CSC263 Database Systems

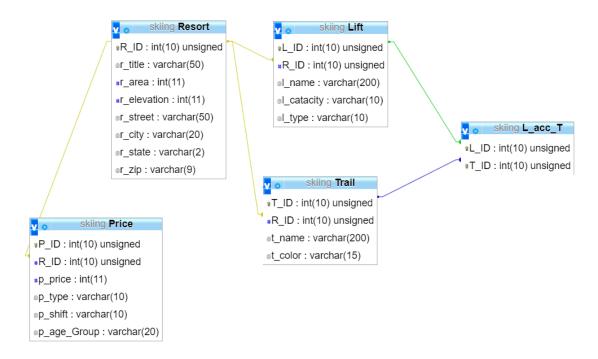
Laboratory Assignment #5

Goals: To learn and practice writing and executing basic SQL queries in MySQL.

Objectives: After successfully completing the lab, a student should be able to become better in writing basic queries in SQL.

Requirements:

1. In this lab you will learn to write and execute some basic SQL queries for a new database, "Ski New England". "Ski New England" is a database that contains stores, manages and allows information retrieval on all New England ski resorts. It has the following schema.



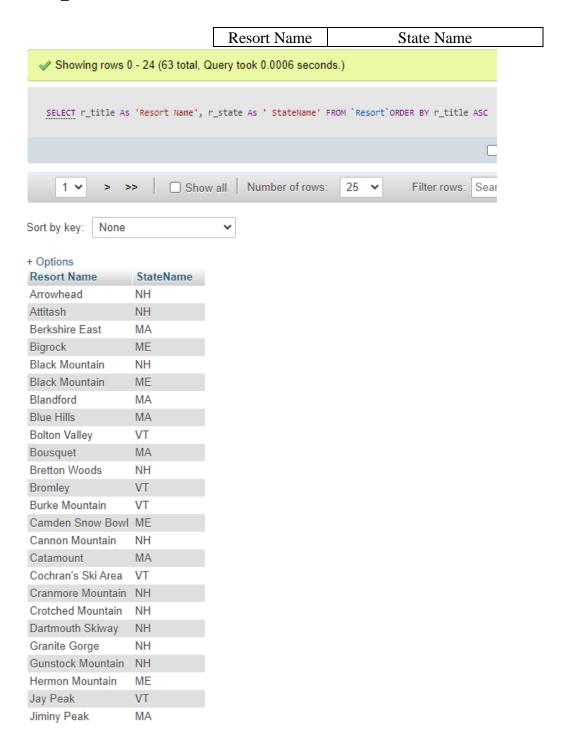
- 2. Follow the following instructions to establish the database. Take a screenshot of the list of tables after you establish the database in your account.
 - a. Use phpMyAdmin to login to your database space.
 - b. Establish the database by importing the given "skiNewEngland.sql" script.
 - c. Check to make sure that you have the correct number of tuples in each table, i.e., 63 in "Resort";331 in "Lift"; 2558 in "Trails"; 252 in "Price"; 747 in "L acc T"

3. Write and execute the following queries. Make sure that you write (type out) each query in the lab report, and make sure that you take screenshot of the execution result of each query. The output of each query must follow the display format given, including the title names. When a query returns too many records that it is not practical to show them all, you only need to show the first 25 of them, but you must show the message that shows the total number of resorts returned.

Query 1. List all ski resorts in New England in ascending order of the resort names (alphabetically).

