University of Central Florida

CGS 2545 Database Concepts

Assignment 11
Airline Database Project
Due, Sunday, December 3, 2023 for maximum 100%
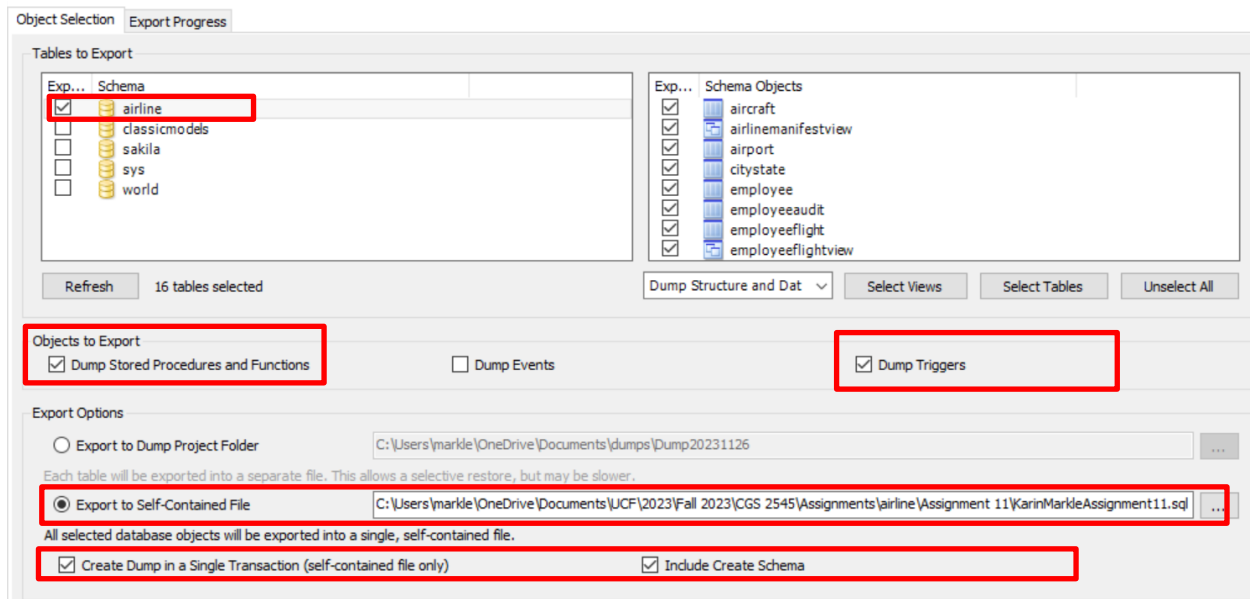**Monday, December 4, 2023 for maximum 90%**
Tuesday, December 5, 2023 for maximum 80%
Wednesday, December 6, 2023 for maximum 70%

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.
2. An ER Diagram generated by MySQL Workbench. The file name should be the following format: **FirstnameLastnameAssignment#ERDiagram.mwb**. Example: KarinMarkleAssignment2ERDiagram.mwb
3. An exported SQL file using MySQL Workbench Data Export option. The file name should be the following format: **FirstnameLastnameAssignment#.sql**. Example: KarinMarkleAssignment2.sql
   a. On the Data Export UI do the following
      i. Select the database to export
      ii. Select Export to Self-Contained File
      iii. Click on the ellipsis to select the directory to save the file to
      iv. **IMPORTANT! Be sure to check option "Dump Stored Procedures and Functions"**
      v. **IMPORTANT! Be sure to check option "Dump Triggers"**
      vi. Click the checkbox for Create Dump in a Single Transaction
      vii. Click the checkbox for Include Create Schema
      viii. Click the Start Export button

Assignment Scope

1. Use database **airline**.
2. Create table.
3. Write triggers.
4. Insert data.
5. Update data.
6. Generate an ER diagram.

