assume workload containing **both**:

```
SELECT * 
FROM employees
WHERE name = 'Peter';
```

and:

```
SELECT avg(city_code) 
FROM employees;
```
Fractured Mirrors

Employees =

(23, Albert, 45000)

(42, Rob, 37000)

(77, Peter, 50000)
Employees =

- (23, Albert, 45000)
- (42, Rob, 37000)
- (77, Peter, 50000)
Fractured Mirrors

Employees =

(23, Albert, 45000)
(42, Rob, 37000)
(77, Peter, 50000)
Fractured Mirrors

Employees =

SELECT *

(23, Albert, 45000)
(77, Peter, 50000)
(42, Rob, 37000)

Employees =

SELECT city, code

(23, Albert, 45000)
(77, Peter, 50000)
(42, Rob, 37000)
assume workload containing **both**: 

```
SELECT ID, name
FROM employees;
```

and:

```
SELECT avg(city_code)
FROM employees;
```
Employees = 

(23, Albert, 45000) 
(42, Rob, 37000) 
(77, Peter, 50000)
assume workload containing both:

```sql
SELECT ID, name
FROM employees;
```

and:

```sql
SELECT name, avg(city_code)
FROM employees
GROUP BY name;
```
Column Grouping with Partial Redundancy

Employees =

- (23, Albert, 45000)
- (77, Peter, 50000)
- (42, Rob, 37000)

Employees =

- (23, Albert, 45000)
- (77, Peter, 50000)
- (42, Rob, 37000)
Number of Vertical Partitionings

given by Bell numbers:

\[ B_0 = B_1 = 1 \]

\[ B_{n+1} = \sum_{k=0}^{n} \binom{n}{k} B_k \]

1, 1, 2, 5, 15, 52, 203, 877, 4140, 21147, 115975, ...
Bell Triangle

1
1  2
2  3  5
5  7 10 15
75 20 27 37 52

1. begin first row with 1
2. begin subsequent rows with last number of previous row
3. fill cells by adding previous cell in row to cell above it
52 Partitions of a 5-Element Set

Colour

Row
Credits and Copyrights

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http://commons.wikimedia.org/wiki/File:Noncrossing_partitions_5.svg
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