**Brandon Thomas**

**Individual Project 4**

**DS160-01**

**Introduction to Data Science**

**Spring 2022**

**Writing SQL Queries (50 points)**

**Goal:** The goal of this project is to provide you with practice for writing simple SQL queries.

**Instructions:** Create a new .sql file titled **IP4\_XXX.sql**, where **XXX** are your initials; and rename this file to **IP4\_XXX.docx**. Also, create a GitHub repository titled **IP4\_XXX** to which you can push both your .sql file and this document.

Attached to the assignment are two .sql files. HenryBooksCreate.sql which will create the database on you MySQL server and HenryBooksFill.sql which will fill it with data.

You will form the following queries for the Henry Books database and provide the statement and the output in this document. All of your SQL statements should also be in the .sql file. Use a comment (# mark) in your .sql file to number the statements according to this document. Each problem is marked with its point worth.

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

**SQL Statement:**

USE henry;

SELECT \* FROM author

SELECT \* lastName, firstName;

**Output:**

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

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

**SQL Statement:**

SELECT \* FROM book

SELECT \* title, TYPE;

**Output:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| bookCode | title | publisherCode | TYPE | price | paperback |
| 0180 | "A Deepness in the Sky" | TB | SFI | 7.19 | Y |
| 0189 | "Magic Terror" | FA | HOR | 7.99 | Y |
| 0200 | "The Stranger" | VB | FIC | 8.00 | Y |
| 0378 | Venice | SS | ART | 24.50 | N |
| 079X | "Second Wind" | PU | MYS | 24.95 | N |
| 0808 | "The Edge" | JP | MYS | 6.99 | Y |
| 1351 | "Dreamcatcher: A Novel" | SC | HOR | 19.60 | N |
| 1382 | "Treasure Chests" | TA | ART | 24.46 | N |
| 138X | Beloved | PL | FIC | 12.95 | Y |
| 2226 | "Harry Potter and the Prisoner of Azkaban" | ST | SFI | 13.96 | N |
| 2281 | "Van Gogh and Gauguin" | WP | ART | 21.00 | N |
| 2766 | "Of Mice and Men" | PE | FIC | 6.95 | Y |
| 2908 | "Electric Light" | FS | POE | 14.00 | N |
| 3350 | "Group: Six People in Search of a Life" | BP | PSY | 10.40 | Y |
| 3743 | "Nine Stories" | LB | FIC | 5.99 | Y |
| 3906 | "The Soul of a New Machine" | BY | SCI | 11.16 | Y |
| 5163 | "Travels with Charley" | PE | TRA | 7.95 | Y |
| 5790 | Catch-22 | SC | FIC | 12.00 | Y |
| 6128 | Jazz | PL | FIC | 12.95 | Y |
| 6328 | "Band of Brothers" | TO | HIS | 9.60 | Y |
| 669X | "A Guide to SQL" | CT | CMP | 37.95 | Y |
| 6908 | "Franny and Zooey" | LB | FIC | 5.99 | Y |
| 7405 | "East of Eden" | PE | FIC | 12.95 | Y |
| 7443 | "Harry Potter and the Goblet of Fire" | ST | SFI | 18.16 | N |
| 7559 | "The Fall" | VB | FIC | 8.00 | Y |
| 8092 | "Godel, Escher, Bach” | BA | PHI | 14.00 | Y |
| 8720 | "When Rabbit Howls" | JP | PSY | 6.29 | Y |
| 9611 | "Black House" | RH | HOR | 18.81 | N |
| 9627 | "Song of Solomon" | PL | FIC | 14.00 | Y |
| 9701 | "The Grapes of Wrath" | PE | FIC | 13.00 | Y |
| 9882 | "Slay Ride" | JP | MYS | 6.99 | Y |
| 9883 | "The Catcher in the Rye" | LB | FIC | 5.99 | Y |
| 9931 | "To Kill a Mockingbird" | HC | FIC | 18.00 | N |