References

1. 59_AdvancedSQL Stored Procedures Triggers.pptx
2. 60_AdvancedSQL Stored Procedures Multiple Triggers.pptx

To access the DBMS

1. Launch the MySQL Command Line Employee 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 trigger **after_employee_insert** to do the following
    a. Set the delimiter to **$$**
    b. Time: AFTER
    c. Action: INSERT
    d. Table: employee
    e. Begin trigger
        i. Insert into table **timesheet**, columns
            1. employeeId
            2. sun

        3. mon
        4. tues
        5. wed
        6. thurs
        7. fri
        8. sat
- ii. Values
        1. new id
        2. 0
        3. 0
        4. 0
        5. 0
        6. 0
        7. 0
        8. 0
- f. End trigger
- g. Set the delimiter back to **;**

3. Insert into table **employee** data in file **employee.sql**

4. Create a table named **employeeAudit** with the following attributes, data types, and constraints:
   a. ID, integer, not null, auto increment
   b. employeeNumber, integer, not null
   c. firstName, variable character, 50 characters, not null
   d. lastName, variable character, 50 characters, not null
   e. email, variable character, 90 characters, not null, unique
   f. changeDate, datetime, default null
   g. action, variable character, 50 characters, default null
   h. primary key is the ID field

5. Create trigger **before_employee_update** to do the following
   a. Set the delimiter to **$$**
   b. Time: BEFORE
   c. Action: UPDATE
   d. Table: employee
   e. Begin trigger
   - a. Insert into table **employeeAudit**, set column values
       i. action: UPDATE
       ii. employeeNumber: old id
       iii. firstName: old firstName
       iv. lastName: old lastName
       v. email: old email
       vi. changeDate: function NOW()
   f. End trigger
   g. Set the delimiter back to **;**

6. Update table **employee** to set column **email** equal to the current email address with an updated domain name
   a. @cruise.com should be @airline.com

	b. @isp.com should be @airline.com c. HINT: use functions REPLACE and SUBSTRING_INDEX
7.	Generate an ER Diagram using MySQL Workbench, save as a .mwb file
8.	Export database **airline** using MySQL Workbench, save as a .sql file
9.	Provide written source code in a .sql file

