University of Central Florida

CGS 2545 Database Concepts

Assignment 6
Cruise Database Project
Due, Friday, March 3, 2023 for maximum 100%
Saturday, March 4, 2023 for maximum 90%
Sunday, March 5, 2023 for maximum 80%
Monday, March 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. 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 **cruise**.
2. Create tables.
3. Insert data into tables.
4. Alter tables.
    a. Change data type of column.
    b. Rename column.
    c. Add foreign key constraints.
5. Write a join query.
6. 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. 17_SQL Update Query.pptx
7. 23_SQL Distinct Keyword.pptx
8. 25_AdvancedSQL Constraints.pptx
9. 26_AdvancedSQL Using Joins.pptx
10. 31_AdvancedSQL Alter Command.pptx

To access the DBMS

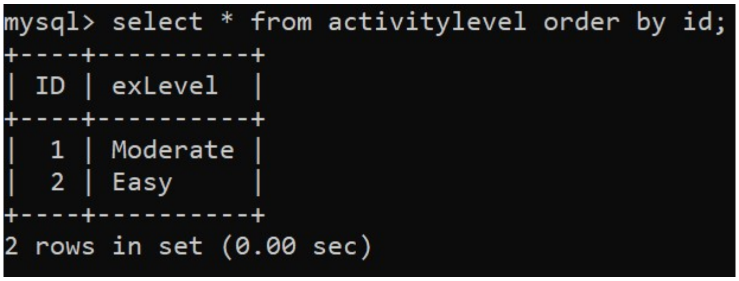
1. Launch the MySQL Command Line Client executable or MySQL Workbench
2. Login in using the password set during installation “cgs2545” or your chosen password.

Tasks

Query Description
1. Change to use the database **cruise**
Create new tables
2. Create a table named **activityLevel** with the following attributes, data types, and constraints: a. ID, integer, not null, auto increment b. exLevel, variable character, 25 characters, not null, unique c. primary key is the ID field
3. Create a table named **size** with the following attributes, data types, and constraints: a. ID, integer, not null, auto increment b. exSize, variable character, 25 characters, not null, unique c. primary key is the ID field
4. Create a table named **type** with the following attributes, data types, and constraints: a. ID, integer, not null, auto increment b. exType, variable character, 25 characters, not null, unique c. primary key is the ID field
5. Create a table named **foodBeverage** with the following attributes, data types, and constraints: a. ID, integer, not null, auto increment b. offering, variable character, 25 characters, not null, unique c. primary key is the ID field
Populate new tables
6. Insert into table **activityLevel,** column **exLevel,** the **distinct** values from table **excursion** column **activityLevel**
7. Insert into table **size,** column **exSize,** the **distinct** values from table **excursion** column **size**
8. Insert into table **type,** column **exType,** the **distinct** values from table **excursion** column **type**
9. Insert into table **foodBeverage,** column **offering,** the **distinct** values from table **excursion** column **foodBeverage**
Update table *excursion* with foreign key data
10. Update table **excursion,** set the value of column **activityLevel** equal to the corresponding **id** value in the table **activityLevel.** This requires a **SELECT * FROM activityLevel;** to see what the **id** value is for each **exLevel**. For example, in my database **a. 1 | Moderate** b. 2 | Easy
11. Update table **excursion,** set the value of column **size** equal to the corresponding **id** value in the table **size.** This requires a **SELECT * FROM size;** to see what the **id** value is for each **exSize**. For example, in my database **a. 1 | Standard**

