

CSDS 341 Databases Project Report, Group 2

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Access Our Application

1. themeparks.bak
2. 079
3. ADS/student
4. password
5. Open a terminal and run “cd
C:\Users\student\Documents\Databases\CSDS_341_GHW\frontend”
Next run “java AmusementParkUI.java”
See user manual for next steps.
6. CSDS_341_GHW.zip
7. Wednesday, December 7, 2-3pm
8. No – The connection string is hard coded
9. No

Project Description:

Our project is an amusement park database. We store data pertaining to the various aspects of the park, such as rides, attractions, and the location of the park. Users (either park attendees or possibly park administrators) can edit all of these items and execute queries to extract useful information.

E-R Diagram:

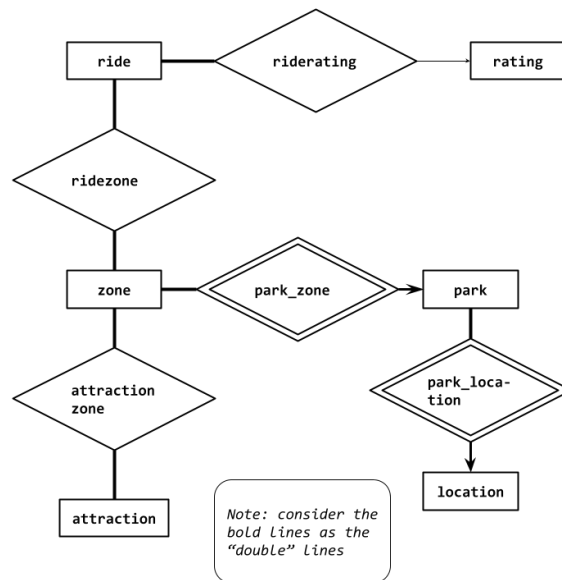


Table Descriptions:

Our database contains 9 tables which are described below. They should be populated in the order of **park**, **location**, **zone**, **ride** or **attraction**, **ridezone** or **attractionzone**, **riderating**, **rating**.

- **park**: contains basic data about the amusement park, including its name and whether the park is open
- **location**: stores data for the geographic location of the park
- **zone**: stores data for various zones in the park that rides and attractions can be located in
- **ride**: a ride in the park
- **ridezone**: designates that a park is in a given zone
- **attraction**: an attraction in the park
- **rating**: a description of the intensity of a ride (has one tuple for all three of our ratings)
- **riderating**: stores possible ride ratings
- **attractionzone**: relates an attraction to its corresponding zonename

Query Descriptions:

We have 8 queries that demonstrate the 4 necessary functions:

- **createPark**: creates a new park
- **updatePark**: allows the user to change the data of an existing park
- **createZone**: adds a new zone to a given park
- **createRide**: creates a new ride
- **updateRide**: allows the user to change the data of an existing ride
- **deleteRide**: deletes a ride
- **selectFastestRide**: gets the top speed of the fastest ride in a park
- **selectZoneWithRating**: given a park and a rating, finds a zone in the park with the greatest number of rides with that rating (imagine you are a parent looking for which zones would be good to take your kids to, so you search for the zone with the most 'baby'-rated rides)

User Manual:

When running the user interface program, the first choice the user will be presented with is to pick which use case they would like to access. The UI will list the use cases as follows:

1. Create a new park
2. Update an existing park
3. Create a new zone
4. Create a new ride
5. Update an existing ride
6. Delete an existing ride
7. Find the top speed ride at a park
8. Find the zone in a park with the most rides of a certain rating

The user will be asked to input a number 1-8 in order to select which use case they would like to run. Once they have selected a use case, they will be asked to input the information for the given use case in order. For creating a new park in Figure 1, they will be asked for the name, the description, and the status where they will be presented with the options of 'open', 'permanently closed' and 'temporarily closed'. Once they have inputted all of this information, they will be notified whether or not it was executed successfully. The rest of the create use cases work in the same manner. For the update use cases as seen in Figure 2 and 5, the user will simply be asked for the ID of the park or ride they would like to update. If the ID exists, they will then be asked for the relevant information. Once they have inputted all information, they will be notified whether or not it was successful. For the delete use case see Figure 6. The user will once again be asked for the ID of the ride they would like to delete. If the ride exists, they will be notified whether it was successful or not. Finally, for the select use cases in Figure 7 and 8, the user will be asked for the park ID in both cases, and will be returned the data they requested.