Test Cases	
Test Case 1	select * from employee should look similar to Figure 1
Test Case 2	select * from timesheet should look similar to Figure 2
Test Case 3	select * from employeeAudit should look similar to Figure 3
Test Case 4	ER Diagram should look like Figure 4

```
mysql> select * from employee;
+-----+----------+-----------+-----------------------------+---------+------------+--------------------------+
| ID  | firstname| lastname  | address                     | zipCode | phone      | email                    |
+-----+----------+-----------+-----------------------------+---------+------------+--------------------------+
|   1 | Paris    | Lindsey   | 763 West Mulberry St        | 29710   | 2025550132 | plindsey@airline.com     |
|   2 | Umaiza   | Melia     | 545 Ohio Ave                | 29710   | 2025550135 | umelia@airline.com       |
|   3 | Nico     | Prince    | 20 Middle River Street      | 44094   | 2025550137 | nprince@airline.com      |
|   4 | Javan    | Rennie    | 8112 North Country St       | 44094   | 2025550139 | jrennie@airline.com      |
|   5 | Ali      | Waters    | 83 Rockland Lane            | 44094   | 2025550144 | awaters@airline.com      |
|   6 | JohnPaul | Clarke    | 1 Riverside Lane            | 44094   | 2025550153 | jpcClarke@airline.com    |
|   7 | Dane     | Kaiser    | 694 Wall Road               | 44094   | 2025550155 | kdaiser@airline.com      |
|   8 | Hammad   | Newman    | 9970 State Court            | 30096   | 2025550157 | hnewman@airline.com      |
|   9 | Maha     | Guthrie   | 54 Woodsman Drive           | 30096   | 2025550161 | mguthrie@airline.com     |
|  10 | Tulisa   | Roberts   | 7174 Studebaker Street      | 30096   | 2025550163 | troberts@airline.com     |
|  11 | Raheem   | Montgomery| 71 Paris Hill Rd.           | 39180   | 4134849795 | rmontgomery@airline.com  |
|  13 | Oliwier  | Barnett   | 81 Cedar Swamp St.          | 39180   | 2764343958 | obarnett@airline.com     |
|  15 | Dawson   | Marquez   | 90 Mammoth Street           | 45601   | 7634882879 | dmarquez@airline.com     |
|  16 | Raja     | Glass     | 7918 Talbot Ave.            | 45601   | 2319969540 | rglass@airline.com       |
|  18 | Nicholas | Pena      | 8123 Race Ave.              | 95060   | 7815242242 | npena@airline.com        |
|  20 | Aamina   | Dillon    | 9 West Boston Lane          | 95060   | 2035745299 | adillon@airline.com      |
|  22 | Krystal  | Walters   | 583 North Nichols Street    | 95060   | 3232591832 | kwalters@airline.com     |
|  30 | Kaya     | Hodge     | 9572 William Lane           | 46060   | 2125271561 | khodge@airline.com       |
|  34 | Brodie   | Gordon    | 71 Jackson Ave.             | 46060   | 9016899813 | bgordon@airline.com      |
|  38 | Mathew   | Horton    | 1 Rockland Ave.             | 46060   | 7195789907 | mhorton@airline.com      |
|  71 | Leo      | Bird      | 201 Eagle Dr.               | 12020   | 7747829407 | lbird@airline.com        |
|  73 | Fern     | Garner    | 37 Gartner Court            | 12020   | 2256254378 | fgarner@airline.com      |
|  83 | Rebekah  | Morgan    | 9437 East 6th Street        | 20601   | 6073928343 | rmorgan@airline.com      |
|  85 | Malik    | Vincent   | 312 Colonial Ave.           | 19083   | 9149573014 | mvincent@airline.com     |
|  87 | Lyra     | Murphy    | 400 Nut Swamp Drive         | 19083   | 3527673126 | lmurphy@airline.com      |
|  91 | Laila    | Christensen| 15 Rose Avenue             | 07501   | 9017396978 | lchristensen@airline.com |
|  95 | Ty       | Bell      | 921 Brook St.               | 07501   | 2393336881 | tbell@airline.com        |
|  99 | Kamil    | Lozano    | 75 N. Golden Star Street    | 07501   | 7638554744 | klozano@airline.com      |
| 141 | Alissa   | Ortiz     | 7756 Fulton Court           | 23832   | 2397268929 | aortiz@airline.com       |
| 143 | Harvey   | West      | 9 Cherry Ave                | 23832   | 7326232762 | hwest@airline.com        |
| 145 | Louis    | Giles     | 598 North Road              | 28115   | 2708583758 | lgiles@airline.com       |
| 147 | Alexa    | Preston   | 9227 North Bow Ridge Street | 28115   | 4098496634 | apreston@airline.com     |
| 149 | Ethan    | Ali       | 167 NE. Depot Dr.           | 28115   | 2245499884 | eali@airline.com         |
| 151 | Sara     | Barron    | 9064 E. Swanson St.         | 20601   | 8707743244 | sbarron@airline.com      |
| 153 | Awais    | Carrillo  | 225 South Manhattan Street  | 28079   | 6369577670 | acarrillo@airline.com    |
| 155 | Jemima   | Miller    | 9290 Indian Spring Rd.      | 28079   | 6206673264 | jmiller@airline.com      |
| 157 | Honey    | Warren    | 7946 Leeton Ridge Street    | 06611   | 5858531050 | hwarren@airline.com      |
| 159 | Lauren   | Morton    | 7931 Rockaway Street        | 28079   | 4476721422 | lmorton@airline.com      |
| 161 | Floyd    | Johns     | 2 Shore Street              | 06611   | 4065842872 | fjohns@airline.com       |
| 163 | Ernest   | Higgins   | 451 Marshall Lane           | 06611   | 7637651247 | ehiggins@airline.com     |
| 164 | Fatima   | Robles    | 2519 Bottom Lane            | 33900   | 5126024452 | frobles@airline.com      |
| 165 | Angelita | Turner    | 3447 Valley Lane            | 33109   | 8574960348 | aturner@airline.com      |
| 169 | Robert   | Johnson   | 526 Metz Lane               | 32401   | 5306942786 | rjohnson@airline.com     |
| 170 | Francisca| Spence    | 1253 Coulter Lane           | 32547   | 8043389754 | fspence@airline.com      |
| 171 | Matthew  | Lee       | 756 Long Street             | 32601   | 3522635642 | mlee@airline.com         |
+-----+----------+-----------+-----------------------------+---------+------------+--------------------------+
45 rows in set (0.00 sec)
```

