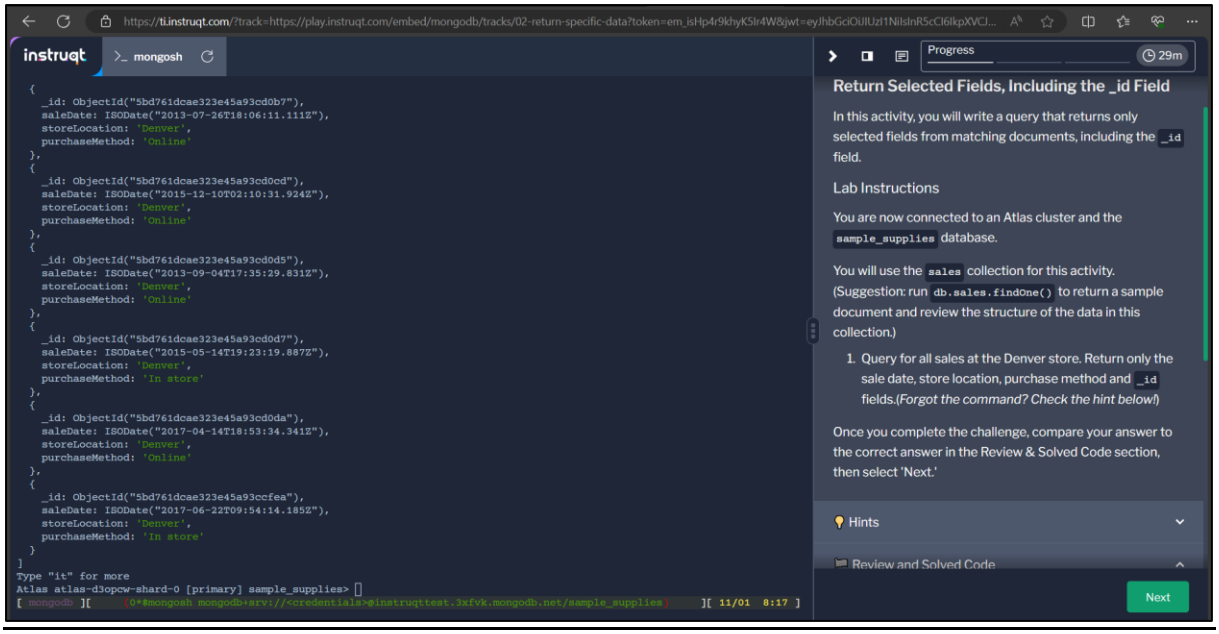

Figure 7.5: Return Selected Fields, Including the _id Field using {<field> : 1}

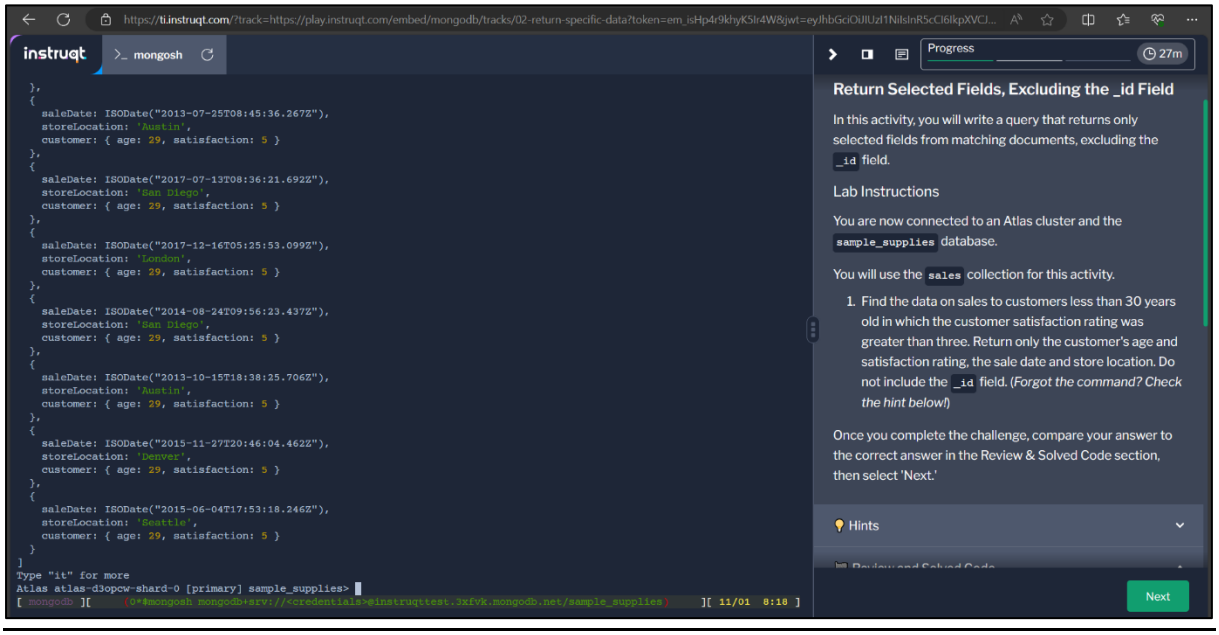

Figure 7.6: Return Selected Fields, Excluding the _id Field using {<field> : 0}

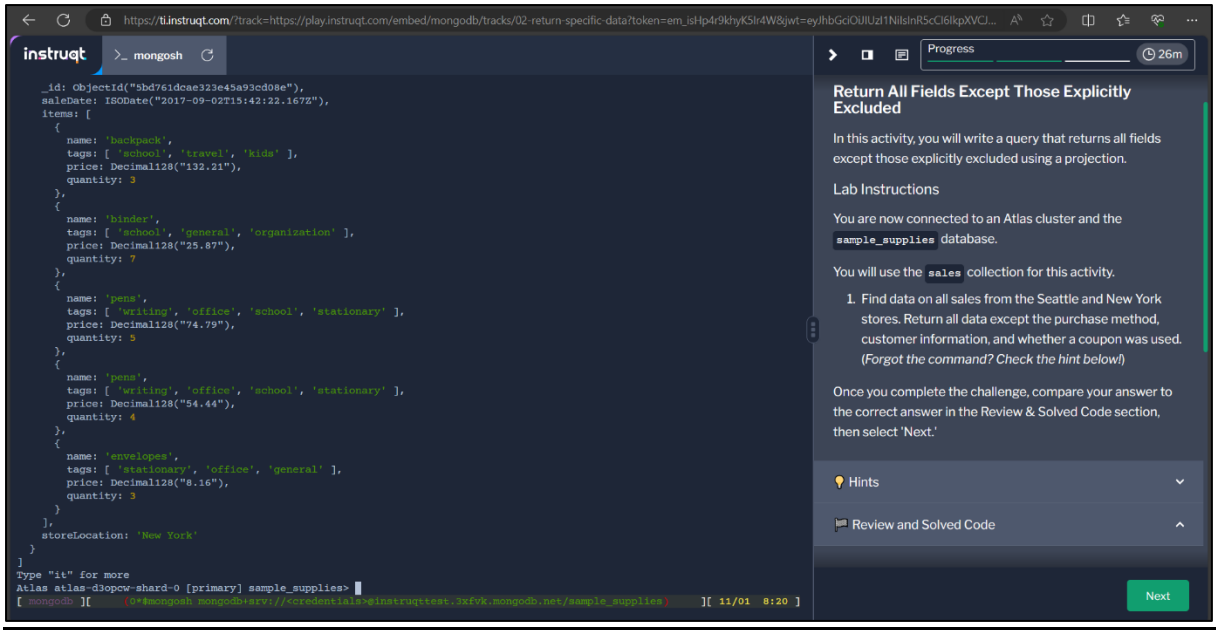

Figure 7.7: Return Selected Fields Except Those Explicitly Excluded

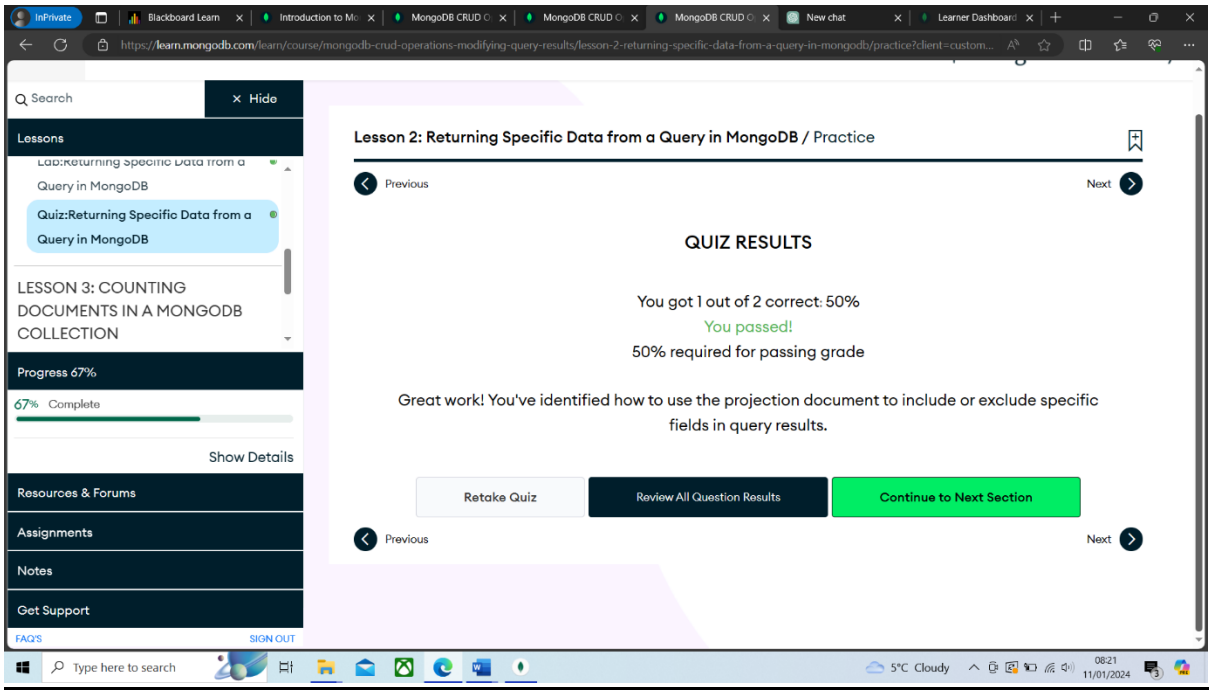

Figure 7.8: Quiz 2 Results for Topic 7

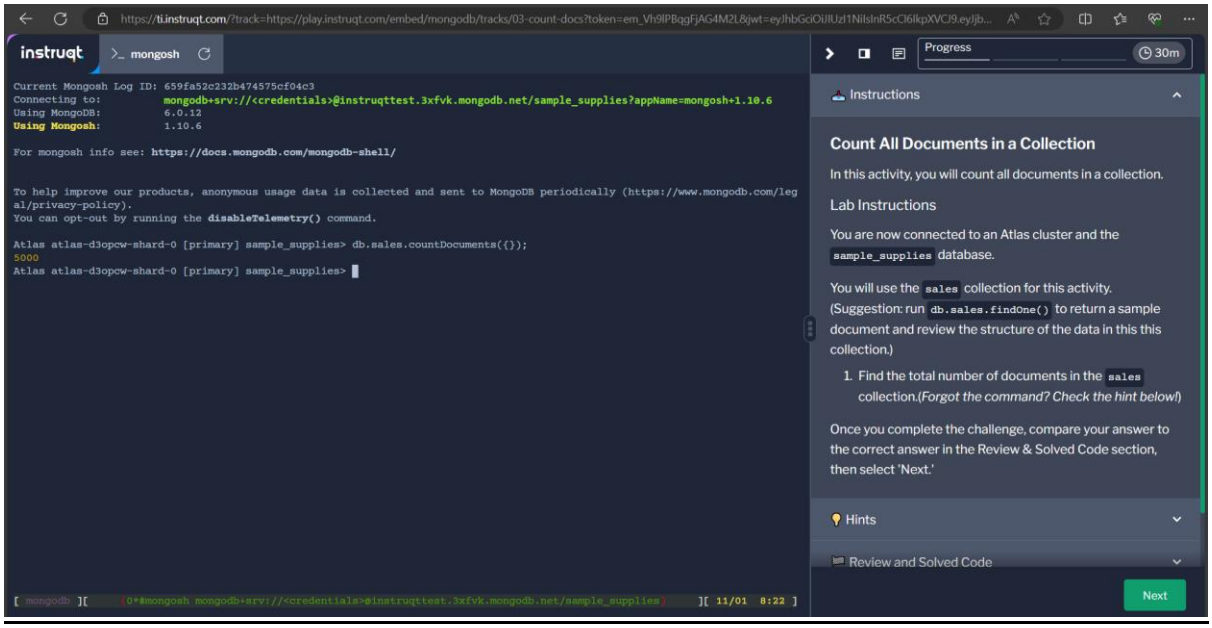

Figure 7.9: Count All Documents in a Collection using countDocument({})