Query Used: "SELECT r_title As 'Resort Name', r_state As ' StateName' FROM `Resort`ORDER

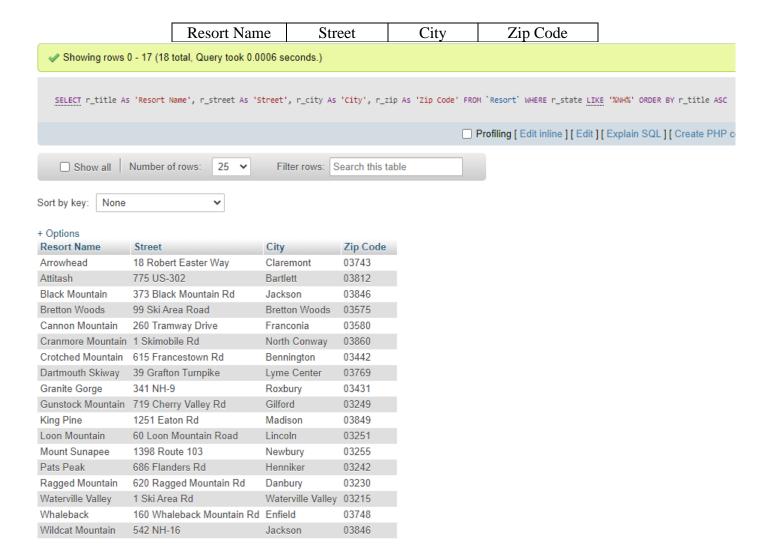
BY r_title ASC "



Query 2. List all ski resort in New Hampshire in the ascending order of the resort names. Q: How many records were returned by this query?

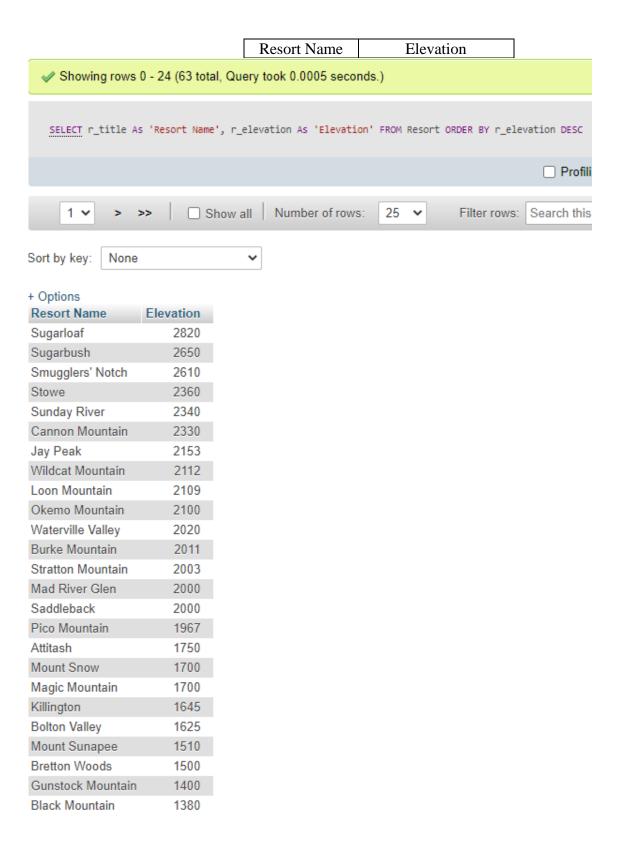
Query Used: "SELECT r_title As 'Resort Name', r_street As 'Street', r_city As 'City', r_zip As 'Zip Code' FROM `Resort` WHERE r_state LIKE '%NH%' ORDER BY r_title ASC "

18 total returned (0-17)



Query 3. List all ski resorts in New England in the descending order of their elevations.

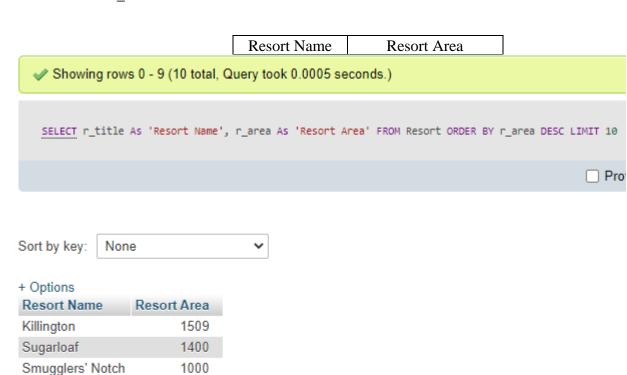
Query Used: "SELECT r_title As 'Resort Name', r_elevation As 'Elevation' FROM Resort ORDER BY r_elevation DESC"



Query 4. List top 10 largest ski resorts in New England in the descending order of their areas.