Figure 1 Table employee

```
mysql> select * from timesheet;
```

ID	employeeId	sun	mon	tues	wed	thurs	fri	sat
1	163	0	8	8	8	8	8	0
2	145	6	6	6	6	6	5	0
3	73	0	12	6	10	6	8	0
4	10	10	8	0	0	8	10	10
5	2	8	8	0	0	8	10	6
6	87	0	12	6	10	6	8	0
7	157	8	8	0	0	8	10	6
8	141	0	8	8	8	8	8	0
9	155	10	8	0	0	8	10	10
10	91	12	0	12	0	4	12	0
11	30	0	12	6	10	6	8	0
12	153	12	0	12	0	4	12	0
13	83	6	6	6	6	6	5	0
14	22	8	8	0	0	8	10	6
15	11	0	8	8	8	8	8	0
16	1	10	8	0	0	8	10	10
17	6	12	0	12	0	4	12	0
18	13	0	12	6	10	6	8	0
19	20	7	4	9	0	0	10	3
20	38	6	6	6	6	6	5	0
21	15	12	0	12	0	4	12	0
22	161	0	8	8	8	8	8	0
23	159	7	4	9	0	0	10	3
24	151	10	8	0	0	8	10	10
25	149	7	4	9	0	0	10	3
26	147	0	12	6	10	6	8	0
27	143	12	0	12	0	4	12	0
28	3	6	6	6	6	6	5	0
29	4	7	4	9	0	0	10	3
30	5	0	8	8	8	8	8	0
31	99	10	8	0	0	8	10	10
32	95	12	0	12	0	4	12	0
33	71	6	6	6	6	6	5	0
34	7	8	8	0	0	8	10	6
35	8	0	8	8	8	8	8	0
36	9	10	8	0	0	8	10	10
37	85	0	12	6	10	6	8	0
38	34	6	6	6	6	6	5	0
39	18	8	8	0	0	8	10	6
40	16	0	8	8	8	8	8	0
41	164	0	0	0	0	0	0	0
42	165	0	0	0	0	0	0	0
43	169	0	0	0	0	0	0	0
44	170	0	0	0	0	0	0	0
45	171	0	0	0	0	0	0	0

```
45 rows in set (0.00 sec)
```