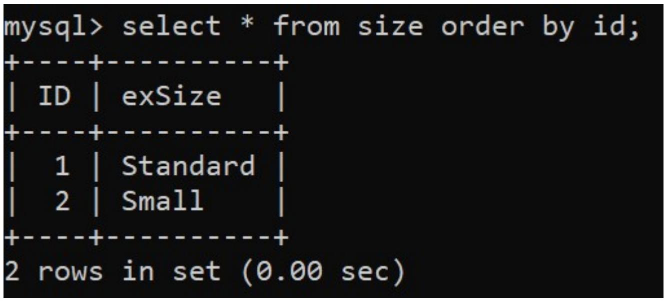
b. 2 | Small
12. Update table **excursion,** set the value of column **type** equal to the corresponding **id** value in the table **type.** This requires a **SELECT * FROM type;** to see what the **id** value is for each **exType**. For example, in my database **a. 1 | Scenic** b. 2 | Cultural, Scenic
13. Update table **excursion,** set the value of column **foodBeverage** equal to the corresponding **id** value in the table **foodBeverage.** This requires a **SELECT * FROM foodBeverage;** to see what the **id** value is for each **offering**. For example, in my database a. 1 | Not Included
Alter table *excursion* to change data type of columns
14. Alter table **excursion** so column **activityLevel** is an integer, not null
15. Alter table **excursion** so column **size** is an integer, not null
16. Alter table **excursion** so column **type** is an integer, not null
17. Alter table **excursion** so column **foodBeverage** is an integer, not null
Alter table *excursion* to rename columns
18. Alter table **excursion** to rename column **activityLevel** to **activityLevelId**
19. Alter table **excursion** to rename column **size** to **sizeId**
20. Alter table **excursion** to rename column **type** to **typeId**
21. Alter table **excursion** to rename column **foodBeverage** to **foodBeverageId**
Alter table *excursion* to add foreign key constraints
22. Alter table **excursion** so that column **activityLevelId** is a foreign key to table **activityLevel**, column **ID**
23. Alter table **excursion** so that column **sizeId** is a foreign key to table **size**, column **ID**
24. Alter table **excursion** so that column **typeId** is a foreign key to table **type**, column **ID**
25. Alter table **excursion** so that column **foodBeverageId** is a foreign key to table **foodBeverage**, column **ID**
Join query
26. Write a join query to join tables **excursion, foodBeverage, type, size, activityLevel** to select the following: a. Columns **id** and **name** from table **excursion** b. Column **exSize** from table **size** c. Column **exType** from table **type** d. Column **offering** from table **foodBeverage** e. Column **exLevel** from table **activityLevel** f. Columns **durationMinutes** and **price** from table **excursion**
File requirements
27. Generate an ER Diagram using MySQL Workbench, save as a .mwb file
28. Export database Cruise using MySQL Workbench, save as a .sql file
29. Provide written source code in a .sql file

Test Cases	
Test Case 1	**select * from activityLevel** should look similar to Figure 1
Test Case 2	**select * from size** should look similar to Figure 2
Test Case 3	**select * from type** should look similar to Figure 3
Test Case 4	**select * from foodBeverage** should look similar to Figure 4
Test Case 5	**select id, name, sizeId, typeId, foodBeverageId, activityLevelId from excursion** should look similar to Figure 5
Test Case 6	**show create table excursion** should look like Figure 6
Test Case 7	**Join query result set** should look like Figure 7
Test Case 8	**ER Diagram** should look like Figure 8



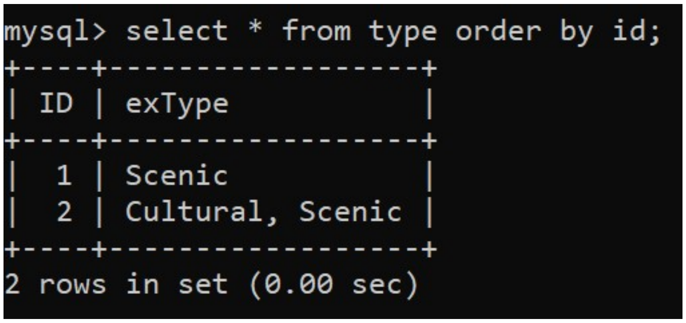
```
mysql> select * from activitylevel order by id;
+----+----------+
| ID | exLevel  |
+----+----------+
|  1 | Moderate |
|  2 | Easy     |
+----+----------+
2 rows in set (0.00 sec)
```

