University of Central Florida

CGS 2545 Database Concepts

Assignment 5
Airline Database Project
Due, Friday, October 13, 2023 for maximum 100%
Saturday, October 14, 2023 for maximum 90%
Sunday, October 15, 2023 for maximum 80%
Monday, October 16, 2023 for maximum 70%

Deliverables

To complete this assignment, submit the following **three** files to Webcourses:

1. An SQL file (i.e. save the file with file extension **.sql**) containing the SQL written to perform the tasks. Example: Assignment2Code.sql
2. An exported SQL file using MySQL Workbench Data Export option. The file name should be the following format: **FirstnameLastnameAssignment#.sql**. Example: KarinMarkleAssignment2.sql
3. An ER Diagram generated by MySQL Workbench. The file name should be the following format: **FirstnameLastnameAssignment#ERDiagram.mwb**. Example: KarinMarkleAssignment2ERDiagram.mwb

Assignment Scope

1. Use database **airline**.
2. Create tables.
3. Insert data into tables.
4. Write a join query.
5. Generate an ER diagram.

References

1. 10_SQL Select Database.pptx
2. 11_SQL Create Table.pptx
3. 13_SQL Insert Query.pptx
4. 14_SQL Select Query.pptx
5. 15_SQL Where Clause.pptx
6. 21_SQL Order By.pptx

To access the DBMS

1. Launch the MySQL Command Line Client executable or MySQL Workbench
2. Login in using the password set during installation “cgs2545” or your chosen password.

Tasks

Query Description
1. Change to use the database **airline**
2. Create a table named **airport** with the following attributes, data types, and constraints: a. faa, character, 3 characters, not null b. icao, character, 4 characters, not null, unique c. cityServed, character, 5 characters, not null d. primary key is the faa field e. foreign key is on column cityServed, references table cityState, column zipCode
3. Create a table named **aircraft** with the following attributes, data types, and constraints: a. ID, integer, not null, auto increment b. manufacturer, varying character, 50, not null c. icaoCode, varying character, 5 not null d. model, varying character, 50, not null e. engineClass enum('Piston','Jet','Turboprop'), not null, default value of 'Turboprop' f. numEngine integer, not null, default value of 1 g. numSeat integer, not null, default value of 10 h. primary key is the id field
4. Insert into table **cityState** data from file **cityState.sql**
5. Insert into table **airport** data from file **airport.sql**
6. Insert into table **aircraft** data from file **aircraft.sql**
7. Write a join query to join table **airport** and **cityState** to select the following: a. Columns **faa** and **icao** from table **airport** b. Column **city, state and zipCode** from table **cityState** c. Order by column **city**
8. Generate an ER Diagram using MySQL Workbench, save as a .mwb file
9. Export database cruise using MySQL Workbench, save as a .sql file
10. Provide written source code in a .sql file

Test Cases	
Test Case 1	**select * from cityState** should look like Figure 1
Test Case 2	**select * from airport** should look like Figure 2
Test Case 3	**select * from aircraft** should look similar to Figure 3
Test Case 4	**Join query result set** should look like Figure 4
Test Case 5	ER Diagram should look like Figure 5

```
mysql> select * from cityState;
+-------------------+-------+---------+
| city              | state | zipCode |
+-------------------+-------+---------+
| Trumbull          | CT    | 06611   |
| Paterson          | NJ    | 07501   |
| Piscataway        | NJ    | 08854   |
| Ballston Spa      | NY    | 12020   |
| Havertown         | PA    | 19083   |
| Waldorf           | MD    | 20601   |
| Glenarden         | MD    | 20706   |
| Chesterfield      | VA    | 23832   |
| Abingdon          | VA    | 24210   |
| Indian Trail      | NC    | 28079   |
| Mooresville       | NC    | 28115   |
| Clover            | SC    | 29710   |
| Duluth            | GA    | 30096   |
| Jacksonville      | FL    | 32099   |
| Daytona Beach     | FL    | 32114   |
| Tallahassee       | FL    | 32301   |
| Panama City       | FL    | 32401   |
| Pensacola         | FL    | 32501   |
| Fort Walton Beach | FL    | 32547   |
| Gainesville       | FL    | 32601   |
| Sanford           | FL    | 32771   |
| Orlando           | FL    | 32801   |
| Melbourne         | FL    | 32904   |
| Key West          | FL    | 33041   |
| Miami             | FL    | 33109   |
| Fort Lauderdale   | FL    | 33301   |
| West Palm Beach   | FL    | 33401   |
| Jupiter           | FL    | 33458   |
| Tampa             | FL    | 33602   |
| St. Petersburg    | FL    | 33701   |
| Fort Myers        | FL    | 33900   |
| Punta Gorda       | FL    | 33950   |
| Sarasota          | FL    | 34231   |
| Nashville         | TN    | 37205   |
| Memphis           | TN    | 38117   |
| Vicksburg         | MS    | 39180   |
| Willoughby        | OH    | 44094   |
| Cuyahoga Falls    | OH    | 44223   |
| Chillicothe       | OH    | 45601   |
| Noblesville       | IN    | 46060   |
| Battle Creek      | MI    | 49016   |
| Jefferson         | LA    | 70121   |
| Covington         | LA    | 70433   |
| Scottsdale        | AZ    | 85260   |
| Ontario           | CA    | 91764   |
| San Marcos        | CA    | 92078   |
| Huntington Beach  | CA    | 92647   |
| Santa Cruz        | CA    | 95060   |
+-------------------+-------+---------+
48 rows in set (0.00 sec)
```

