Stephen Brom
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CS300-ON
Writing Queries using SQL

Queries

1. Retrieve the first name and last name of each author in the author relation. Order does not matter. **(1 points)**

    SQL Statement:
    SELECT firstName, lastName
    FROM author;

    Output:

firstName	lastName
Toni	Morrison
Paul	Solotaroff
Vernor	Vintage
Dick	Francis
Peter	Straub
Stephen	King
Philip	Pratt
Truddi	Chase
Bradley	Collins
Joseph	Heller
Gary	Wills
Douglas R.	Hofstadter
Harper	Lee
Stephen E.	Ambrose
J.K.	Rowling
J.D.	Salinger
Seamus	Heaney
Albert	Camus
Bradley	Collins, Jr.
John	Steinbeck
Riva	Castelman
Barbara	Owen
Randy	O'Rourke
Tracy	Kidder
Lon	Schleining

2. Retrieve the title and book type in the book relation. Order does not matter. (**1 points**)

SQL Statement:
SELECT title, type
FROM book;

Output:

title	type
A Deepness in the Sky	SFI
Magic Terror	HOR
The Stranger	FIC
Venice	ART
Second Wind	MYS
The Edge	MYS
Dreamcatcher: A Novel	HOR
Treasure Chests	ART
Beloved	FIC
Harry Potter and the Prisoner of Azkaban	SFI
Van Gogh and Gauguin	ART
Of Mice and Men	FIC
Electric Light	POE
Group: Six People in Search of a Life	PSY
Nine Stories	FIC
The Soul of a New Machine	SCI
Travels with Charley	TRA
Catch-22	FIC
Jazz	FIC
Band of Brothers	HIS
A Guide to SQL	CMP
Franny and Zooey	FIC
East of Eden	FIC
Harry Potter and the Goblet of Fire	SFI
The Fall	FIC
Godel, Escher, Bach	PHI
When Rabbit Howls	PSY
Black House	HOR
Song of Solomon	FIC
The Grapes of Wrath	FIC
Slay Ride	MYS
The Catcher in the Rye	FIC
To Kill a Mockingbird	FIC

3. Retrieve the publisherCode in the book relation. List each publisherCode only once in the result. Order does not matter. **(1 points)**

SQL Statement:
SELECT DISTINCT publisherCode
FROM book;

Output:

publisherCode
BA
BP
BY
CT
FA
FS
HC
JP
LB
PE
PL
PU
RH
SC
SS
ST
TA
TB
TO
VB
WP

4. Retrieve the title and price of each book in the book relation. Further add a calculated column named 'discount' that shows the price the book with 25% discount. Order does not matter. Show the first five rows of the result. **(2 points)**

SQL Statement:
SELECT title, price, price * 0.75 AS discount
FROM book
LIMIT 5;

Output:

title	price	discount
A Deepness in the Sky	7.19	5.3925
Magic Terror	7.99	5.9925
The Stranger	8	6
Venice	24.5	18.375
Second Wind	24.95	18.7125

5. Retrieve the title and price for any book whose price is higher than $20.00 in the book relation. Show the full result. **(2 points)**

    SQL Statement:
    > SELECT title, price
    > FROM book
    > WHERE price > 20.00;

    Output:

title	price
Venice	24.5
Second Wind	24.95
Treasure Chests	24.46
Van Gogh and Gauguin	21
A Guide to SQL	37.95

6. Retrieve the publisherName of all publishers that are in New York only in the publisher relation. Order does not matter. **(2 points)**

SQL Statement:
```
SELECT publisherName
FROM publisher
WHERE city = 'New York';
```

Output:

publisherName
Arcade Publishing
Back Bay books
Fawcett books
Farrar Straus and Giroux
HarperCollins publishers
Jove Publications
Lb books
Penguin USA
Plume
Putnam Publishing Group
Random House
Schoken books
Scribner
Simon and Schuster
SchoLASTic Trade
Tor books
Thames and Hudson
Vintage books
W.W. Norton