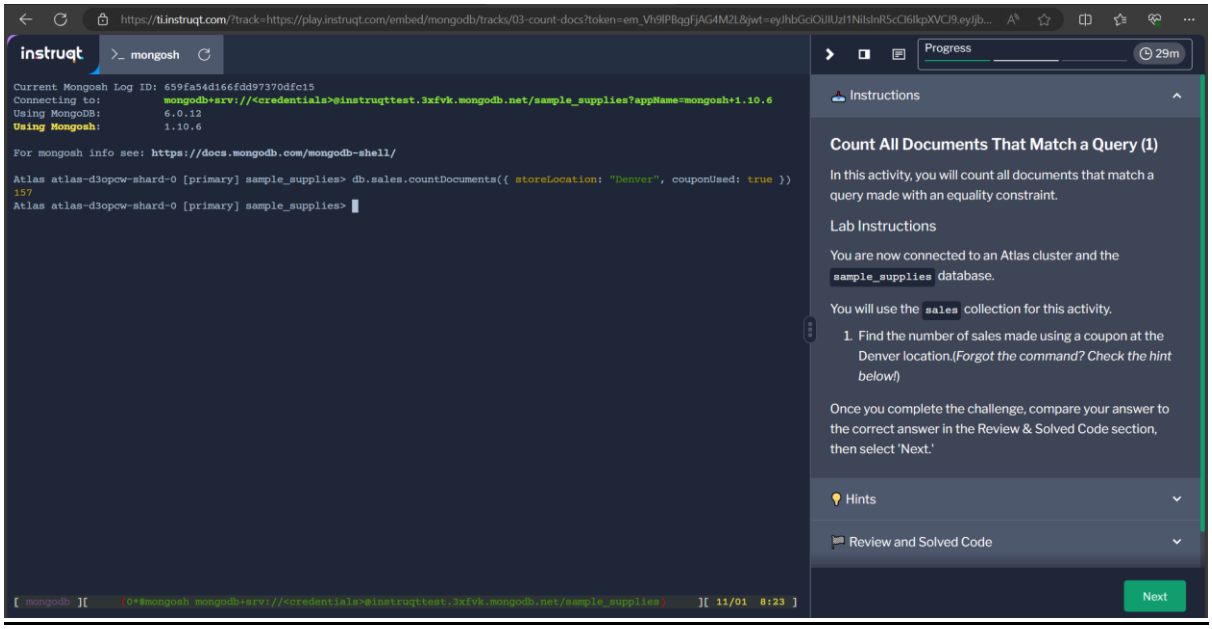

Figure 7.10: Count All Documents That Match a Query 1

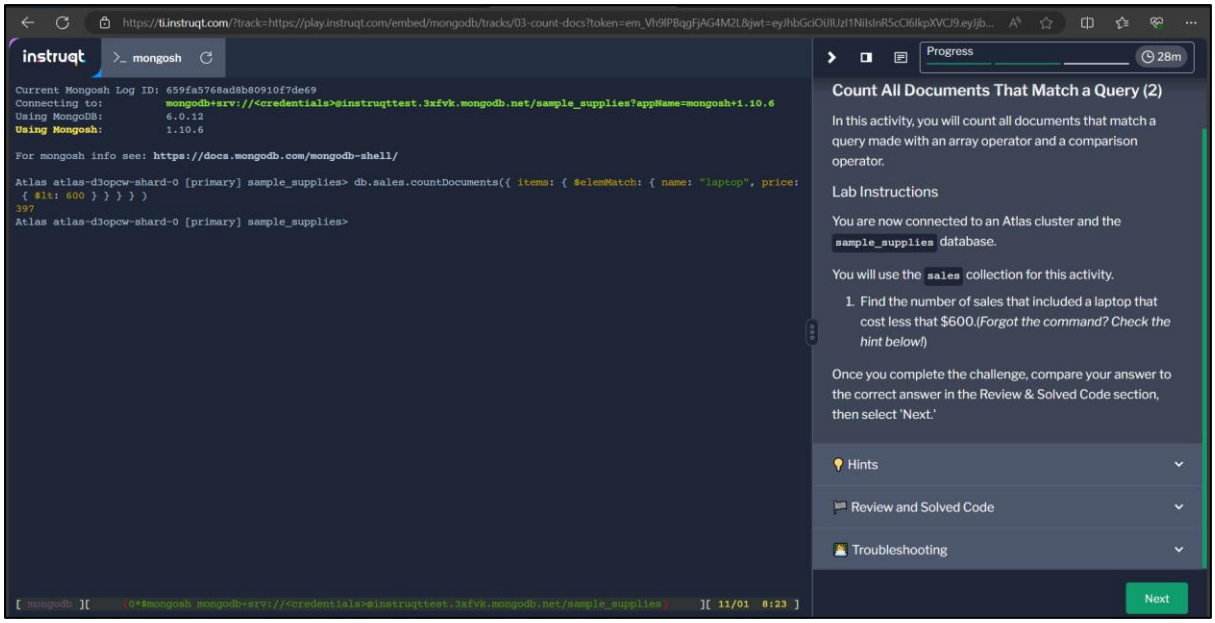

Figure 7.11: Count All Documents That Match a Query 2

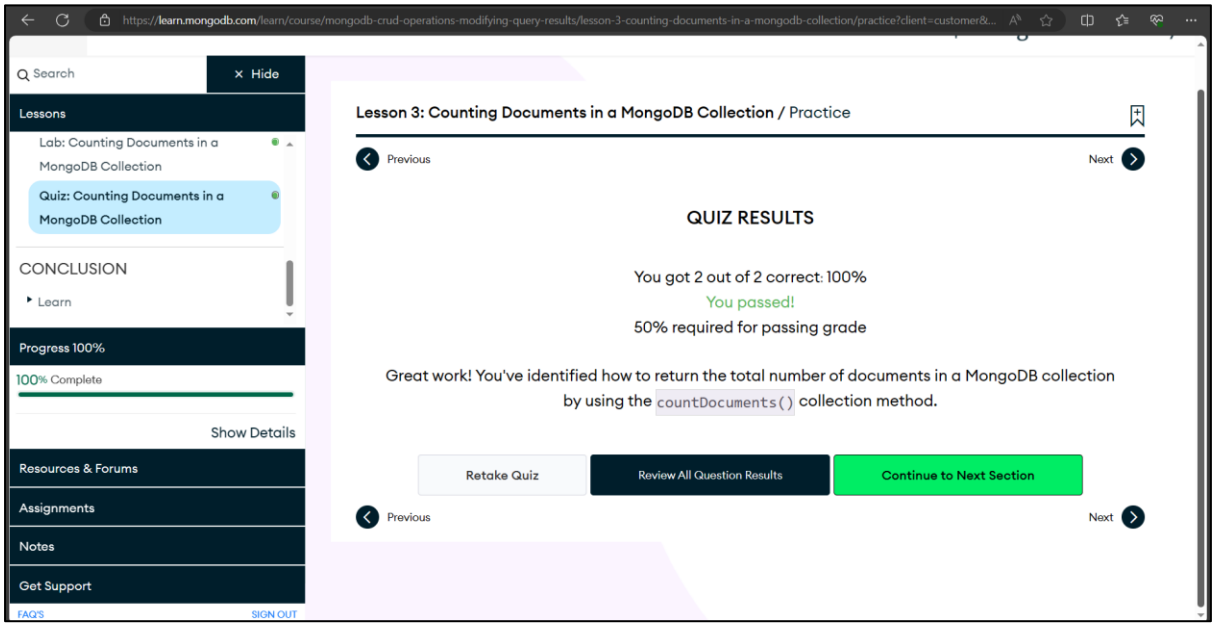

Figure 7.12: Quiz 3 Results for Topic 7

Figure 7.13: Topic 7 Proof of Completion

Topic 8: MongoDB Aggregation

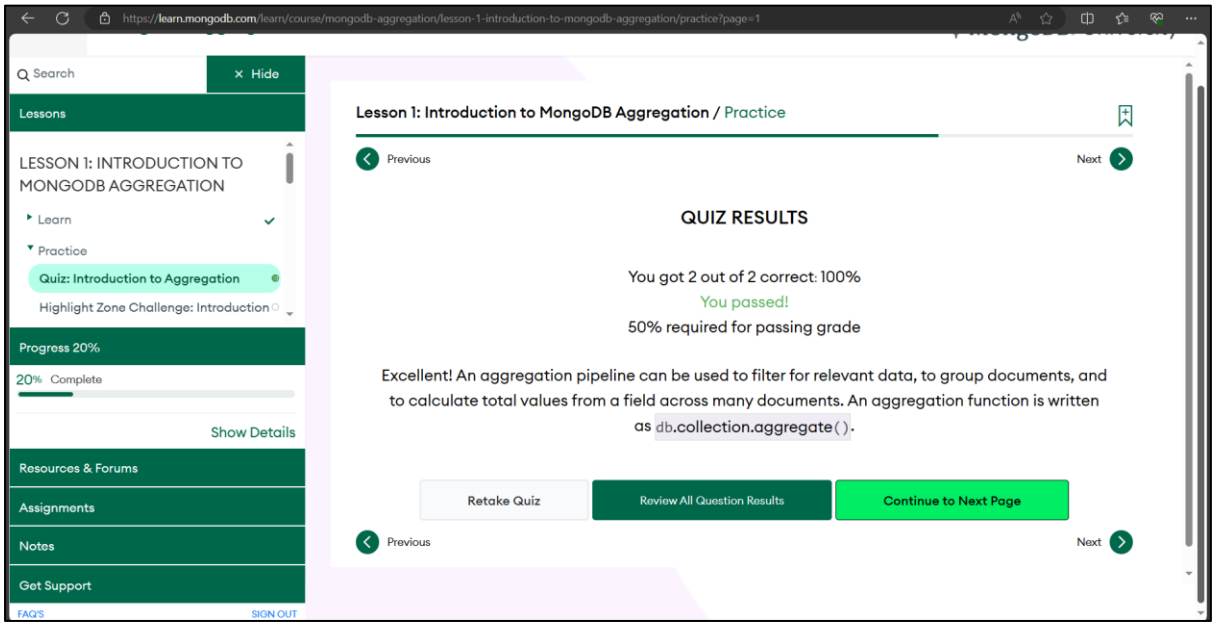

Figure 8.1: Quiz 1 Results for Topic 8

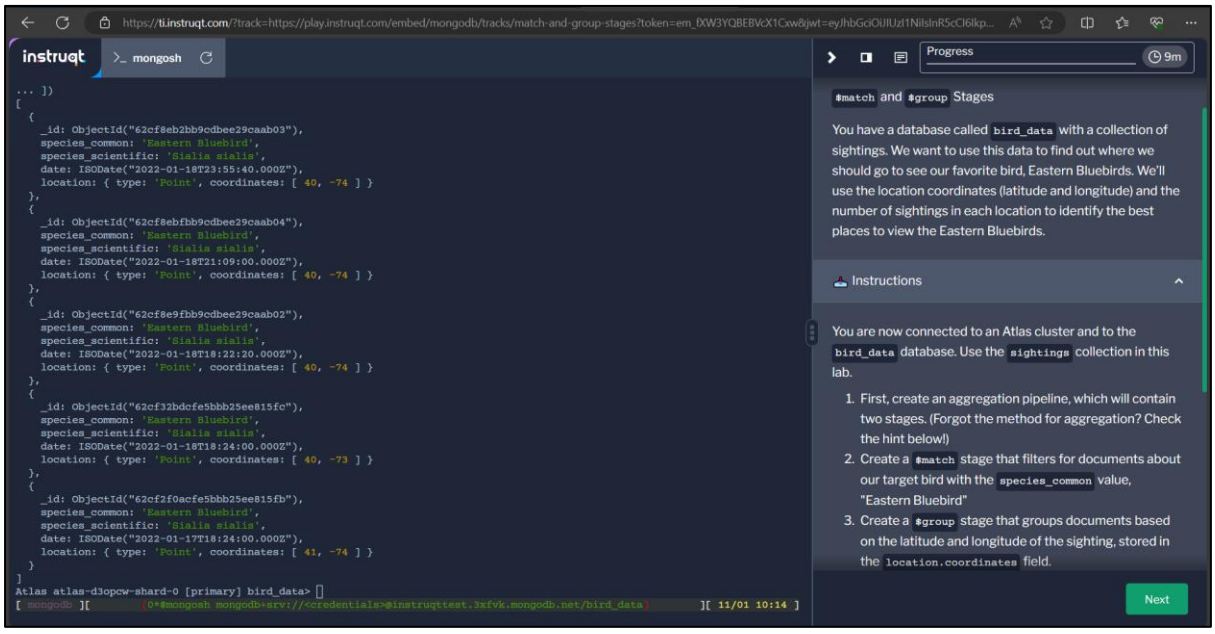

Figure 8.2: Aggregation using $match and $group

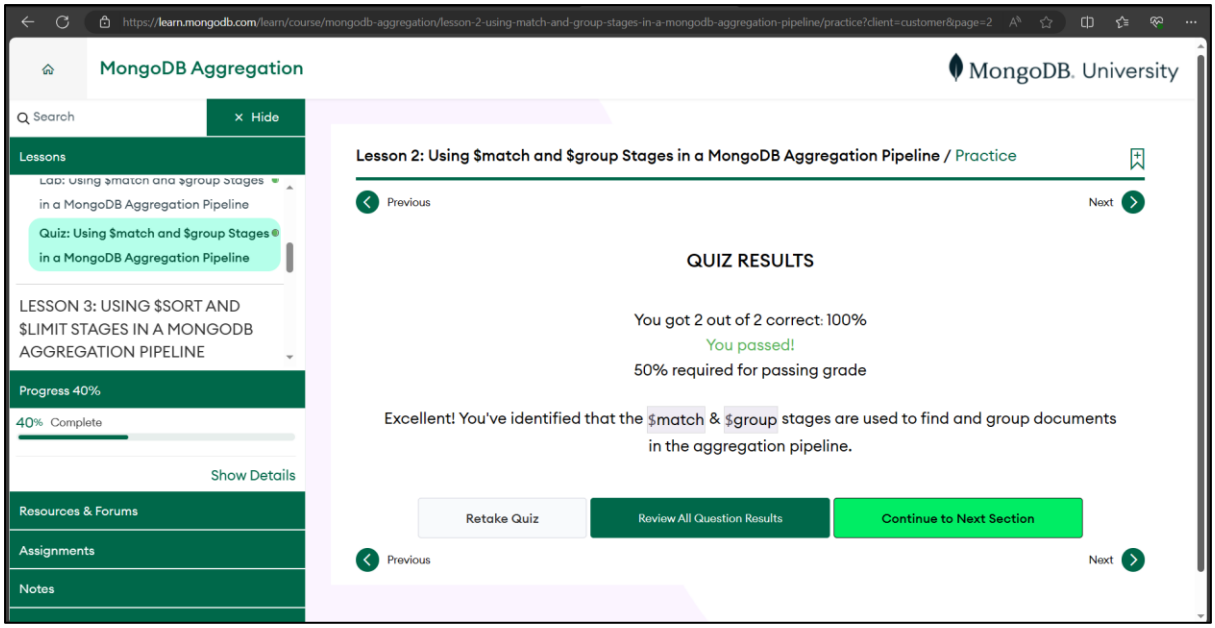

Figure 8.3: Quiz 2 Results for Topic 8

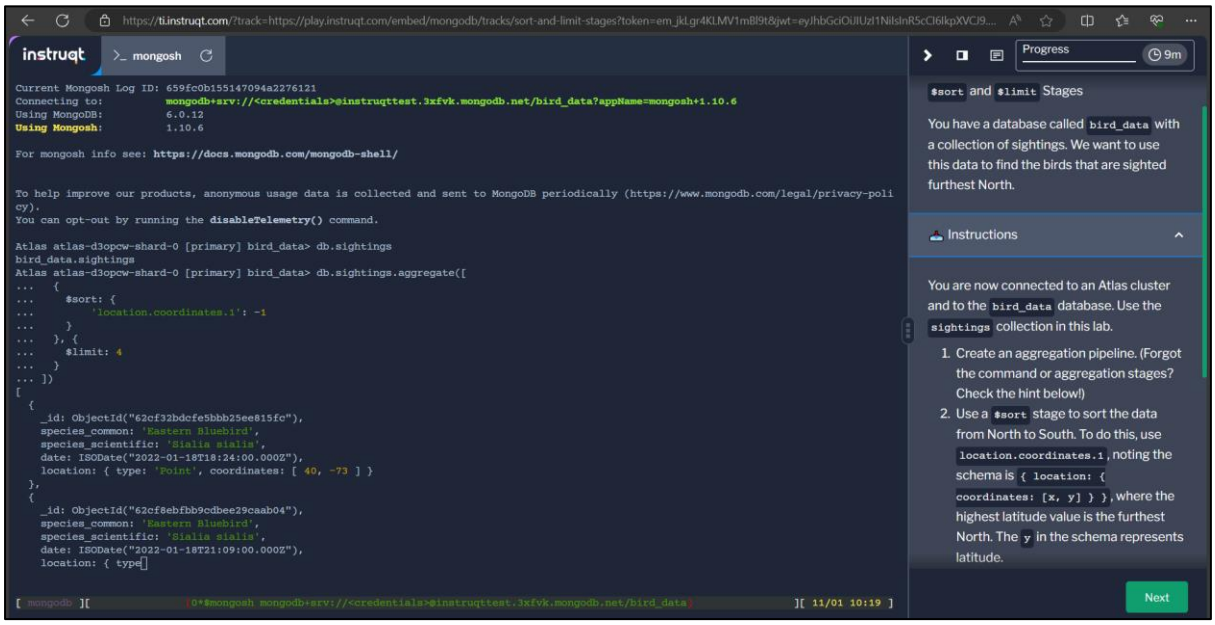

Figure 8.4: Aggregation using $sort and $limit

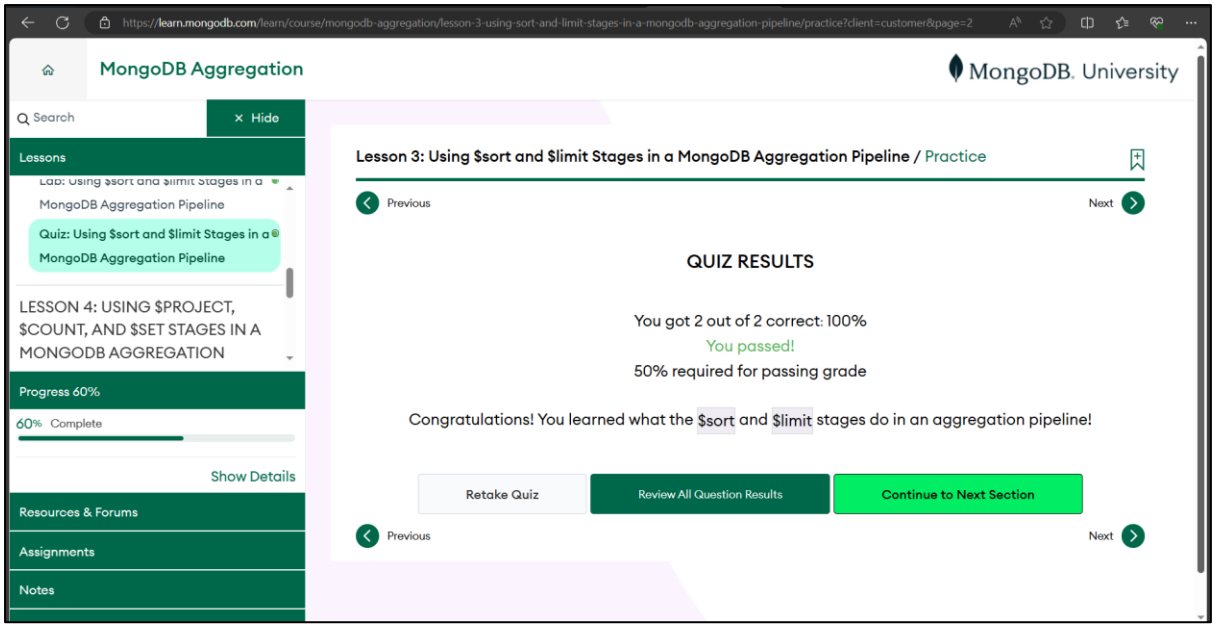

