Task 2: Creating queries

Q1	SELECT publisher_name FROM publisher WHERE publisher_city <> 'New York';	publisher_name Arkham House Basic Books Berkley Publishing Course Technology Jeremy P. Tarcher McPherson and Co. Taunton Press Touchstone Books Westview Press
Q2	SELECT book_title AS 'title' FROM book WHERE publisher_code = (SELECT publisher_code FROM publisher WHERE publisher_name = 'Penguin USA');	title Of Mice and Men Travels with Charley East of Eden The Grapes of Wrath
Q3	SELECT book_title AS 'title' FROM book WHERE book_type = 'SFI' AND book_paperback = 'TRUE';	title A Deepness in the Sky
Q4	SELECT book_title AS 'title' FROM book WHERE book_type IN ('CMP', 'HIS', 'SCI');	title The Soul of a New Machine Band of Brothers A Guide to SQL
Q5	SELECT count(*) AS 'book count' FROM author JOIN wrote USING (author_num) WHERE (author_first = 'Dick' AND author_last = 'Francis') OR (author_first = 'Vernor' AND author_last = 'Vintage');	book count 4

Q6	SELECT book_title
	FROM book JOIN wrote USING (book_code)
	        JOIN author USING (author_num)
	WHERE book_type = 'FIC'
	    AND author_first = 'John'
	    AND author_last = 'Steinbeck';
		title
		Of Mice and Men
		East of Eden
		The Grapes of Wrath

Q7	SELECT count(*) AS 'book count'
	FROM copy JOIN branch USING (branch_num)
	WHERE branch_name = 'JM Downtown'
	    AND copy_price > 10
	    AND copy_price < 20;
		book count
		11

Q8	SELECT branch_name,
	    copy_num,
	    copy_quality AS 'quality',
	    copy_price AS 'price'
	FROM copy JOIN branch USING (branch_num)
	WHERE book_code =
	    (SELECT book_code
	    FROM book
	    WHERE book_title = 'The Stranger');
		<table><tr><td>branch_name</td><td>copy_num</td><td>quality</td><td>price</td></tr><tr><td>JM Downtown</td><td>1</td><td>Excellent</td><td>8.00</td></tr><tr><td>JM on the Hill</td><td>1</td><td>Excellent</td><td>8.00</td></tr><tr><td>JM on the Hill</td><td>2</td><td>Fair</td><td>3.50</td></tr><tr><td>JM on the Hill</td><td>3</td><td>Poor</td><td>2.25</td></tr></table>

Q9	SELECT book_title as 'title',
	    count(*) AS 'count',
	    concat('$', round(avg(copy_price), 2)) AS 'average price'
	FROM book JOIN copy USING (book_code)
	GROUP BY book_title
	    HAVING count(*) > 4
	ORDER BY book_title;
		<table><tr><td>title</td><td>count</td><td>average price</td></tr><tr><td>Dreamcatcher: A Novel</td><td>6</td><td>$20.62</td></tr><tr><td>Harry Potter and the Prisoner of Azkaban</td><td>6</td><td>$12.12</td></tr><tr><td>Jazz</td><td>7</td><td>$11.78</td></tr><tr><td>Second Wind</td><td>6</td><td>$23.95</td></tr><tr><td>Song of Solomon</td><td>7</td><td>$11.86</td></tr><tr><td>The Catcher in the Rye</td><td>5</td><td>$4.78</td></tr><tr><td>The Grapes of Wrath</td><td>8</td><td>$8.60</td></tr></table>