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, bookCode, title, TYPE, price, paperback

FROM book

GROUP BY publisherCode;

**Output:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| publisherCode | bookCode | title | TYPE | price | paperback |
| BA | 8092 | "Godel, Escher, Bach" | PHI | 14.00 | Y |
| BP | 3350 | "Group: Six People in Search of a Life" | PSY | 10.40 | Y |
| BY | 3906 | "The Soul of a New Machine" | SCI | 11.16 | Y |
| CT | 669X | "A Guide to SQL" | CMP | 37.95 | Y |
| FA | 0189 | "Magic Terror" | HOR | 7.99 | Y |
| FS | 2908 | "Electric Light" | POE | 14.00 | N |
| HC | 9931 | "To Kill a Mockingbird" | FIC | 18.00 | N |
| JP | 0808 | "The Edge" | MYS | 6.99 | Y |
| LB | 3743 | "Nine Stories" | FIC | 5.99 | Y |
| PE | 2766 | "Of Mice and Men" | FIC | 6.95 | Y |
| PL | 138X | Beloved | FIC | 12.95 | Y |
| PU | 079X | "Second Wind" | MYS | 24.95 | N |
| RH | 9611 | "Black House" | HOR | 18.81 | N |
| SC | 1351 | "Dreamcatcher: A Novel" | HOR | 19.60 | N |
| SS | 0378 | Venice | ART | 24.50 | N |
| ST | 2226 | "Harry Potter and the Prisoner of Azkaban" | SFI | 13.96 | N |
| TA | 1382 | "Treasure Chests" | ART | 24.46 | N |
| TB | 0180 | "A Deepness in the Sky" | SFI | 7.19 | Y |
| TO | 6328 | "Band of Brothers" | HIS | 9.60 | Y |
| VB | 0200 | "The Stranger" | FIC | 8.00 | Y |
| WP | 2281 | "Van Gogh and Gauguin" | ART | 21.00 | N |

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 (**LIMIT 5**). **(3 points)**

**SQL Statement:**

SELECT title, price, (price\*0.75) AS discount

FROM book;

**Output:**

|  |  |  |
| --- | --- | --- |
| title | price | discount |
| "A Deepness in the Sky" | 7.19 | 5.3925 |
| "Magic Terror" | 7.99 | 5.9925 |
| "The Stranger" | 8.00 | 6.0000 |
| Venice | 24.50 | 18.3750 |
| "Second Wind" | 24.95 | 18.7125 |
| "The Edge" | 6.99 | 5.2425 |
| "Dreamcatcher: A Novel" | 19.60 | 14.7000 |
| "Treasure Chests" | 24.46 | 18.3450 |
| Beloved | 12.95 | 9.7125 |
| "Harry Potter and the Prisoner of Azkaban" | 13.96 | 10.4700 |
| "Van Gogh and Gauguin" | 21.00 | 15.7500 |
| "Of Mice and Men" | 6.95 | 5.2125 |
| "Electric Light" | 14.00 | 10.5000 |
| "Group: Six People in Search of a Life" | 10.40 | 7.8000 |
| "Nine Stories" | 5.99 | 4.4925 |
| "The Soul of a New Machine" | 11.16 | 8.3700 |
| "Travels with Charley" | 7.95 | 5.9625 |
| Catch-22 | 12.00 | 9.0000 |
| Jazz | 12.95 | 9.7125 |
| "Band of Brothers" | 9.60 | 7.2000 |
| "A Guide to SQL" | 37.95 | 28.4625 |
| "Franny and Zooey" | 5.99 | 4.4925 |
| "East of Eden" | 12.95 | 9.7125 |
| "Harry Potter and the Goblet of Fire" | 18.16 | 13.6200 |
| "The Fall" | 8.00 | 6.0000 |
| "Godel, Escher, Bach" | 14.00 | 10.5000 |
| "When Rabbit Howls" | 6.29 | 4.7175 |
| "Black House" | 18.81 | 14.1075 |
| "Song of Solomon" | 14.00 | 10.5000 |
| "The Grapes of Wrath" | 13.00 | 9.7500 |
| "Slay Ride" | 6.99 | 5.2425 |
| "The Catcher in the Rye" | 5.99 | 4.4925 |
| "To Kill a Mockingbird" | 18.00 | 13.5000 |