Figure 8.5: Quiz 3 Results for Topic 8

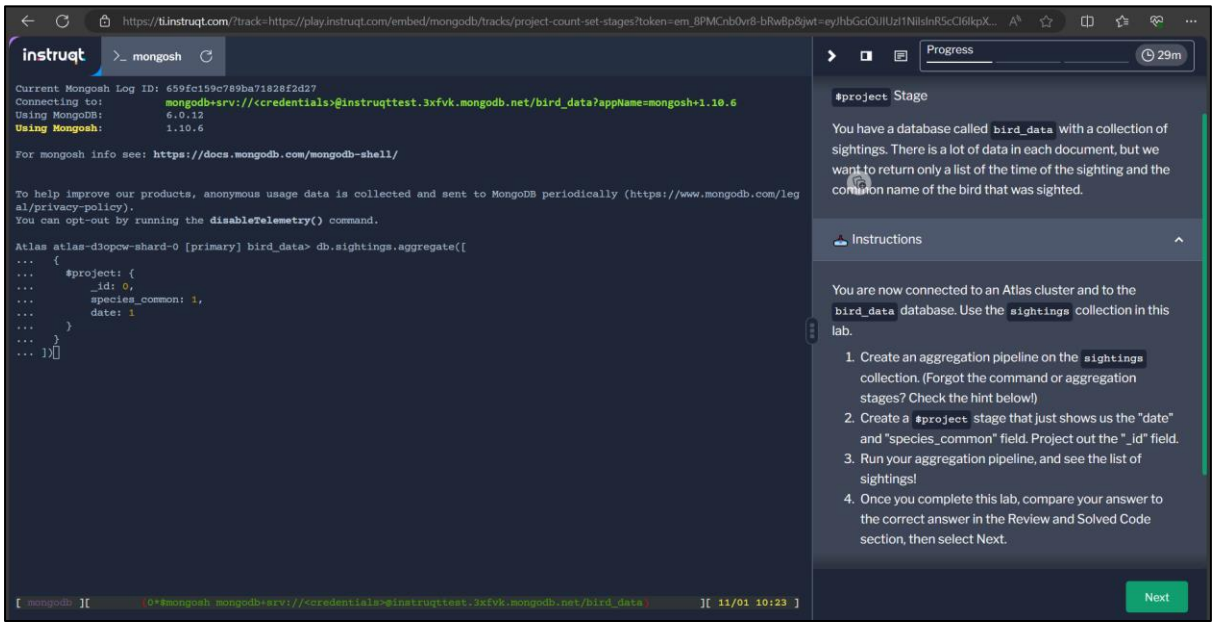

Figure 8.6: Aggregation using $project

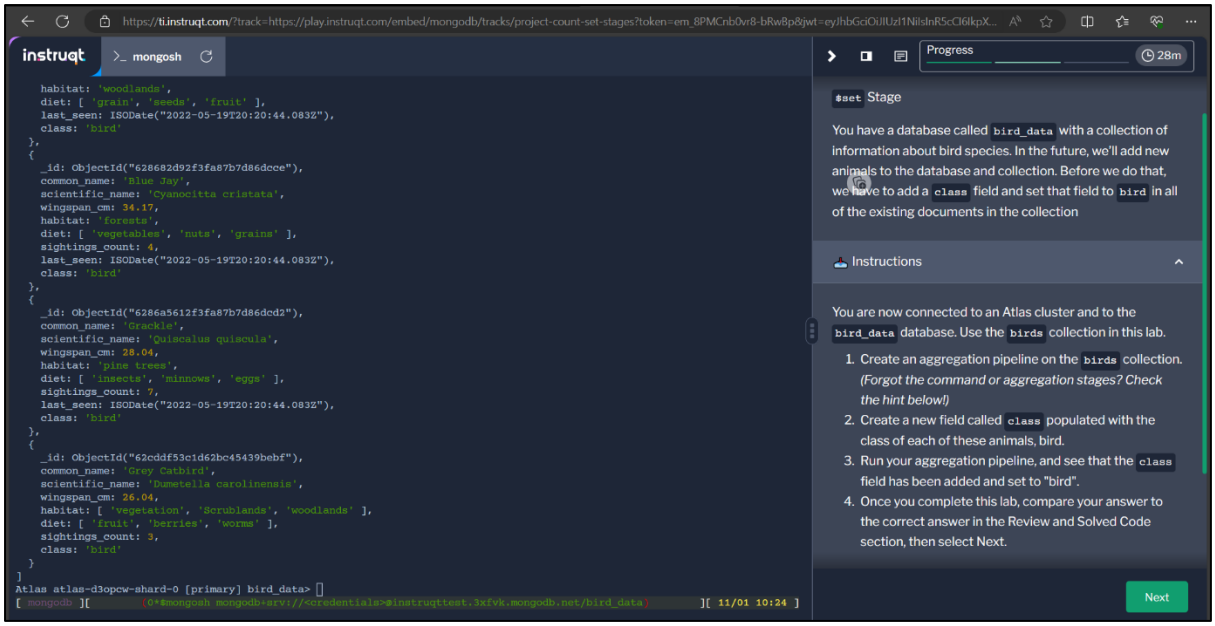

Figure 8.7: Aggregation using $set

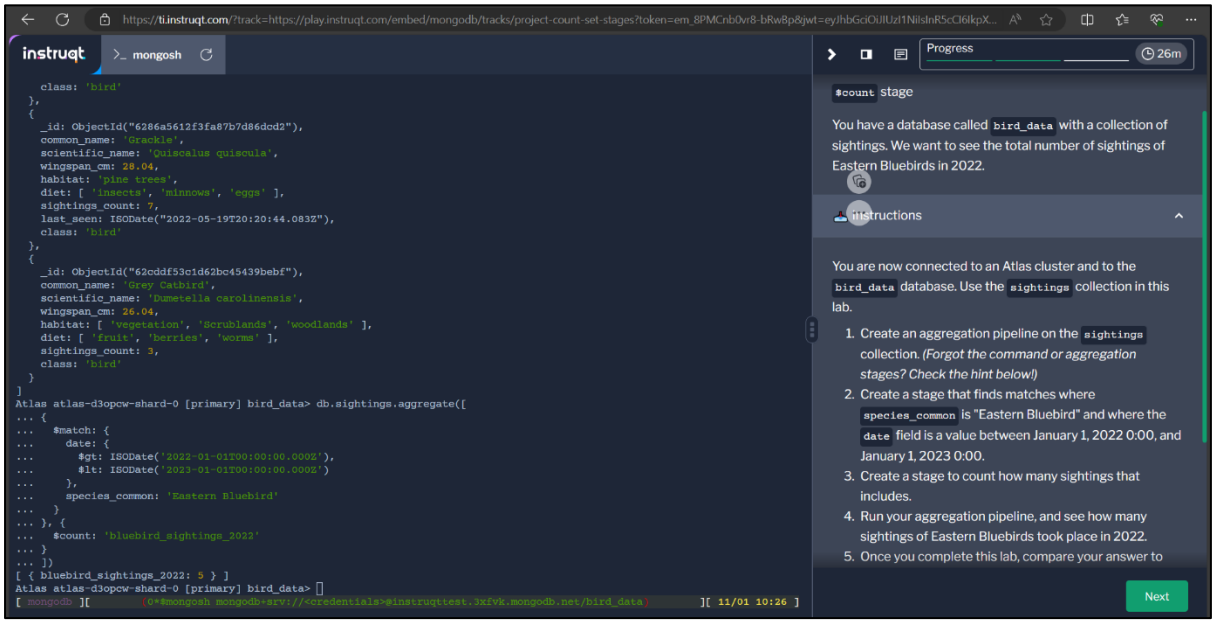

Figure 8.8: Aggregation using $count

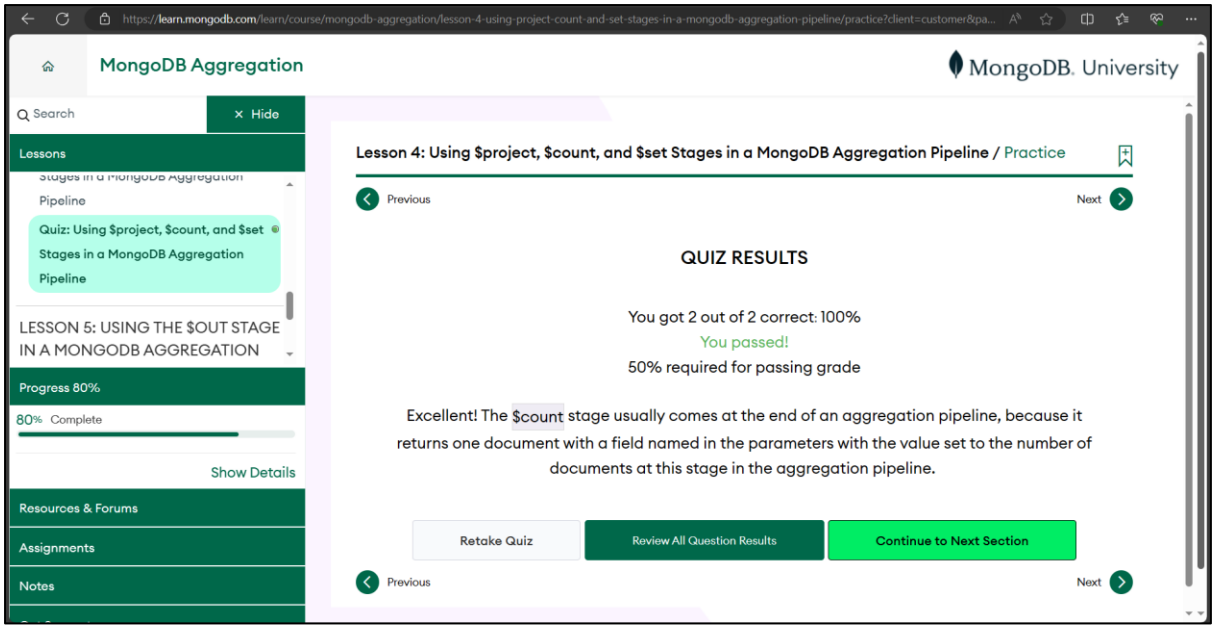

Figure 8.9: Quiz 4 Results for Topic 8

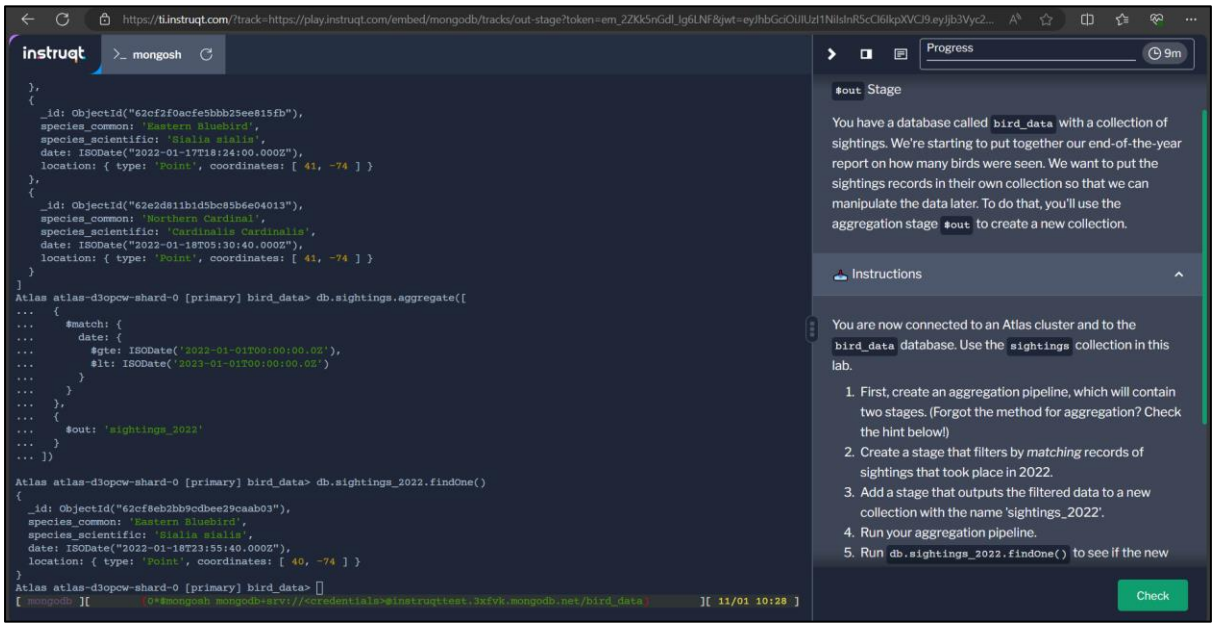

Figure 8.10: Aggregation using $out

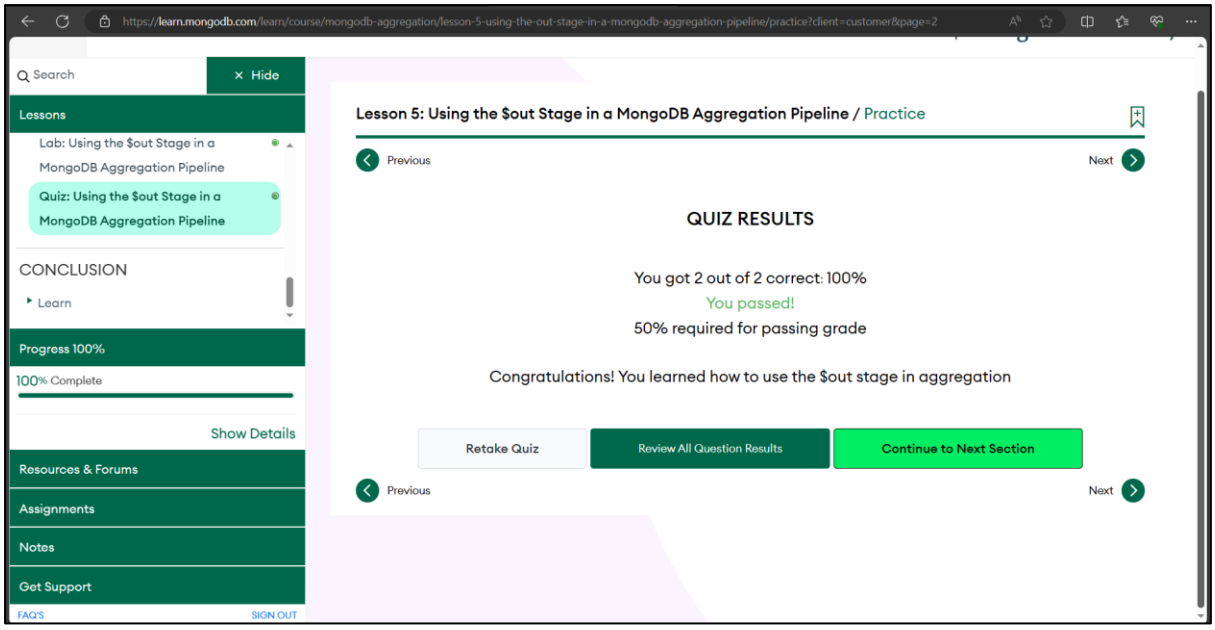

Figure 8.11: Quiz 5 Results for Topic 8

Figure 8.12: Topic 8 Proof of Completion

Topic 9: MongoDB Indexes

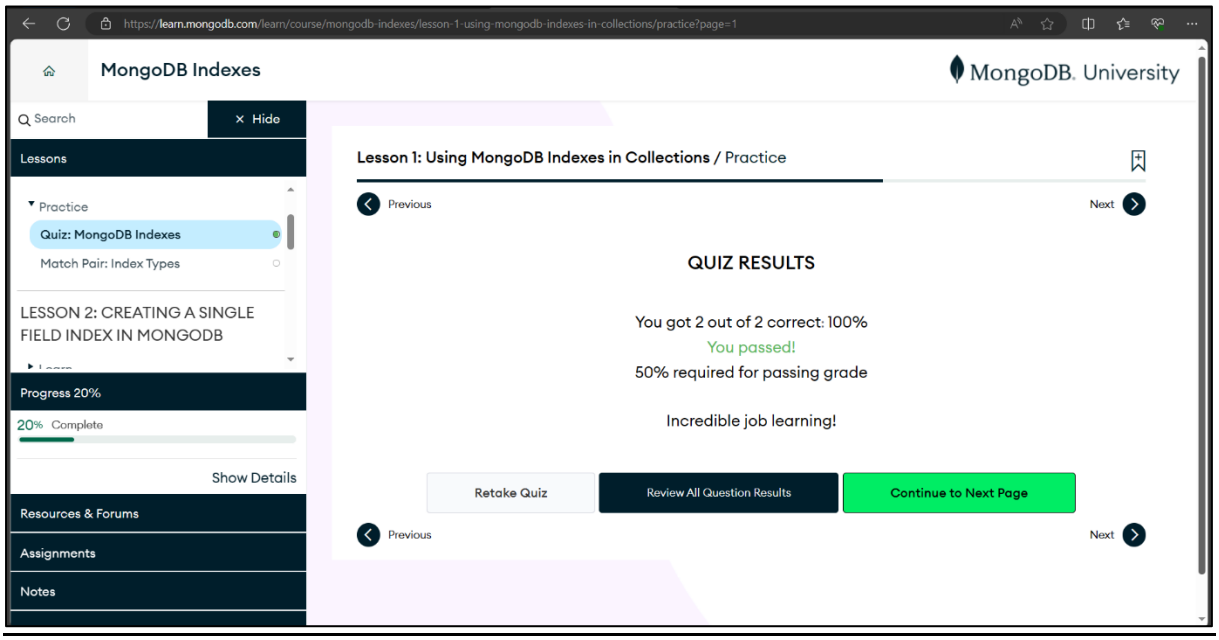

Figure 9.1: Quiz 1 Results for Topic 9

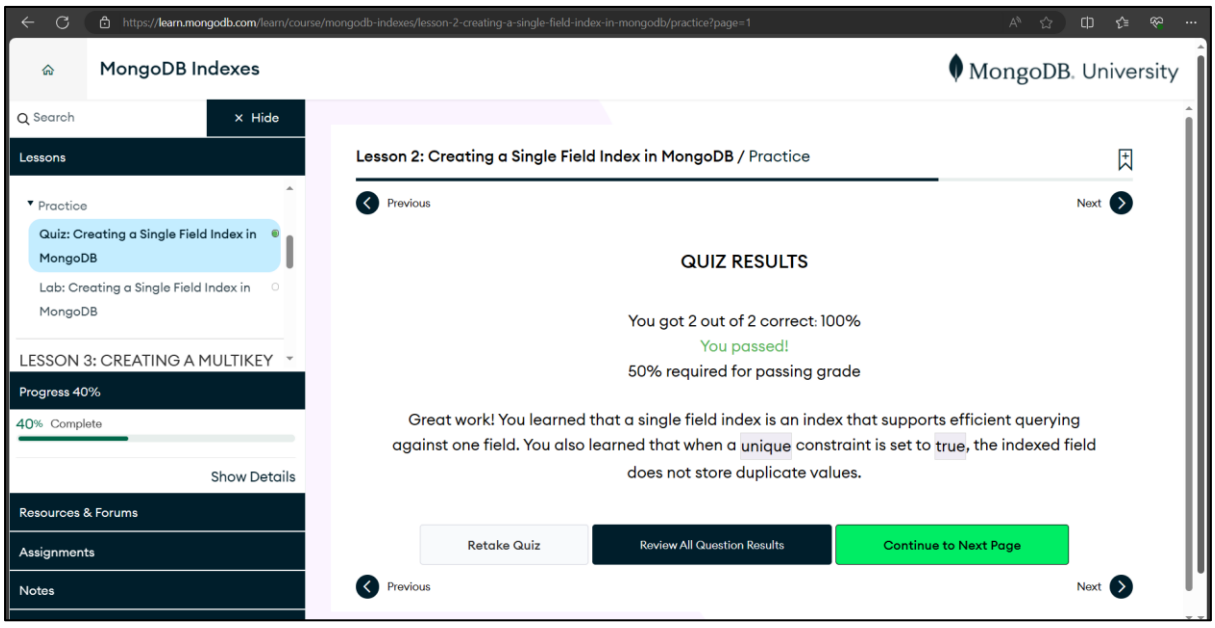

