CODD – COnstructing Dataless Databases

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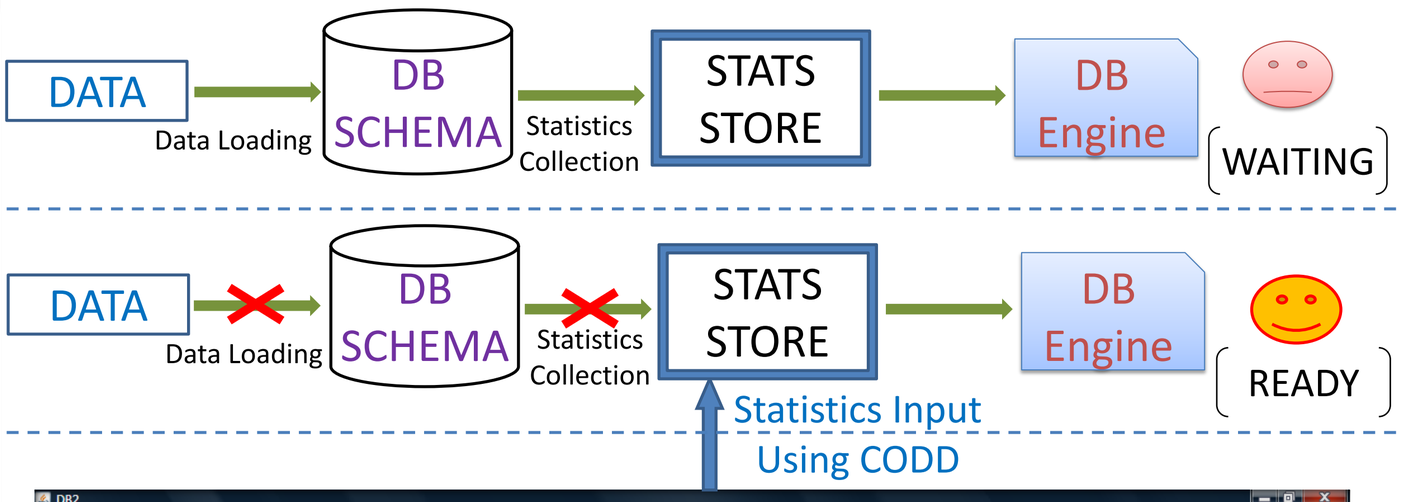
Introduction

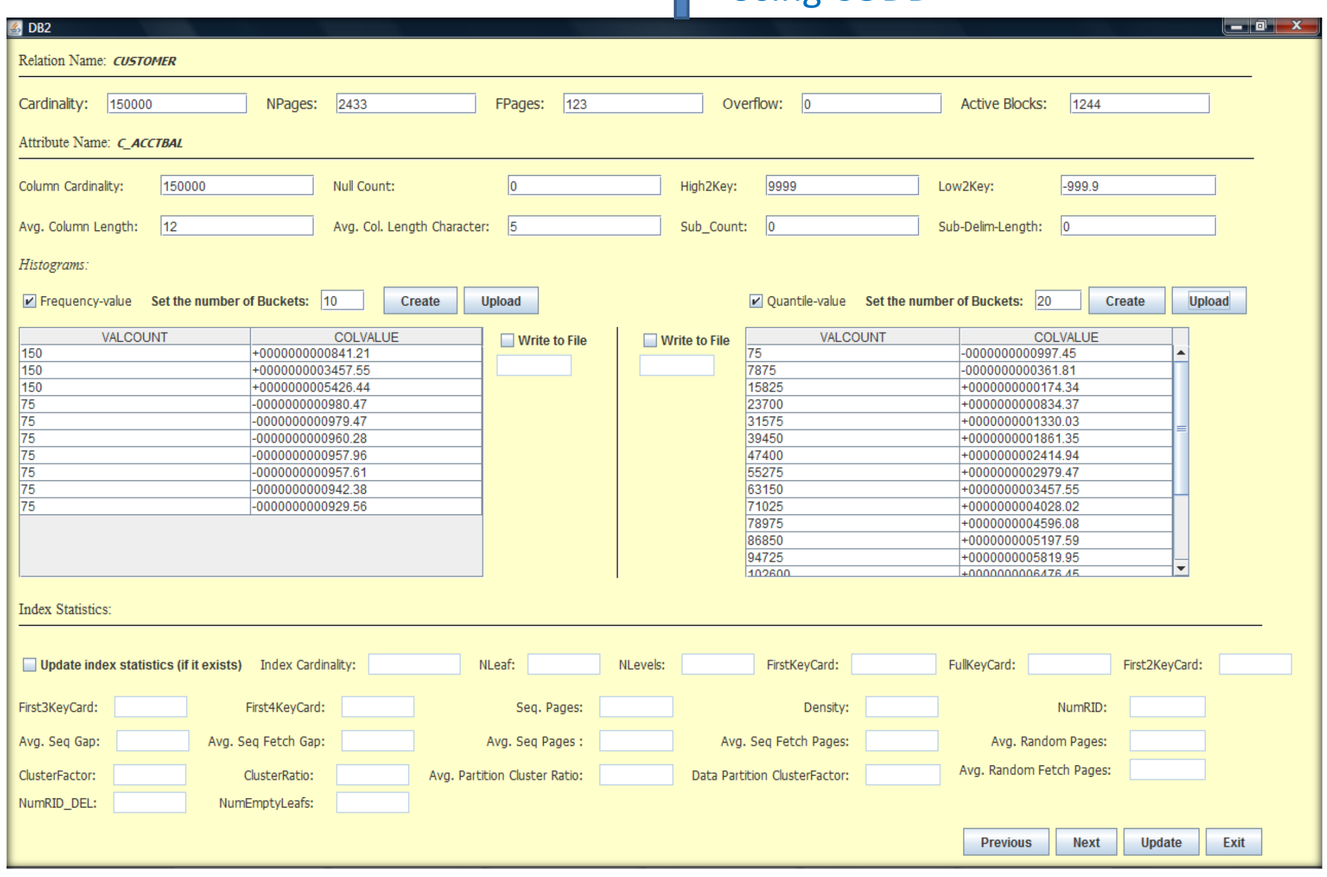
A fundamental requirement in the effective design and testing of database engines and applications is to easily construct alternative scenarios with regards to database contents.