Figure 1 Table activityLevel



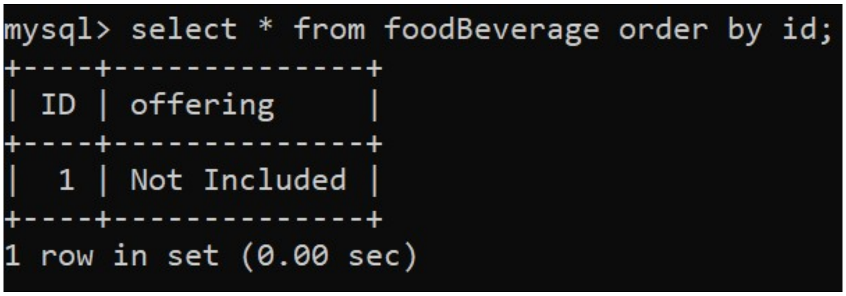
```
mysql> select * from size order by id;
+----+----------+
| ID | exSize   |
+----+----------+
|  1 | Standard |
|  2 | Small    |
+----+----------+
2 rows in set (0.00 sec)
```

Figure 2 Table size



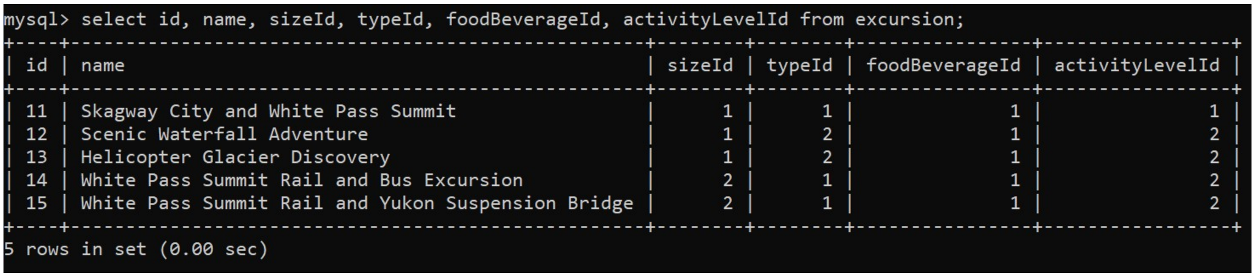
```
mysql> select * from type order by id;
+----+-----------------+
| ID | exType          |
+----+-----------------+
|  1 | Scenic          |
|  2 | Cultural, Scenic |
+----+-----------------+
2 rows in set (0.00 sec)
```

Figure 3 Table type



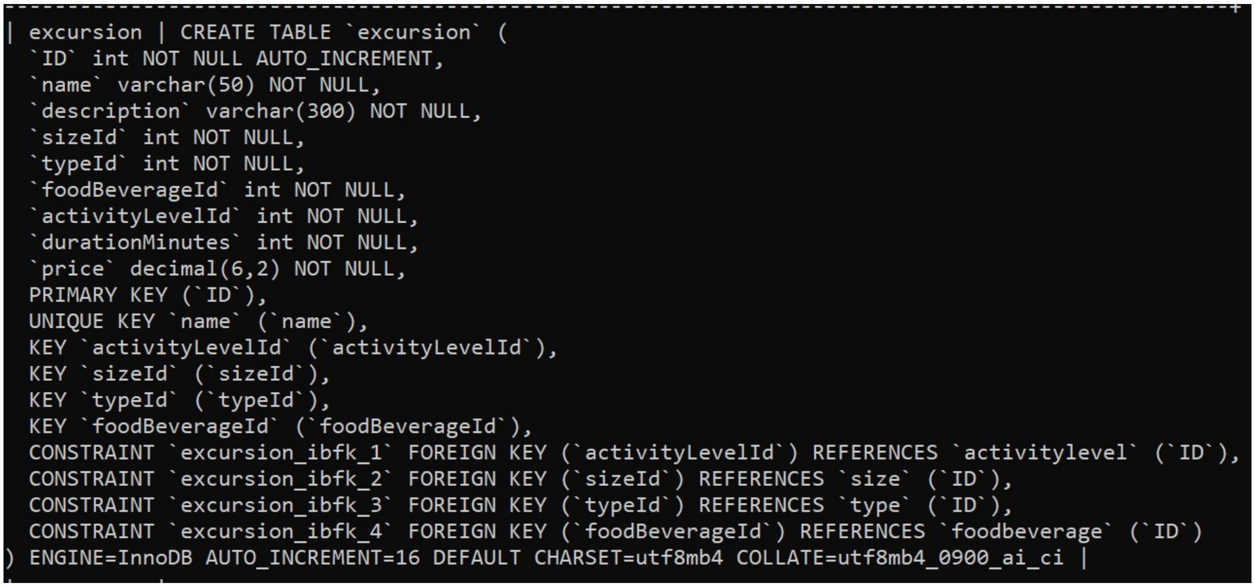
```
mysql> select * from foodBeverage order by id;
+----+--------------+
| ID | offering     |
+----+--------------+
|  1 | Not Included |
+----+--------------+
1 row in set (0.00 sec)
```