Figure 9.2: Quiz 2 Results for Topic 9

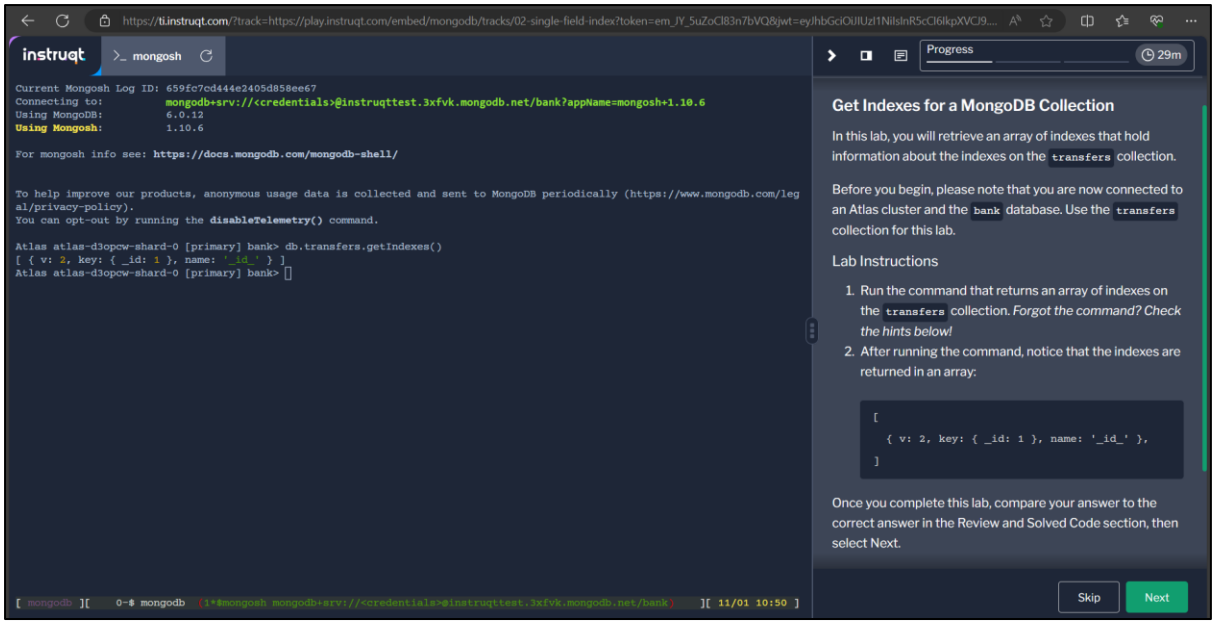

Figure 9.3: Get Indexes for a MongoDB Collection using getIndexes()

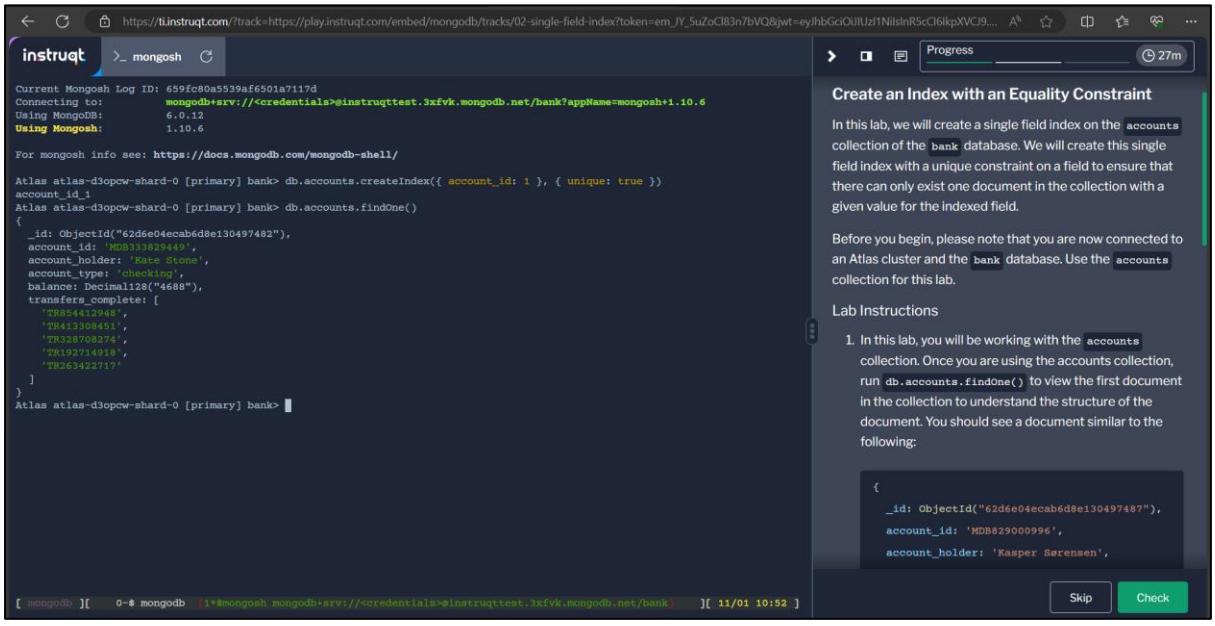

Figure 9.4: Create an Index with an Equality Constraint using createIndex()

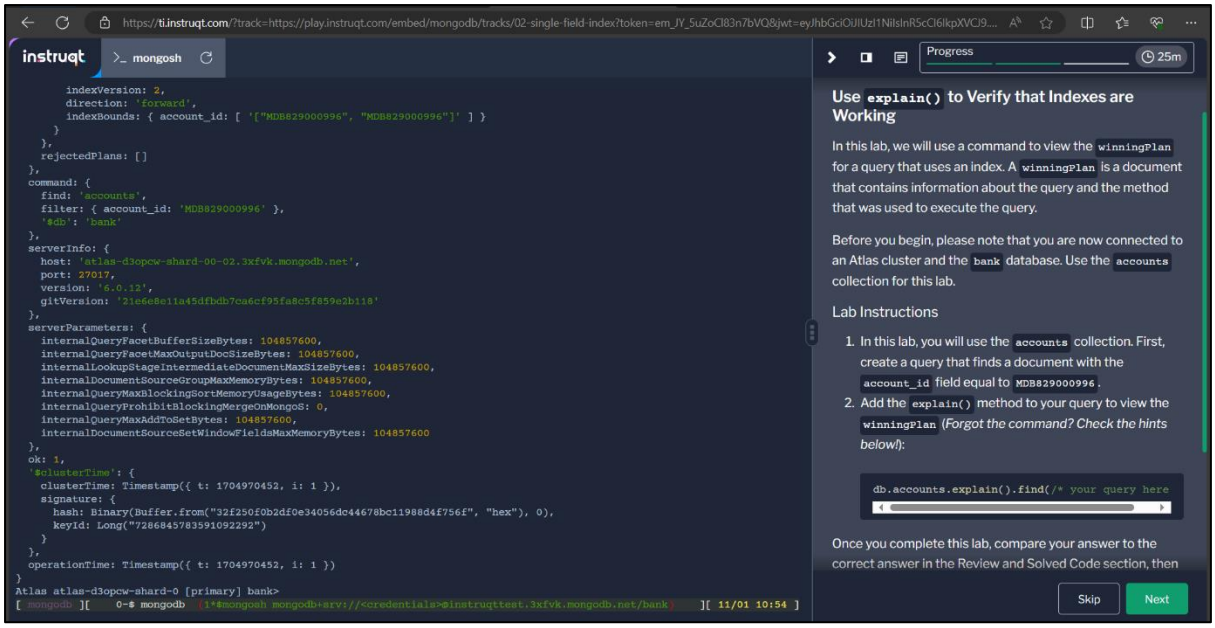

Figure 9.5: Use explain() to Verify that Indexes are Working

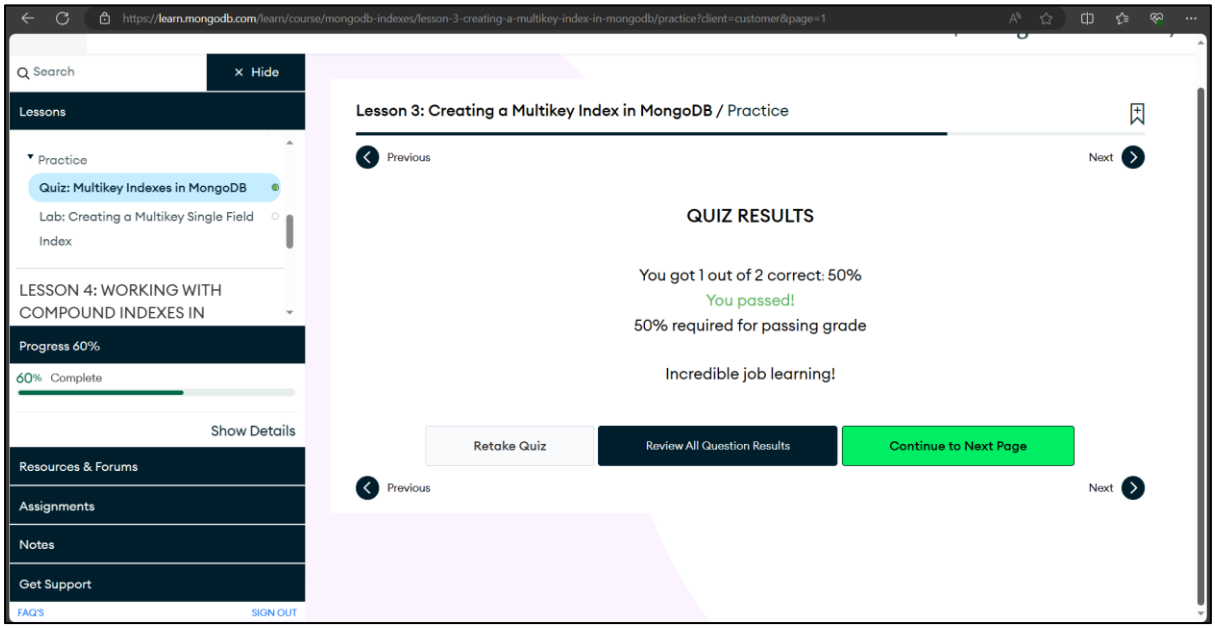

Figure 9.6: Quiz 3 Results for Topic 9

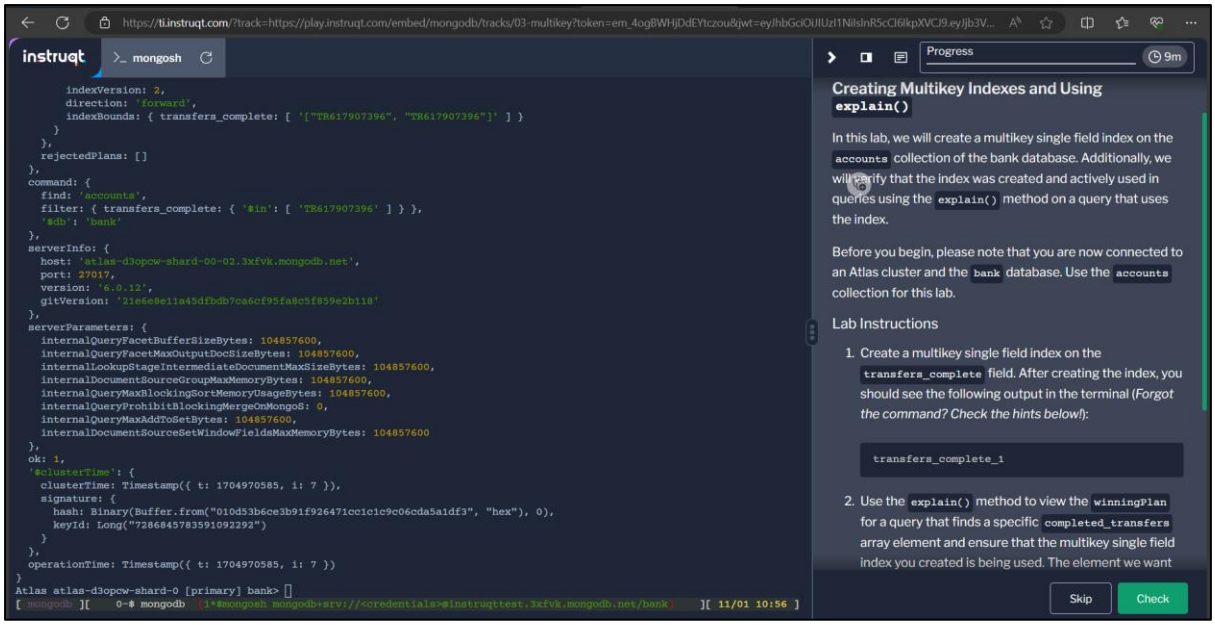

Figure 9.7: Creating Multikey Indexes and Using explain()

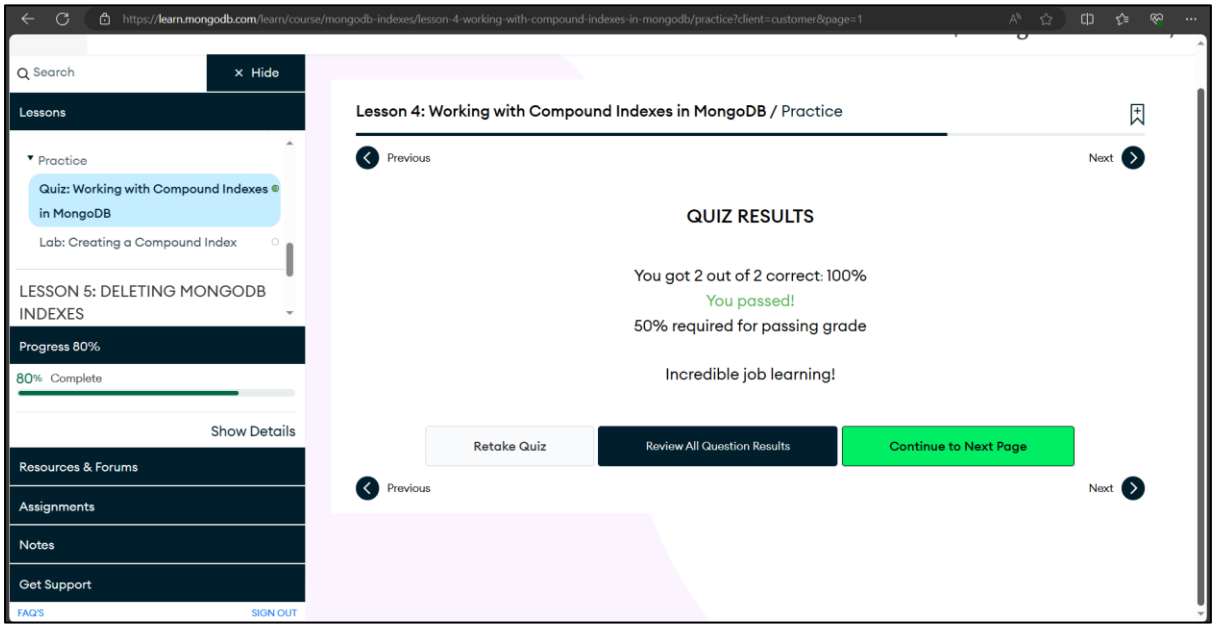

Figure 9.8: Quiz 4 Results for Topic 9

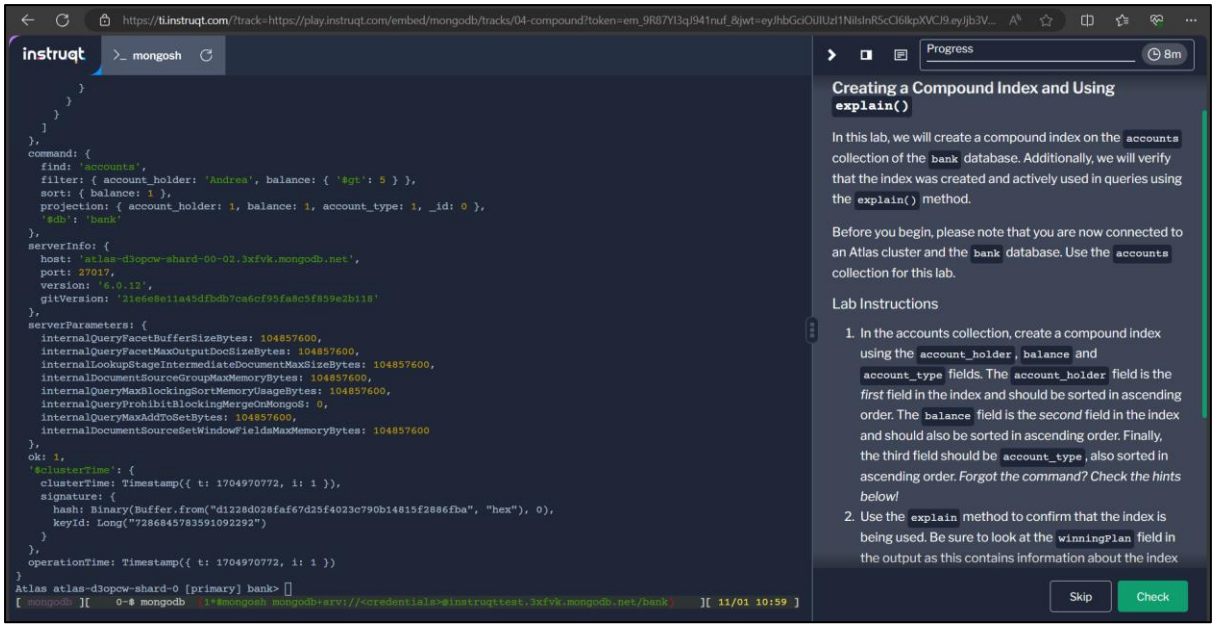

Figure 9.9: Creating a Compound Index and Using explain()

