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**CS300-ON**

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**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:**

|  |  |
| --- | --- |
| 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 |

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:**

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 publisher;

**Output:**

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\*75/100) AS discount

FROM book;

**Output:**

|  |  |  |
| --- | --- | --- |
| A Deepness in the Sky | 7.19 | 5.392500 |
| Magic Terror | 7.99 | 5.992500 |
| The Stranger | 8.00 | 6.000000 |
| Venice | 24.50 | 18.375000 |
| Second Wind | 24.95 | 18.712500 |

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;

**Output:**

|  |  |
| --- | --- |
| 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 publisherName

FROM publisher

WHERE city = "New York";

**Output:**

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:**

|  |
| --- |
| 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:**

|  |  |
| --- | --- |
| 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");

**Output:**

|  |  |
| --- | --- |
| A Deepness in the Sky | SFI |
| Magic Terror | HOR |
| Venice | ART |
| Dreamcatcher: A Novel | HOR |
| Treasure Chests | ART |

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%"

ORDER BY title ASC;

**Output:**

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

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 ASC;

**Output:**

No output (empty set) as all books in the book relation have a type

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:**

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 ASC;

**Output:**

|  |  |
| --- | --- |
| The Stranger | FIC |
| To Kill a Mockingbird | FIC |
| Band of Brothers | HIS |
| Black House | HOR |
| Dreamcatcher: A Novel | HOR |

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(publisherCode) 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 bookCount

FROM book

GROUP BY publisherCode

ORDER BY bookCount DESC;

**Output:**

|  |  |
| --- | --- |
| 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 publisherCode, COUNT(publisherCode) AS bookCount

FROM book

GROUP BY publisherCode

HAVING bookCount>=3

ORDER BY publisherCode;

**Output:**

|  |  |
| --- | --- |
| JP | 3 |
| LB | 3 |
| PE | 4 |
| 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 "Books under $20"

FROM book

WHERE price<=20;

**Output:**

|  | Books 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

FROM book

WHERE price = (SELECT MAX(price)

FROM book);

**Output:**

| title |
| --- |
| A Guide to SQL |

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

FROM book

WHERE price = (SELECT MIN(price)

FROM book);

**Output:**

|  |
| --- |
| Nine Stories |
| Franny and Zooey |
| The Catcher in the Rye |

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 title

FROM book

WHERE publisherCode IN (SELECT publisherCode

FROM publisher

WHERE city != "New York"

ORDER BY city ASC);

**Output:**

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 \*

FROM book b

JOIN publisher p;

**Output:**

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

**SQL Statement:**

SELECT \*

FROM book b

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

**Output:**

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 title, city

FROM book b

JOIN publisher p ON b.publisherCode=p.publisherCode

ORDER BY title;

**Output:**

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 title, lastName

FROM book b

JOIN wrote w ON b.bookCode=w.bookCode

JOIN author a ON w.authorNum=a.authorNum

ORDER BY lastName;

**Output:**

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 title, branchNum

FROM book b

JOIN inventory i ON b.bookCode=i.bookCode

ORDER BY title;

**Output:**

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 title, branchName, COUNT(onHand) AS "Number on hand"

FROM book bo

JOIN inventory i ON bo.bookCode=i.bookCode

JOIN branch br ON i.branchNum=br.branchNum

GROUP BY title, branchName

ORDER BY title ASC;

**Output:**

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 title, COUNT(onHand) AS "Inventory"

FROM book b

JOIN inventory i ON b.bookCode=i.bookCode

GROUP BY title

ORDER BY title;

**Output:**

|  |  |
| --- | --- |
| A Deepness in the Sky | 1 |
| A Guide to SQL | 1 |

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 firstName, lastName, title

FROM author a

JOIN wrote w ON a.authorNum=w.authorNum

JOIN book b ON w.bookCode=b.bookCode

WHERE paperback = "Y"

ORDER BY lastName, title;

**Output:**

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:**

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";

**Output:**