

Project Option 3 -- DBMS

Microhard

OUTLINE

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04

PART ONE

Background

Project Background



UCB CS61B

This project is a project of the course CS61B in UCB.



DBMS

Implement a miniature relational database management system.



Java

This project is done by Java.



Commands

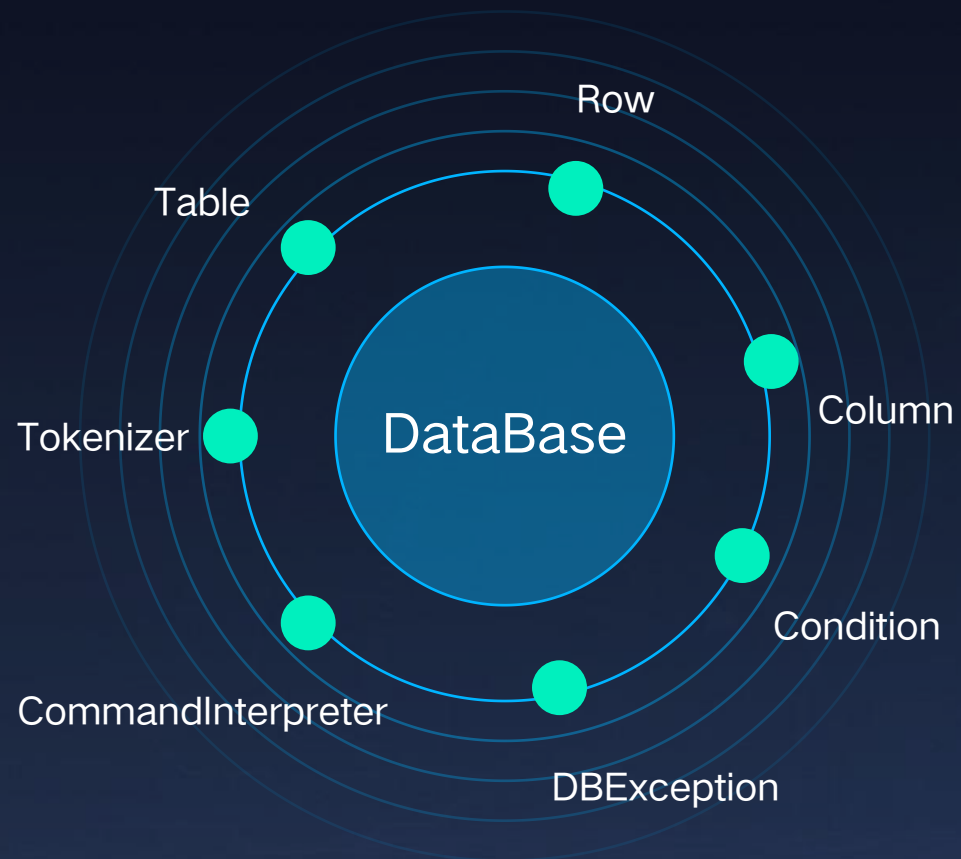
This DBMS supports several basic mysql commands.

PART TWO

The background is a dark blue field filled with numerous small white dots, some of which are larger and colored in shades of teal, orange, and blue. A thick, curved teal shape is positioned in the upper right. A horizontal teal bar with a white vertical stripe on its left side spans the middle of the image. The text 'PART TWO' is in the top left, and 'Design' is inside the teal bar.

Design

Project Design



Data(.db file)

Basic Function

Enhanced Function

■ DataBase Module

Function

- To store several Tables;
- DB is a collection of Tables, indexed by name.

Method

- `get()/ put()` table from/into DB.

