Airlines Database Management System (DBMS) User Manual

1. Introduction
   * Overview of the DBMS

Our Air Passenger Arrival Data Management System addresses challenges in tourism management and economic planning by consolidating fragmented air passenger data into a unified, comprehensive database. This system enables analysis of arrival patterns, integrating information on passengers, countries of origin, length of stay, and airlines. This is a powerful tools for data-driven decision-making. The system's capabilities extend to enhanced resource allocation, targeted marketing campaigns, improved tourist

experiences, and the promotion of sustainable tourism practices.

* + Key Features of the DBMS
    - Create, Read, Update, Delete (CRUD) for passenger data
    - Advanced Features: Analyse Airline Popularity, Analyse Tourism Duration, Analyse Airline Trend

1. Installation and Setup
   * + Install Python and MongoDB
     + Download and install the latest version of Python from the official Python website.
     + Download and install MongoDB Compass from MongoDB's official website.
   * Installation Guide for MongoDB Compass
     + Install MongoDB Compass here: <https://www.mongodb.com/>
     + Once MongoDB is up and running
     + Select “Add New Connections”
     + Copy this link into the URL box:

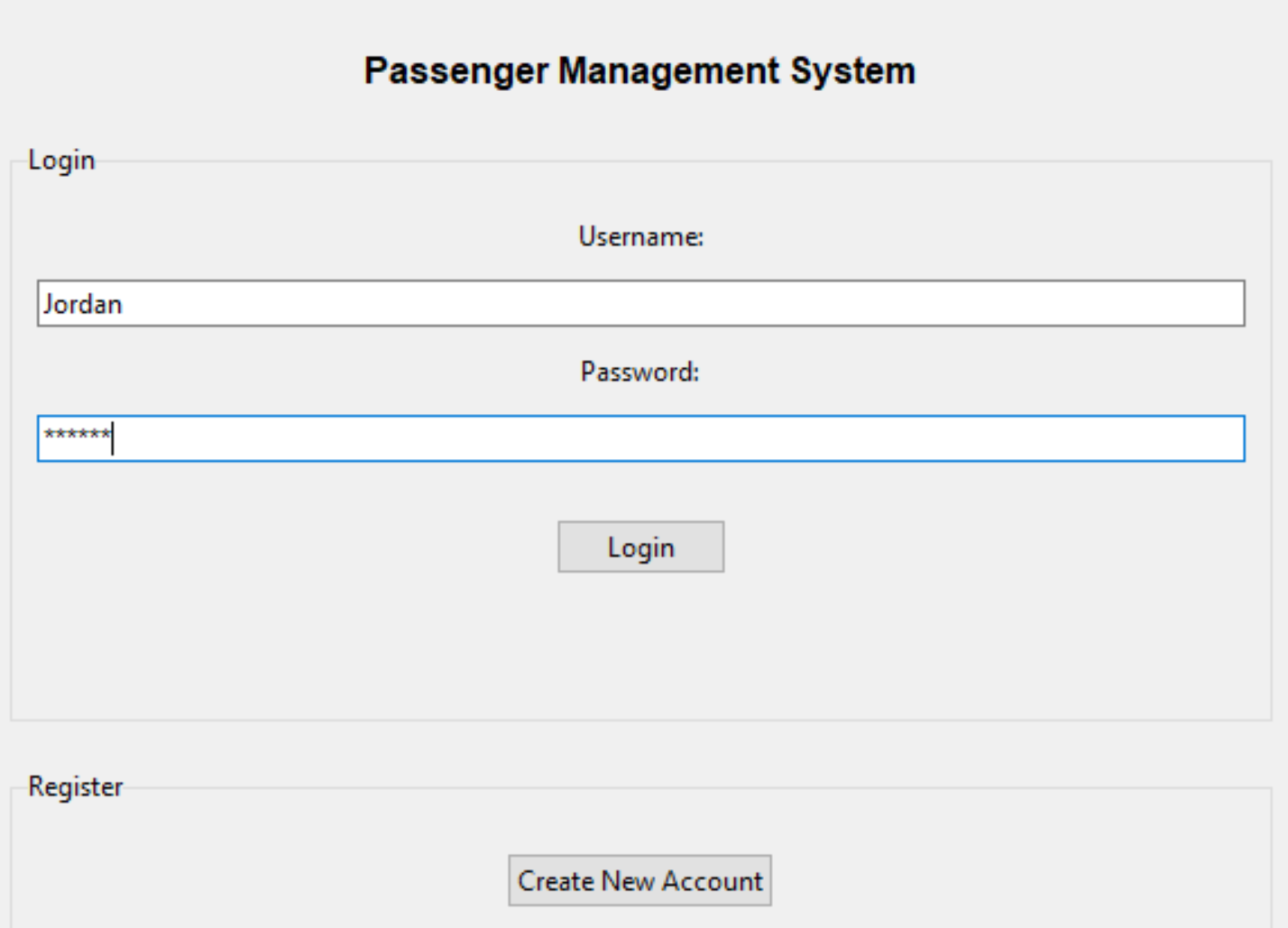
*mongodb+srv://INF2003:INF2003@cluster0.yib8q.mongodb.net/?retryWrites=true&w=majority&appName=Cluster0*