Figure 2 Table timesheet AFTER INSERT into table employee

```
mysql> select * from employeeaudit;
+----+----------------+-----------+------------+-----------------------------+---------------------+--------+
| ID | employeeNumber | firstName | lastName   | email                       | changeDate          | action |
+----+----------------+-----------+------------+-----------------------------+---------------------+--------+
|  1 |             11 | Raheem    | Montgomery | rmontgomery@cruise.com      | 2023-11-26 23:41:32 | UPDATE |
|  2 |             13 | Oliwier   | Barnett    | obarnett@cruise.com         | 2023-11-26 23:41:32 | UPDATE |
|  3 |             15 | Dawson    | Marquez    | dmarquez@cruise.com         | 2023-11-26 23:41:32 | UPDATE |
|  4 |             16 | Raja      | Glass      | rglass@cruise.com           | 2023-11-26 23:41:32 | UPDATE |
|  5 |             18 | Nicholas  | Pena       | npena@cruise.com            | 2023-11-26 23:41:32 | UPDATE |
|  6 |             20 | Aamina    | Dillon     | adillon@cruise.com          | 2023-11-26 23:41:32 | UPDATE |
|  7 |             22 | Krystal   | Walters    | kwalters@cruise.com         | 2023-11-26 23:41:32 | UPDATE |
|  8 |             30 | Kaya      | Hodge      | khodge@cruise.com           | 2023-11-26 23:41:32 | UPDATE |
|  9 |             34 | Brodie    | Gordon     | bgordon@cruise.com          | 2023-11-26 23:41:32 | UPDATE |
| 10 |             38 | Mathew    | Horton     | mhorton@cruise.com          | 2023-11-26 23:41:32 | UPDATE |
| 11 |             71 | Leo       | Bird       | lbird@cruise.com            | 2023-11-26 23:41:32 | UPDATE |
| 12 |             73 | Fern      | Garner     | fgarner@cruise.com          | 2023-11-26 23:41:32 | UPDATE |
| 13 |             83 | Rebekah   | Morgan     | rmorgan@cruise.com          | 2023-11-26 23:41:32 | UPDATE |
| 14 |             85 | Malik     | Vincent    | mvincent@cruise.com         | 2023-11-26 23:41:32 | UPDATE |
| 15 |             87 | Lyra      | Murphy     | lmurphy@cruise.com          | 2023-11-26 23:41:32 | UPDATE |
| 16 |             91 | Laila     | Christensen| lchristensen@cruise.com     | 2023-11-26 23:41:32 | UPDATE |
| 17 |             95 | Ty        | Bell       | tbell@cruise.com            | 2023-11-26 23:41:32 | UPDATE |
| 18 |             99 | Kamil     | Lozano     | klozano@cruise.com          | 2023-11-26 23:41:32 | UPDATE |
| 19 |            141 | Alissa    | Ortiz      | aortiz@cruise.com           | 2023-11-26 23:41:32 | UPDATE |
| 20 |            143 | Harvey    | West       | hwest@cruise.com            | 2023-11-26 23:41:32 | UPDATE |
| 21 |            145 | Louis     | Giles      | lgiles@cruise.com           | 2023-11-26 23:41:32 | UPDATE |
| 22 |            147 | Alexa     | Preston    | apreston@cruise.com         | 2023-11-26 23:41:32 | UPDATE |
| 23 |            149 | Ethan     | Ali        | eali@cruise.com             | 2023-11-26 23:41:32 | UPDATE |
| 24 |            151 | Sara      | Barron     | sbarron@cruise.com          | 2023-11-26 23:41:32 | UPDATE |
| 25 |            153 | Awais     | Carrillo   | acarrillo@cruise.com        | 2023-11-26 23:41:32 | UPDATE |
| 26 |            155 | Jemima    | Miller     | jmiller@cruise.com          | 2023-11-26 23:41:32 | UPDATE |
| 27 |            157 | Honey     | Warren     | hwarren@cruise.com          | 2023-11-26 23:41:32 | UPDATE |
| 28 |            159 | Lauren    | Morton     | lmorton@cruise.com          | 2023-11-26 23:41:32 | UPDATE |
| 29 |            161 | Floyd     | Johns      | fjohns@cruise.com           | 2023-11-26 23:41:32 | UPDATE |
| 30 |            163 | Ernest    | Higgins    | ehiggins@cruise.com         | 2023-11-26 23:41:32 | UPDATE |
| 31 |              1 | Paris     | Lindsey    | plindsey@isp.com            | 2023-11-26 23:41:50 | UPDATE |
| 32 |              2 | Umaiza    | Melia      | umelia@isp.com              | 2023-11-26 23:41:50 | UPDATE |
| 33 |              3 | Nico      | Prince     | nprince@isp.com             | 2023-11-26 23:41:50 | UPDATE |
| 34 |              4 | Javan     | Rennie     | jrennie@isp.com             | 2023-11-26 23:41:50 | UPDATE |
| 35 |              5 | Ali       | Waters     | awaters@isp.com             | 2023-11-26 23:41:50 | UPDATE |
| 36 |              6 | JohnPaul  | Clarke     | jpcClarke@isp.com           | 2023-11-26 23:41:50 | UPDATE |
| 37 |              7 | Dane      | Kaiser     | kdaiser@isp.com             | 2023-11-26 23:41:50 | UPDATE |
| 38 |              8 | Hammad    | Newman     | hnewman@isp.com             | 2023-11-26 23:41:50 | UPDATE |
| 39 |              9 | Maha      | Guthrie    | mguthrie@isp.com            | 2023-11-26 23:41:50 | UPDATE |
| 40 |             10 | Tulisa    | Roberts    | troberts@isp.com            | 2023-11-26 23:41:50 | UPDATE |
+----+----------------+-----------+------------+-----------------------------+---------------------+--------+
40 rows in set (0.00 sec)
```

Figure 3 Table employeeAudit BEFORE UPDATE on table employee

Figure 4 ER Diagram