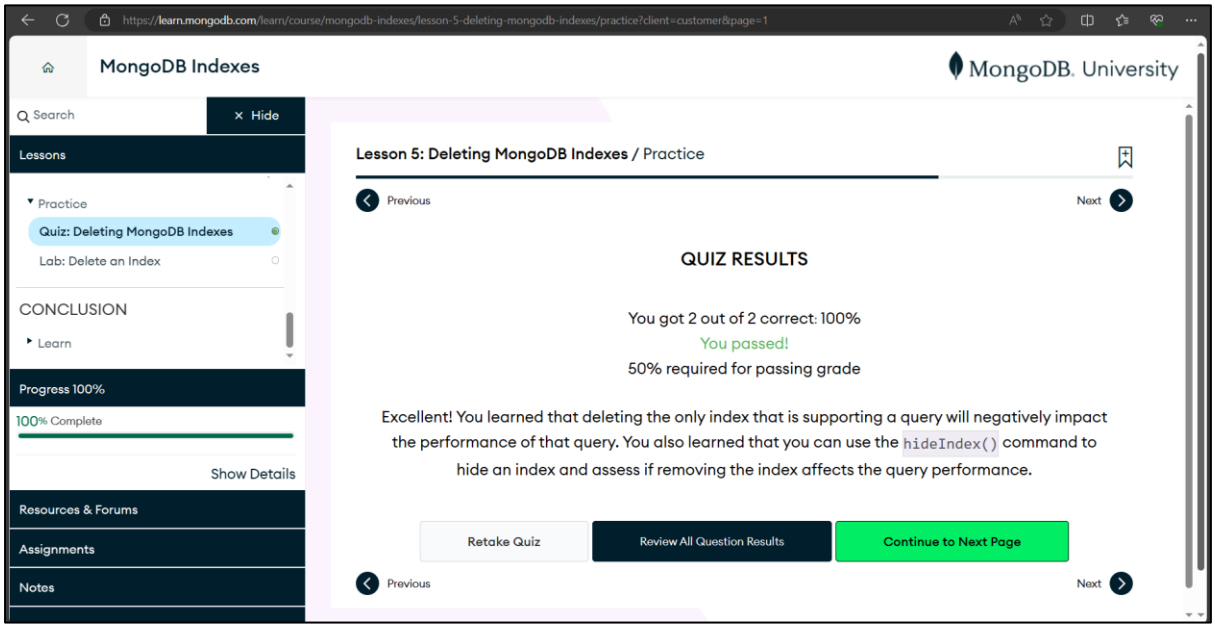

Figure 9.10: Quiz 5 Results for Topic 9

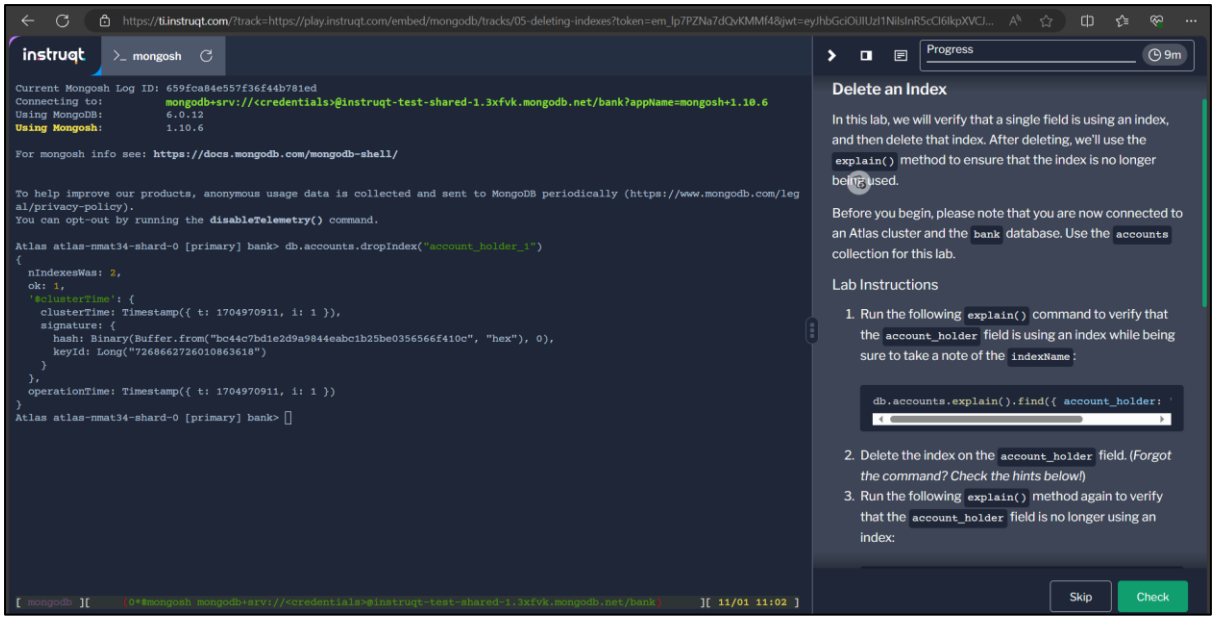

Figure 9.11: Deleting an Index using dropIndex()