Query Used: "SELECT r_title As 'Resort Name', r_area As 'Resort Area' FROM Resort ORDER

BY r_area DESC LIMIT 10"



Sunday River

Mount Snow

Mount Abram

Sugarbush

Stowe

Okemo Mountain

Stratton Mountain

870

632

625

588

578

560

485

Query 5. Find the ski resort in New England that has the highest elevation.

Query Used: "SELECT r_title As 'Resort Name', r_elevation As 'Highest Elevation' FROM Resort ORDER BY r_elevation DESC LIMIT 1"



Query 6. What is the area of the largest ski resort in New England? Output this area as:

Query Used: "SELECT r_area As 'Largest Ski Resort Area in New England' FROM Resort ORDER BY r_area DESC LIMIT 1"



F Options

Largest Ski Resort Area in New England

Query 7. Which is the largest ski resort in New England?

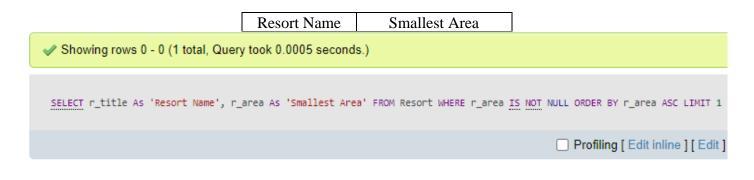
Query Used: "SELECT r_title As 'Largest Ski Resort in New England' FROM Resort ORDER BY r_area DESC LIMIT"

	Largest Ski Resort in New England	
✓ Showing rows 0 - 0 (1 to	otal, Query took 0.0005 seconds.)	
SELECT r_title As 'Largest	t Ski Resort in New England' FROM Resort ORDER BY r_area DE	SC LIMIT 1
+ Options		
Largest Ski Resort in New E	England	
Killington	-	

Query 8. Find the smallest ski resort in New England. Print the ski resort name and its area.

Query Used: "SELECT r_title As 'Resort Name', r_area As 'Smallest Area' FROM Resort

WHERE r_area IS NOT NULL ORDER BY r_area ASC LIMIT 1"



+ Options
Resort Name Smallest Area
Granite Gorge 25

Query 9. Count and display the number of ski resorts New England.

Query Used: "SELECT COUNT(R_ID) As 'Total Number of Ski Resorsts in New England' FROM Resort"



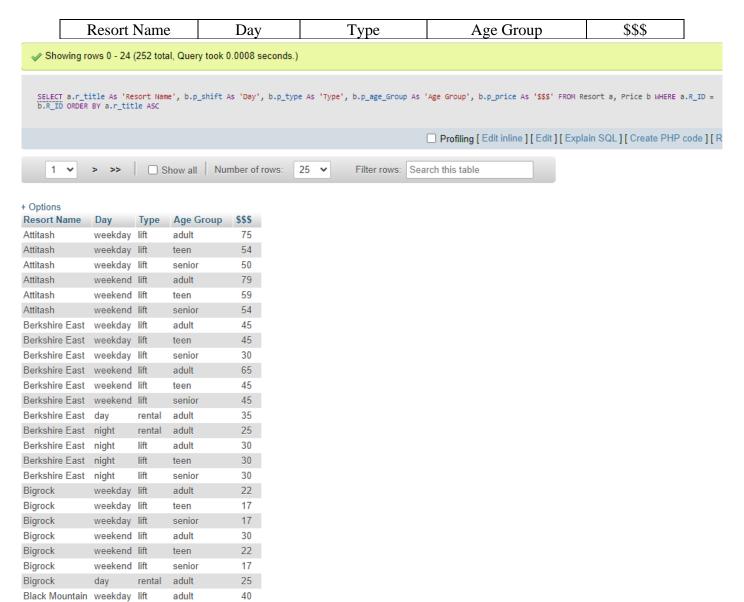
Query 10. Count and display the number of ski resorts in each state of New England.