Figure 4 Table foodBeverage



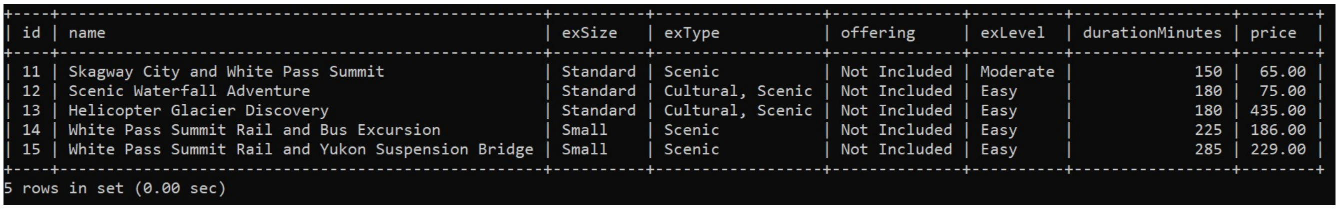
```
mysql> select id, name, sizeId, typeId, foodBeverageId, activityLevelId from excursion;
+----+----------------------------------------------------+--------+--------+----------------+-----------------+
| id | name                                               | sizeId | typeId | foodBeverageId | activityLevelId |
+----+----------------------------------------------------+--------+--------+----------------+-----------------+
| 11 | Skagway City and White Pass Summit                 |      1 |      1 |              1 |               1 |
| 12 | Scenic Waterfall Adventure                         |      1 |      2 |              1 |               2 |
| 13 | Helicopter Glacier Discovery                       |      1 |      2 |              1 |               2 |
| 14 | White Pass Summit Rail and Bus Excursion           |      2 |      1 |              1 |               2 |
| 15 | White Pass Summit Rail and Yukon Suspension Bridge |      2 |      1 |              1 |               2 |
+----+----------------------------------------------------+--------+--------+----------------+-----------------+
5 rows in set (0.00 sec)
```

Figure 5 select from excursion result set



```
--------------------------------------------------------------------------------------------------------------+
| excursion | CREATE TABLE `excursion` (
  `ID` int NOT NULL AUTO_INCREMENT,
  `name` varchar(50) NOT NULL,
  `description` varchar(300) NOT NULL,
  `sizeId` int NOT NULL,
  `typeId` int NOT NULL,
  `foodBeverageId` int NOT NULL,
  `activityLevelId` int NOT NULL,
  `durationMinutes` int NOT NULL,
  `price` decimal(6,2) NOT NULL,
  PRIMARY KEY (`ID`),
  UNIQUE KEY `name` (`name`),
  KEY `activityLevelId` (`activityLevelId`),
  KEY `sizeId` (`sizeId`),
  KEY `typeId` (`typeId`),
  KEY `foodBeverageId` (`foodBeverageId`),
  CONSTRAINT `excursion_ibfk_1` FOREIGN KEY (`activityLevelId`) REFERENCES `activitylevel` (`ID`),
  CONSTRAINT `excursion_ibfk_2` FOREIGN KEY (`sizeId`) REFERENCES `size` (`ID`),
  CONSTRAINT `excursion_ibfk_3` FOREIGN KEY (`typeId`) REFERENCES `type` (`ID`),
  CONSTRAINT `excursion_ibfk_4` FOREIGN KEY (`foodBeverageId`) REFERENCES `foodbeverage` (`ID`)
) ENGINE=InnoDB AUTO_INCREMENT=16 DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci |
```

