Select the average advance of books written by authors who have not had any of their books published by “Algodata Infosystems”

```
SELECT AVG(advance) AS 'Average Advance'
FROM titles T    INNER JOIN titleauthor TA    ON T.title_id=TA.title_id
WHERE TA.au_id NOT IN (
                    SELECT au_id
                    FROM titleauthor
                    WHERE title_id IN (
                          SELECT title_id
                          FROM titles T INNER JOIN publishers P ON T.pub_id=P.pub_id
                          WHERE pub_name='Algodata Infosystems'
                    )
)
```

# Column calculations with nested queries

1. Select the average price of a book for each genre (type), and then show the difference between this average price and the average price of all books.

| | type | Average Price | Difference |
|---|---|---|---|
| 1 | business | 13,73 | 1,0362 |
| 2 | mod_cook | 11,49 | 3,2762 |
| 3 | popular_comp | 21,475 | -6,7088 |
| 4 | psychology | 13,504 | 1,2622 |
| 5 | trad_cook | 15,9633 | -1,1971 |
| 6 | UNDECIDED | NULL | NULL |

```
SELECT type, AVG(price) AS 'Average Price', (SELECT AVG(price) FROM titles) - AVG(price) AS Difference
FROM titles
GROUP BY type
```

2. Select each publisher's name and the total amount they have paid in advances. In the % column, show what percent of total advances paid each of the producer has paid.

| | Publisher | Advance | % |
|---|---|---|---|
| 1 | Algodata Infosystems | 30000.00 | 31.44 % |
| 2 | Binnet & Hardley | 41000.00 | 42.97 % |
| 3 | New Moon Books | 24400.00 | 25.57 % |

```
SELECT    pub_name AS Publisher,
          SUM(advance) AS Advance,
          STR(SUM(advance)/(SELECT SUM(advance) FROM titles)*100, 5, 2)+' %' AS '%'
FROM publishers P JOIN titles T ON P.pub_id=T.pub_id
GROUP BY P.pub_id, pub_name
```

3. Select the average advance for each publisher, the average advance each publisher makes per genre (type), and the difference between each publisher's average per genre and the average publisher advance for that genre.

| | pub_id | type | AvgPerPublisherPerType | AvgPubAdvance | Difference |
|---|---|---|---|---|---|
| 1 | 0736 | business | 10125.00 | 4880.00 | 5245.00 |
| 2 | 1389 | business | 5000.00 | 6000.00 | -1000.00 |
| 3 | 0877 | mod_cook | 7500.00 | 6833.3333 | 666.6667 |
| 4 | 1389 | popular_comp | 7500.00 | 6000.00 | 1500.00 |
| 5 | 0736 | psychology | 3568.75 | 4880.00 | -1311.25 |
| 6 | 0877 | psychology | 7000.00 | 6833.3333 | 166.6667 |
| 7 | 0877 | trad_cook | 6333.3333 | 6833.3333 | -500.00 |
| 8 | 0877 | UNDECIDED | NULL | 6833.3333 | NULL |

3. Select the average advance for each publisher, the average advance each publisher makes per genre (type), and the difference between each publisher's average per genre and the average publisher advance for that genre.

```
SELECT  pub_id,  type,
        AVG(advance) AS AvgPerPublisherPerType,
        (     SELECT AVG(advance) FROM titles T2
              WHERE T2.pub_id = T1.pub_id
        ) AS AvgPubAdvance,
        AVG(advance) - (  SELECT AVG(advance) FROM titles T2
                          WHERE T2.pub_id = T1.pub_id

        ) AS Difference
FROM titles T1
GROUP BY pub_id, type
ORDER BY type
```

# Pivot tables

Return a pivot table containing the number of each book type published by each publisher.