Query Used: "SELECT r_state As 'State', COUNT(R_ID) As 'Total Number of Ski Resorsts in New England' FROM Resort GROUP BY r_state ORDER BY r_state ASC"



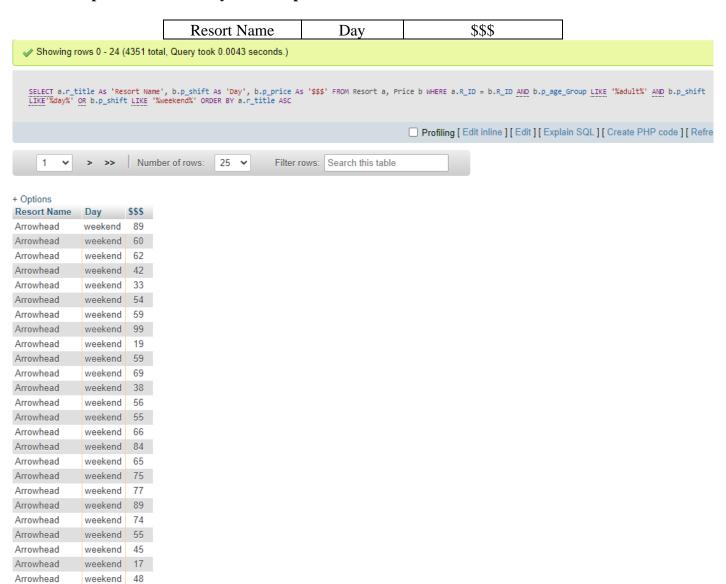
Query 11. In ascending order of resort names, list all information on prices for all ski resorts in New England. Use the following display format.

Query Used: "SELECT a.r_title As 'Resort Name', b.p_shift As 'Day', b.p_type As 'Type', b.p_age_Group As 'Age Group', b.p_price As '\$\$\$' FROM Resort a, Price b WHERE a.R_ID = b.R_ID ORDER BY a.r_title ASC"



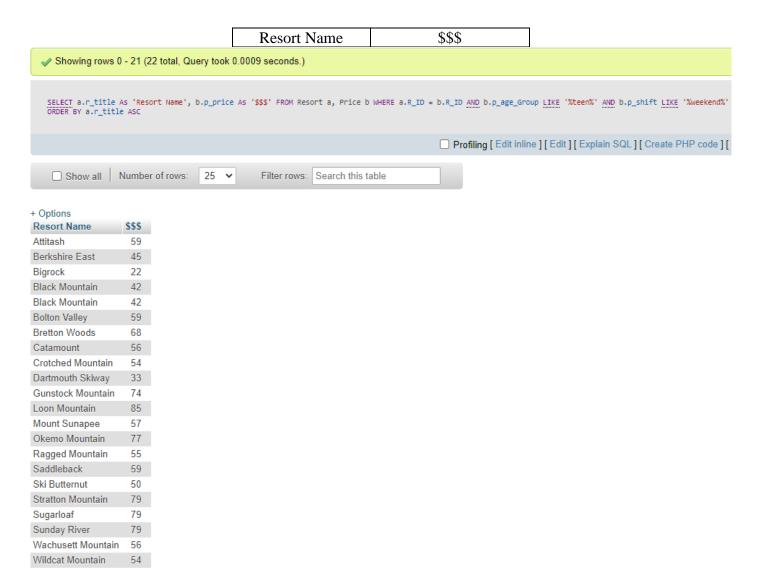
Query 12. In ascending order of resort names, list the adult day and weekend lift ticket prices for all ski resorts in New England. Use the following display format. How many records were returned by this query?

