**Analyzing Business Data in SQL Server**

**Chapter1**

**Revenue**

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A screenshot of a computer screen

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A screenshot of a computer

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A screenshot of a menu

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A screen shot of a computer program

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A black and white text on a black background

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**Chapter2**

**User-Centric KPIs**

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A screenshot of a computer code

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A blue rectangle with white text

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A black and white text

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* **Growth**

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A screenshot of a computer screen

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A white background with black text

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A screenshot of a review

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A screenshot of a computer

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* **Retention**

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A blue and red pie chart

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A close-up of a questionnaire

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* Nothing to do with new users!

**Chapter3**

**Unit Economics**

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* GREATEST is used, when in the fraction denominator might be zero!

A screenshot of a computer code

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A black rectangular object with text

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A graph and chart with text

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A screenshot of a computer program

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A group of logos

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A graph of a normal and high

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* **Bucketing**

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A black and white sign with white text

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A close-up of a graph

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A diagram of a normal distribution

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A **CROSS JOIN** in SQL combines every row from one table with every row from another table, resulting in the Cartesian product of the two tables. It is typically used when all combinations of rows between two tables are required.

**Syntax**

SELECT \*

FROM table1

CROSS JOIN table2;

**Characteristics**

* **No Condition Required**: Unlike other joins (e.g., INNER JOIN or LEFT JOIN), a CROSS JOIN does not require a condition to match rows between tables.
* **Row Count**: The result will contain rows\_in\_table1 × rows\_in\_table2 rows.
* **Output**: Combines every row in table1 with every row in table2.

**Example**

**Tables**

**Table A**:

| **id** | **name** |
| --- | --- |
| 1 | Alice |
| 2 | Bob |

**Table B**:

| **product\_id** | **product\_name** |
| --- | --- |
| 101 | Laptop |
| 102 | Phone |

**CROSS JOIN Query**

SELECT \*

FROM TableA

CROSS JOIN TableB;

**Result**

| **id** | **name** | **product\_id** | **product\_name** |
| --- | --- | --- | --- |
| 1 | Alice | 101 | Laptop |
| 1 | Alice | 102 | Phone |
| 2 | Bob | 101 | Laptop |
| 2 | Bob | 102 | Phone |

**Use Cases**

1. **Generate Combinations**:
   * To create all possible combinations of two sets of data.
2. **Testing or Prototyping**:
   * When analyzing all relationships between two datasets.
3. **Unconventional Scenarios**:
   * Such as simulating or creating a grid of data.

**Caution**

* **Large Tables**: A CROSS JOIN can generate extremely large result sets, especially with large tables.
* **Performance**: Use with caution as the result size grows exponentially with the number of rows.

For most use cases, apply filters with a WHERE clause or reconsider the necessity of a Cartesian product.

**Chapter4**

**Survey of Useful Functions**

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* Pivoting

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A comparison of a black square

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A screen shot of a computer code

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* **Executive reports**

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A blue and white graph

Description automatically generated with medium confidence