

## Introduction

- + Codd stands for **CO**nstructing **DA**taless **DA**tases
- + It is a Java based graphical tool that attempts to alleviate the space and time overheads associated with construction of metadata for various scenarios

## Modes of Operation

**CONSTRUCT MODE**: User can directly create or edit the statistical metadata for the database without existing database instance

ENGINE	DB2	ORACLE	MS SQL	SYBASE	POSTGRES SQL
CONSTRUCT MODE	●	●	● (Internal Format)	●	● (Code Addition)

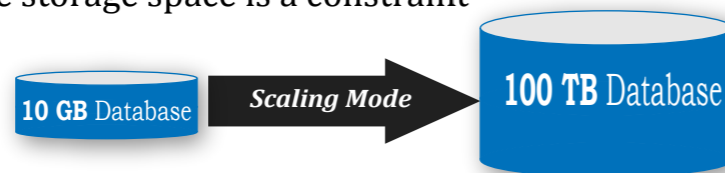
**RETAIN MODE**: Storage space is claimed back from a database already loaded with data without affecting metadata statistics

ENGINE	DB2	ORACLE	MS SQL	SYBASE	POSTGRES SQL
RETAIN MODE	●	●	● (Fresh Schema)	● (Entire DB)	●

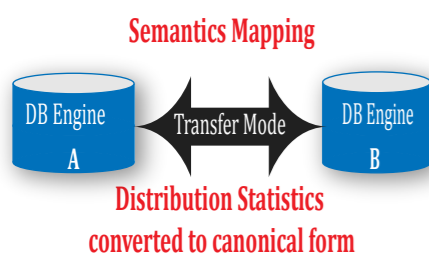
**SCALING MODE**: Metadata can be scaled to work with large instances. It is useful where storage space is a constraint

Scaling Types:

- Time Scaling
- Space Scaling

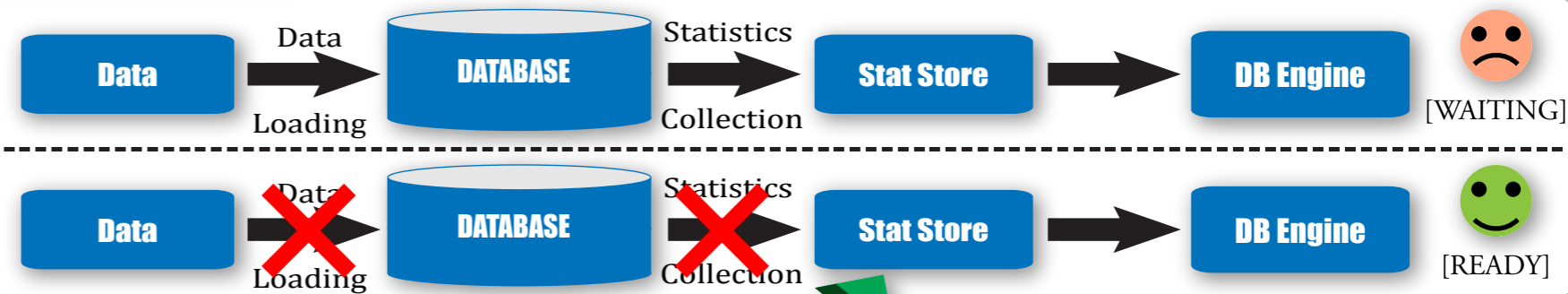
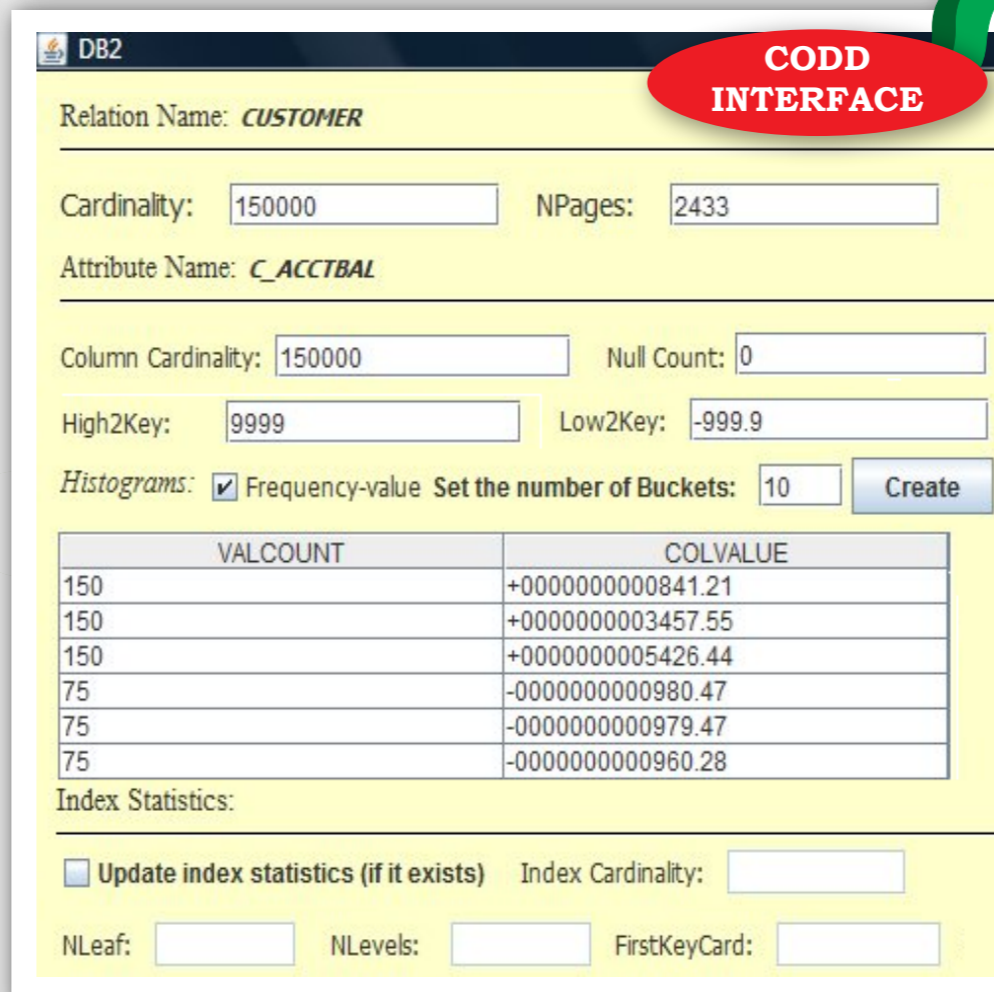