Query Used: "SELECT a.r_title As 'Resort Name', b.p_shift As 'Day', b.p_price As '\$\$\$' FROM Resort a, Price b WHERE a.R_ID = b.R_ID AND b.p_age_Group LIKE '%adult%' AND b.p_shift LIKE'%day%' OR b.p_shift LIKE '%weekend%' ORDER BY a.r_title ASC "



Query 13. In ascending order of resort names,, list all ski resorts' weekend lift ticket prices for teenagers.

Query Used: "SELECT a.r_title As 'Resort Name', b.p_price As '\$\$\$' FROM Resort a, Price b WHERE a.R_ID = b.R_ID AND b.p_age_Group LIKE '%teen%' AND b.p_shift LIKE '%weekend%' ORDER BY a.r_title ASC "



Query 14. Which ski resort has the most expensive lift ticket for adult any day?

Query Used: "SELECT a.r_title As 'Most Expensive Resort', b.p_price As '\$\$\$' FROM Resort a,
Price b WHERE a.R_ID = b.R_ID AND b.p_age_Group LIKE '%adult%' ORDER BY
b.p_price DESC LIMIT 1"

		Most Expensive	e Resort	\$\$\$			
SELECT a.r_title As 'Mo	st Expensive	Resort', b.p_price As '\$\$\$'	FROM Resort a,	Price b WHERE a.R_ID = b.R_ID AND b.p_age_Gro	up LIKE '%adult%' ORDER BY b.p_price DESC		
				Profiling [Edit inline] [Edit]	[Explain SQL][Create PHP code][Refre		
+ Options							
Most Expensive Resort	\$\$\$						
Stowe	124						

Query 15. What are the average, most expensive and least expensive lift tickets in New England?

Query Used: "SELECT AVG(b.p_price) As 'Average Lift Ticket',MAX(b.p_price) As 'Most Expensive List Ticket', MIN(b.p_price) As 'Least Expensive Lift Ticket' FROM Resort a, Price b WHERE a.R_ID = b.R_ID "

	Average Li	ft Ticket	Most Expensive Lift T	icket	Least Expens	ive Lift Ticket	
✓ Showing	g rows 0 - 0 (1 total, Qu	uery took 0.0012 seco	nds.)				
	(b.p_price) As 'Averag ID = b.R_ID	e Lift Ticket',MAX(b.	p_price) As 'Most Expensive List	Ticket', M	IN(b.p_price) As 'Leas	t Expensive Lift Ticket	' FROM Resort a, Price b
					Profiling [Edit inline]	[Edit][Explain SQL][Create PHP code] [Refr
Show	all Number of rows	s: 25 🕶 Filt	ter rows: Search this table				
+ Options							
←T→	\forall	Average Lift Ticket	Most Expensive List Ticket	Least Ex	pensive Lift Ticket		
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Query 16. What are the average, most expensive and least expensive lift tickets in Vermont?

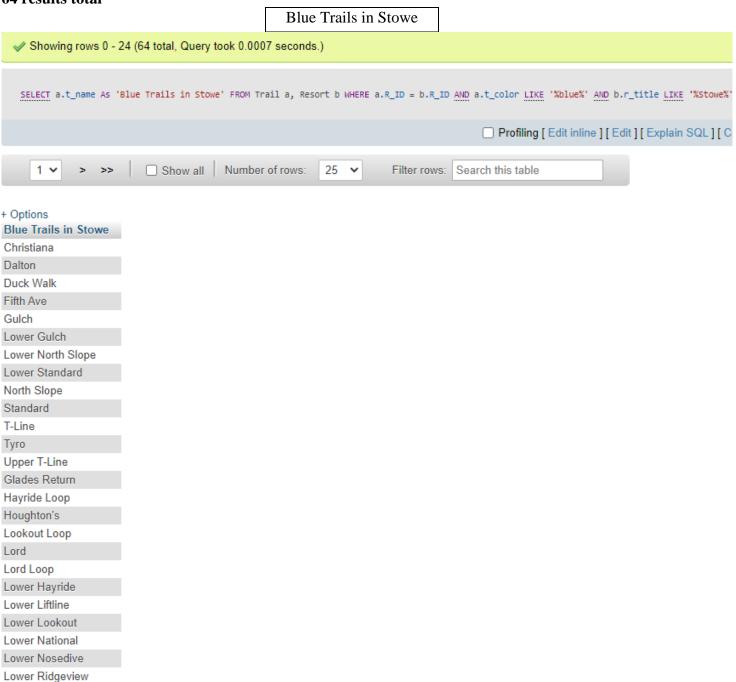
Query Used: "SELECT AVG(b.p_price) As 'Average Lift Ticket',MAX(b.p_price) As 'Most Expensive List Ticket', MIN(b.p_price) As 'Least Expensive Lift Ticket' FROM Resort a, Price b WHERE a.R_ID = b.R_ID AND a.r_state LIKE '%VT%' "

