LAB 2: SQL

Class: CS-3743-003

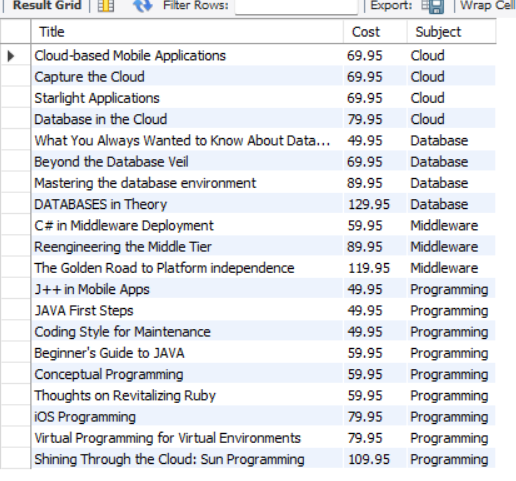
Name: Khoa Dang Nguyen

**1) I want to know how much each book costs - including the title, subject, and cost. Sort the books by subject first, then cost with the lowest cost book listed first.**

SELECT BOOK\_TITLE AS Title, BOOK\_COST AS Cost, BOOK\_SUBJECT AS Subject -- get the book title, cost, subject

FROM BOOK -- from the book table

ORDER BY BOOK\_SUBJECT, BOOK\_COST asc; -- sort the order by subject first, then sort the order by the cost with the lowest first

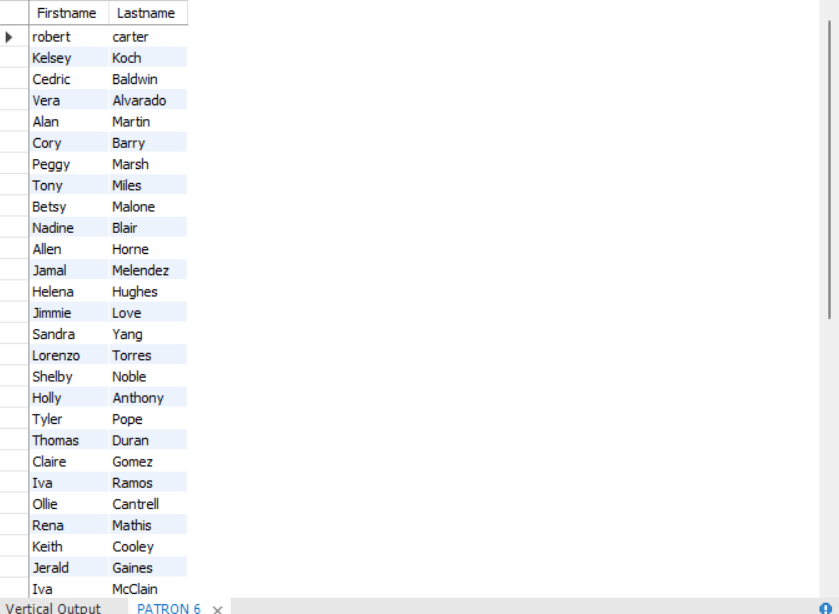


**2) What are the names of all our patrons?**

(I would assume the professor is asking for the first name and the last name, separately), if not, I would use CONCAT())

SELECT PAT\_FNAME AS Firstname, PAT\_LNAME AS Lastname -- get the patron first name and last name

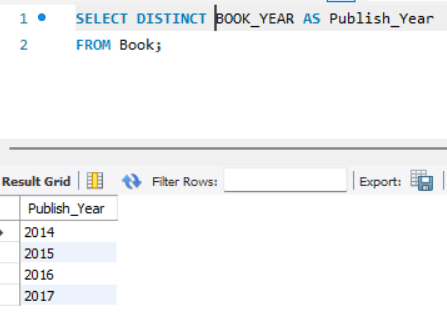
FROM PATRON; -- from the table patron



**3) What years were books published? Each year should only return one time. Bonus question: How many books were published in that year?**

SELECT DISTINCT BOOK\_YEAR AS Publish\_Year -- get book published year that are distinctive (appear only once)

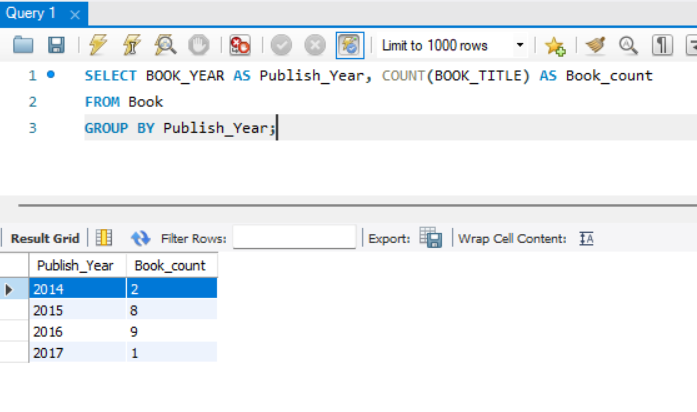
FROM BOOK; -- from the book table

  
  