| | pub_id | type | (No column name) |
|---|---|---|---|
| 1 | 0736 | business | 1 |
| 2 | 1389 | business | 3 |
| 3 | 0877 | mod_cook | 2 |
| 4 | 1389 | popular_comp | 3 |
| 5 | 0736 | psychology | 4 |
| 6 | 0877 | psychology | 1 |
| 7 | 0877 | trad_cook | 3 |
| 8 | 0877 | UNDECIDED | 1 |

| | pub_id | Business | Psychology | Mod_cook | Trad_cook |
|---|---|---|---|---|---|
| 1 | 0736 | 1 | 4 | 0 | 0 |
| 2 | 0877 | 0 | 1 | 2 | 3 |
| 3 | 1389 | 3 | 0 | 0 | 0 |

# Solution 1 :

```
SELECT DISTINCT pub_id,
CASE
      WHEN pub_id= '0736' THEN
            (SELECT COUNT(*) FROM titles WHERE type='business' AND pub_id='0736')
      WHEN pub_id= '0877' THEN
            (SELECT COUNT(*) FROM titles WHERE type= 'business ' AND pub_id='0877')
      WHEN pub_id= '1389' THEN
            (SELECT COUNT(*) FROM titles WHERE type= 'business ' AND pub_id='1389')
END AS ' Business ',
CASE
      WHEN pub_id= '0736' THEN
            (SELECT COUNT(*) FROM titles WHERE type='psychology' AND pub_id='0736')
      WHEN pub_id= '0877' THEN
            (SELECT COUNT(*) FROM titles WHERE type= 'psychology ' AND pub_id='0877')
      WHEN pub_id='1389' THEN
            (SELECT COUNT(*) FROM titles WHERE type= 'psychology ' AND pub_id='1389')
END AS 'Psychology',

-- It is the same process for all other types
FROM titles
```

# Solution 2 :

```
SELECT pub_id,
        (   SELECT COUNT(*) FROM titles
            WHERE pub_id=P.pub_id AND type= “business”          ) AS business
        (   SELECT COUNT(*) FROM titles
            WHERE pub_id=P.pub_id AND type= “psychology”        ) AS psychology
        (   SELECT COUNT(*) FROM titles
            WHERE pub_id=P.pub_id AND type= “mod_cook”          ) AS mod_cook
        (   SELECT COUNT(*) FROM titles
            WHERE pub_id=P.pub_id AND type= “trad_cook”         ) AS trad_cook
        (   SELECT COUNT(*) FROM titles
            WHERE pub_id=P.pub_id AND type= “popular_comp”      ) AS popular_comp
        (   SELECT COUNT(*) FROM titles
            WHERE pub_id=P.pub_id AND type= “undecided”         ) AS undecided
FROM publishers P
```

Modify the query to display the names of publishers instead of their pub_id

| | Pub_name | Business | Psychology | Mod_cook | Trad_cook |
|---|---|---|---|---|---|
| 1 | Algodata Infosystems | 3 | 0 | 0 | 0 |
| 2 | Binnet & Hardley | 0 | 1 | 2 | 3 |
| 3 | New Moon Books | 1 | 4 | 0 | 0 |

| | pub_id | Business | Psychology | Mod_cook | Trad_cook |
|---|---|---|---|---|---|
| 1 | 0736 | 1 | 4 | 0 | 0 |
| 2 | 0877 | 0 | 1 | 2 | 3 |
| 3 | 1389 | 3 | 0 | 0 | 0 |

Return a pivot table that contains the number of each book type published by each publisher.

| | type | 0736 | 0877 | 1389 |
|---|---|---|---|---|
| 1 | business | 1 | 0 | 3 |
| 2 | mod_cook | 0 | 2 | 0 |
| 3 | popular_comp | 0 | 0 | 3 |
| 4 | psychology | 4 | 1 | 0 |
| 5 | trad_cook | 0 | 3 | 0 |
| 6 | UNDECIDED | 0 | 1 | 0 |

```
SELECT  DISTINCT  T.type,
          ( SELECT COUNT(*)
            FROM titles T1
            WHERE  T.type=T1.type AND T1.pub_id='0736')  AS '0736',
          ( SELECT COUNT(*)
            FROM titles T1
            WHERE  T.type=T1.type AND T1.pub_id='0877')  AS '0877',
          ( SELECT COUNT(*)
            FROM titles T1
            WHERE  T.type=T1.type AND T1.pub_id='1389')  AS '1389'
FROM titles T
```