	Average L	Lift Ticket	Most Expensive L	ift Ticket	Least Expen	sive Lift Ticket]
	.p_price) As 'Average = b.R_ID AND a.r_sta		p_price) As 'Most Expensive List	Ticket', MIN(b.p	_price) As 'Least Expe	ensive Lift Ticket' FROM Re	sort a, Price b
				Profili	ng [Edit inline] [Edit]	[Explain SQL][Create P	HP code] [Refr
☐ Show a	Number of rows:	25 v Filt	er rows: Search this table				
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←T→		, and the second	Most Expensive List Ticket	Least Expens	ive Lift Ticket		
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Query 17. Display the blue trails in Stowe resort. How many records were returned by this query?

Query Used: "SELECT a.t_name As 'Blue Trails in Stowe' FROM Trail a, Resort b WHERE a.R_ID = b.R_ID AND a.t_color LIKE '%blue%' AND b.r_title LIKE '%Stowe%'"

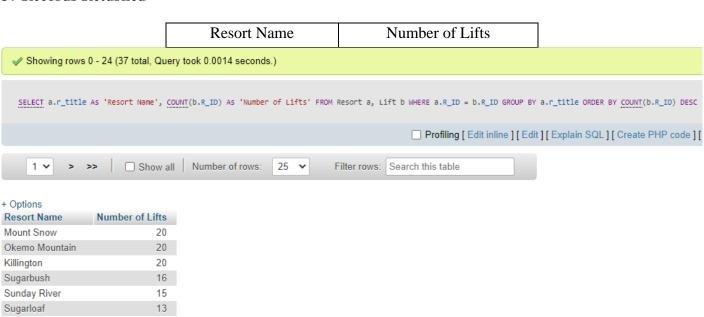
64 results total



Query 18. List the resorts and the number of lifts for each resort. The list should be in the order of the resort with most number of lifts to the resort with the least number of lifts. How many records were returned by this query?

Query Used: "SELECT a.r_title As 'Resort Name', COUNT(b.R_ID) As 'Number of Lifts' FROM Resort a, Lift b WHERE a.R_ID = b.R_ID GROUP BY a.r_title ORDER BY COUNT(b.R_ID) DESC "