Q10	SELECT book_title AS 'title',
	      author_first,
	      author_last
	FROM branch JOIN copy USING (branch_num)
	      JOIN book USING (book_code)
	      JOIN wrote USING (book_code)
	      JOIN author USING (author_num)
	WHERE branch_name = 'JM on the Hill'
	      AND copy_quality = 'Excellent'
	ORDER BY wrote_sequence;	

title	author_first	author_last
A Guide to SQL	Philip	Pratt
Band of Brothers	Stephen E.	Ambrose
Band of Brothers	Stephen E.	Ambrose
Beloved	Toni	Morrison
Beloved	Toni	Morrison
Dreamcatcher: A Novel	Stephen	King
Dreamcatcher: A Novel	Stephen	King
Dreamcatcher: A Novel	Stephen	King
Dreamcatcher: A Novel	Stephen	King
Franny and Zooey	J.D.	Salinger
Franny and Zooey	J.D.	Salinger
Jazz	Toni	Morrison
Jazz	Toni	Morrison
Jazz	Toni	Morrison
Jazz	Toni	Morrison
Magic Terror	Peter	Straub
Nine Stories	J.D.	Salinger
Second Wind	Dick	Francis
The Catcher in the Rye	J.D.	Salinger
The Catcher in the Rye	J.D.	Salinger
The Edge	Dick	Francis
The Grapes of Wrath	John	Steinbeck
The Soul of a New Ma...	Tracy	Kidder
The Stranger	Albert	Camus

Q11	CREATE TABLE FictionCopies (

```
CREATE TABLE FictionCopies (
    book_code VARCHAR(5),
    book_title VARCHAR(100),
    branch_num INT(2),
    copy_num INT(2),
    copy_quality VARCHAR(10),
    copy_price DECIMAL(5,2)
);


INSERT INTO FictionCopies
SELECT book_code, book_title, branch_num, copy_num, copy_quality,
    copy_price
FROM book JOIN copy USING (book_code)
WHERE book_type = 'FIC';


SELECT *
FROM fictioncopies;
```

book_code	book_title	branch_num	copy_num	copy_quality	copy_price
0200	The Stranger	1	1	Excellent	8.00
0200	The Stranger	2	1	Excellent	8.00
0200	The Stranger	2	2	Fair	3.50
0200	The Stranger	2	3	Poor	2.25
138X	Beloved	2	1	Excellent	12.95
138X	Beloved	2	2	Excellent	12.95
138X	Beloved	2	3	Good	6.95
2766	Of Mice and Men	3	1	Excellent	7.95
2766	Of Mice and Men	3	2	Good	3.95
3743	Nine Stories	2	1	Excellent	5.99
5790	Catch-22	4	1	Excellent	12.00
5790	Catch-22	4	2	Good	5.95
6128	Jazz	2	1	Excellent	12.95
6128	Jazz	3	1	Excellent	12.95
6128	Jazz	2	2	Excellent	12.95
6128	Jazz	3	2	Excellent	12.95
6128	Jazz	2	3	Excellent	12.95
6128	Jazz	3	3	Good	4.75
6128	Jazz	2	4	Excellent	12.95
6908	Franny and Zooey	2	1	Excellent	5.99
6908	Franny and Zooey	2	2	Excellent	5.99
7405	East of Eden	3	1	Good	5.00
7405	East of Eden	3	2	Fair	2.95
7559	The Fall	2	1	Fair	3.65
7559	The Fall	2	2	Good	8.00
9627	Song of Solomon	3	1	Excellent	14.00
9627	Song of Solomon	4	1	Excellent	14.00
9627	Song of Solomon	3	2	Excellent	14.00
9627	Song of Solomon	4	2	Good	6.50
9627	Song of Solomon	3	3	Excellent	14.00
9627	Song of Solomon	3	4	Excellent	14.00
9627	Song of Solomon	3	5	Good	6.50
9701	The Grapes of Wrath	1	1	Excellent	13.00
9701	The Grapes of Wrath	2	1	Excellent	13.00
9701	The Grapes of Wrath	3	1	Fair	4.00
9701	The Grapes of Wrath	4	1	Excellent	13.00
9701	The Grapes of Wrath	1	2	Excellent	13.00
9701	The Grapes of Wrath	3	2	Fair	4.00
9701	The Grapes of Wrath	4	2	Poor	1.55
9701	The Grapes of Wrath	3	3	Good	7.25
9883	The Catcher in the Rye	2	1	Excellent	5.99
9883	The Catcher in the Rye	4	1	Good	3.99
9883	The Catcher in the Rye	2	2	Excellent	5.99
9883	The Catcher in the Rye	4	2	Excellent	5.99
9883	The Catcher in the Rye	2	3	Fair	1.95
9931	To Kill a Mockingbird	1	1	Excellent	13.00
9931	To Kill a Mockingbird	1	2	Excellent	13.00