Figure 1: CREATE PARK

```
Choose from one of the following, then press enter.
  1 - Create Park
  2 - Update Park
  3 - Create Zone
  4 - Create Ride
  5 - Update Ride
  6 - Delete Ride
  7 - Select top speed ride at park
  8 - Select zone at a park with most baby rides
  q - Quit
1
Create Park:
Type the park name, then press enter.
really cool theme park
Choose from one of the following statuses, then press enter.
  1 - Open
  2 - Temporarily Closed
  3 - Permanently Closed
1
Type the description of the park, then press enter.
this park is a very very cool park
Name: really cool theme park
Status: open
Description: this park is a very very cool park
Successfully generated park with ID = 2
```

Figure 2: UPDATE PARK

```
Choose from one of the following, then press enter.
  1 - Create Park
  2 - Update Park
  3 - Create Zone
  4 - Create Ride
  5 - Update Ride
  6 - Delete Ride
  7 - Select top speed ride at park
  8 - Select zone at a park with most baby rides
  q - Quit
2
Update Park:
Type the integer id of the park you want to update, then press enter.
1
Type the new park name, then press enter.
new park name
Choose the new status from one of the following statuses, then press enter.
  1 - Open
  2 - Temporarily Closed
  3 - Permanently Closed
3
Type the new description of the park, then press enter.
new description
ID: 1
Name: new park name
Status: permanently closed
Description: new description
Successfully updated park with ID = 1
```

Figure 3: CREATE ZONE

```
Choose from one of the following, then press enter.
  1 - Create Park
  2 - Update Park
  3 - Create Zone
  4 - Create Ride
  5 - Update Ride
  6 - Delete Ride
  7 - Select top speed ride at park
  8 - Select zone at a park with most baby rides
  q - Quit
3
Create Zone:
Type the Park's ID, then press enter.
2
Type the zone name, then press enter.
VERY cool zone
Park ID: 2
Name: VERY cool zone
Successfully generated zone with primary key (2, VERY cool zone)
```

Figure 4: CREATE RIDE

```
Choose from one of the following, then press enter.
  1 - Create Park
  2 - Update Park
  3 - Create Zone
  4 - Create Ride
  5 - Update Ride
  6 - Delete Ride
  7 - Select top speed ride at park
  8 - Select zone at a park with most baby rides
  Q - Quit
4
Create Ride:
Type the ride name then press enter.
ride 1
Type the integer max speed, then press enter.
10
Type the ride description, then press enter
ride description
Select the ride rating from one of the following, then press enter.
  1 - Baby
  2 - Intermediate
  3 - Concussion
2
Type the Park's ID, then press enter.
1
Type the zone name where the ride is located, then press enter.
test zone 1
Name: ride 1
Max Speed: 10
Description: ride description
Rating: intermediate
Park ID: 1
Zone Name: test zone 1
Successfully generated ride with ID = 6
```

Figure 5: UPDATE RIDE

```
Choose from one of the following, then press enter.
    1 - Create Park
    2 - Update Park
    3 - Create Zone
    4 - Create Ride
    5 - Update Ride
    6 - Delete Ride
    7 - Select top speed ride at park
    8 - Select zone at a park with most baby rides
    Q - Quit
5
Update Ride:
Type the id of the ride you would like to update, then press enter.
7
Type the updated ride name, then press enter.
Updated ride name
Type the updated max speed integer of the ride, then press enter.
12
Type the updated description of the ride, then press enter.
updated description
Name: Updated ride name
Max Speed: 12
Description: updated description
Successfully updated ride with ID = 7
```

Figure 6: DELETE RIDE

```
Choose from one of the following, then press enter.
    1 - Create Park
    2 - Update Park
    3 - Create Zone
    4 - Create Ride
    5 - Update Ride
    6 - Delete Ride
    7 - Select top speed ride at park
    8 - Select zone at a park with most baby rides
    Q - Quit
6
Delete Ride:
Type the ID of the ride being deleted, then press enter.
6
Successfully deleted ride with ID = 6
```

Figure 7: Select top speed ride

```
Choose from one of the following, then press enter.
  1 - Create Park
  2 - Update Park
  3 - Create Zone
  4 - Create Ride
  5 - Update Ride
  6 - Delete Ride
  7 - Select top speed ride at park
  8 - Select zone at a park with the most rides of a rating
  Q - Quit
7
Top Speed Ride at Park:
Type the park id of the park you would like to search in, then press enter.
1
Fastest ride =
      Name:  Top Thrill Cheester
```

Figure 8: Select Zone from a park with the most rides of a certain rating

```
Choose from one of the following, then press enter.
  1 - Create Park
  2 - Update Park
  3 - Create Zone
  4 - Create Ride
  5 - Update Ride
  6 - Delete Ride
  7 - Select top speed ride at park
  8 - Select zone at a park with most baby rides
  Q - Quit
8
Zone at Park with most rides of a rating:
Type the park id of the park you would like to search in, then press enter.
1
Select the rating type you would like to search for, then press enter.
  1 - Baby
  2 - Intermediate
  3 - Concussion
1
Zone =
      Name:  Swiss Land
```

Lessons Learned or Problems Arose

1. **A Lesson:** UI design should only be done after the mental exercise of actually placing yourself in the shoes of a user (e.g. saying “who am I?” or “what information would I like to gather from this database application?”). We wrote a bunch of strange, stupid queries and procedures at first and realized they didn’t satisfy any reasonable use case, and were nonsensical.
2. **A Lesson:** Any tasks that are contingent on the knowledge and activity of an outside party (e.g. setting up the VM or the MySQL server) should be done both first and early. It made our project rushed, and made the setup a lot longer not being able to ask a TA or Dr. Foreback questions about those things in a reasonable timeframe.

3. **A problem:** not all of us know Java or even know Java well, so the UI was contingent on the performance of one or two of us. This is obviously not good.
4. **A Lesson:** IDs should be automatically generated whenever possible.