**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 lastName, firstName

FROM author;

**Output:**

lastName firstName

Morrison Toni

Solotaroff Paul

Vintage Vernor

Francis Dick

Straub Peter

King Stephen

Pratt Philip

Chase Truddi

Collins Bradley

Heller Joseph

Wills Gary

Hofstadter Douglas R.

Lee Harper

Ambrose Stephen E.

Rowling J.K.

Salinger J.D.

Heaney Seamus

Camus Albert

Collins, Jr. Bradley

Steinbeck John

Castelman Riva

Owen Barbara

O'Rourke Randy

Kidder Tracy

Schleining Lon

1. 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

1. 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

1. 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 discountPrice

FROM book;

**Output:**

title price discountPrice

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

1. 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

1. 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

1. 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

1. 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

0180 2

0189 2

0200 3

0378 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

1. 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;

**Output:**

title TYPE

Venice ART

Treasure Chests ART

Van Gogh and Gauguin ART

Magic Terror HOR

Dreamcatcher: A Novel HOR

Black House HOR

Group: Six People in Search of a Life PSY

When Rabbit Howls PSY

A Deepness in the Sky SFI

Harry Potter and the Prisoner of Azkaban SFI

Harry Potter and the Goblet of Fire SFI

1. 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%";

**Output:**

title

The Stranger

The Edge

The Soul of a New Machine

The Fall

The Grapes of Wrath

The Catcher in the Rye

1. 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;

**Output:**

No results, as TYPE is filled out in every instance so there are no NULL values to return

1. 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.

1. 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, title;

**Output:**

title TYPE

Treasure Chests ART

Van Gogh and Gauguin ART

Venice ART

A Guide to SQL CMP

Beloved FIC

Catch-22 FIC

East of Eden FIC

Franny and Zooey FIC

Jazz FIC

Nine Stories FIC

Of Mice and Men FIC

Song of Solomon FIC

The Catcher in the Rye FIC

The Fall FIC

The Grapes of Wrath FIC

The Stranger FIC

To Kill a Mockingbird FIC

Band of Brothers HIS

Black House HOR

Dreamcatcher: A Novel HOR

Magic Terror HOR

Second Wind MYS

Slay Ride MYS

The Edge MYS

Godel, Escher, Bach PHI

Electric Light POE

Group: Six People in Search of a Life PSY

When Rabbit Howls PSY

The Soul of a New Machine SCI

A Deepness in the Sky SFI

Harry Potter and the Goblet of Fire SFI

Harry Potter and the Prisoner of Azkaban SFI

Travels with Charley TRA

1. 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(title) AS "Penguin Books"

FROM book

WHERE publisherCode="PE";

**Output:**

Penguin Books

4

1. 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(publisherCode) AS numBooks

FROM book

GROUP BY publisherCode

ORDER BY numBooks DESC;

**Output:**

publisherCode numBooks

PE 4

JP 3

LB 3

PL 3

SC 2

1. 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 DISTINCT publisherCode, COUNT(publisherCode) AS numBooks

FROM book

GROUP BY publisherCode

HAVING numBooks>=3

ORDER BY numBooks DESC;

**Output:**

publisherCode numBooks

PE 4

JP 3

LB 3

PL 3

1. 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(title) AS "Titles under $20"

FROM book

WHERE price<=20.0;

**Output:**

Titles under $20

28

1. 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, price

FROM book

WHERE price=

(SELECT MAX(price)

FROM book);

**Output:**

title price

A Guide to SQL 37.95

1. 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, price

FROM book

WHERE price=

(SELECT MIN(price)

FROM book);

**Output:**

title price

Nine Stories 5.99

Franny and Zooey 5.99

The Catcher in the Rye 5.99

1. 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 b.title

FROM book b, publisher p

WHERE b.publisherCode=p.publisherCode AND b.publisherCode IN

(SELECT publisherCode

FROM publisher

WHERE city!="New York")

ORDER BY city;

**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

1. 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 b, publisher p

WHERE b.publisherCode=p.publisherCode;

**Output:**

A table of information with text

Description automatically generated with medium confidence

This one was too wide to paste into a word document like the others, so here is a screenshot of the output instead.

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

**SQL Statement:**

SELECT b.\*, p.\*

FROM book b JOIN publisher p ON b.publisherCode=p.publisherCode;

**Output:**

A table of information

Description automatically generated

Same as above result

1. 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 b, publisher p

WHERE 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

1. 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 b, author a, wrote w

WHERE a.authorNum=w.authorNum AND b.bookCode=w.bookCode;

**Output:**

title lastName

Beloved Morrison

Jazz Morrison

Song of Solomon Morrison

Group: Six People in Search of a Life Solotaroff

A Deepness in the Sky Vintage

Second Wind Francis

The Edge Francis

Slay Ride Francis

Magic Terror Straub

Black House Straub

Dreamcatcher: A Novel King

Black House King

A Guide to SQL Pratt

When Rabbit Howls Chase

Van Gogh and Gauguin Collins

Catch-22 Heller

Venice Wills

Godel, Escher, Bach Hofstadter

To Kill a Mockingbird Lee

Band of Brothers Ambrose

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

Electric Light Heaney

The Stranger Camus

The Fall Camus

Van Gogh and Gauguin Collins, Jr.

Of Mice and Men Steinbeck

Travels with Charley Steinbeck

East of Eden Steinbeck

The Grapes of Wrath Steinbeck

Treasure Chests O'Rourke

The Soul of a New Machine Kidder

Treasure Chests Schleining

1. 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 b, inventory i

WHERE 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

1. 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 b, branch br, inventory i

WHERE br.branchNum=i.branchNum AND b.bookCode=i.bookCode

ORDER BY b.title;

**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

1. 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, COUNT(i.onHand) AS Inventory

FROM book b, inventory i

WHERE b.bookCode=i.bookCode

GROUP BY b.title

ORDER BY Inventory desc;

**Output:**

title Inventory

The Grapes of Wrath 4

Second Wind 3

1. 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 a, book b, wrote w

WHERE b.bookCode=w.bookCode AND w.authorNum=a.authorNum AND paperback="Y"

ORDER BY a.lastName, b.title;

**Output:**

firstName lastName title

Stephen E. Ambrose Band of Brothers

Albert Camus The Fall

Albert Camus The Stranger

Truddi Chase When Rabbit Howls

Dick Francis Slay Ride

Dick Francis The Edge

Joseph Heller Catch-22

Douglas R. Hofstadter Godel, Escher, Bach

Tracy Kidder The Soul of a New Machine

Toni Morrison Beloved

Toni Morrison Jazz

Toni Morrison Song of Solomon

Philip Pratt A Guide to SQL

J.D. Salinger Franny and Zooey

J.D. Salinger Nine Stories

J.D. Salinger The Catcher in the Rye

Paul Solotaroff Group: Six People in Search of a Life

John Steinbeck East of Eden

John Steinbeck Of Mice and Men

John Steinbeck The Grapes of Wrath

John Steinbeck Travels with Charley

Peter Straub Magic Terror

Vernor Vintage A Deepness in the Sky

1. 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 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

5 Henry Lexington Green 127 South Road 7

1. 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 branchName, branchLocation

FROM branch;

**Output:**

branchName branchLocation

Henry Downtown 184 St. John’s Way

Henry On The Hill 1289 Bedford

Henry Brentwood Brentwood Mall

Henry Eastshore Eastshore Mall

Henry Lexington Green 127 South Road