COMPUTER SCIENCE: DATABASES PRACTICAL 2

GROUP NAME:

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## 1. Introduction

Our team chose the E-commerce theme because we are all interested in working with online shopping websites and apps in the future. E-commerce is a growing field, and learning how to manage product data, customer information, and orders will be very useful for our careers.

This document explains our e-commerce database and how to set up and use our application.

## 2. Dataset Overview

We chose the ecommerce\_db that stores information for an online store. It has three collections:

2.1 Users Collection (Customer Information)

This stores information about people who shop on the website:

* name: Customer's full name
* email: Their email address
* address: Where they live (street, city, zip code, country)
* order\_history: List of orders they've placed
* payment\_methods: How they pay (credit cards, etc.)

2.2 Products Collection (Items for Sale)

This stores information about products available for purchase:

* name: Product name
* description: What the product is
* price: How much it costs
* category: Type of product (Electronics, Books, Clothing, etc.)
* tags: Keywords to help with search
* features: Special characteristics of the product
* reviews: What customers think about the product
* variants: Different colors or sizes available

2.3 Orders Collection (Customer Purchases)

This stores information about customer orders:

* user\_id: Which customer placed the order
* order\_date: When they ordered
* total\_amount: Total cost of the order
* items: What products they bought and how many
* shipping\_address: Where to send the order
* status\_history: Order progress (Pending, Shipped, etc.)

## 3. How to Run the Application

What You Need First:

* Python installed on your computer
* A MongoDB Atlas account (free)
* Internet connection

Accessing Our Database:

We have created a database user account called "admin" for anyone else who wants to access our database. Here's how to connect:

Step 1: Connection Details

Cluster connection string:

| mongodb+srv://admin:admin2@cluster0.lkmoqjo.mongodb.net/?retryWrites=true&w=majority&appName=Cluster0 |
| --- |

The password for the "admin" user is <admin2>

Step 2: Install Python Packages

Open your command prompt or terminal and type:

pip install pymongo faker

Step 3: Update Connection String in Files

You will need to update TWO files with the connection information we provide:

In ecommerce\_dataset.py, find this line:

MONGO\_URI = "#TODO: add your URI here for your cluster"

Replace it with the connection string we provided.

In app.py, find this line:

MONGO\_URI = "mongodb+srv://admin:admin2@cluster0.lkmoqjo.mongodb.net/?retryWrites=true&w=majority&appName=Cluster0"

Replace it with the same connection string we provided.

Step 4: Create Sample Data

If you want to start with fresh sample data, run ecommerce\_dataset.py

This will create:

* 100 sample products
* 50 sample customers
* Random orders and reviews

Wait for "Dataset generation complete!" message.

Note: This will DELETE any existing data and create new sample data.

Step 5: Run [app.py](http://app.py)

## How to Use the Application:

When you run app.py, you'll see a menu with these options:

1. Create New User - Add a new customer to the database

* Enter: name, email, address information

2. Create User with Payment Method - Add customer with credit card

* Enter: name, email, address, and payment details

3. View All Users - See all customers in the database

4. Find User by Email - Search for a specific customer

5. Find Users by City - Find all customers in a particular city

6. Update User Address - Change a customer's address

7. Add Payment Method to User - Add a new payment option

8. Delete User - Remove a customer from the database

9. Exit - Close the application

Example - Adding a New Customer:

1. Run app.py
2. Choose option 1 (Create New User)
3. Enter the information when asked:

* Name: Sarah Johnson
* Email: sarah.johnson@email.com
* Street: 456 Oak Avenue
* City: Boston
* Zip: 02115
* Country: USA

1. You'll see: "User created successfully! User ID: [some numbers and letters]"
2. Choose option 3 to see all users - your new user should be in the list!