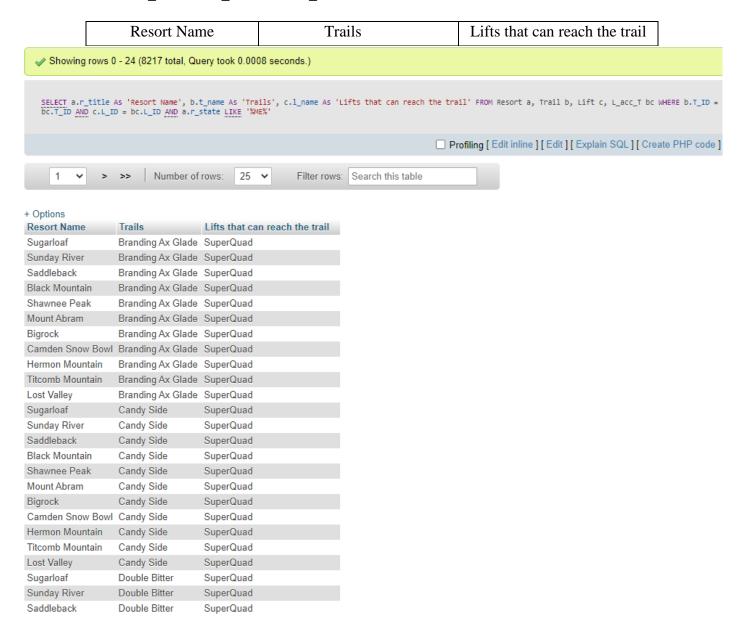
37 Records Returned



+ Options	
Resort Name	Number of Lifts
Mount Snow	20
Okemo Mountain	20
Killington	20
Sugarbush	16
Sunday River	15
Sugarloaf	13
Loon Mountain	12
Stowe	12
Cannon Mountain	11
Waterville Valley	11
Ski Butternut	11
Mount Sunapee	10
Bretton Woods	10
Jiminy Peak	10
Attitash	10
Jay Peak	9
Bromley	9
Wachusett Mountain	8
Smugglers' Notch	8
Pico Mountain	7
Gunstock Mountain	7
Cranmore Mountain	7
Catamount	7
Burke Mountain	6
Ragged Mountain	6

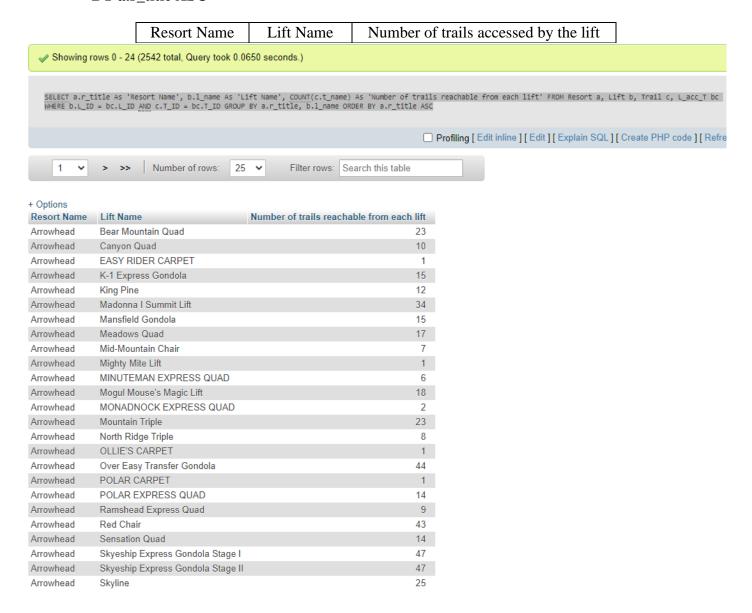
Query 19. List complete information of all the resorts in Maine with lifts and trails.

Query Used: "SELECT a.r_title As 'Resort Name', b.t_name As 'Trails', c.l_name As 'Lifts that can reach the trail' FROM Resort a, Trail b, Lift c, L_acc_T bc WHERE b.T_ID = bc.T_ID AND c.L ID = bc.L ID AND a.r state LIKE '%ME%'"



Query 20. List all the resorts in New England with each resort's all the lifts and the number of trails reachable from each lift. Display the result in ascending order of alphabetical order the resorts names.

Query Used: "SELECT a.r_title As 'Resort Name', b.l_name As 'Lift Name', COUNT(c.t_name)
As 'Number of trails reachable from each lift' FROM Resort a, Lift b, Trail c, L_acc_T bc
WHERE b.L_ID = bc.L_ID AND c.T_ID = bc.T_ID GROUP BY a.r_title, b.l_name ORDER
BY a.r_title ASC"



Submission Requirements:

- Submit a lab report (in .pdf format) that contains ALL your Lab 5 activities, including your answers and discussions for all the queries.
- Write a summary of what you learned in this lab.
 - o I learned about the various SELECT commands. I also learned more about how to run advanced queries on a database as well as how to modify title values using the "As" command. I furthered my knowledge on combining columns of databases and how to ensure accuracy when doing so.