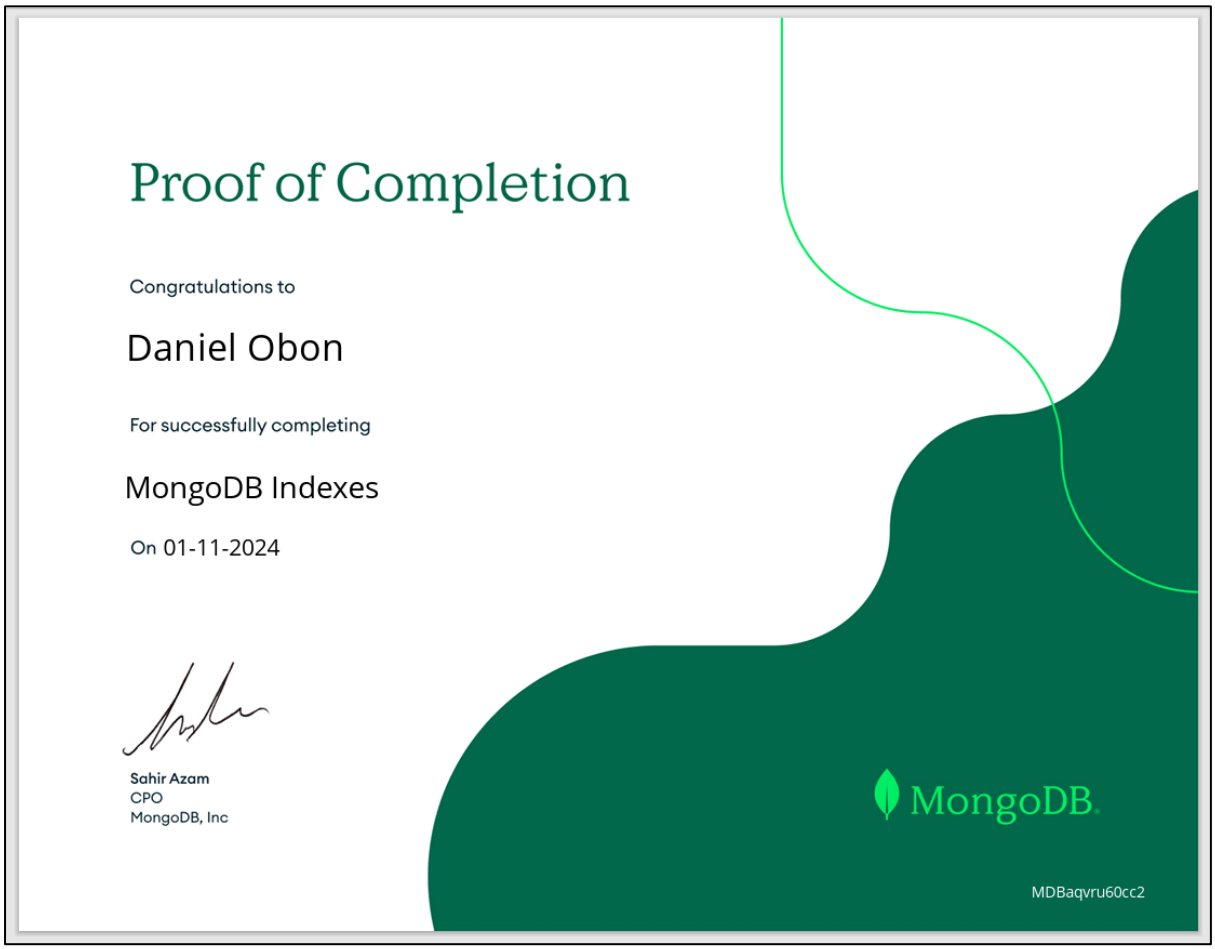

Figure 9.12: Topic 9 Proof of Completion

Topic 10: MongoDB Atlas Search

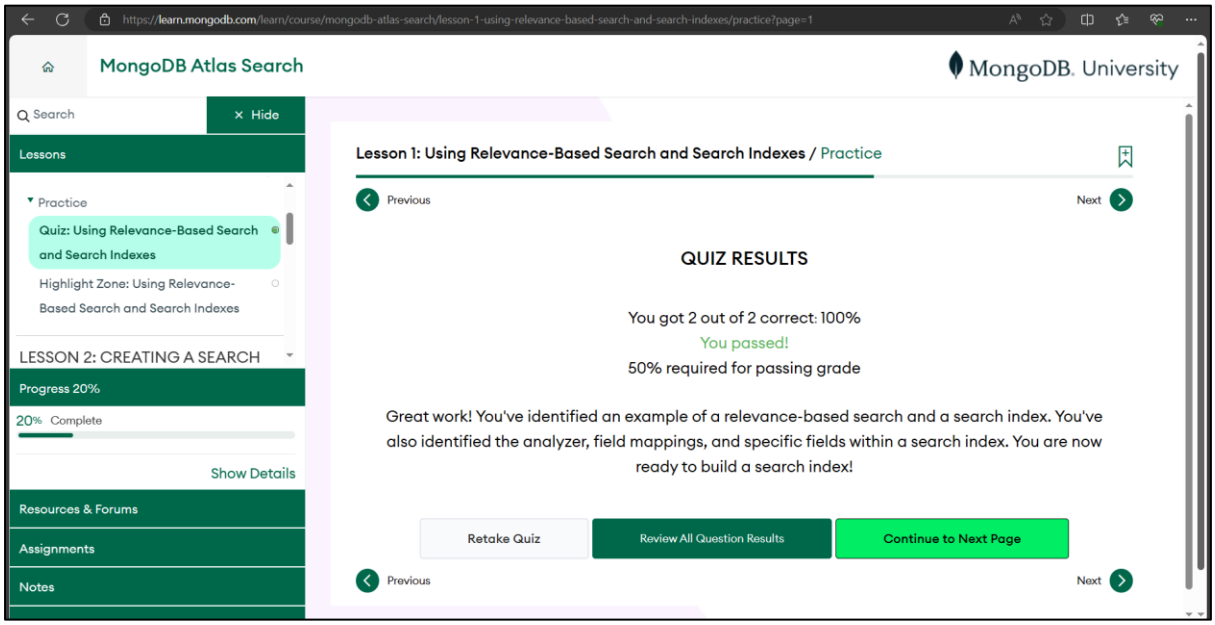

Figure 10.1: Quiz 1 for Topic 10

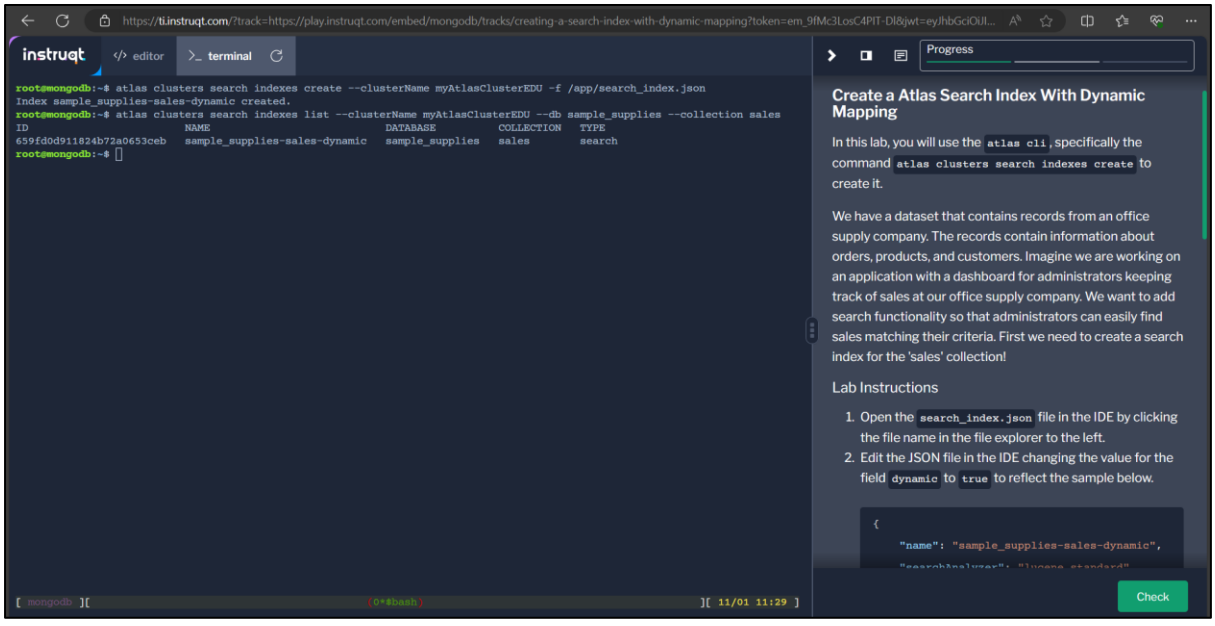

Figure 10.2: Creating an Atlas Search Index With Dynamic Mapping using atlas cli

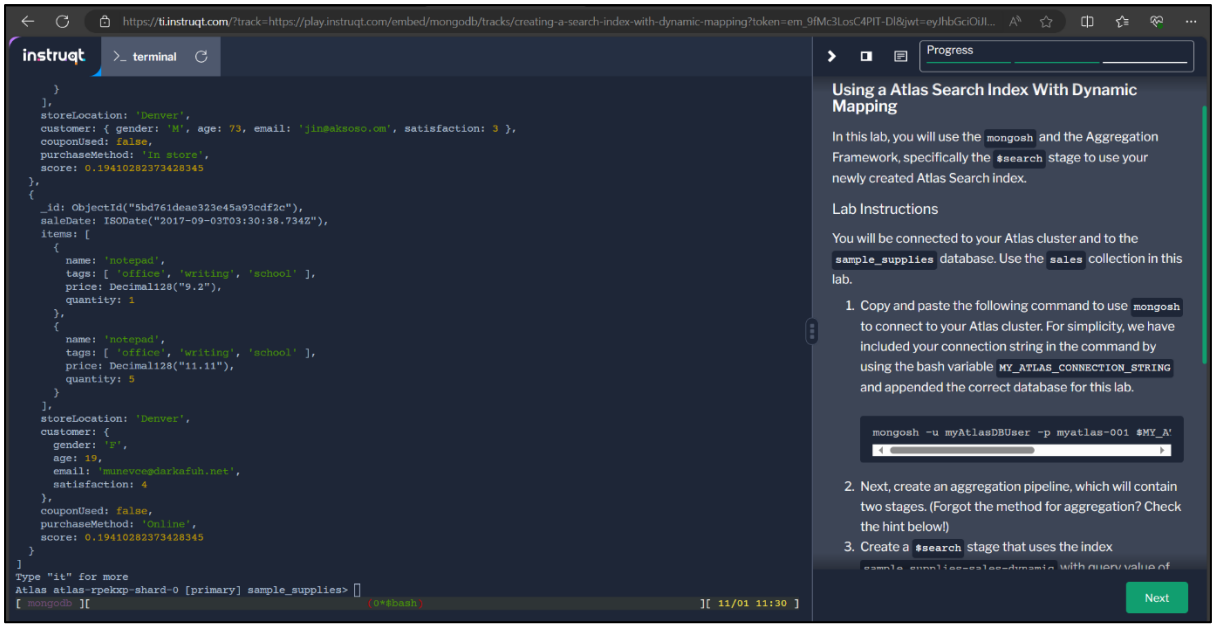

Figure 10.3: Using an Atlas Search Index with Dynamic Mapping using $search

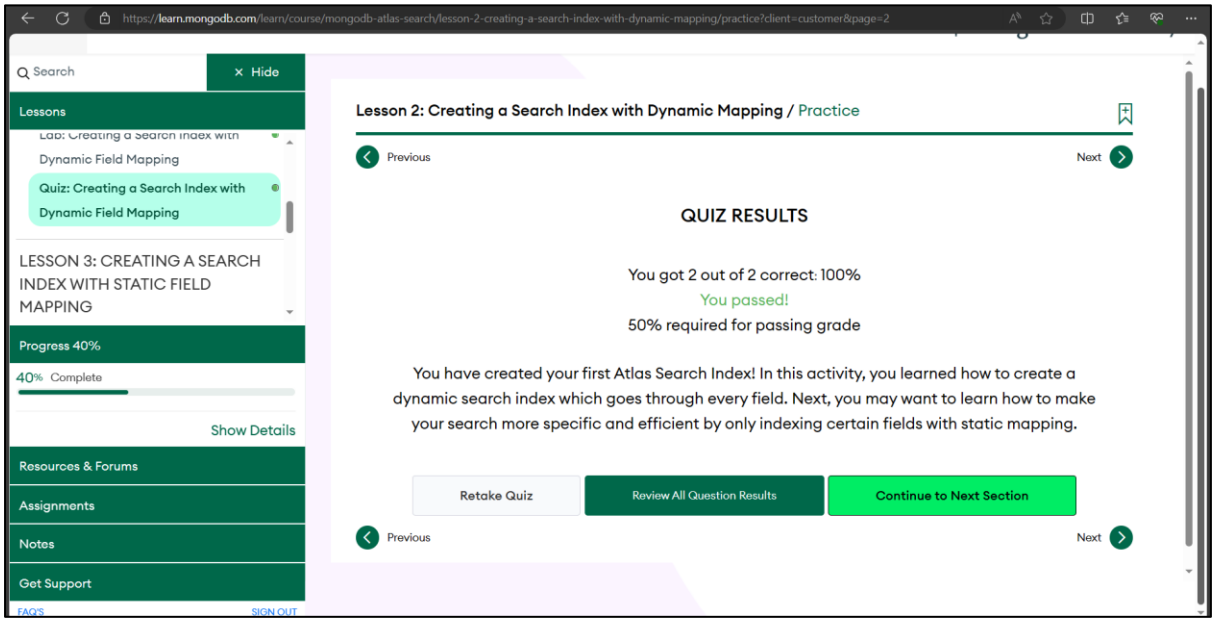

Figure 10.4: Quiz 2 for Topic 10

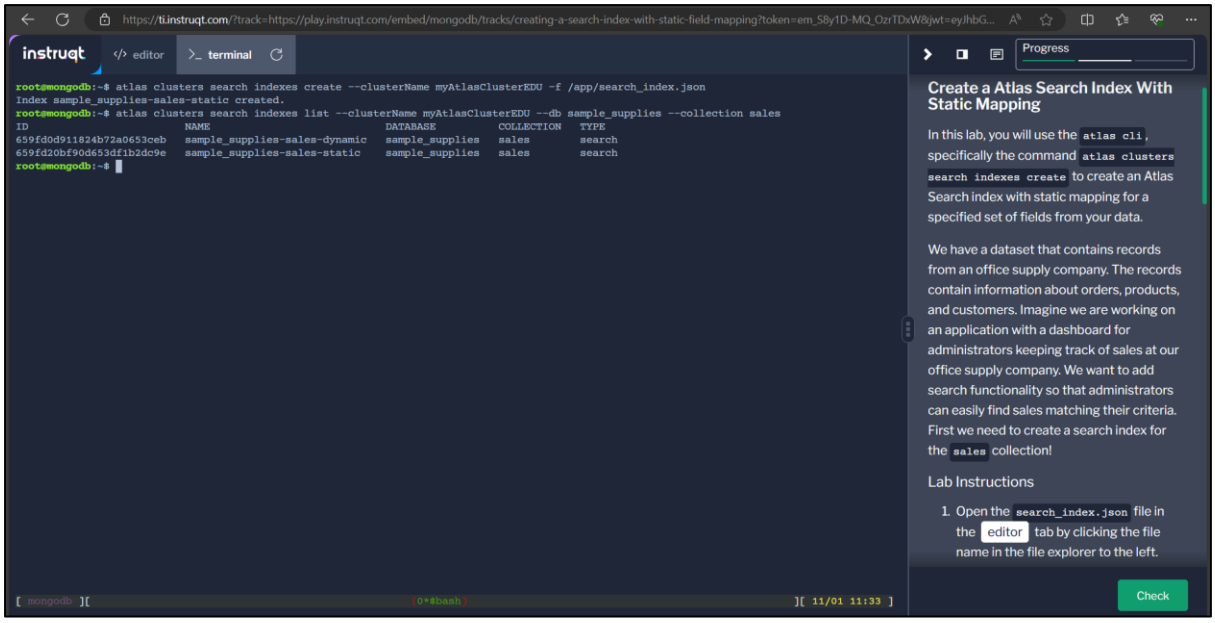

Figure 10.5: Creating an Atlas Search Index with Static Mapping using atlas cli

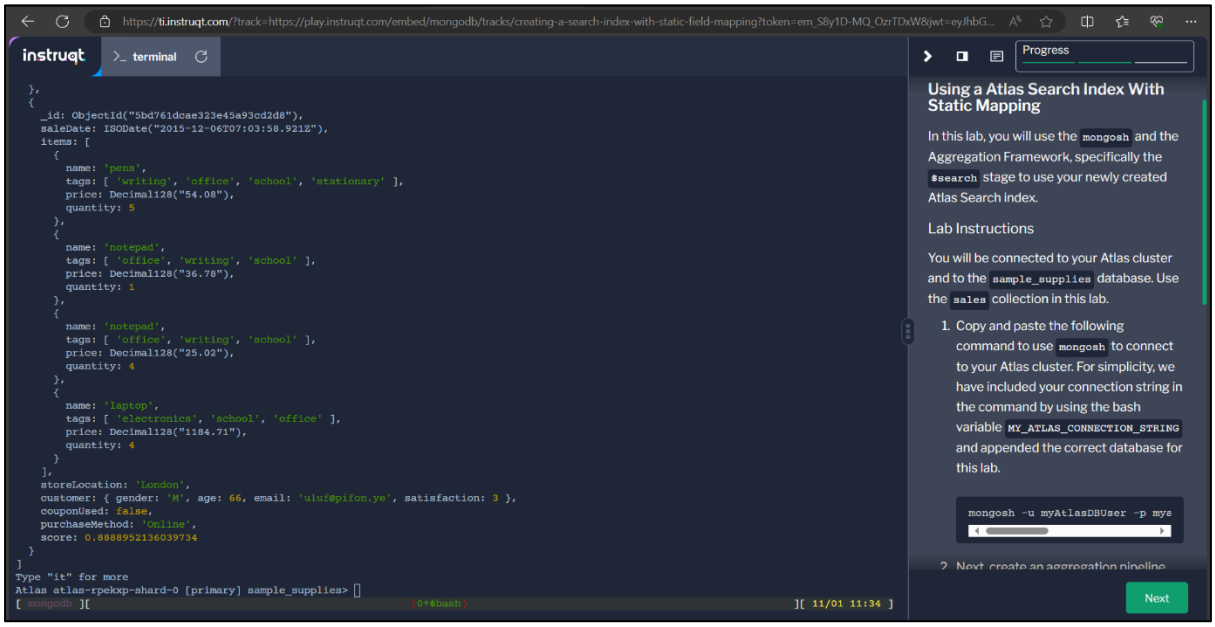

Figure 10.6: Using an Atlas Search Index with Static Mapping with $search

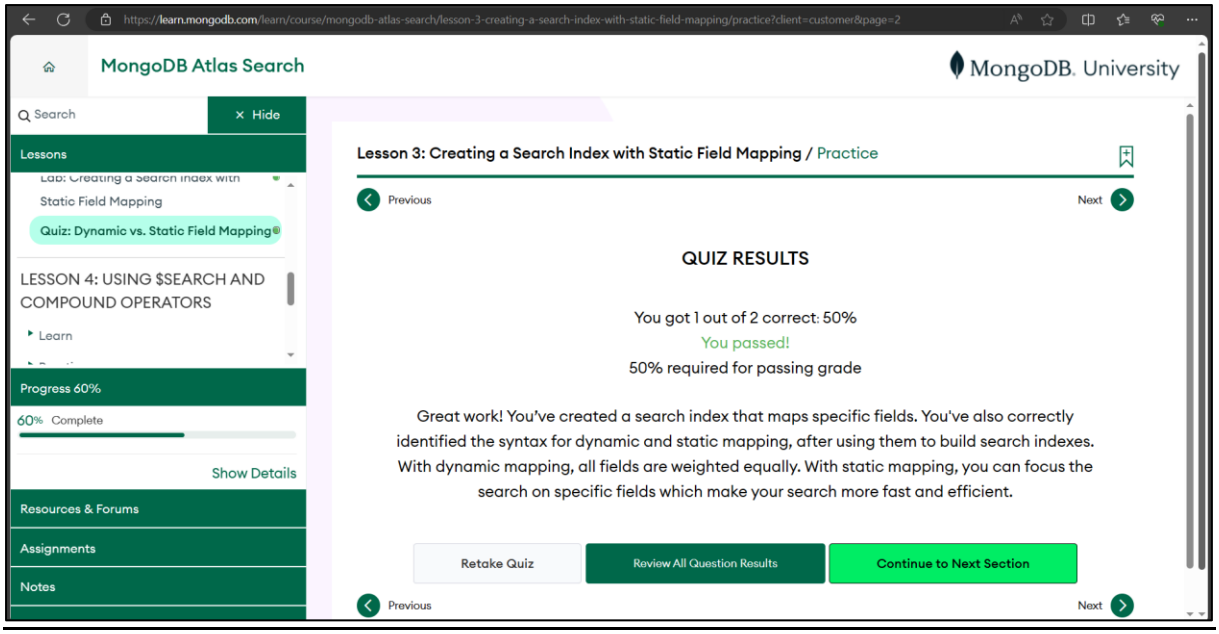

Figure 10.7: Quiz 3 for Topic 10

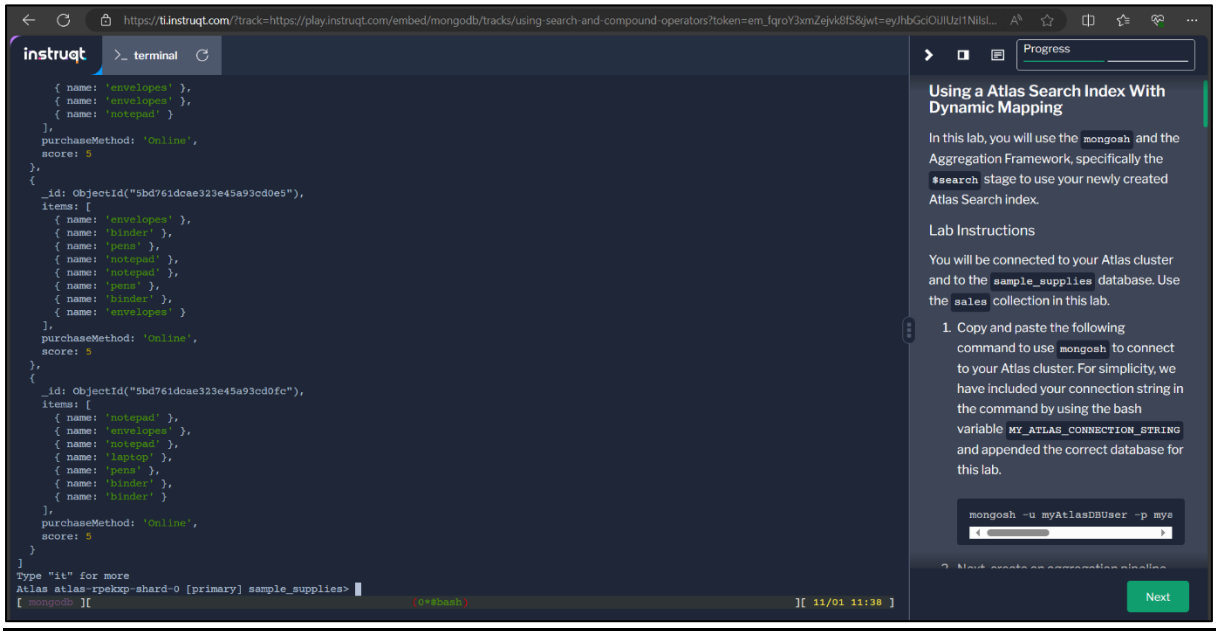

Figure 10.8: Using an Atlas Search Index with Dynamic Mapping with $search

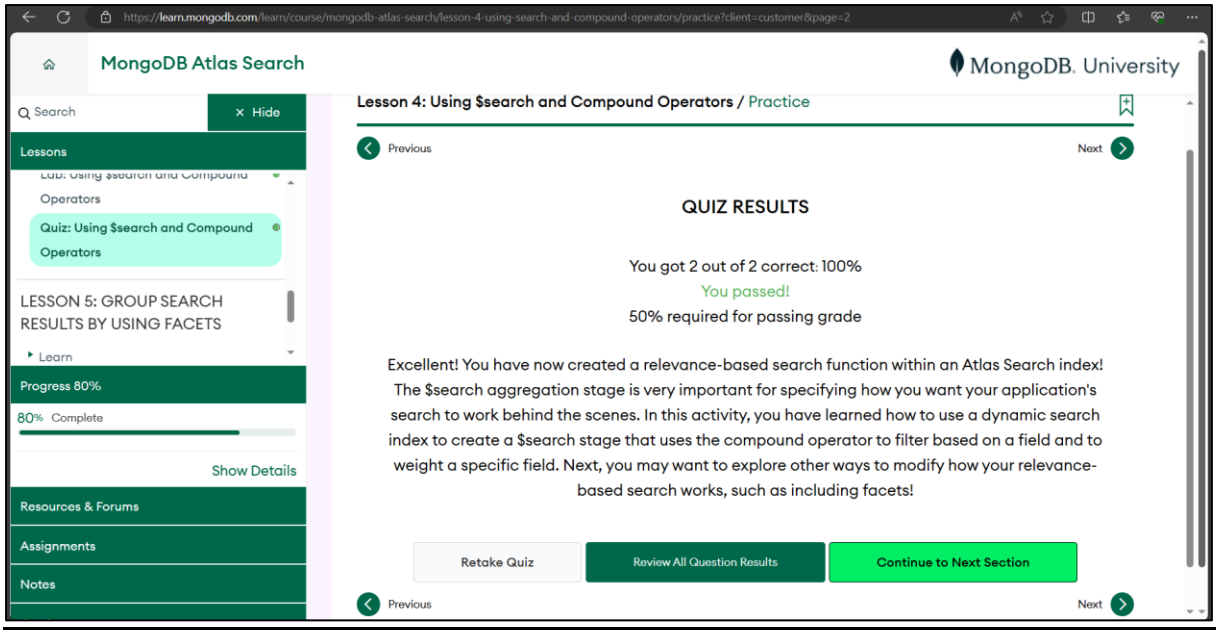

Figure 10.9: Quiz 4 for Topic 10

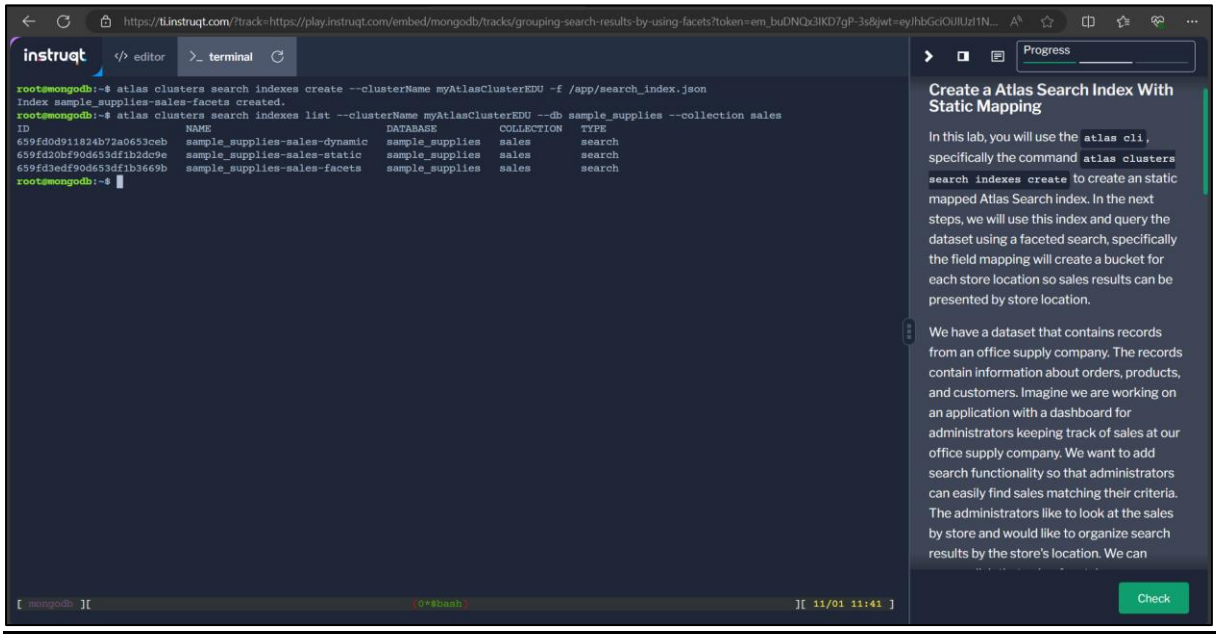

Figure 10.10: Creating an Atlas Search Index with Static Mapping using atlas cli

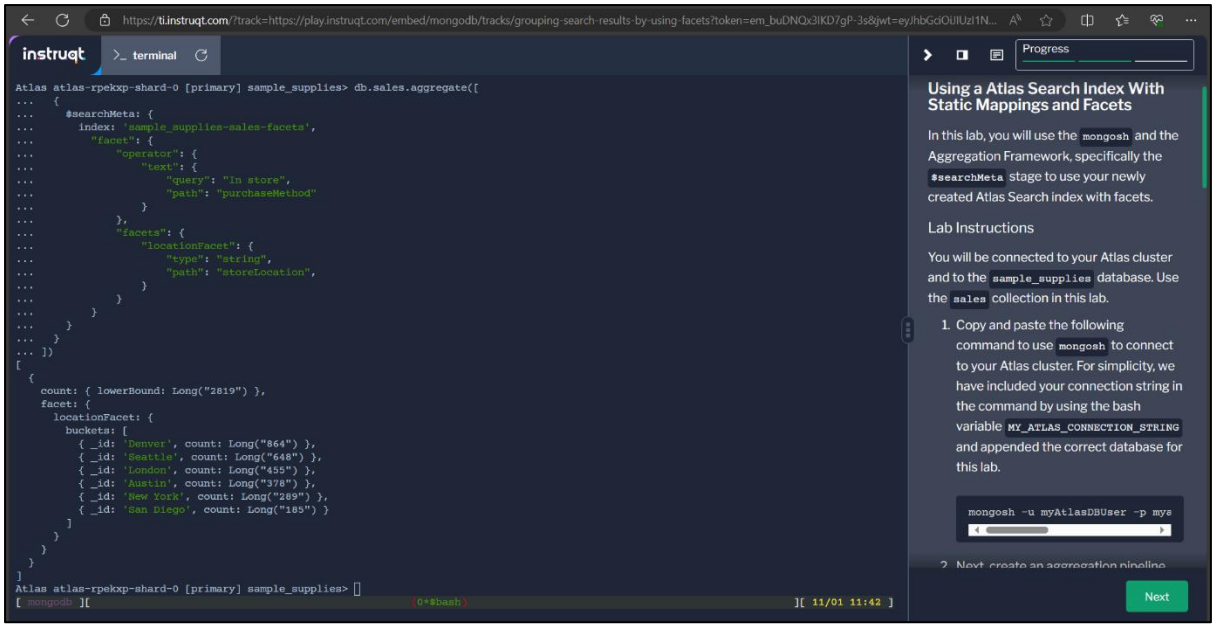

Figure 10.11: Using an Atlas Search Index with Static Mapping and Facets using $searchMeta