**TRANSFER MODE**: Statistical metadata of a pre-existing database can be transferred to another database



source/target	DB2	ORACLE	MS SQL	SYBASE	POSTGRE SQL
DB2	●	●	●	●	●
ORACLE	●	●	●	●	●
MS SQL	●	●	●	●	●
SYBASE	●	●	●	●	●
POSTGRE SQL	●	●	●	●	●

## How it Works

**Relation Name: CUSTOMER**

Cardinality: 150000      NPages: 2433

Attribute Name: C\_ACCTBAL

Column Cardinality: 150000      Null Count: 0

High2Key: 9999      Low2Key: -999.9

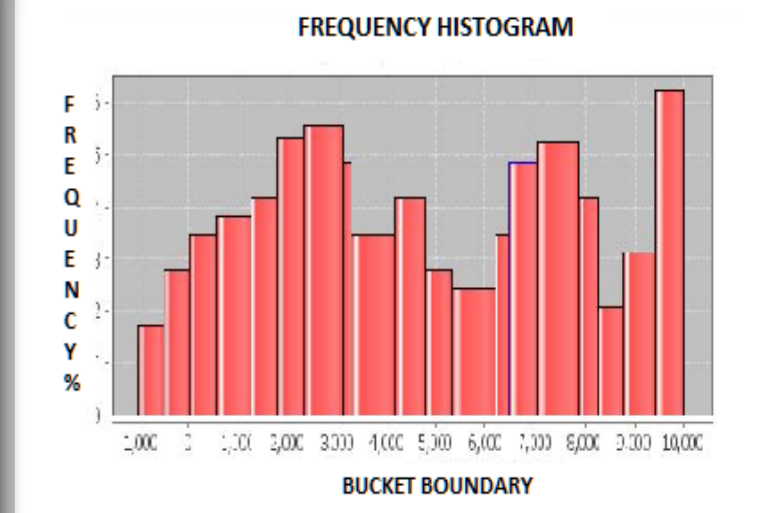
Histograms:  Frequency-value      Set the number of Buckets: 10      Create

VALCOUNT	COLVALUE
150	+0000000000841.21
150	+0000000003457.55
150	+0000000005426.44
75	-0000000000980.47
75	-0000000000979.47
75	-0000000000960.28

Index Statistics:

Update index statistics (if it exists)      Index Cardinality:

NLeaf:       NLevels:       FirstKeyCard:

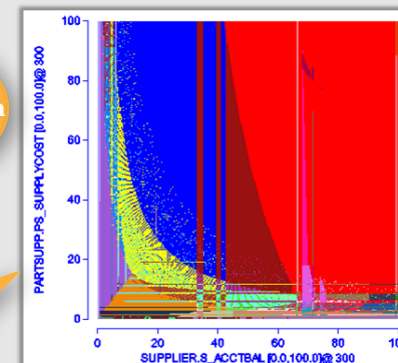


## Applications

Analyzing optimizer's altered behaviour in response to futuristic scenarios using **Picasso Query Optimizer Visualizer**

Picasso Requires Metadata (Codd Provides Metadata for various scenarios)

Plan Diagram for QT 9



100TB TPC-H 77 Plans

## Metadata Validation

In Construct mode, it ensures that inputted metadata is both **legal** (valid type and range) and **consistent** (compatible with other metadata values)