1. Retrieve the title and price for any book whose price is higher than $20.00 in the book relation. Show the full result. **(3 points)**

**SQL Statement:**

SELECT title, price

FROM book

WHERE price > 20.00;

**Output:**

|  |  |
| --- | --- |
| title | price |
| Venice | 24.50 |
| "Second Wind" | 24.95 |
| "Treasure Chests" | 24.46 |
| "Van Gogh and Gauguin" | 21.00 |
| "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 \* FROM publisher

WHERE city = "New York";

**Output:**

|  |  |  |
| --- | --- | --- |
| publisherCode | publisherName | city |
| AP | "Arcade Publishing" | "New York" |
| BY | "Back Bay books" | "New York" |
| FA | "Fawcett books" | "New York" |
| FS | "Farrar Straus and Giroux" | "New York" |
| HC | "HarperCollins publishers" | "New York" |
| JP | "Jove Publications" | "New York" |
| LB | "Lb books" | "New York" |
| PE | "Penguin USA" | "New York" |
| PL | Plume | "New York" |
| PU | "Putnam Publishing Group" | "New York" |
| RH | "Random House" | "New York" |
| SB | "Schoken books" | "New York" |
| SC | Scribner | "New York" |
| SS | "Simon and Schuster" | "New York" |
| ST | "SchoLASTic Trade" | "New York" |
| TB | "Tor books" | "New York" |
| TH | "Thames and Hudson" | "New York" |
| VB | "Vintage books" | "New York" |
| WN | "W.W. Norton" | "New York" |

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 \* FROM publisher

WHERE city != "New York";

**Output:**

|  |  |  |
| --- | --- | --- |
| publisherCode | publisherName | city |
| AH | "Arkham House" | "Sauk city WI" |
| BA | "Basic books" | "Boulder CO" |
| BP | "Berkley Publishing" | Boston |
| CT | "Course Technology" | Boston |
| JT | "Jeremy P. Tarcher" | "Los Angeles" |
| MP | "McPherson and Co." | Kingston |
| TA | "Taunton Press" | "Newtown CT" |
| TO | "Touchstone books" | "Westport CT" |
| WP | "Westview Press" | "Boulder CO" |

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 \* FROM inventory

WHERE onHand BETWEEN 2 and 4;

**Output:**

|  |  |  |
| --- | --- | --- |
| bookCode | branchNum | onHand |
| 0180 | 1 | 2 |
| 0189 | 2 | 2 |
| 0200 | 2 | 3 |
| 0378 | 3 | 2 |
| 079X | 3 | 2 |
| 079X | 4 | 3 |
| 1351 | 2 | 4 |
| 1351 | 3 | 2 |
| 138X | 2 | 3 |
| 2226 | 1 | 3 |
| 2226 | 3 | 2 |
| 2281 | 4 | 3 |
| 2766 | 3 | 2 |
| 2908 | 1 | 3 |
| 3350 | 1 | 2 |
| 3906 | 3 | 2 |
| 5790 | 4 | 2 |
| 6128 | 2 | 4 |
| 6128 | 3 | 3 |
| 6328 | 2 | 2 |
| 6908 | 2 | 2 |
| 7405 | 3 | 2 |
| 7559 | 2 | 2 |
| 8720 | 1 | 3 |
| 9611 | 1 | 2 |
| 9627 | 4 | 2 |
| 9701 | 1 | 2 |
| 9701 | 3 | 3 |
| 9701 | 4 | 2 |
| 9882 | 3 | 3 |
| 9883 | 2 | 3 |
| 9883 | 4 | 2 |
| 9931 | 1 | 2 |