Figure 6 show create table excursion



```
+----+----------------------------------------------------+----------+------------------+--------------+----------+-----------------+--------+
| id | name                                               | exSize   | exType           | offering     | exLevel  | durationMinutes | price  |
+----+----------------------------------------------------+----------+------------------+--------------+----------+-----------------+--------+
| 11 | Skagway City and White Pass Summit                 | Standard | Scenic           | Not Included | Moderate |             150 |  65.00 |
| 12 | Scenic Waterfall Adventure                         | Standard | Cultural, Scenic | Not Included | Easy     |             180 |  75.00 |
| 13 | Helicopter Glacier Discovery                       | Standard | Cultural, Scenic | Not Included | Easy     |             180 | 435.00 |
| 14 | White Pass Summit Rail and Bus Excursion           | Small    | Scenic           | Not Included | Easy     |             225 | 186.00 |
| 15 | White Pass Summit Rail and Yukon Suspension Bridge | Small    | Scenic           | Not Included | Easy     |             285 | 229.00 |
+----+----------------------------------------------------+----------+------------------+--------------+----------+-----------------+--------+
5 rows in set (0.00 sec)
```

Figure 7 Join query result set

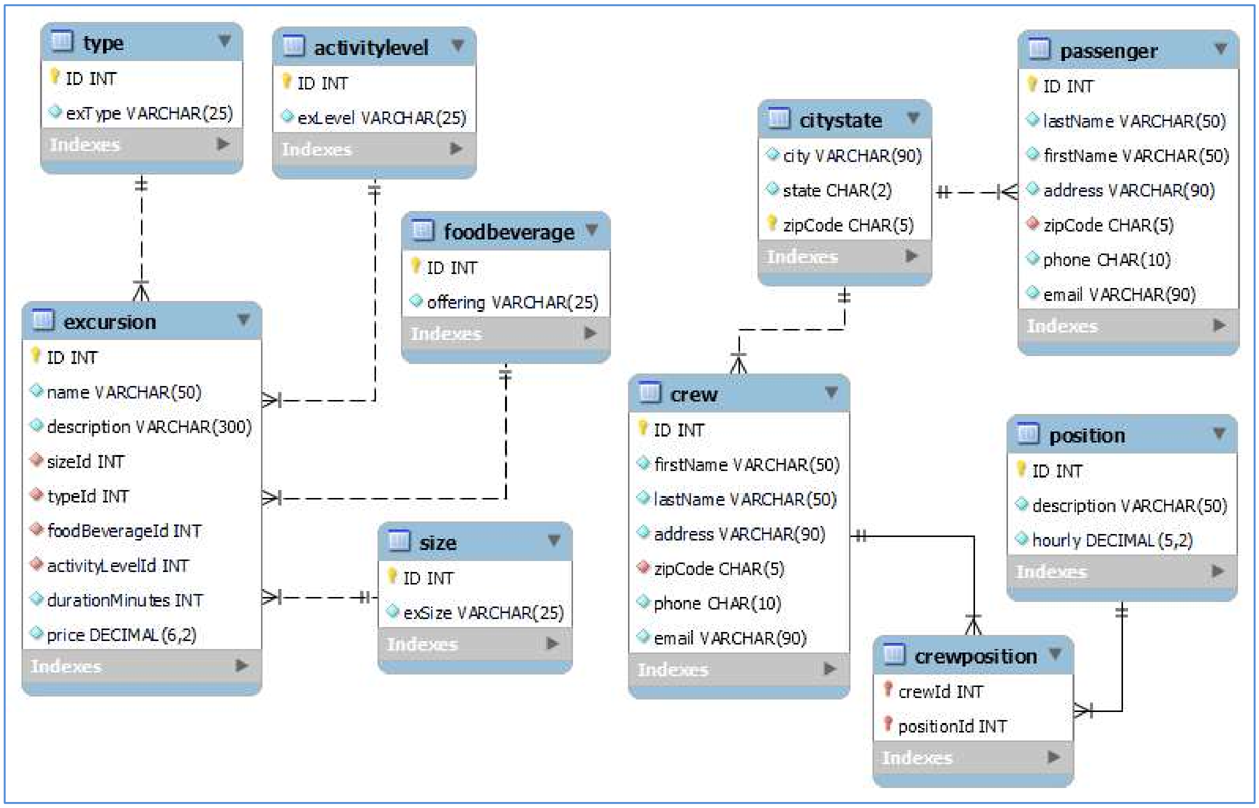


Figure 8 ER Diagram