7. Retrieve the publisherName of all publishers that are not in New York in the publisher relation. (use != for inequality). Order does not matter. Show the full result. **(3 points)**

   SQL Statement:
   SELECT publisherName
   FROM publisher
   WHERE city != 'New York';

   Output:

publisherName
Arkham House
Basic books
Berkley Publishing
Course Technology
Jeremy P. Tarcher
McPherson and Co.
Taunton Press
Touchstone books
Westview Press

8. Retrieve the bookCode and onHand for each book for which a branch has between 2 and 4 copies in the inventory relation. **Use the BETWEEN keyword in this query.** Order does not matter. Show the full result. **(3 points)**

SQL Statement:
SELECT bookCode, onHand
FROM inventory
WHERE onHand BETWEEN 2 AND 4;

Output:

bookCode	onHand
180	2
189	2
200	3
378	2
079X	2
079X	3
1351	4
1351	2
138X	3
2226	3
2226	2
2281	3
2766	2
2908	3
3350	2
3906	2
5790	2
6128	4
6128	3
6328	2
6908	2
7405	2
7559	2
8720	3
9611	2
9627	2
9701	2
9701	3
9701	2
9882	3
9883	3
9883	2
9931	2

9. Retrieve the title and type for each book in the book relation in which the type is SFI, HOR, ART or PSY. **Use the IN operator for this query.** Order the result by type ascending. Show the first five rows of the result. **(3 points)**

   SQL Statement:
   > SELECT title, type
   > FROM book
   > WHERE type IN ('SFI', 'HOR', 'ART', 'PSY')
   > ORDER BY type ASC
   > LIMIT 5;

   Output:

title	type
Venice	ART
Treasure Chests	ART
Van Gogh and Gauguin	ART
Black House	HOR
Magic Terror	HOR

10. Retrieve the title for each book in the book relation that begins with the word "The". Order the result by title ascending. Show the full result. **(3 points)**

SQL Statement:
```
SELECT title
FROM book
WHERE title LIKE 'The%'
ORDER BY title ASC;
```

Output:

title
The Catcher in the Rye
The Edge
The Fall
The Grapes of Wrath
The Soul of a New Machine
The Stranger

11. Retrieve the title for each book in the book relation that doesn't have a type. Order the result by title ascending. Show the full result. **(3 points)**

   SQL Statement:
   SELECT title
   FROM book
   WHERE type IS NULL
   ORDER BY title ASC;

   Output:

title	

12. Retrieve all of the columns from the author relation. Order the results by the authors lastName descending. **(3 points)**

   SQL Statement:
   SELECT *
   FROM author
   ORDER BY lastName DESC;

   Output:

authorNum	lastName	firstName
11	Wills	Gary
3	Vintage	Vernor
5	Straub	Peter
20	Steinbeck	John
2	Solotaroff	Paul
25	Schleining	Lon
16	Salinger	J.D.
15	Rowling	J.K.
7	Pratt	Philip
22	Owen	Barbara
23	O'Rourke	Randy
1	Morrison	Toni
13	Lee	Harper
6	King	Stephen
24	Kidder	Tracy
12	Hofstadter	Douglas R.
10	Heller	Joseph
17	Heaney	Seamus
4	Francis	Dick
19	Collins, Jr.	Bradley
9	Collins	Bradley
8	Chase	Truddi
21	Castelman	Riva
18	Camus	Albert
14	Ambrose	Stephen E.

13. Retrieve the title and type from the book relation. Order the results first by type and then by title. Both sort keys should be ascending order. Show the first five rows of the result. **(3 points)**

SQL Statement:
    SELECT title, type
    FROM book
    ORDER BY type ASC, title ASC
    LIMIT 5;

Output:

title	type
Treasure Chests	ART
Van Gogh and Gauguin	ART
Venice	ART
A Guide to SQL	CMP
Beloved	FIC

14. Retrieve a count of the number of books published by Penguin USA. Name the column 'Penguin Books'. Order does not matter. Show your full result. **(3 points)**

SQL Statement:

SELECT COUNT(*) AS "Penguin Books"
FROM book
JOIN publisher ON book.publisherCode = publisher.publisherCode
WHERE publisher.publisherName = 'Penguin USA';

Output:

Penguin Books
4

15. Retrieve the publisherCode and the number of books from from publisher from the book relation. Order the result by the count in descending order. Show the first five rows of the result. **(3 points)**

SQL Statement:
>   SELECT publisherCode, COUNT(*) AS "Number of Books"
>   FROM book
>   GROUP BY publisherCode
>   ORDER BY COUNT(*) DESC
>   LIMIT 5;

Output:

publisherCode	Number of Books
PE	4
PL	3
LB	3
JP	3
SC	2

16. Retrieve the publisherCode and the number of books from that publisher from the book relation. Order the results by publisherCode and only show publishers who have 3 or more books in the relation. **Hint: will need to use the HAVING keyword.** Show your full result. **(3 points)**

   SQL Statement:
   > SELECT publisherCode, COUNT(*) AS "Number of Books"
   > FROM book
   > GROUP BY publisherCode
   > HAVING COUNT(*) >= 3
   > ORDER BY publisherCode;

   Output:

publisherCode	Number of Books
JP	3
LB	3
PE	4
PL	3

17. Retrieve the number of books in the book relation whose prices is $20.00 or lower. Order does not matter. Show your full result. **(3 points)**

SQL Statement:
SELECT COUNT(*) AS "Number of Books"
FROM book
WHERE price <= 20.00;

Output:

Number of Books
28

18. Retrieve the title of the most expensive book in the book relation. Use a subquery for this problem. Show your full result. **(3 points)**

SQL Statement:
> SELECT title
> FROM book
> WHERE price = (SELECT MAX(price) FROM book);

Output:

title
A Guide to SQL

19. Retrieve the title of the least expensive book in the book relation. Use a subquery for this problem. Show your full result. **(3 points)**

SQL Statement:
SELECT title
FROM book
WHERE price = (SELECT MIN(price) FROM book);

Output:

title
Nine Stories
Franny and Zooey
The Catcher in the Rye

20. Retrieve the title of all books in the book relation that are not published in New York. Order result by the city ascending. Use a subquery for this query. **(5 points)**

SQL Statement:
        SELECT title
        FROM book
        WHERE publisherCode NOT IN (SELECT publisherCode FROM publisher WHERE city = 'New York')
        ORDER BY (SELECT city FROM publisher WHERE publisherCode = book.publisherCode);

Output:

title
Group: Six People in Search of a Life
A Guide to SQL
Van Gogh and Gauguin
Godel, Escher, Bach
Treasure Chests
Band of Brothers

21. Retrieve all of the columns from the book and publisher relations in one result. Use aliases in your query and use the simple JOIN syntax. Order does not matter. **(5 points)**

SQL Statement:
SELECT b.*, p.*
FROM book AS b
JOIN publisher AS p ON b.publisherCode = p.publisherCode;

Output:

bookCode	title	publisherCode	TYPE	price	paperback	publisherCode	publisherName	city
180	A Deepness in the Sky	TB	SFI	7.19	Y	TB	Tor books	New York
189	Magic Terror	FA	HOR	7.99	Y	FA	Fawcett books	New York
200	The Stranger	VB	FIC	8	Y	VB	Vintage books	New York
378	Venice	SS	ART	24.5	N	SS	Simon and Schuster	New York
079X	Second Wind	PU	MYS	24.95	N	PU	Putnam Publishing Group	New York
808	The Edge	JP	MYS	6.99	Y	JP	Jove Publications	New York
1351	Dreamcatcher: A Novel	SC	HOR	19.6	N	SC	Scribner	New York
1382	Treasure Chests	TA	ART	24.46	N	TA	Taunton Press	Newtown CT
138X	Beloved	PL	FIC	12.95	Y	PL	Plume	New York
2226	Harry Potter and the Prisoner of Azkaban	ST	SFI	13.96	N	ST	SchoLASTic Trade	New York
2281	Van Gogh and Gauguin	WP	ART	21	N	WP	Westview Press	Boulder CO
2766	Of Mice and Men	PE	FIC	6.95	Y	PE	Penguin USA	New York
2908	Electric Light	FS	POE	14	N	FS	Farrar Straus and Giroux	New York
3350	Group: Six People in Search of a Life	BP	PSY	10.4	Y	BP	Berkley Publishing	Boston
3743	Nine Stories	LB	FIC	5.99	Y	LB	Lb books	New York
3906	The Soul of a New Machine	BY	SCI	11.16	Y	BY	Back Bay books	New York
5163	Travels with Charley	PE	TRA	7.95	Y	PE	Penguin USA	New York
5790	Catch-22	SC	FIC	12	Y	SC	Scribner	New York
6128	Jazz	PL	FIC	12.95	Y	PL	Plume	New York
6328	Band of Brothers	TO	HIS	9.6	Y	TO	Touchstone books	Westport CT
669X	A Guide to SQL	CT	CMP	37.95	Y	CT	Course Technology	Boston
6908	Franny and Zooey	LB	FIC	5.99	Y	LB	Lb books	New York
7405	East of Eden	PE	FIC	12.95	Y	PE	Penguin USA	New York
7443	Harry Potter and the Goblet of Fire	ST	SFI	18.16	N	ST	SchoLASTic Trade	New York
7559	The Fall	VB	FIC	8	Y	VB	Vintage books	New York
8092	Godel, Escher, Bach	BA	PHI	14	Y	BA	Basic books	Boulder CO
8720	When Rabbit Howls	JP	PSY	6.29	Y	JP	Jove Publications	New York
9611	Black House	RH	HOR	18.81	N	RH	Random House	New York
9627	Song of Solomon	PL	FIC	14	Y	PL	Plume	New York
9701	The Grapes of Wrath	PE	FIC	13	Y	PE	Penguin USA	New York
9882	Slay Ride	JP	MYS	6.99	Y	JP	Jove Publications	New York
9883	The Catcher in the Rye	LB	FIC	5.99	Y	LB	Lb books	New York
9931	To Kill a Mockingbird	HC	FIC	18	N	HC	HarperCollins publishers	New York

22. Rewrite the previous query using the ON keyword. **(5 points)**

SQL Statement:

SELECT b.*, p.*

FROM book AS b

JOIN publisher AS p ON b.publisherCode = p.publisherCode;

Output:

bookCode	title	publisherCode	TYPE	price	paperback	publisherCode	publisherName	city
180	A Deepness in the Sky	TB	SFI	7.19	Y	TB	Tor books	New York
189	Magic Terror	FA	HOR	7.99	Y	FA	Fawcett books	New York
200	The Stranger	VB	FIC	8	Y	VB	Vintage books	New York
378	Venice	SS	ART	24.5	N	SS	Simon and Schuster	New York
079X	Second Wind	PU	MYS	24.95	N	PU	Putnam Publishing Group	New York
808	The Edge	JP	MYS	6.99	Y	JP	Jove Publications	New York
1351	Dreamcatcher: A Novel	SC	HOR	19.6	N	SC	Scribner	New York
1382	Treasure Chests	TA	ART	24.46	N	TA	Taunton Press	Newtown CT
138X	Beloved	PL	FIC	12.95	Y	PL	Plume	New York
2226	Harry Potter and the Prisoner of Azkaban	ST	SFI	13.96	N	ST	SchoLASTic Trade	New York
2281	Van Gogh and Gauguin	WP	ART	21	N	WP	Westview Press	Boulder CO
2766	Of Mice and Men	PE	FIC	6.95	Y	PE	Penguin USA	New York
2908	Electric Light	FS	POE	14	N	FS	Farrar Straus and Giroux	New York
3350	Group: Six People in Search of a Life	BP	PSY	10.4	Y	BP	Berkley Publishing	Boston
3743	Nine Stories	LB	FIC	5.99	Y	LB	Lb books	New York
3906	The Soul of a New Machine	BY	SCI	11.16	Y	BY	Back Bay books	New York
5163	Travels with Charley	PE	TRA	7.95	Y	PE	Penguin USA	New York
5790	Catch-22	SC	FIC	12	Y	SC	Scribner	New York
6128	Jazz	PL	FIC	12.95	Y	PL	Plume	New York
6328	Band of Brothers	TO	HIS	9.6	Y	TO	Touchstone books	Westport CT
669X	A Guide to SQL	CT	CMP	37.95	Y	CT	Course Technology	Boston
6908	Franny and Zooey	LB	FIC	5.99	Y	LB	Lb books	New York
7405	East of Eden	PE	FIC	12.95	Y	PE	Penguin USA	New York
7443	Harry Potter and the Goblet of Fire	ST	SFI	18.16	N	ST	SchoLASTic Trade	New York
7559	The Fall	VB	FIC	8	Y	VB	Vintage books	New York
8092	Godel, Escher, Bach	BA	PHI	14	Y	BA	Basic books	Boulder CO
8720	When Rabbit Howls	JP	PSY	6.29	Y	JP	Jove Publications	New York
9611	Black House	RH	HOR	18.81	N	RH	Random House	New York
9627	Song of Solomon	PL	FIC	14	Y	PL	Plume	New York
9701	The Grapes of Wrath	PE	FIC	13	Y	PE	Penguin USA	New York
9882	Slay Ride	JP	MYS	6.99	Y	JP	Jove Publications	New York
9883	The Catcher in the Rye	LB	FIC	5.99	Y	LB	Lb books	New York
9931	To Kill a Mockingbird	HC	FIC	18	N	HC	HarperCollins publishers	New York

23. Retrieve the title from the book relation and the city from the publisher relation using a JOIN query. Use aliases in your query. Order the result by title. **(5 points)**

SQL Statement:
     SELECT b.title, p.city
     FROM book AS b
     JOIN publisher AS p ON b.publisherCode = p.publisherCode
     ORDER BY b.title;

Output:

title	city
A Deepness in the Sky	New York
A Guide to SQL	Boston
Band of Brothers	Westport CT
Beloved	New York
Black House	New York
Catch-22	New York
Dreamcatcher: A Novel	New York
East of Eden	New York
Electric Light	New York
Franny and Zooey	New York
Godel, Escher, Bach	Boulder CO
Group: Six People in Search of a Life	Boston
Harry Potter and the Goblet of Fire	New York
Harry Potter and the Prisoner of Azkaban	New York
Jazz	New York
Magic Terror	New York
Nine Stories	New York
Of Mice and Men	New York
Second Wind	New York
Slay Ride	New York
Song of Solomon	New York
The Catcher in the Rye	New York
The Edge	New York
The Fall	New York
The Grapes of Wrath	New York
The Soul of a New Machine	New York
The Stranger	New York
To Kill a Mockingbird	New York
Travels with Charley	New York
Treasure Chests	Newtown CT
Van Gogh and Gauguin	Boulder CO
Venice	New York
When Rabbit Howls	New York

24. Retrieve the title from the book relation and the author lastName from the author relation. Order by author lastName. Use aliases in your query. **This will involve JOINING the book, author and wrote relations. (5 points)**

SQL Statement:
>SELECT b.title, a.lastName
>FROM book AS b
>JOIN wrote AS w ON b.bookCode = w.bookCode
>JOIN author AS a ON w.authorNum = a.authorNum
>ORDER BY a.lastName;