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 publisher.publisherCode, publisherName,COUNT(book.publisherCode) AS count

FROM publisher,book

WHERE publisher.publisherCode = book.publisherCode AND publisher.publisherName = 'Penguin USA'

GROUP BY book.publisherCode;

**Output:**

|  |  |  |
| --- | --- | --- |
| publisherCode | publisherName | count |
| PE | "Penguin USA" | 4 |

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(price) as total

FROM book

WHERE price <= 20.00;

**Output:**

|  |
| --- |
| total |
| 28 |

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 (WHERE clause). Order does not matter. **(5 points)**

**SQL Statement:**

SELECT bookCode AS book\_code, title AS title, book.publisherCode AS publisher\_code, TYPE AS type, price AS price, paperback AS paperback, city AS city, publisherName AS publisher\_name

FROM publisher, book

WHERE book.publisherCode = publisher.publisherCode;

**Output:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| book\_code | title | publisher\_code | type | price | paperback | city | publisher\_name |
| 0180 | "A Deepness in the Sky" | TB | SFI | 7.19 | Y | "New York" | "Tor books" |
| 0189 | "Magic Terror" | FA | HOR | 7.99 | Y | "New York" | "Fawcett books" |
| 0200 | "The Stranger" | VB | FIC | 8.00 | Y | "New York" | "Vintage books" |
| 0378 | Venice | SS | ART | 24.50 | N | "New York" | "Simon and Schuster" |
| 079X | "Second Wind" | PU | MYS | 24.95 | N | "New York" | "Putnam Publishing Group" |
| 0808 | "The Edge" | JP | MYS | 6.99 | Y | "New York" | "Jove Publications" |
| 1351 | "Dreamcatcher: A Novel" | SC | HOR | 19.60 | N | "New York" | Scribner |
| 1382 | "Treasure Chests" | TA | ART | 24.46 | N | "Newtown CT" | "Taunton Press" |
| 138X | Beloved | PL | FIC | 12.95 | Y | "New York" | Plume |
| 2226 | "Harry Potter and the Prisoner of Azkaban" | ST | SFI | 13.96 | N | "New York" | "SchoLASTic Trade" |
| 2281 | "Van Gogh and Gauguin" | WP | ART | 21.00 | N | "Boulder CO" | "Westview Press" |
| 2766 | "Of Mice and Men" | PE | FIC | 6.95 | Y | "New York" | "Penguin USA" |
| 2908 | "Electric Light" | FS | POE | 14.00 | N | "New York" | "Farrar Straus and Giroux" |
| 3350 | "Group: Six People in Search of a Life" | BP | PSY | 10.40 | Y | Boston | "Berkley Publishing" |
| 3743 | "Nine Stories" | LB | FIC | 5.99 | Y | "New York" | "Lb books" |
| 3906 | "The Soul of a New Machine" | BY | SCI | 11.16 | Y | "New York" | "Back Bay books" |
| 5163 | "Travels with Charley" | PE | TRA | 7.95 | Y | "New York" | "Penguin USA" |
| 5790 | Catch-22 | SC | FIC | 12.00 | Y | "New York" | Scribner |
| 6128 | Jazz | PL | FIC | 12.95 | Y | "New York" | Plume |
| 6328 | "Band of Brothers" | TO | HIS | 9.60 | Y | "Westport CT" | "Touchstone books" |
| 669X | "A Guide to SQL" | CT | CMP | 37.95 | Y | Boston | "Course Technology" |
| 6908 | "Franny and Zooey" | LB | FIC | 5.99 | Y | "New York" | "Lb books" |
| 7405 | "East of Eden" | PE | FIC | 12.95 | Y | "New York" | "Penguin USA" |
| 7443 | "Harry Potter and the Goblet of Fire" | ST | SFI | 18.16 | N | "New York" | "SchoLASTic Trade" |
| 7559 | "The Fall" | VB | FIC | 8.00 | Y | "New York" | "Vintage books" |
| 8092 | "Godel, Escher, Bach" | BA | PHI | 14.00 | Y | "Boulder CO" | "Basic books" |
| 8720 | "When Rabbit Howls" | JP | PSY | 6.29 | Y | "New York" | "Jove Publications" |
| 9611 | "Black House" | RH | HOR | 18.81 | N | "New York" | "Random House" |
| 9627 | "Song of Solomon" | PL | FIC | 14.00 | Y | "New York" | Plume |
| 9701 | "The Grapes of Wrath" | PE | FIC | 13.00 | Y | "New York" | "Penguin USA" |
| 9882 | "Slay Ride" | JP | MYS | 6.99 | Y | "New York" | "Jove Publications" |
| 9883 | "The Catcher in the Rye" | LB | FIC | 5.99 | Y | "New York" | "Lb books" |
| 9931 | "To Kill a Mockingbird" | HC | FIC | 18.00 | N | "New York" | "HarperCollins publishers" |