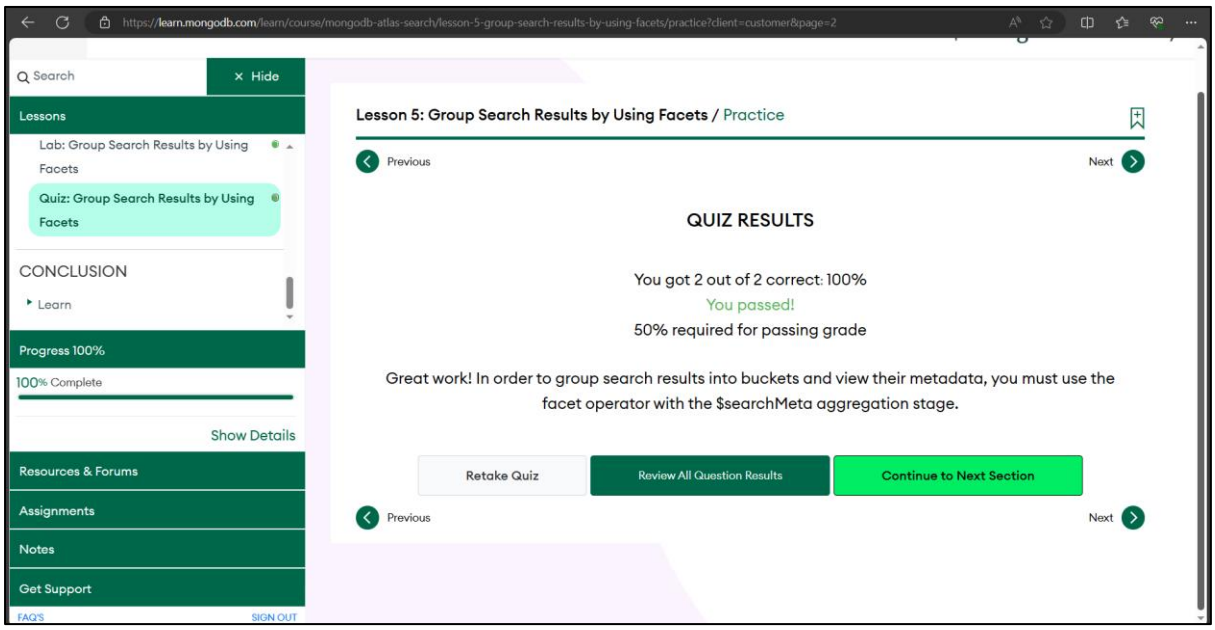

Figure 10.12: Quiz 5 for Topic 10

Figure 10.13: Topic 10 Proof of Completion

Topic 11: MongoDB Data Modelling Intro

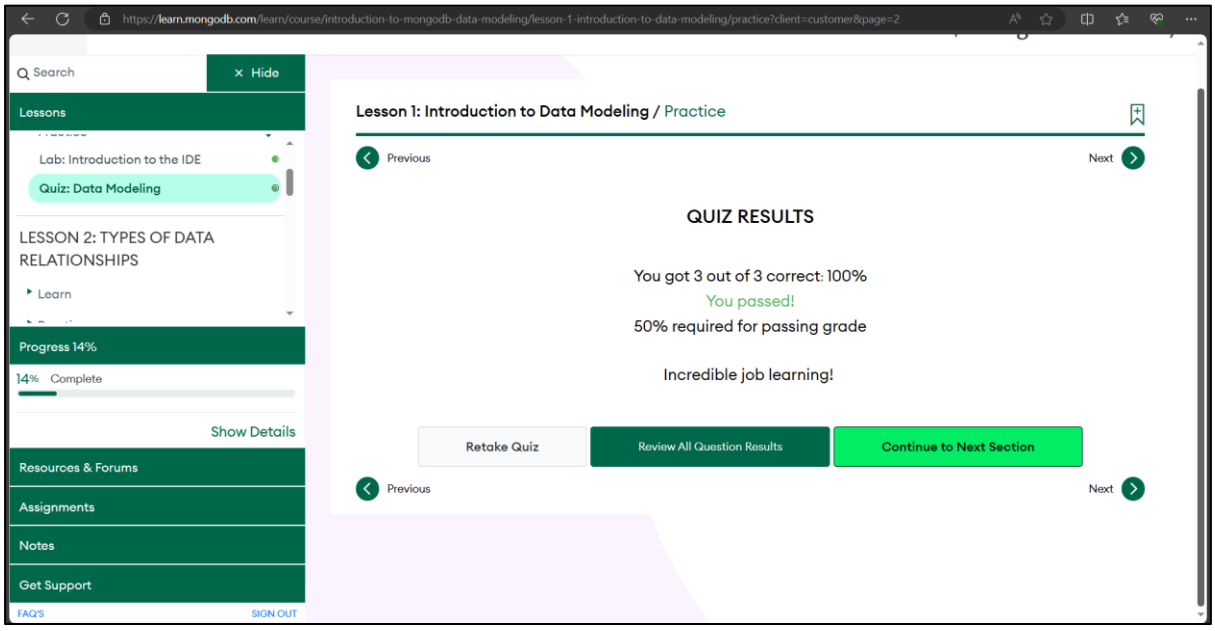

Figure 11.1: Quiz 1 for Topic 11

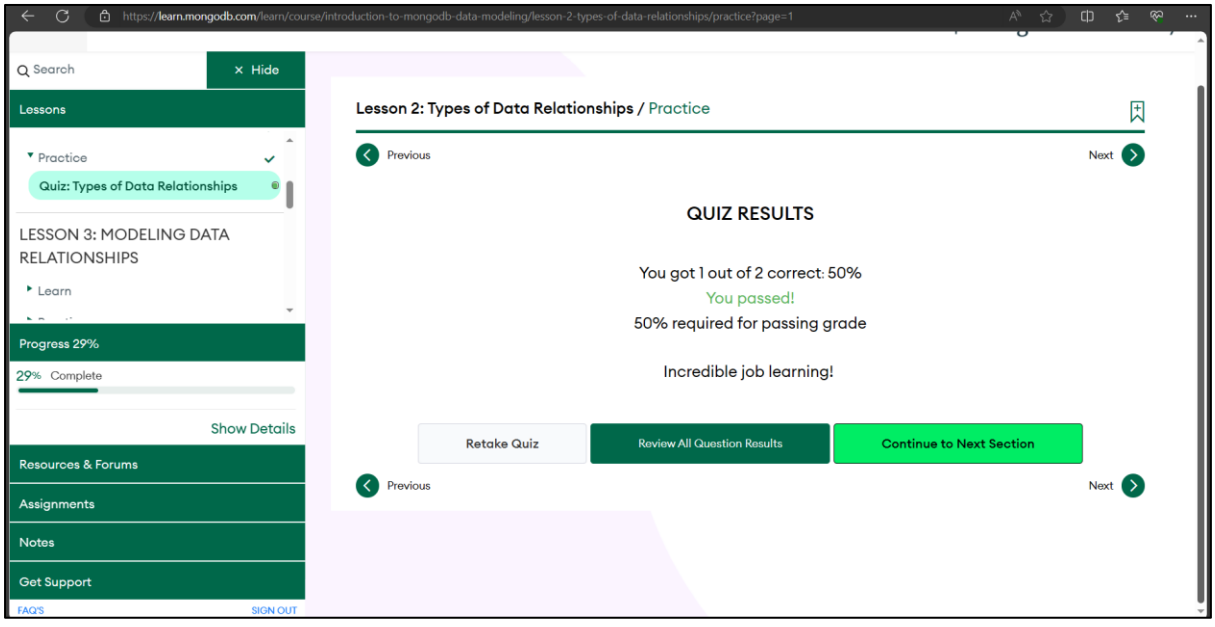

Figure 11.2: Quiz 2 for Topic 11

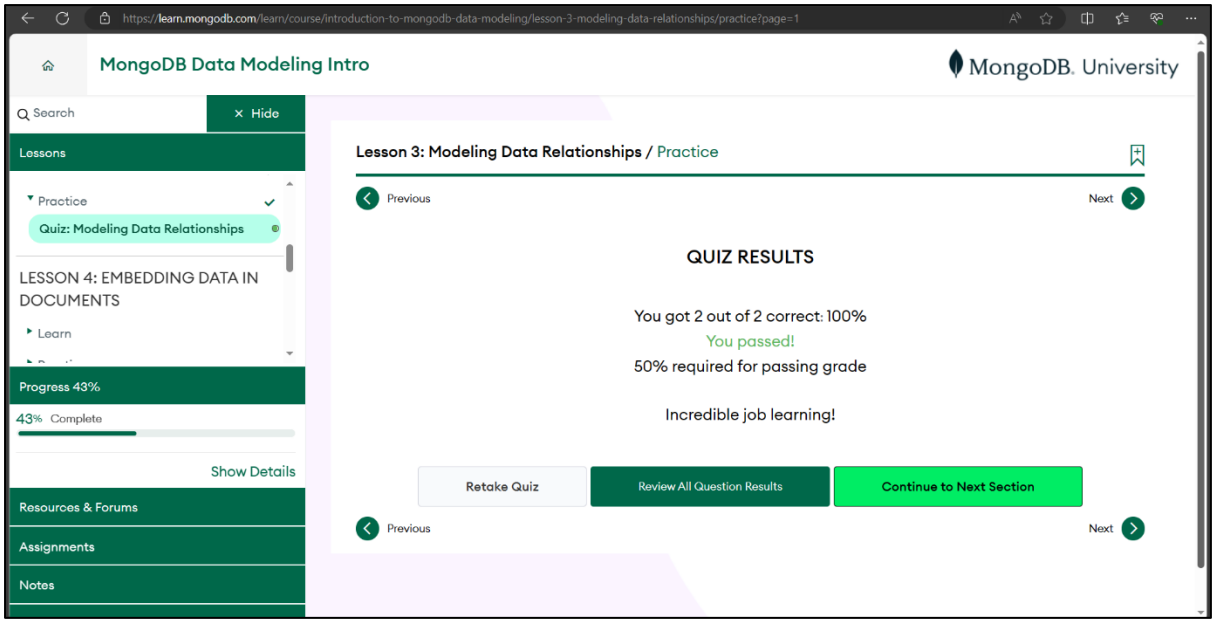

Figure 11.3: Quiz 3 for Topic 11

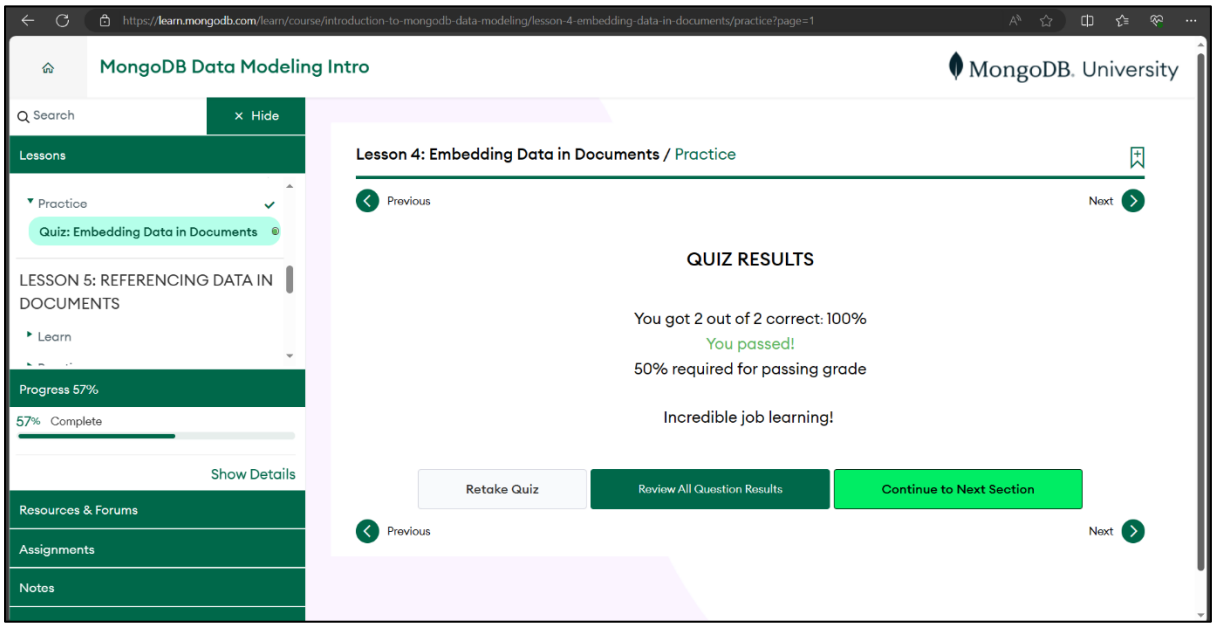

Figure 11.4: Quiz 4 for Topic 11

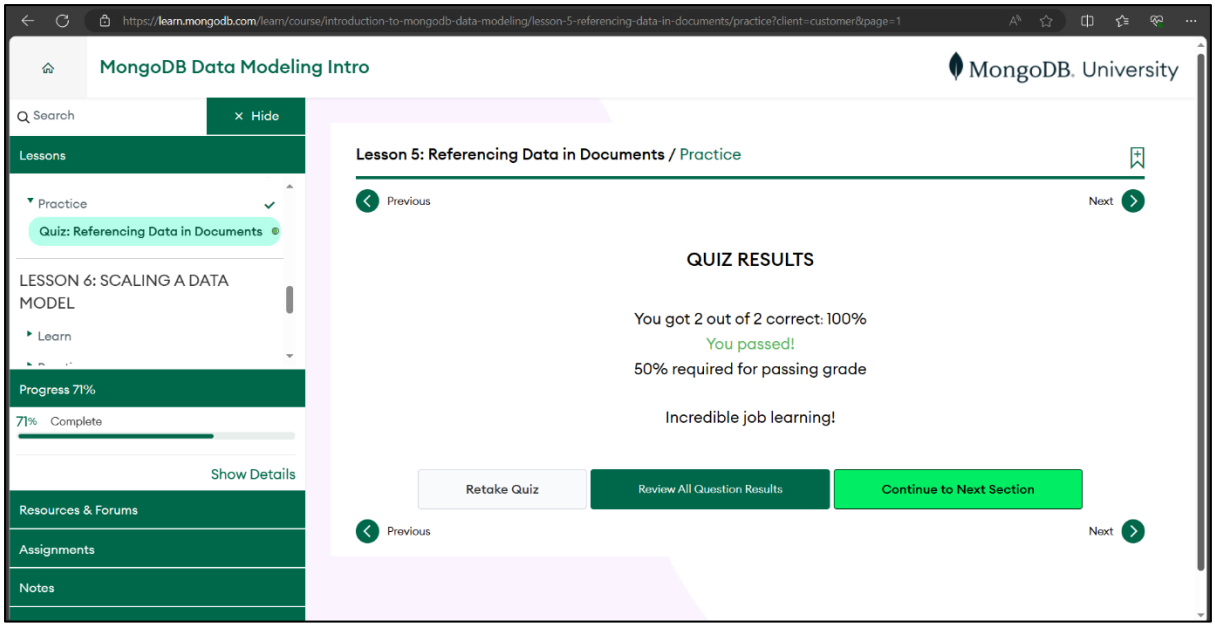

Figure 11.5: Quiz 5 for Topic 11

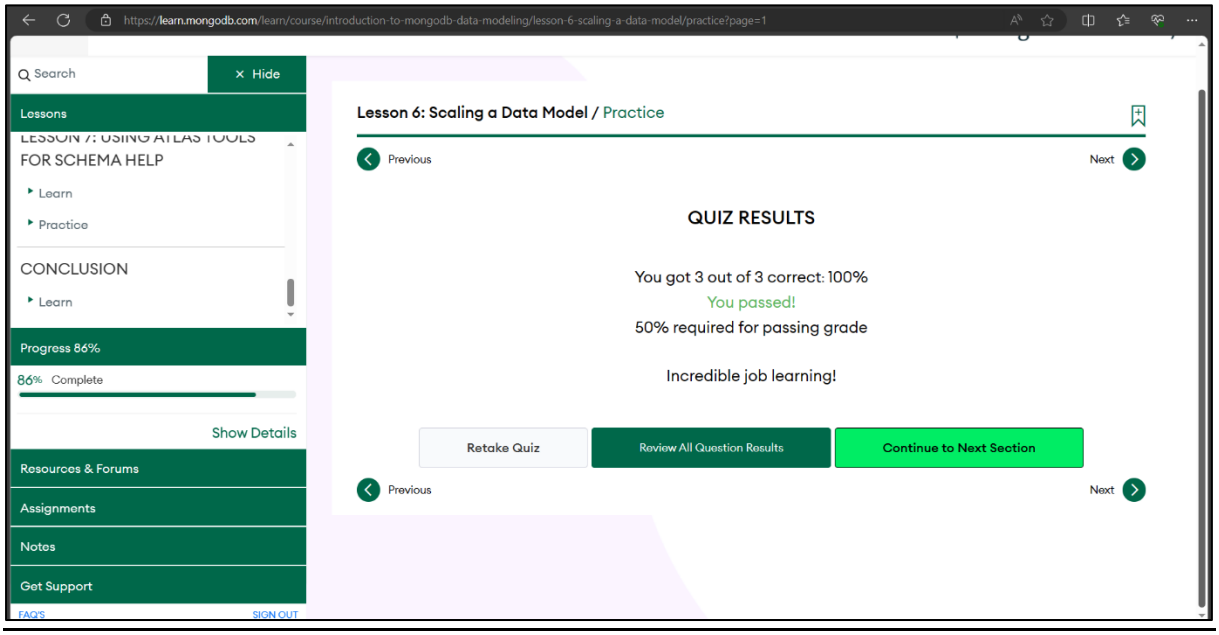

Figure 11.6: Quiz 6 for Topic 11