**How many books were published in that year?** (took me a while, but I managed to do it using group by)

SELECT BOOK\_YEAR AS Publish\_Year, COUNT(BOOK\_TITLE) AS Book\_count -- get the year book published and the count for published book in each year

FROM BOOK -- from the book table

GROUP BY BOOK\_YEAR ; -- group the result with the year book published

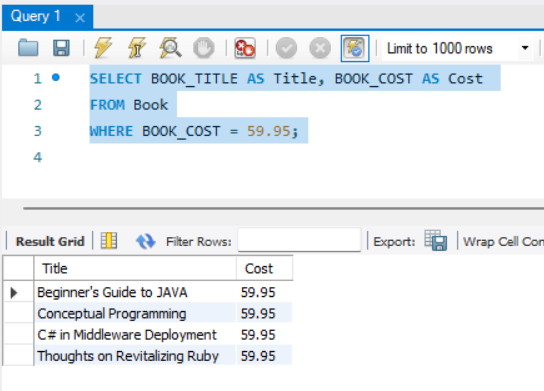


**4) Find all the titles of books that cost 59.95**

SELECT BOOK\_TITLE AS Title, BOOK\_COST AS Cost -- get the book title and cost

FROM BOOK-- from the book table

WHERE BOOK\_COST = 59.95; -- with condition that equal 59.95

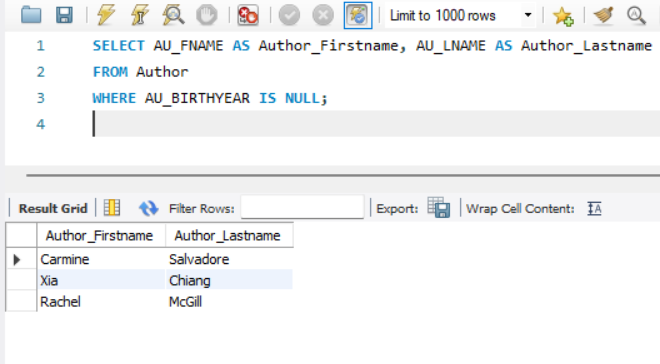


**5) Some authors are missing birthday information. Provide a list of authors' first and last names where Birthdate is missing (null).**

SELECT AU\_FNAME AS Author\_Firstname, AU\_LNAME AS Author\_Lastname -- get author first name and last name

FROM AUTHOR-- from the author table

WHERE AU\_BIRTHYEAR IS NULL; -- with condition that the author birthyear is null (empty)



**6) I need a list of authors and how many books each author has written. Use the full author's name and provide the number of books they wrote (hint: use COUNT).**

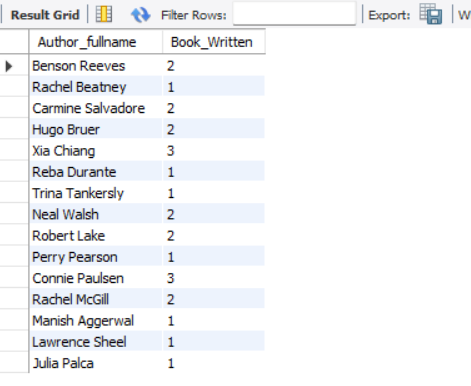
SELECT CONCAT(AUTHOR.AU\_FNAME, " ", AUTHOR.AU\_LNAME) AS Author\_fullname, -- get the author fullname using concat on author first name and last name

COUNT(WRITES.BOOK\_NUM) AS Book\_Written -- get number of book written for that ID

FROM AUTHOR -- from the author table

INNER JOIN WRITES ON WRITES.AU\_ID = AUTHOR.AU\_ID -- join the writes table and author table using author ID

GROUP BY AUTHOR.AU\_ID; -- group the result with the author ID



**7) Figure out how long each patron kept their checkouts (hint, you will need to calculate this based on book returned date and book check out date). Display each patron's name, book title, and how many days they have kept the book.**

SELECT CONCAT(PATRON.PAT\_FNAME, " ", PATRON.PAT\_LNAME) AS Patron\_Name, -- Combine the patron's first and last name to get fullname