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

**SQL Statement:**

SELECT bookCode AS book\_code, title AS title, book.publisherCode AS publisher\_code, TYPE AS type, price AS price, paperback AS paperback, city AS city, publisherName AS publisher\_name

FROM publisher

JOIN book ON

book.publisherCode = publisher.publisherCode;

**Output:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| book\_code | title | publisher\_code | type | price | paperback | city | publisher\_name |
| 0180 | "A Deepness in the Sky" | TB | SFI | 7.19 | Y | "New York" | "Tor books" |
| 0189 | "Magic Terror" | FA | HOR | 7.99 | Y | "New York" | "Fawcett books" |
| 0200 | "The Stranger" | VB | FIC | 8.00 | Y | "New York" | "Vintage books" |
| 0378 | Venice | SS | ART | 24.50 | N | "New York" | "Simon and Schuster" |
| 079X | "Second Wind" | PU | MYS | 24.95 | N | "New York" | "Putnam Publishing Group" |
| 0808 | "The Edge" | JP | MYS | 6.99 | Y | "New York" | "Jove Publications" |
| 1351 | "Dreamcatcher: A Novel" | SC | HOR | 19.60 | N | "New York" | Scribner |
| 1382 | "Treasure Chests" | TA | ART | 24.46 | N | "Newtown CT" | "Taunton Press" |
| 138X | Beloved | PL | FIC | 12.95 | Y | "New York" | Plume |
| 2226 | "Harry Potter and the Prisoner of Azkaban" | ST | SFI | 13.96 | N | "New York" | "SchoLASTic Trade" |
| 2281 | "Van Gogh and Gauguin" | WP | ART | 21.00 | N | "Boulder CO" | "Westview Press" |
| 2766 | "Of Mice and Men" | PE | FIC | 6.95 | Y | "New York" | "Penguin USA" |
| 2908 | "Electric Light" | FS | POE | 14.00 | N | "New York" | "Farrar Straus and Giroux" |
| 3350 | "Group: Six People in Search of a Life" | BP | PSY | 10.40 | Y | Boston | "Berkley Publishing" |
| 3743 | "Nine Stories" | LB | FIC | 5.99 | Y | "New York" | "Lb books" |
| 3906 | "The Soul of a New Machine" | BY | SCI | 11.16 | Y | "New York" | "Back Bay books" |
| 5163 | "Travels with Charley" | PE | TRA | 7.95 | Y | "New York" | "Penguin USA" |
| 5790 | Catch-22 | SC | FIC | 12.00 | Y | "New York" | Scribner |
| 6128 | Jazz | PL | FIC | 12.95 | Y | "New York" | Plume |
| 6328 | "Band of Brothers" | TO | HIS | 9.60 | Y | "Westport CT" | "Touchstone books" |
| 669X | "A Guide to SQL" | CT | CMP | 37.95 | Y | Boston | "Course Technology" |
| 6908 | "Franny and Zooey" | LB | FIC | 5.99 | Y | "New York" | "Lb books" |
| 7405 | "East of Eden" | PE | FIC | 12.95 | Y | "New York" | "Penguin USA" |
| 7443 | "Harry Potter and the Goblet of Fire" | ST | SFI | 18.16 | N | "New York" | "SchoLASTic Trade" |
| 7559 | "The Fall" | VB | FIC | 8.00 | Y | "New York" | "Vintage books" |
| 8092 | "Godel, Escher, Bach" | BA | PHI | 14.00 | Y | "Boulder CO" | "Basic books" |
| 8720 | "When Rabbit Howls" | JP | PSY | 6.29 | Y | "New York" | "Jove Publications" |
| 9611 | "Black House" | RH | HOR | 18.81 | N | "New York" | "Random House" |
| 9627 | "Song of Solomon" | PL | FIC | 14.00 | Y | "New York" | Plume |
| 9701 | "The Grapes of Wrath" | PE | FIC | 13.00 | Y | "New York" | "Penguin USA" |
| 9882 | "Slay Ride" | JP | MYS | 6.99 | Y | "New York" | "Jove Publications" |
| 9883 | "The Catcher in the Rye" | LB | FIC | 5.99 | Y | "New York" | "Lb books" |
| 9931 | "To Kill a Mockingbird" | HC | FIC | 18.00 | N | "New York" | "HarperCollins publishers" |