Q12	SELECT book_title,
	        branch_num,
	        copy_num,
	        copy_quality,
	        copy_price AS 'old price',
	        if(copy_price < 10.00,
	            round(copy_price*1.1, 2),
	            ' ') AS 'increased price'
	FROM fictioncopies
	WHERE copy_quality = 'Excellent';

book_title	branch_num	copy_num	copy_quality	old price	increased price
The Stranger	1	1	Excellent	8.00	8.80
The Stranger	2	1	Excellent	8.00	8.80
Beloved	2	1	Excellent	12.95	
Beloved	2	2	Excellent	12.95	
Of Mice and Men	3	1	Excellent	7.95	8.75
Nine Stories	2	1	Excellent	5.99	6.59
Catch-22	4	1	Excellent	12.00	
Jazz	2	1	Excellent	12.95	
Jazz	3	1	Excellent	12.95	
Jazz	2	2	Excellent	12.95	
Jazz	3	2	Excellent	12.95	
Jazz	2	3	Excellent	12.95	
Jazz	2	4	Excellent	12.95	
Franny and Zooey	2	1	Excellent	5.99	6.59
Franny and Zooey	2	2	Excellent	5.99	6.59
Song of Solomon	3	1	Excellent	14.00	
Song of Solomon	4	1	Excellent	14.00	
Song of Solomon	3	2	Excellent	14.00	
Song of Solomon	3	3	Excellent	14.00	
Song of Solomon	3	4	Excellent	14.00	
The Grapes of Wrath	1	1	Excellent	13.00	
The Grapes of Wrath	2	1	Excellent	13.00	
The Grapes of Wrath	4	1	Excellent	13.00	
The Grapes of Wrath	1	2	Excellent	13.00	
The Catcher in the Rye	2	1	Excellent	5.99	6.59
The Catcher in the Rye	2	2	Excellent	5.99	6.59
The Catcher in the Rye	4	2	Excellent	5.99	6.59
To Kill a Mockingbird	1	1	Excellent	13.00	
To Kill a Mockingbird	1	2	Excellent	13.00	

Q13	SELECT distinct book_code,
	        book_title AS 'title'
	FROM book JOIN copy USING (book_code)
	WHERE publisher_code =
	        (SELECT publisher_code
	        FROM publisher
	        WHERE publisher_name = 'Vintage Books')
	          OR branch_num =
	              (SELECT branch_num
	              FROM branch
	              WHERE branch_name = 'JM Brentwood'));	

book_code	title
0200	The Stranger
0378	Venice
079X	Second Wind
1351	Dreamcatcher: A Novel
2226	Harry Potter and the Prisoner of Azkaban
2766	Of Mice and Men
3906	The Soul of a New Machine
6128	Jazz
7405	East of Eden
7559	The Fall
8092	Godel, Escher, Bach
9627	Song of Solomon
9701	The Grapes of Wrath
9882	Slay Ride