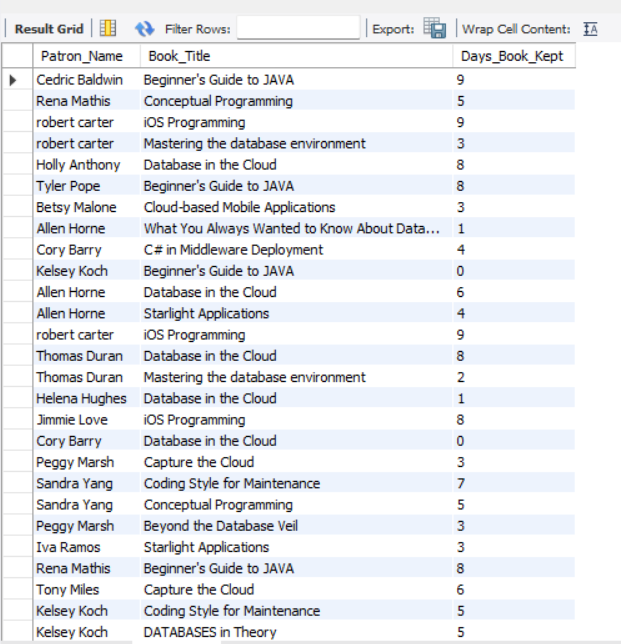
BOOK.BOOK\_TITLE AS Book\_Title, -- get book title from book table

DATEDIFF(CHECK\_IN\_DATE, CHECK\_OUT\_DATE) AS Days\_Book\_Kept -- calculate number of day between check out and return

FROM CHECKOUT -- get checkin and checkout dates from the Checkout table

INNER JOIN BOOK ON BOOK.BOOK\_NUM = CHECKOUT.BOOK\_NUM -- join Checkout with the book table using BOOK\_NUM to get the book title

INNER JOIN PATRON ON CHECKOUT.PAT\_ID = PATRON.PAT\_ID; -- join Checkout with the Patron table to get the Patron name



**8) Display each author's name, book title, and book subject. Sort by Book Subject.**

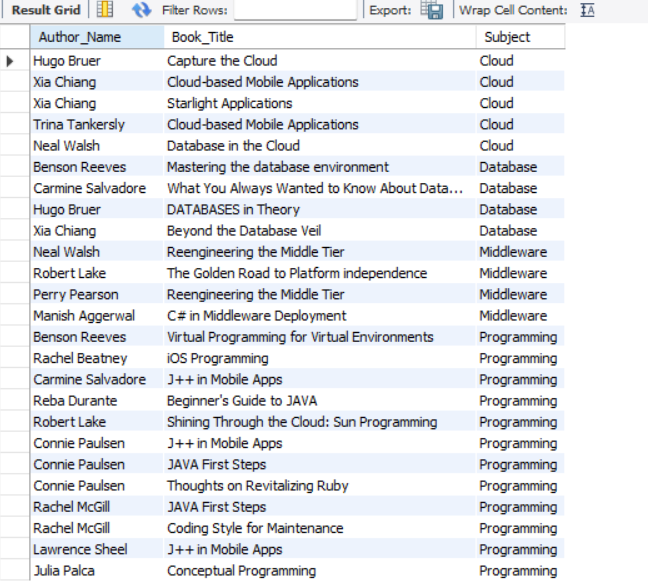
SELECT CONCAT(AUTHOR.AU\_FNAME," ", AUTHOR.AU\_LNAME) AS Author\_Name, BOOK\_TITLE AS Book\_Title, BOOK\_SUBJECT AS Subject -- get the author name using concat, get the book subject and the book title

FROM BOOK-- get information from the book table

INNER JOIN WRITES ON WRITES.BOOK\_NUM = BOOK.BOOK\_NUM -- join the book table with the writes table using book\_num

INNER JOIN Author ON WRITES.AU\_ID = AUTHOR.AU\_ID -- join the writes table with the author table using author id number

ORDER BY Subject; -- sort by subject



**9) Find out who has books currently checked out. You should return the patron's first name, last name, and book title.**

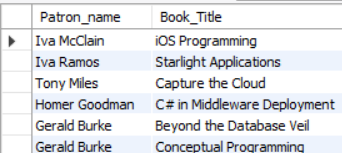
SELECT CONCAT(PATRON.PAT\_FNAME," ", PATRON.PAT\_LNAME) AS Patron\_name, BOOK.BOOK\_TITLE AS Book\_Title -- get the patron's name, book title

FROM CHECKOUT

INNER JOIN PATRON ON CHECKOUT.PAT\_ID = PATRON.PAT\_ID -- connect the patron\_id from checkout table and patron table using INNER JOIN

INNER JOIN BOOK ON CHECKOUT.BOOK\_NUM = BOOK.BOOK\_NUM -- display the book title using join to connect