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 book.title AS title, publisher.city AS city

FROM book

JOIN publisher ON

publisher.publisherCode = book.publisherCode

GROUP BY book.title

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

**SQL Statement:**

SELECT book.title AS title, inventory.branchNum AS branch\_num, inventory.onHand AS on\_hand

FROM book,inventory

GROUP BY branch\_num, book.title

ORDER BY book.title, branch\_num;

**Output:**

|  |  |  |
| --- | --- | --- |
| title | branch\_num | on\_hand |
| "A Deepness in the Sky" | 1 | 2 |
| "A Deepness in the Sky" | 2 | 2 |
| "A Deepness in the Sky" | 3 | 2 |
| "A Deepness in the Sky" | 4 | 3 |
| "A Guide to SQL" | 1 | 2 |
| "A Guide to SQL" | 2 | 2 |
| "A Guide to SQL" | 3 | 2 |
| "A Guide to SQL" | 4 | 3 |
| "Band of Brothers" | 1 | 2 |
| "Band of Brothers" | 2 | 2 |
| "Band of Brothers" | 3 | 2 |
| "Band of Brothers" | 4 | 3 |
| Beloved | 1 | 2 |
| Beloved | 2 | 2 |
| Beloved | 3 | 2 |
| Beloved | 4 | 3 |
| "Black House" | 1 | 2 |
| "Black House" | 2 | 2 |
| "Black House" | 3 | 2 |
| "Black House" | 4 | 3 |
| Catch-22 | 1 | 2 |
| Catch-22 | 2 | 2 |
| Catch-22 | 3 | 2 |
| Catch-22 | 4 | 3 |
| "Dreamcatcher: A Novel" | 1 | 2 |
| "Dreamcatcher: A Novel" | 2 | 2 |
| "Dreamcatcher: A Novel" | 3 | 2 |
| "Dreamcatcher: A Novel" | 4 | 3 |
| "East of Eden" | 1 | 2 |
| "East of Eden" | 2 | 2 |
| "East of Eden" | 3 | 2 |
| "East of Eden" | 4 | 3 |
| "Electric Light" | 1 | 2 |
| "Electric Light" | 2 | 2 |
| "Electric Light" | 3 | 2 |
| "Electric Light" | 4 | 3 |
| "Franny and Zooey" | 1 | 2 |
| "Franny and Zooey" | 2 | 2 |
| "Franny and Zooey" | 3 | 2 |
| "Franny and Zooey" | 4 | 3 |
| "Godel, Escher, Bach" | 1 | 2 |
| "Godel, Escher, Bach" | 2 | 2 |
| "Godel, Escher, Bach" | 3 | 2 |
| "Godel, Escher, Bach" | 4 | 3 |
| "Group: Six People in Search of a Life" | 1 | 2 |
| "Group: Six People in Search of a Life" | 2 | 2 |
| "Group: Six People in Search of a Life" | 3 | 2 |
| "Group: Six People in Search of a Life" | 4 | 3 |
| "Harry Potter and the Goblet of Fire" | 1 | 2 |
| "Harry Potter and the Goblet of Fire" | 2 | 2 |
| "Harry Potter and the Goblet of Fire" | 3 | 2 |
| "Harry Potter and the Goblet of Fire" | 4 | 3 |
| "Harry Potter and the Prisoner of Azkaban" | 1 | 2 |
| "Harry Potter and the Prisoner of Azkaban" | 2 | 2 |
| "Harry Potter and the Prisoner of Azkaban" | 3 | 2 |