Return a pivot table that contains the number of books published by type and publication year.

| | type | 1991 | 1994 | 2009 |
|---|---|---|---|---|
| 1 | business | 4 | 0 | 0 |
| 2 | mod_cook | 2 | 0 | 0 |
| 3 | popular_comp | 1 | 1 | 1 |
| 4 | psychology | 5 | 0 | 0 |
| 5 | trad_cook | 3 | 0 | 0 |
| 6 | UNDECIDED | 0 | 0 | 1 |

Return a pivot table that contains the number of books sold of each genre in each state.

| | state | Business | Psychology | Modern Cooking | Popular Cooking | Traditional Cooking |
|---|---|---|---|---|---|---|
| 1 | WA | 5 | 108 | 25 | NULL | NULL |
| 2 | CA | 50 | 85 | 10 | 50 | 80 |
| 3 | CA | 50 | 85 | 10 | 50 | 80 |
| 4 | WA | 5 | 108 | 25 | NULL | NULL |
| 5 | CA | 50 | 85 | 10 | 50 | 80 |
| 6 | OR | 35 | NULL | 15 | 30 | NULL |

Return the pivot table that contains the number of each book type published in the years '1991', '1994', '2011'.

| | TYPE | 1991 | 1994 | 2011 |
|---|---|---|---|---|
| 1 | business | 4 | 0 | 0 |
| 2 | mod_cook | 2 | 0 | 0 |
| 3 | popular_comp | 1 | 1 | 1 |
| 4 | psychology | 5 | 0 | 0 |
| 5 | trad_cook | 3 | 0 | 0 |
| 6 | UNDECIDED | 0 | 0 | 1 |

```
SELECT DISTINCT type,
    (SELECT COUNT(*) FROM titles T2 WHERE YEAR(T2.pubdate)=1991
        AND T1.type=T2.type)  AS '1991',
    (SELECT COUNT(*) FROM titles T2 WHERE YEAR(T2.pubdate)=1994
        AND T1.type=T2.type) AS '1994',
    (SELECT COUNT(*) FROM titles T2 WHERE YEAR(T2.pubdate)=2011
        AND T1.type=T2.type) AS '2011'
FROM titles T1
```

Return the pivot table that contains the quantity of each book type that was sold in each state.

| | state | Business | Psy... | Mod. Cook. | Trad. Cook. | Pop. Comp. | UND. |
|---|---|---|---|---|---|---|---|
| 1 | CA | 50 | 85 | 10 | 80 | 50 | 0 |
| 2 | OR | 35 | 0 | 15 | 0 | 30 | 0 |
| 3 | WA | 5 | 108 | 25 | 0 | 0 | 0 |

```
SELECT state,
       SUM(CASE WHEN type='business' THEN qty ELSE 0 END) AS "Business",
       SUM(CASE WHEN type='psychology' THEN qty ELSE 0 END) AS "Psychology",
       SUM(CASE WHEN type='mod_cook' THEN qty ELSE 0 END) AS "Modern Cook.",
       SUM(CASE WHEN type='trad_cook' THEN qty ELSE 0 END) AS "Trad. Cook.”,
       SUM(CASE WHEN type='popular_comp' THEN qty ELSE 0 END) AS "Pop. Comp.",
       SUM(CASE WHEN type='UNDECIDED' THEN qty ELSE 0 END) AS "Unknown!"
FROM titles T   INNER JOIN sales S       ON T.title_id = S.title_id
                INNER JOIN stores ST     ON S.stor_id = ST.stor_id
GROUP BY state
```

Return the table containing the ID and title of each book, its author name's, total sales, royalty and royalty percent.