Figure 1 Table cityState

```
mysql> select * from airport;
+-----+------+------------+
| faa | icao | cityServed |
+-----+------+------------+
| DAB | KDAB | 32114      |
| ECP | KECP | 32401      |
| EYW | KEYW | 33041      |
| FLL | KFLL | 33301      |
| GNV | KGNV | 32601      |
| JAX | KJAX | 32099      |
| MCO | KMCO | 32801      |
| MIA | KMIA | 33109      |
| MLB | KMLB | 32904      |
| PBI | KPBI | 33401      |
| PGD | KPGD | 33950      |
| PIE | KPIE | 33701      |
| PNS | KPNS | 32501      |
| RSW | KRSW | 33900      |
| SFB | KSFB | 32771      |
| SRQ | KSRQ | 34231      |
| TLH | KTLH | 32301      |
| TPA | KTPA | 33602      |
| VPS | KVPS | 32547      |
+-----+------+------------+
19 rows in set (0.00 sec)
```

Figure 2 Table airport

```
mysql> select * from aircraft;
+----+--------------------------+----------+--------------------+-------------+-----------+---------+
| ID | manufacturer             | icaoCode | model              | engineClass | numEngine | numSeat |
+----+--------------------------+----------+--------------------+-------------+-----------+---------+
|  1 | Acro Sport               | ACRO     | Acro Sport         | Piston      |         1 |      10 |
|  2 | Adam Aircraft Industries | A500     | A-500              | Piston      |         2 |      20 |
|  3 | Beechcraft               | B18T     | Model 18 Turboliner | Turboprop   |         2 |      40 |
|  4 | Boeing                   | B743     | 747-300SR          | Jet         |         4 |      75 |
|  5 | Cessna                   | C526     | CitationJet        | Jet         |         2 |      50 |
|  6 | Embraer                  | E170     | EMB 175-E2         | Jet         |         2 |      30 |
|  7 | Globe Aircraft/TEMCO     | GC1      | GC-1B Globe        | Piston      |         1 |      40 |
|  8 | Israel Aircraft Industries | WW23   | 1123 Westwind      | Jet         |         4 |      60 |
|  9 | North American Rockwell  | SBR1     | Sabre 40/60        | Jet         |         2 |      50 |
| 10 | Piper                    | PA18     | PA-18-150 Super Cub | Piston      |         1 |      30 |
+----+--------------------------+----------+--------------------+-------------+-----------+---------+
10 rows in set (0.00 sec)
```