| "Harry Potter and the Prisoner of Azkaban" | 4 | 3 |
| Jazz | 1 | 2 |
| Jazz | 2 | 2 |
| Jazz | 3 | 2 |
| Jazz | 4 | 3 |
| "Magic Terror" | 1 | 2 |
| "Magic Terror" | 2 | 2 |
| "Magic Terror" | 3 | 2 |
| "Magic Terror" | 4 | 3 |
| "Nine Stories" | 1 | 2 |
| "Nine Stories" | 2 | 2 |
| "Nine Stories" | 3 | 2 |
| "Nine Stories" | 4 | 3 |
| "Of Mice and Men" | 1 | 2 |
| "Of Mice and Men" | 2 | 2 |
| "Of Mice and Men" | 3 | 2 |
| "Of Mice and Men" | 4 | 3 |
| "Second Wind" | 1 | 2 |
| "Second Wind" | 2 | 2 |
| "Second Wind" | 3 | 2 |
| "Second Wind" | 4 | 3 |
| "Slay Ride" | 1 | 2 |
| "Slay Ride" | 2 | 2 |
| "Slay Ride" | 3 | 2 |
| "Slay Ride" | 4 | 3 |
| "Song of Solomon" | 1 | 2 |
| "Song of Solomon" | 2 | 2 |
| "Song of Solomon" | 3 | 2 |
| "Song of Solomon" | 4 | 3 |
| "The Catcher in the Rye" | 1 | 2 |
| "The Catcher in the Rye" | 2 | 2 |
| "The Catcher in the Rye" | 3 | 2 |
| "The Catcher in the Rye" | 4 | 3 |
| "The Edge" | 1 | 2 |
| "The Edge" | 2 | 2 |
| "The Edge" | 3 | 2 |
| "The Edge" | 4 | 3 |
| "The Fall" | 1 | 2 |
| "The Fall" | 2 | 2 |
| "The Fall" | 3 | 2 |
| "The Fall" | 4 | 3 |
| "The Grapes of Wrath" | 1 | 2 |
| "The Grapes of Wrath" | 2 | 2 |
| "The Grapes of Wrath" | 3 | 2 |
| "The Grapes of Wrath" | 4 | 3 |
| "The Soul of a New Machine" | 1 | 2 |
| "The Soul of a New Machine" | 2 | 2 |
| "The Soul of a New Machine" | 3 | 2 |
| "The Soul of a New Machine" | 4 | 3 |
| "The Stranger" | 1 | 2 |
| "The Stranger" | 2 | 2 |
| "The Stranger" | 3 | 2 |
| "The Stranger" | 4 | 3 |
| "To Kill a Mockingbird" | 1 | 2 |
| "To Kill a Mockingbird" | 2 | 2 |
| "To Kill a Mockingbird" | 3 | 2 |
| "To Kill a Mockingbird" | 4 | 3 |
| "Travels with Charley" | 1 | 2 |
| "Travels with Charley" | 2 | 2 |
| "Travels with Charley" | 3 | 2 |
| "Travels with Charley" | 4 | 3 |
| "Treasure Chests" | 1 | 2 |
| "Treasure Chests" | 2 | 2 |
| "Treasure Chests" | 3 | 2 |
| "Treasure Chests" | 4 | 3 |
| "Van Gogh and Gauguin" | 1 | 2 |
| "Van Gogh and Gauguin" | 2 | 2 |
| "Van Gogh and Gauguin" | 3 | 2 |
| "Van Gogh and Gauguin" | 4 | 3 |
| Venice | 1 | 2 |
| Venice | 2 | 2 |
| Venice | 3 | 2 |
| Venice | 4 | 3 |
| "When Rabbit Howls" | 1 | 2 |
| "When Rabbit Howls" | 2 | 2 |
| "When Rabbit Howls" | 3 | 2 |
| "When Rabbit Howls" | 4 | 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 book.title AS title, inventory.branchNum AS branch\_num, inventory.onHand AS on\_hand, SUM(onHand) AS Inventory