WHERE CHECKOUT.CHECK\_IN\_DATE IS NULL; -- if check\_in\_date is null, then the book is still currently checkout



**10) Which books are most popular? Create a query that displays the book number, the book title, and the number of times each book has been checked out. Arrange the books in order from the most checkouts to the fewest checkouts. For books with the same number of checkouts, arrange alphabetically.**

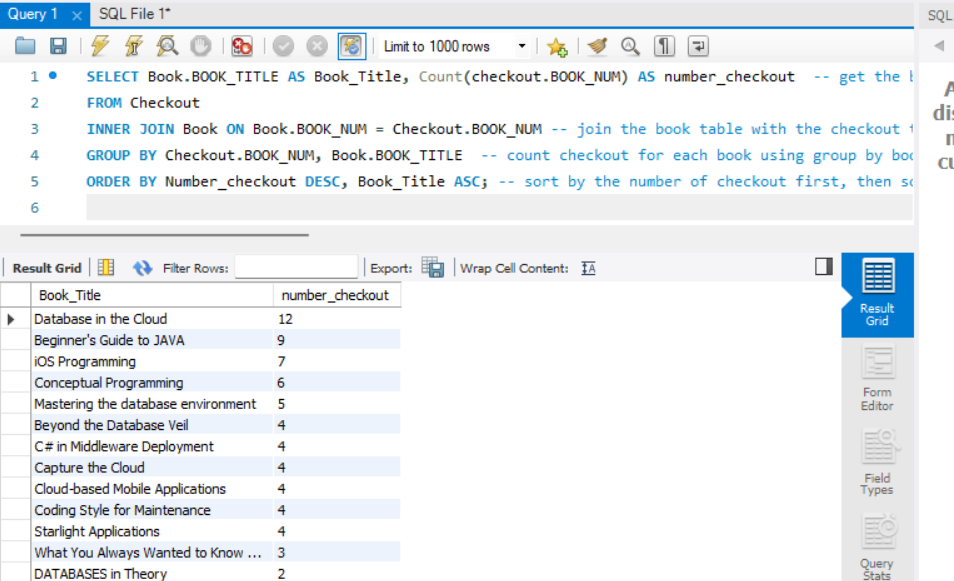
SELECT BOOK.BOOK\_TITLE AS Book\_Title, Count(CHECKOUT.BOOK\_NUM) AS number\_checkout -- get the book title and number of checkout of those books

FROM Checkout

INNER JOIN BOOK ON BOOK.BOOK\_NUM = CHECKOUT.BOOK\_NUM -- join the book table with the checkout table using book\_num

GROUP BY CHECKOUT.BOOK\_NUM, BOOK.BOOK\_TITLE -- count checkout for each book using group by book\_num and book\_title

ORDER BY Number\_checkout desc, BOOK.BOOK\_TITLE asc; -- sort by the number of checkout first, then sort by book title letter



**11) Write a question and a query of your own that joins a minimum of three tables. Think about what information might be useful from this database. Describe the information you want your query to return, write the query and display the results.**

Find the author for the most borrowed book and display the author's name, age, book number, title, subject, and number of checkouts, then sort by number of checkouts to further analyze the reader research trends (which book attracts most patrons and how if the author age (YoE) is also a factor).

(This one really take a while)

SELECT CONCAT(AUTHOR.AU\_FNAME, " ", AUTHOR.AU\_LNAME) AS Author\_Fullname, -- get author fullname

AUTHOR.AU\_BIRTHYEAR AS BirthYear, -- get author first year

BOOK.BOOK\_TITLE AS Book\_Title, -- get book title

BOOK.BOOK\_SUBJECT AS Subject, -- get subject of the book

COUNT(CHECKOUT.BOOK\_NUM) AS number\_checkout -- get the book title and number of checkouts of those books

FROM CHECKOUT

INNER JOIN BOOK ON BOOK.BOOK\_NUM = CHECKOUT.BOOK\_NUM -- join the book table with the checkout table using book number

INNER JOIN WRITES ON WRITES.BOOK\_NUM = BOOK.BOOK\_NUM -- join the write table and link the book\_num from the book table

INNER JOIN AUTHOR ON AUTHOR.AU\_ID = WRITES.AU\_ID -- join the author table and link the author ID from the writes table

GROUP BY CHECKOUT.BOOK\_NUM, Author\_Fullname, AUTHOR.AU\_BIRTHYEAR, BOOK.BOOK\_TITLE, BOOK.BOOK\_SUBJECT -- group result by book number, author name, birthyear of that author, book subject and title

ORDER BY Number\_checkout desc, Author\_Fullname asc, Book\_title asc; -- sort by the number of checkout first, then sort by author name with alphabet order, and then book title letter