Q14	SELECT book_title AS 'title',
	        publisher_name,
	        author_last,
	        author_first
	FROM book JOIN publisher USING (publisher_code)
	        JOIN wrote USING (book_code)
	        JOIN author USING (author_num)
	WHERE (SELECT book_code
	        FROM wrote AS wrote2
	        WHERE wrote2.book_code = book.book_code
	        GROUP BY wrote2.book_code
	          HAVING count(*) = 2);	

title	publisher_name	author_last	author_first
Treasure Chests	Taunton Press	O'Rourke	Randy
Treasure Chests	Taunton Press	Schleining	Lon
Van Gogh and Gauguin	Westview Press	Collins	Bradley
Van Gogh and Gauguin	Westview Press	Collins, Jr.	Bradley
Black House	Random House	Straub	Peter
Black House	Random House	King	Stephen

| Q15 | If we assume that a book can exist without a corresponding copy existing:

SELECT distinct publisher_name
FROM publisher JOIN book USING (publisher_code)
WHERE publisher_code NOT IN
    (SELECT publisher_code
    FROM copy JOIN book USING (book_code));

If we follow the ERD's mandatory relationship between *book* and *copy*, then the query becomes the following and the output matches the table supplied in the assignment specifications:

SELECT publisher_name
FROM publisher
WHERE publisher_code NOT IN
    (SELECT publisher_code
    FROM copy JOIN book USING (book_code)); | **publisher_name**

publisher_name
Arkham House
Arcade Publishing
Jeremy P. Tarcher
McPherson and Co.
Schoken Books
Thames and Hudson
W.W. Norton |
| Q16 | SELECT branch_name,
      concat('$', cast(sum(comp_cost) AS CHAR))
        AS 'total cost of computers'
FROM branch JOIN employee USING (branch_num)
        JOIN hire USING (emp_num)
        JOIN computer USING (comp_num)
WHERE hire_end IS NULL
GROUP BY branch_name; | **branch_name** \| **total cost of computers**
JM on the Hill \| $6090
JM Downtown \| $5807
JM Brentwood \| $6518
JM Eastshore \| $1900 |

| Q17 | SELECT comp_num,
        year(comp_purchase_date) AS 'Year Purchased'
FROM computer
WHERE year(comp_purchase_date) <= 2008
    AND comp_num NOT IN
        (SELECT comp_num
        FROM hire JOIN employee USING (emp_num)
        WHERE (emp_last = 'Chopping' AND emp_first = 'Marie')
            OR (emp_last = 'Smith' AND emp_first = 'Ronald')); | comp_num / year purchased table |

comp_num	year purchased
I002	2008
I003	2007
I005	2008
I006	2006
I007	2007
I008	2003
I012	2008
I014	2003
I016	2005

| Q18 | SELECT branch_name AS 'branch',
        count(emp_num) AS 'num of employees'
FROM branch JOIN employee USING (branch_num)
GROUP BY branch_name
ORDER BY 2 desc; | branch table |

branch_name	num of employees
JM Downtown	5
JM Brentwood	5
JM on the Hill	3
JM Eastshore	3

| Q19 | SELECT distinct book_code, book_title
FROM book JOIN copy USING (book_code)
        JOIN branch USING (branch_num)
WHERE branch_name = 'JM Brentwood'
    AND book_code IN
        (SELECT book_code
        FROM copy JOIN branch USING (branch_num)
        WHERE branch_name = 'JM On the Hill'); | book table |

book_code	book_title
079X	Second Wind
1351	Dreamcatcher: A Novel
3906	The Soul of a New Machine
6128	Jazz
9701	The Grapes of Wrath

Q20	SELECT distinct publisher_name
	FROM publisher JOIN book USING (publisher_code)
	       JOIN copy USING (book_code)
	WHERE branch_num =
	     (SELECT max(2)
	      FROM (SELECT branch_num, count(distinct book_code)
	        FROM copy JOIN branch USING (branch_num)
	       GROUP BY branch_num) AS sub);
		publisher_name ▲
		Back Bay Books
		Course Technology
		Fawcett Books
		Jove Publications
		Lb Books
		Penguin USA
		Plume
		Putnam Publishing Group
		Scribner
		Taunton Press
		Touchstone Books
		Vintage Books