Output:

title	lastName
Band of Brothers	Ambrose
The Stranger	Camus
The Fall	Camus
When Rabbit Howls	Chase
Van Gogh and Gauguin	Collins
Van Gogh and Gauguin	Collins, Jr.
Second Wind	Francis
The Edge	Francis
Slay Ride	Francis
Electric Light	Heaney
Catch-22	Heller
Godel, Escher, Bach	Hofstadter
The Soul of a New Machine	Kidder
Dreamcatcher: A Novel	King
Black House	King
To Kill a Mockingbird	Lee
Beloved	Morrison
Jazz	Morrison
Song of Solomon	Morrison
Treasure Chests	O'Rourke
A Guide to SQL	Pratt
Harry Potter and the Prisoner of Azkaban	Rowling
Harry Potter and the Goblet of Fire	Rowling
Nine Stories	Salinger
Franny and Zooey	Salinger
The Catcher in the Rye	Salinger
Treasure Chests	Schleining
Group: Six People in Search of a Life	Solotaroff
Of Mice and Men	Steinbeck
Travels with Charley	Steinbeck
East of Eden	Steinbeck
The Grapes of Wrath	Steinbeck
Magic Terror	Straub
Black House	Straub
A Deepness in the Sky	Vintage
Venice	Wills

25. Retrieve the title from the book relation and branchNum and onHand from the inventory relation. Use aliases in your query. Order the result by title. **(5 points)**

SQL Statement:
SELECT b.title, i.branchNum, i.onHand
FROM book AS b
JOIN inventory AS i ON b.bookCode = i.bookCode
ORDER BY b.title;

Output:

title	branchNum	onHand
A Deepness in the Sky	1	2
A Guide to SQL	1	1
Band of Brothers	2	2
Beloved	2	3
Black House	1	2
Catch-22	4	2
Dreamcatcher: A Novel	2	4
Dreamcatcher: A Novel	3	2
East of Eden	3	2
Electric Light	1	3
Electric Light	4	1
Franny and Zooey	2	2
Godel, Escher, Bach	3	1
Group: Six People in Search of a Life	1	2
Harry Potter and the Goblet of Fire	4	1
Harry Potter and the Prisoner of Azkaban	1	3
Harry Potter and the Prisoner of Azkaban	3	2
Harry Potter and the Prisoner of Azkaban	4	1
Jazz	2	4
Jazz	3	3
Magic Terror	2	2
Nine Stories	2	1
Of Mice and Men	3	2
Second Wind	2	1
Second Wind	3	2
Second Wind	4	3
Slay Ride	3	3
Song of Solomon	3	5
Song of Solomon	4	2
The Catcher in the Rye	2	3
The Catcher in the Rye	4	2
The Edge	2	1

The Fall	2	2
The Grapes of Wrath	1	2
The Grapes of Wrath	2	1
The Grapes of Wrath	3	3
The Grapes of Wrath	4	2
The Soul of a New Machine	2	1
The Soul of a New Machine	3	2
The Stranger	1	1
The Stranger	2	3
To Kill a Mockingbird	1	2
Travels with Charley	1	1
Treasure Chests	2	1
Van Gogh and Gauguin	4	3
Venice	3	2
When Rabbit Howls	1	3

26. Retrieve the title from the book relation, the branchName from the branch relation and number of copies onHand from the inventory relation. Use aliases in your query. Order the result by title ascending. **(5 points)**

SQL Statement:
>SELECT b.title, br.branchName, i.onHand
>FROM book AS b
>JOIN inventory AS i ON b.bookCode = i.bookCode
>JOIN branch AS br ON i.branchNum = br.branchNum
>ORDER BY b.title ASC;

Output:

