A cartoon of a coat of arms

AI-generated content may be incorrect.

TASK 2

Sophie Fidan 21068639

UFCFU3-15-3 Advanced Databases

|  |
| --- |
| MONGODB SETUP |

MongoDB setup using MongoDB Compass, and the data was imported straight from the CSV file.

Connecting localhost:

A screenshot of a computer

AI-generated content may be incorrect.

Creating a new database and collection:

A screenshot of a computer

AI-generated content may be incorrect.

Note: In a NoSQL model, a single collection (table) can be used to store all data in a denormalised format to simplify data retrieval and reduce complexity.

Importing data from CSV File:

A screenshot of a computer

AI-generated content may be incorrect.

The *Person* Collection:

A screenshot of a computer

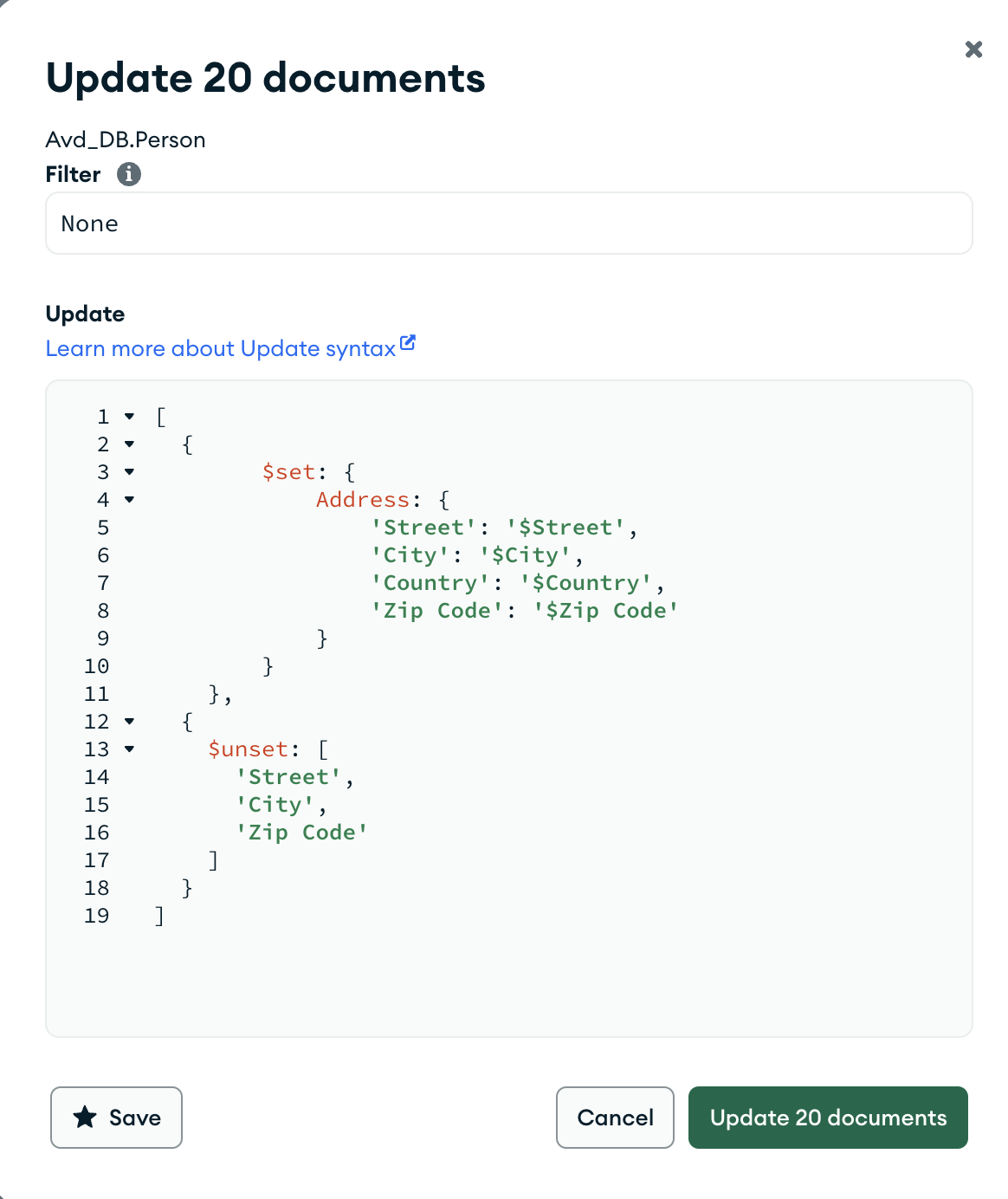
AI-generated content may be incorrect.

|  |
| --- |
| updating documents |

The data is transformed into a more structured design to improve efficiency:

* The imported CSV file had a flat structure, which made address details, favourite items and neighbours’ information scattered as separate fields. By grouping related data into embedded subdocuments, the data is more readable and organised.
* This design simplifies updates and maintenance, as the entire subdocument can be updated with a single query, reducing redundancy and complexity.
* With this design, queries become more efficient, as MongoDB can fetch entire objects instead of selecting multiple fields when retrieving data. This also improves indexing performance of traversing the nested documents rather than scanning unrelated fields.

Updating Address fields: change this



Instead of having different fields for *Street*, *City*, *Country* and *Zip Code*, the address details are reconstructed into a nested object called *Address*.

Update *Favourites* fields:

A screenshot of a computer program

AI-generated content may be incorrect.

Instead of having different fields for *Favourite Book*, *Favourite Drink*, and *Favourite Activity*, all favourite types are reconstructed into a nested object called *Favourites*.

Update Neighbours field:

A screenshot of a computer program

AI-generated content may be incorrect.

The neighbour information of neighbour name and email is converted into an array of objects to work efficiently with two neighbour object with their values.

Example object after all updates:

|  |
| --- |
| DOCUMENT DATA MODEL |

The Document Data Model is created using PlantUML as below:

|  |
| --- |
| queries |

1. Cds