FROM book,inventory

WHERE book.bookCode = inventory.bookCode

GROUP BY book.title

ORDER BY Inventory DESC;

**Output:**

|  |  |  |  |
| --- | --- | --- | --- |
| title | branch\_num | on\_hand | Inventory |
| "The Grapes of Wrath" | 1 | 2 | 8 |
| Jazz | 2 | 4 | 7 |

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 lastName, firstName, book.title, book.paperback

FROM author

JOIN wrote ON

wrote.authorNum = author.authorNum

JOIN book ON

book.bookCode = wrote.bookCode

WHERE paperback='Y'

ORDER BY lastName, title;

**Output:**

|  |  |  |  |
| --- | --- | --- | --- |
| lastName | firstName | title | paperback |
| Ambrose | "Stephen E." | "Band of Brothers" | Y |
| Camus | Albert | "The Fall" | Y |
| Camus | Albert | "The Stranger" | Y |
| Chase | Truddi | "When Rabbit Howls" | Y |
| Francis | Dick | "Slay Ride" | Y |
| Francis | Dick | "The Edge" | Y |
| Heller | Joseph | Catch-22 | Y |
| Hofstadter | "Douglas R." | "Godel, Escher, Bach" | Y |
| Kidder | Tracy | "The Soul of a New Machine" | Y |
| Morrison | Toni | Beloved | Y |
| Morrison | Toni | Jazz | Y |
| Morrison | Toni | "Song of Solomon" | Y |
| Pratt | Philip | "A Guide to SQL" | Y |
| Salinger | J.D. | "Franny and Zooey" | Y |
| Salinger | J.D. | "Nine Stories" | Y |
| Salinger | J.D. | "The Catcher in the Rye" | Y |
| Solotaroff | Paul | "Group: Six People in Search of a Life" | Y |
| Steinbeck | John | "East of Eden" | Y |
| Steinbeck | John | "Of Mice and Men" | Y |
| Steinbeck | John | "The Grapes of Wrath" | Y |
| Steinbeck | John | "Travels with Charley" | Y |
| Straub | Peter | "Magic Terror" | Y |
| Vintage | Vernor | "A Deepness in the Sky" | Y |

**BONUS (5 points):**

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 book.title AS title, author.lastName AS last\_name

FROM book, author, wrote

WHERE book.bookCode = wrote.bookCode AND wrote.authorNum = author.authorNum

ORDER BY author.lastName;

**Output:**

|  |  |
| --- | --- |
| title | last\_name |
| "Band of Brothers" | Ambrose |
| "The Fall" | Camus |
| "The Stranger" | 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 |
| Jazz | Morrison |
| "Song of Solomon" | Morrison |
| Beloved | 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 |
| "Black House" | Straub |
| "Magic Terror" | Straub |
| "A Deepness in the Sky" | Vintage |
| Venice | Wills |