title	branchName	onHand
A Deepness in the Sky	Henry Downtown	2
A Guide to SQL	Henry Downtown	1
Band of Brothers	Henry On The Hill	2
Beloved	Henry On The Hill	3
Black House	Henry Downtown	2
Catch-22	Henry Eastshore	2
Dreamcatcher: A Novel	Henry On The Hill	4
Dreamcatcher: A Novel	Henry Brentwood	2
East of Eden	Henry Brentwood	2
Electric Light	Henry Eastshore	1
Electric Light	Henry Downtown	3
Franny and Zooey	Henry On The Hill	2
Godel, Escher, Bach	Henry Brentwood	1
Group: Six People in Search of a Life	Henry Downtown	2
Harry Potter and the Goblet of Fire	Henry Eastshore	1
Harry Potter and the Prisoner of Azkaban	Henry Downtown	3
Harry Potter and the Prisoner of Azkaban	Henry Brentwood	2
Harry Potter and the Prisoner of Azkaban	Henry Eastshore	1
Jazz	Henry Brentwood	3
Jazz	Henry On The Hill	4
Magic Terror	Henry On The Hill	2
Nine Stories	Henry On The Hill	1
Of Mice and Men	Henry Brentwood	2
Second Wind	Henry On The Hill	1
Second Wind	Henry Brentwood	2
Second Wind	Henry Eastshore	3
Slay Ride	Henry Brentwood	3
Song of Solomon	Henry Brentwood	5
Song of Solomon	Henry Eastshore	2
The Catcher in the Rye	Henry Eastshore	2
The Catcher in the Rye	Henry On The Hill	3
The Edge	Henry On The Hill	1
The Fall	Henry On The Hill	2

The Grapes of Wrath	Henry Downtown	2
The Grapes of Wrath	Henry On The Hill	1
The Grapes of Wrath	Henry Eastshore	2
The Grapes of Wrath	Henry Brentwood	3
The Soul of a New Machine	Henry Brentwood	2
The Soul of a New Machine	Henry On The Hill	1
The Stranger	Henry On The Hill	3
The Stranger	Henry Downtown	1
To Kill a Mockingbird	Henry Downtown	2
Travels with Charley	Henry Downtown	1
Treasure Chests	Henry On The Hill	1
Van Gogh and Gauguin	Henry Eastshore	3
Venice	Henry Brentwood	2
When Rabbit Howls	Henry Downtown	3

27. Retrieve the title from the book relation and compute the number of copies of the title that all branches have on hand. Name this computed column 'Inventory' **Hint: You will need to join book and inventory and do an aggregate query.** Use aliases in your query. Order the result by the total number of copies of the book in descending order. Show the first two rows of your result. **(5 points)**

SQL Statement:
```
SELECT b.title, SUM(i.onHand) AS "Inventory"
FROM book AS b
JOIN inventory AS i ON b.bookCode = i.bookCode
GROUP BY b.title
ORDER BY "Inventory" DESC
LIMIT 2;
```

Output:

title	Inventory
A Deepness in the Sky	2
Magic Terror	2

28. Retrieve the first name and last name from the author relation and the title from the book relation for all paperback books in the book relation. Order the result by the author last name and title. **(5 points)**

SQL Statement:
SELECT a.firstName, a.lastName, b.title
FROM author AS a
JOIN wrote AS w ON a.authorNum = w.authorNum
JOIN book AS b ON w.bookCode = b.bookCode
WHERE b.paperback = 'yes'
ORDER BY a.lastName, b.title;

Output:

firstName	lastName	title

29. Insert a new branch into the branch relation with the following data branch number = 5, branch name = Henry Lexington Green, branch location = 127 South Road, numEmployees = 7. Then write the query to show all of the branches in the branch relation. **(4 points)**

SQL Statement:
INSERT INTO branch (branchNum, branchName, branchLocation, numEmployees)
VALUES (5, 'Henry Lexington Green', '127 South Road', 7);

SELECT *
FROM branch;

Output:

branchNum	branchName	branchLocation	numEmployees
1	Henry Downtown	16 Riverview	10
2	Henry On The Hill	1289 Bedford	6
3	Henry Brentwood	Brentwood Mall	15
4	Henry Eastshore	Eastshore Mall	9

30. The Henry Downtown branch moved to 184 St. John's Way. Update the branch table with the new address. **(3 points)**

SQL Statement:
>
> UPDATE branch
> SET branchLocation = '184 St. John's Way'
> WHERE branchName = 'Henry Downtown';
>
> SELECT *
> FROM branch;

Output:

branchNum	branchName	branchLocation	numEmployees
1	Henry Downtown	16 Riverview	10
2	Henry On The Hill	1289 Bedford	6
3	Henry Brentwood	Brentwood Mall	15
4	Henry Eastshore	Eastshore Mall	9