A screenshot of a computer

Description automatically generated

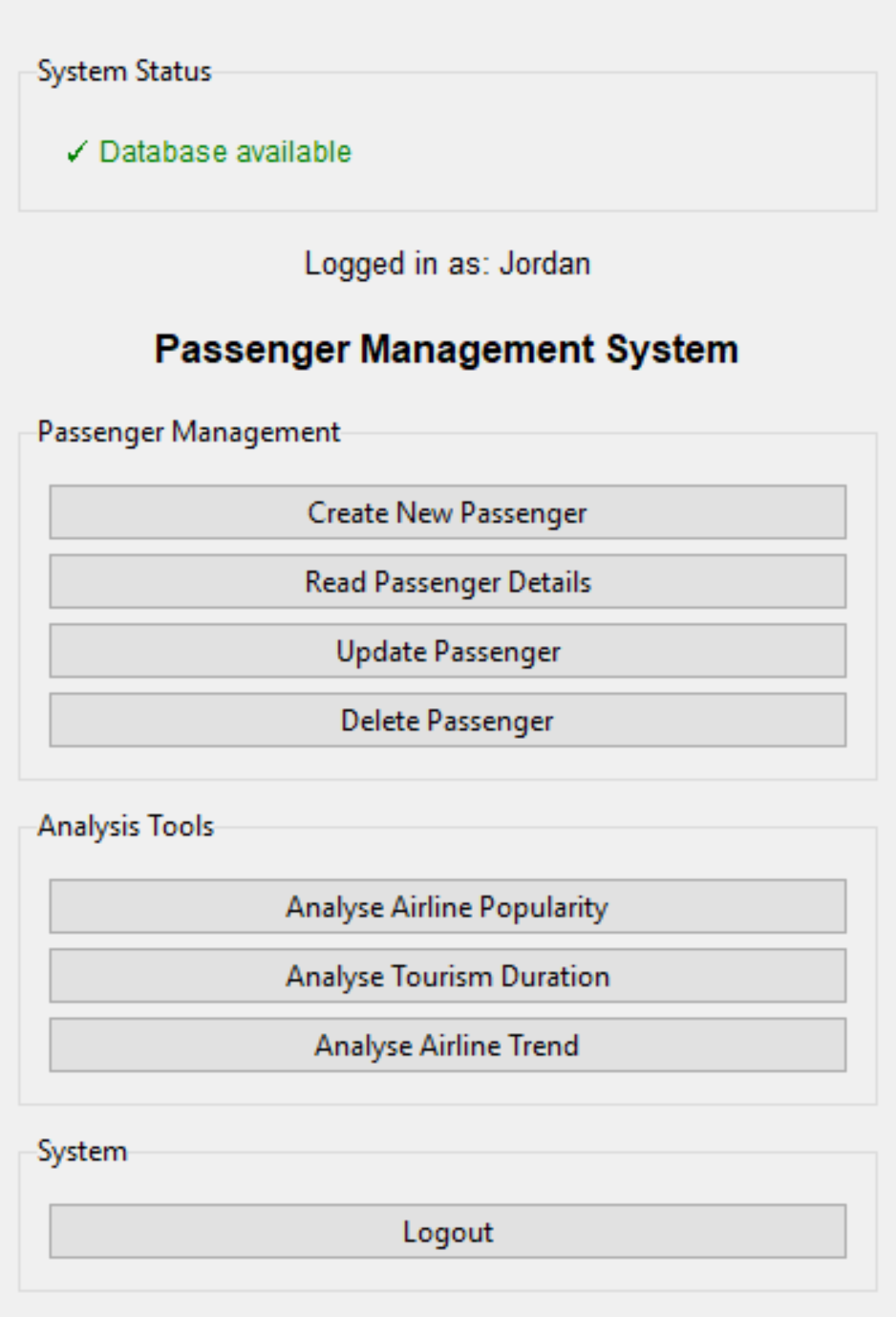
* + - Click **save and connect**. Now u have successfully connected into the MongoDB Database.

1. Getting Started with the DBMS
   * Import the python file into the python IDE
   * Ensure that libraries tkinter, matplotlib, pandas, numpy, psutil, pymongo, functools, bcrypt, jwt,(For security) are installed before running the code.
   * Once the code is running, you will be greeted with a GUI
   * You will be prompt to login as a user. You can create your own by Clicking **“Create New Account”**
   * Create a Username and Password then proceed to login into the system



* + Log into the system to access it features.

1. Performing Basic Operations
   * **Create New Passenger**: Select 'Create New Passenger" and fill in the respective Details
   * **Read Data:** Select 'Read Passenger Details' select by PID to search.
   * **Updating Data:** Select 'Update Passenger' to Update passenger details
   * **Deleting Data:** Select 'Delete Passenger' to delete passenger details from table
   * When any user of the system is accessing any Passenger Management CRUD Functions. A 2nd user would be unable to access these functions for concurrency and protect the data integrity of the database.



1. Advanced Operations
   * Analyse Airline Popularity: Select 'Analyse Airline Popularity' to view most popular airline and the chart passenger count for each airlines
   * Analyse Tourism Duration: Select 'Analyse Tourism Duration' to view most common stayed duration and chart to compare each duration range
   * Analyse Airline Trend: Select 'Analyse Airline Trend' to view which airlines is the highest passenger from the respective country of origin.