CODD is a JAVA based graphical tool that attempts to alleviate the space and time overheads associated with such requirement. CODD constructs what might be termed as "Dataless Databases".

Only meta-data shell is maintained. Associated database contents are either eliminated or never created at first place.

CODD Interface





Metadata Scaling

- Scaling the metadata to work on a large database
- Scaling types: TPC-H scaling, Cost based scaling
- Can be used in an environment where storage space is a constraint

Modes of Operation

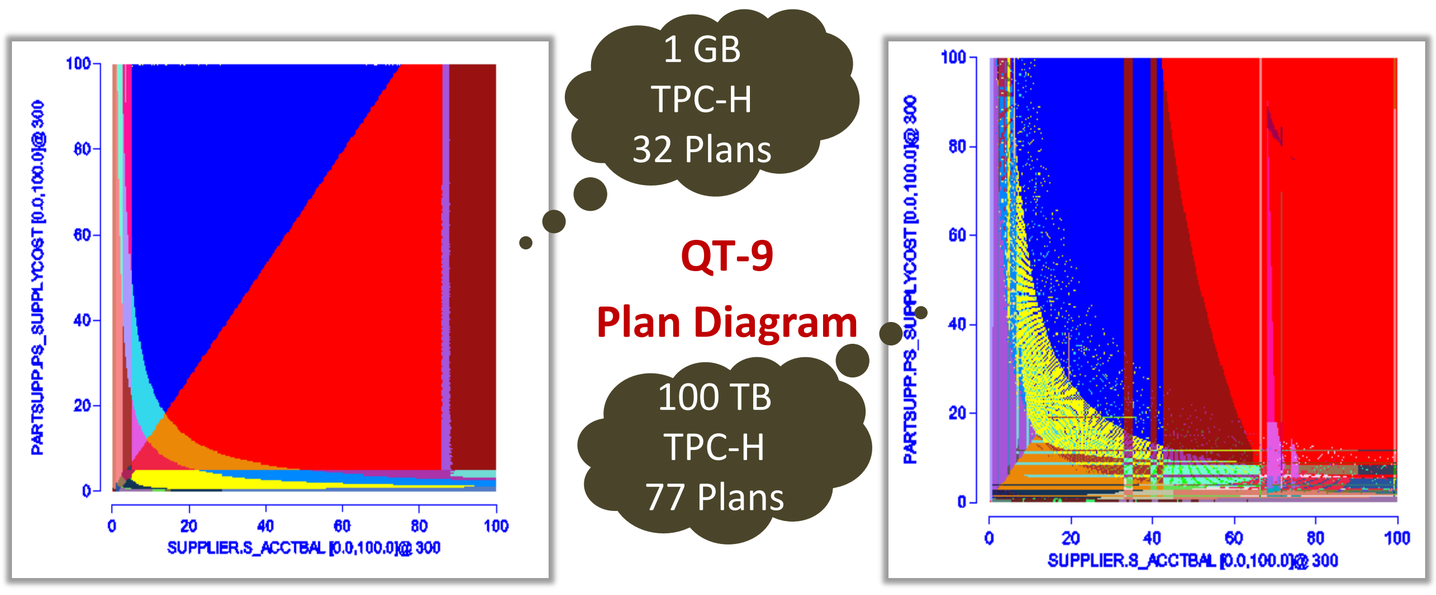
- **Drop Mode**
  - Database is already loaded with data
  - Objective is to reclaim back the storage space
- **Transfer Mode**
  - Statistics from loaded database are exported into a file and then they are imported into another database setup using that file on an identical environment
  - Can be used for simulating production scenarios in a test environment
- **Construct Mode**
  - User is allowed to directly create or edit statistical metadata for database
  - No prior database instance is required

Dataless Modes on Database Engines

Engines / Modes	DB2	ORACLE	SQL Server	Sybase	PostgreSQL
Drop Mode	Y	Y	Y (fresh schema)	Y (entire database)	Y
Transfer Mode	Y	Y	Y	Y	Y (code addition)
Construct Mode	Y	Y	N (internal format)	Y	Y (code addition)

Applications : Optimizer's behavior for futuristic scenarios

Optimizer's altered behavior in response to futuristic scenarios observed using PICASSO Query Optimizer Visualizer



Project Website: http://dsl.serc.iisc.ernet.in/projects/CODD/index.html