Figure 3 Table aircraft

faa	icao	city	state	zipCode
DAB	KDAB	Daytona Beach	FL	32114
FLL	KFLL	Fort Lauderdale	FL	33301
RSW	KRSW	Fort Myers	FL	33900
VPS	KVPS	Fort Walton Beach	FL	32547
GNV	KGNV	Gainesville	FL	32601
JAX	KJAX	Jacksonville	FL	32099
EYW	KEYW	Key West	FL	33041
MLB	KMLB	Melbourne	FL	32904
MIA	KMIA	Miami	FL	33109
MCO	KMCO	Orlando	FL	32801
ECP	KECP	Panama City	FL	32401
PNS	KPNS	Pensacola	FL	32501
PGD	KPGD	Punta Gorda	FL	33950
SFB	KSFB	Sanford	FL	32771
SRQ	KSRQ	Sarasota	FL	34231
PIE	KPIE	St. Petersburg	FL	33701
TLH	KTLH	Tallahassee	FL	32301
TPA	KTPA	Tampa	FL	33602
PBI	KPBI	West Palm Beach	FL	33401

19 rows in set (0.00 sec)

Figure 4 Join query result set

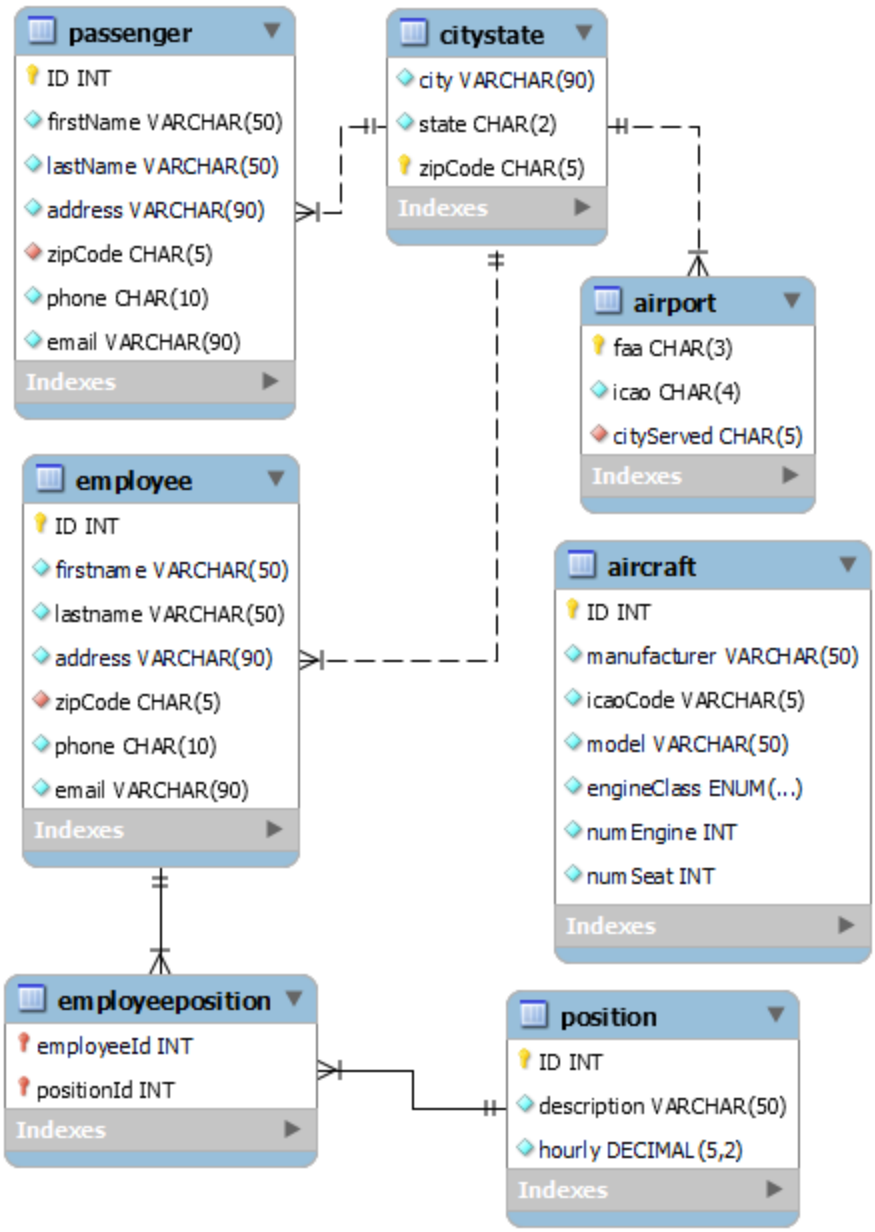

Figure 5 ER Diagram