| | Book | Author | Sales | royalty | royaltyper | Total | Author's Cut |
|---|---|---|---|---|---|---|---|
| 1 | BU1032 - The Busy Executive's Database Guide | Bennet Abraham | 299,85 | 10 | 60 | 29.985000 | 17.991000 |
| 2 | BU1032 - The Busy Executive's Database Guide | Green Marjorie | 299,85 | 10 | 40 | 29.985000 | 11.994000 |
| 3 | BU1111 - Cooking with Computers: Surreptitious Balanc... | MacFeather Stearns | 298,75 | 10 | 60 | 29.875000 | 17.925000 |
| 4 | BU1111 - Cooking with Computers: Surreptitious Balanc... | O'Leary Michael | 298,75 | 10 | 40 | 29.875000 | 11.950000 |
| 5 | BU2075 - You Can Combat Computer Stress! | Green Marjorie | 104,65 | 24 | 100 | 25.116000 | 25.116000 |
| 6 | BU7832 - Straight Talk About Computers | Straight Dean | 299,85 | 10 | 100 | 29.985000 | 29.985000 |
| 7 | MC2222 - Silicon Valley Gastronomic Treats | del Castillo Innes | 199,90 | 12 | 100 | 23.988000 | 23.988000 |
| 8 | MC3021 - The Gourmet Microwave | DeFrance Michel | 119,60 | 24 | 75 | 28.704000 | 21.528000 |
| 9 | MC3021 - The Gourmet Microwave | Ringer Anne | 119,60 | 24 | 25 | 28.704000 | 7.176000 |
| 10 | PC1035 - But Is It User Friendly? | Carson Cheryl | 688,50 | 16 | 100 | 110.160000 | 110.160000 |
| 11 | PC8888 - Secrets of Silicon Valley | Dull Ann | 1000,00 | 10 | 50 | 100.000000 | 50.000000 |
| 12 | PC8888 - Secrets of Silicon Valley | Hunter Sheryl | 1000,00 | 10 | 50 | 100.000000 | 50.000000 |
| 13 | PS1372 - Computer Phobic AND Non-Phobic Individual... | Karsen Livia | 431,80 | 10 | 75 | 43.180000 | 32.385000 |
| 14 | PS1372 - Computer Phobic AND Non-Phobic Individual... | MacFeather Stearns | 431,80 | 10 | 25 | 43.180000 | 10.795000 |
| 15 | PS2091 - Is Anger the Enemy? | Ringer Albert | 1182,60 | 12 | 50 | 141.912000 | 70.956000 |
| 16 | PS2091 - Is Anger the Enemy? | Ringer Anne | 1182,60 | 12 | 50 | 141.912000 | 70.956000 |
| 17 | PS2106 - Life Without Fear | Ringer Albert | 175,00 | 10 | 100 | 17.500000 | 17.500000 |
| 18 | PS3333 - Prolonged Data Deprivation: Four Case Studies | White Johnson | 299,85 | 10 | 100 | 29.985000 | 29.985000 |
| 19 | PS7777 - Emotional Security: A New Algorithm | Locksley Charlene | 199,75 | 10 | 100 | 19.975000 | 19.975000 |
| 20 | TC3218 - Onions, Leeks, and Garlic: Cooking Secrets o... | Panteley Sylvia | 838,00 | 10 | 100 | 83.800000 | 83.800000 |
| 21 | TC4203 - Fifty Years in Buckingham Palace Kitchens | Blotchet-Halls Reg... | 239,00 | 14 | 100 | 33.460000 | 33.460000 |
| 22 | TC7777 - Sushi, Anyone? | Gringlesby Burt | 299,80 | 10 | 30 | 29.980000 | 8.994000 |
| 23 | TC7777 - Sushi, Anyone? | O'Leary Michael | 299,80 | 10 | 30 | 29.980000 | 8.994000 |
| 24 | TC7777 - Sushi, Anyone? | Yokomoto Akiko | 299,80 | 10 | 40 | 29.980000 | 11.992000 |