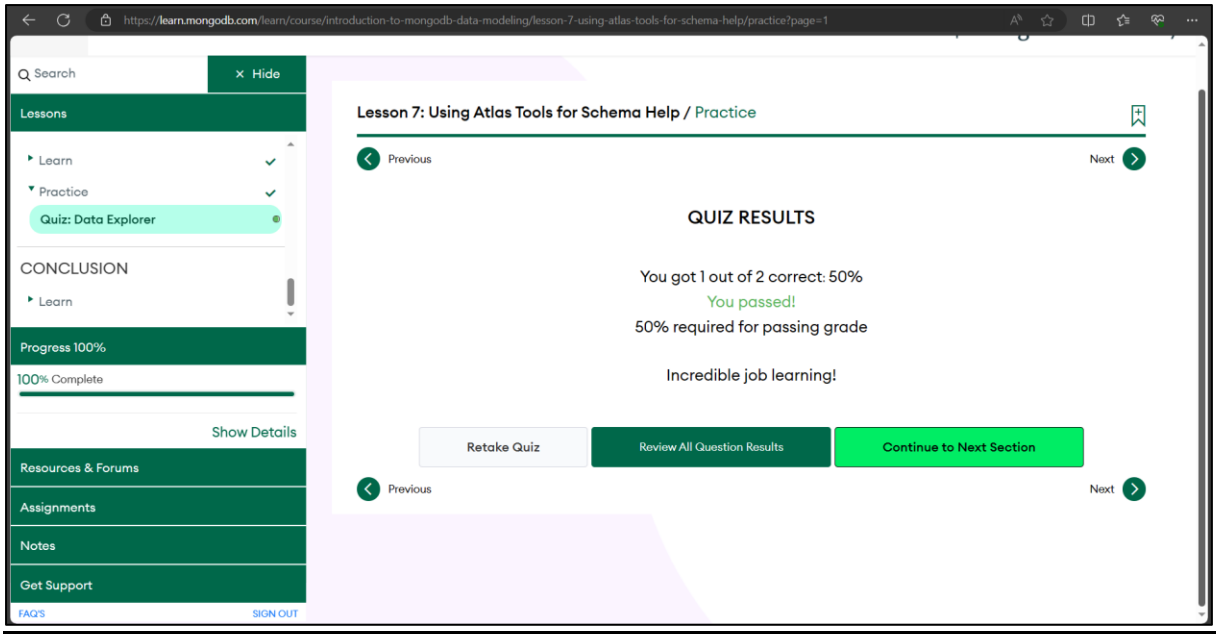

Figure 11.7: Quiz 7 for Topic 11

Figure 11.8: Topic 11 Proof of Completion

Topic 12: MongoDB Transactions

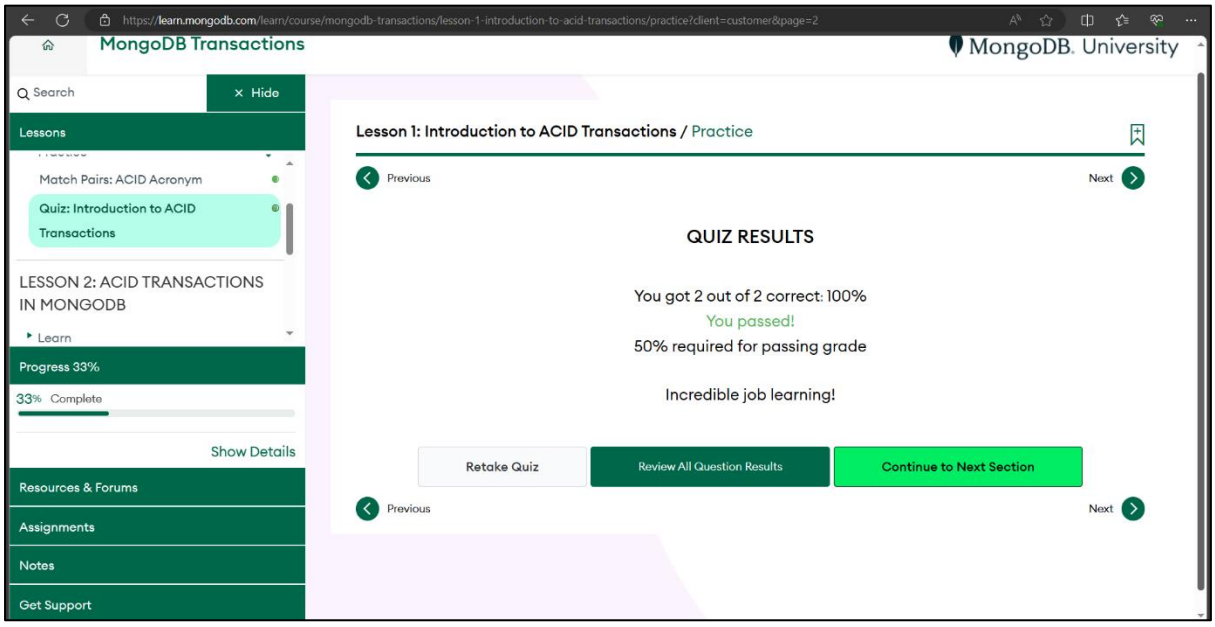

Figure 12.1: Quiz 1 for Topic 12

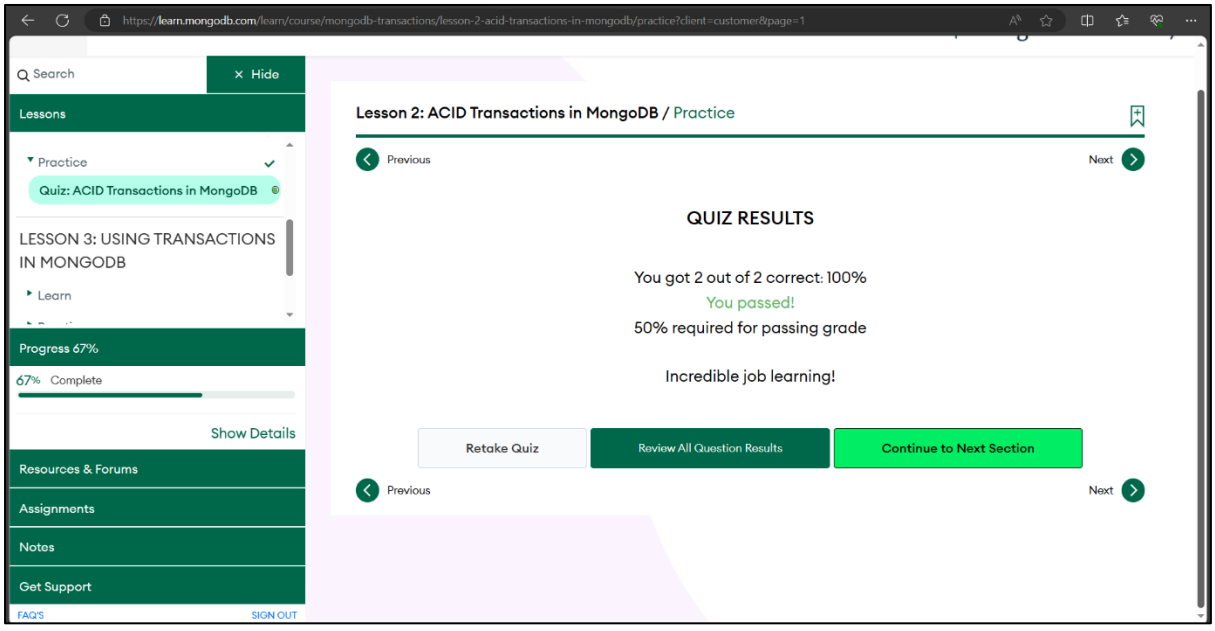

Figure 12.2: Quiz 2 for Topic 12

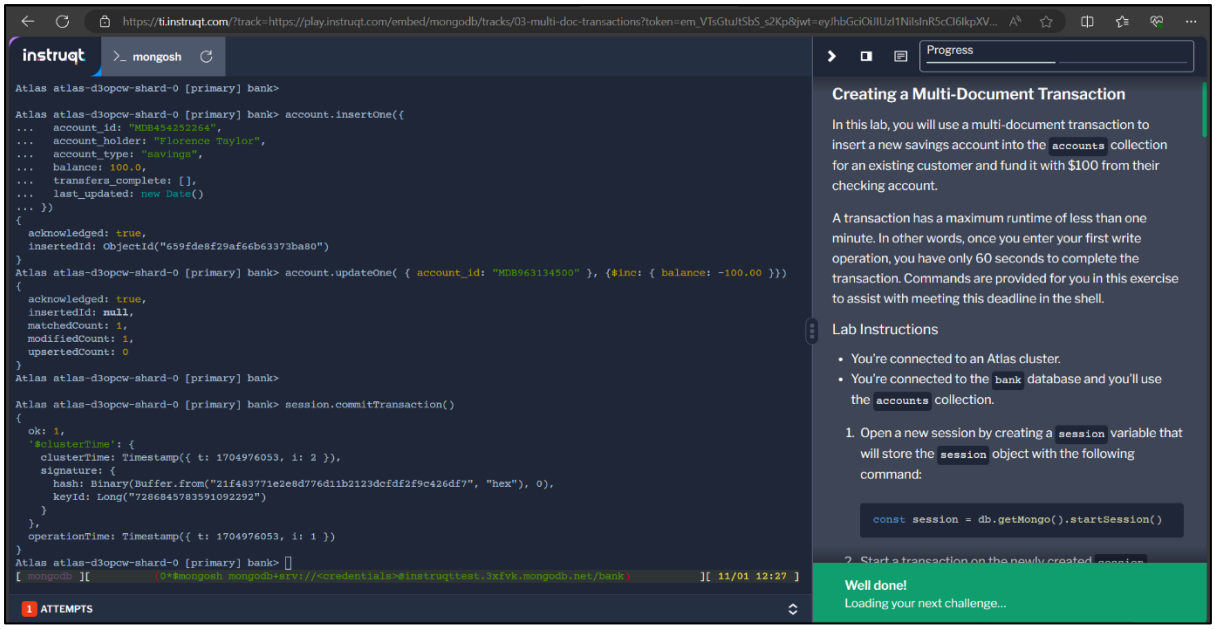

Figure 12.3: Creating a Multi-Document Transaction

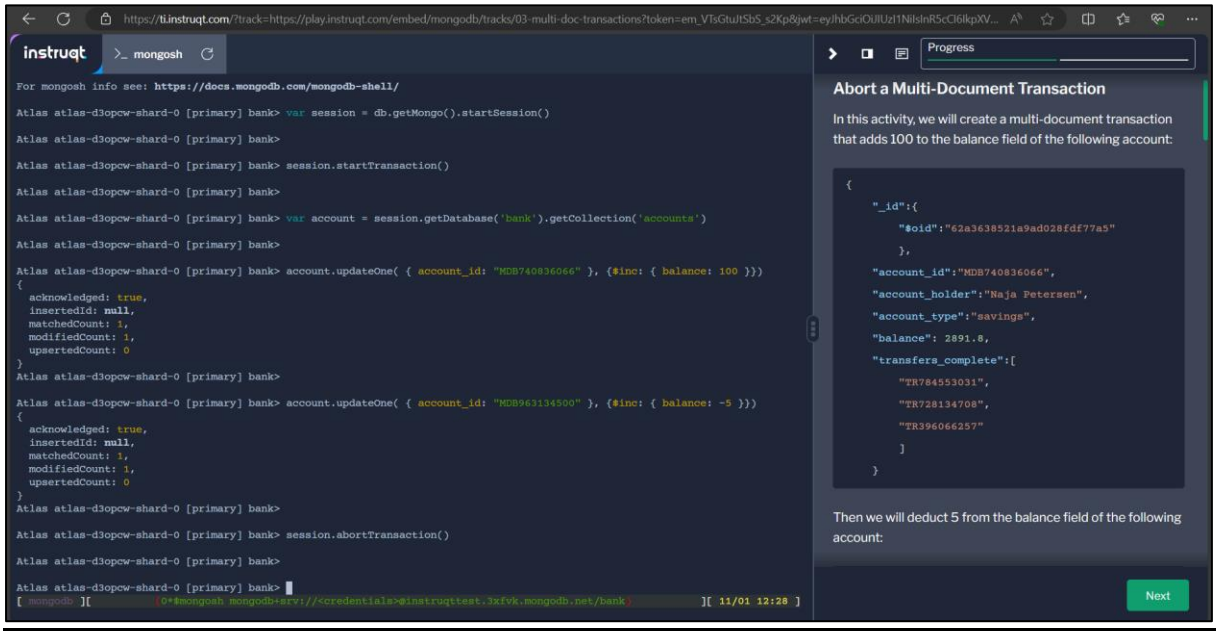

Figure 12.4: Abort a Multi-Document Transaction

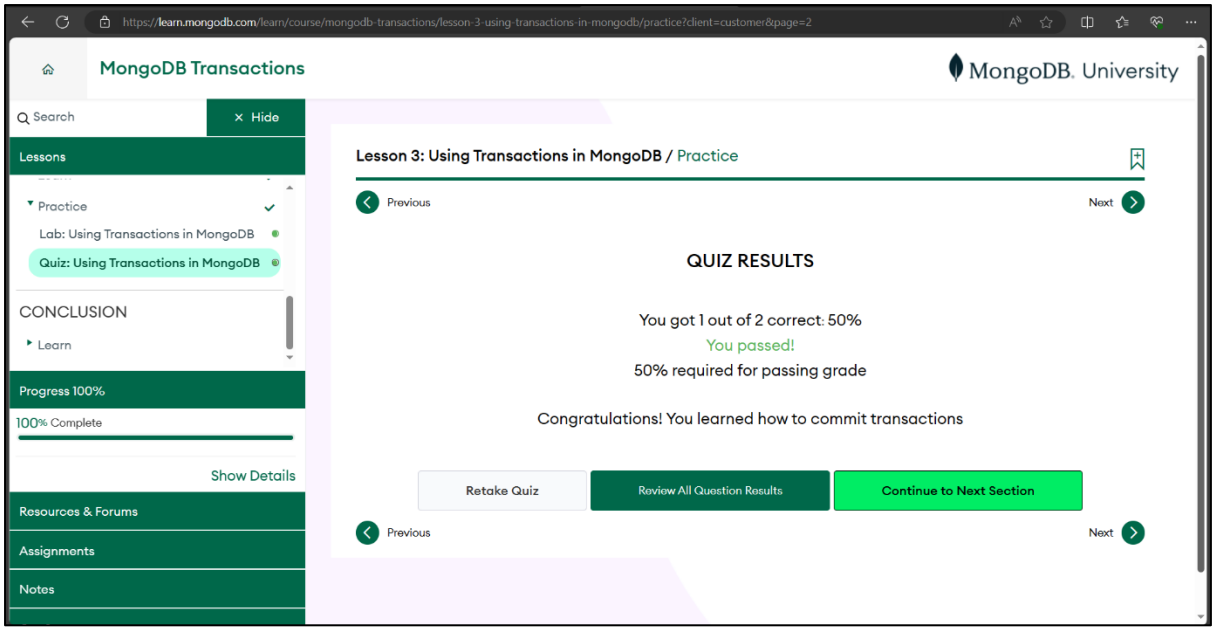

Figure 12.5: Quiz 3 for Topic 12

Figure 12.6: Topic 12 Proof of Completion