Table Module

Table

Function: A table in a DB

Method

Basic

readTable(): Read the contents of the file NAME.db, and return as a Table

writeTable(): Write the contents of TABLE into the file NAME.db

findColumn

add(): add row to a table

print()

selectcolumn()

one column

several columns

Select(): return table

Extend

Sort(): order the sequence of rows in a table

One column

Several columns

■ Row&Column Module

• Row

- Function: describes a single row of a table
- Method: equals()

• Column

- Function: efficient index of a row list
- Method: column(): Selects column according to the name from a row of one of the given TABLES

CommandInterpreter Module



■ Condition & Tokenizer & DBException Module

• Condition

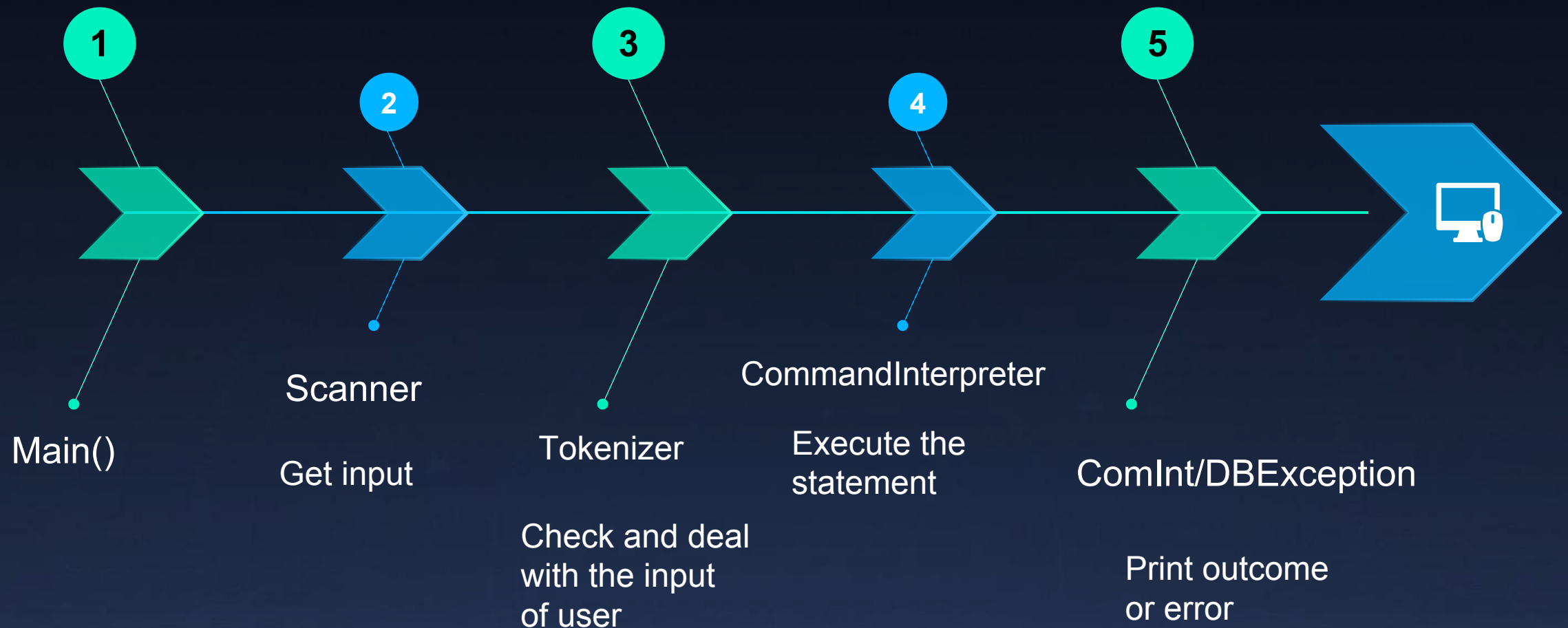
- Function: Check whether rows are satisfied all condition
- Method: test()

• Tokenizer

- Function: read command from a given Scanner

• DBException

Program Running Steps



PART THREE

Basic Test

Basic Tests

Print table
after loading

Omit
comments in
expressions

Basic select
from where

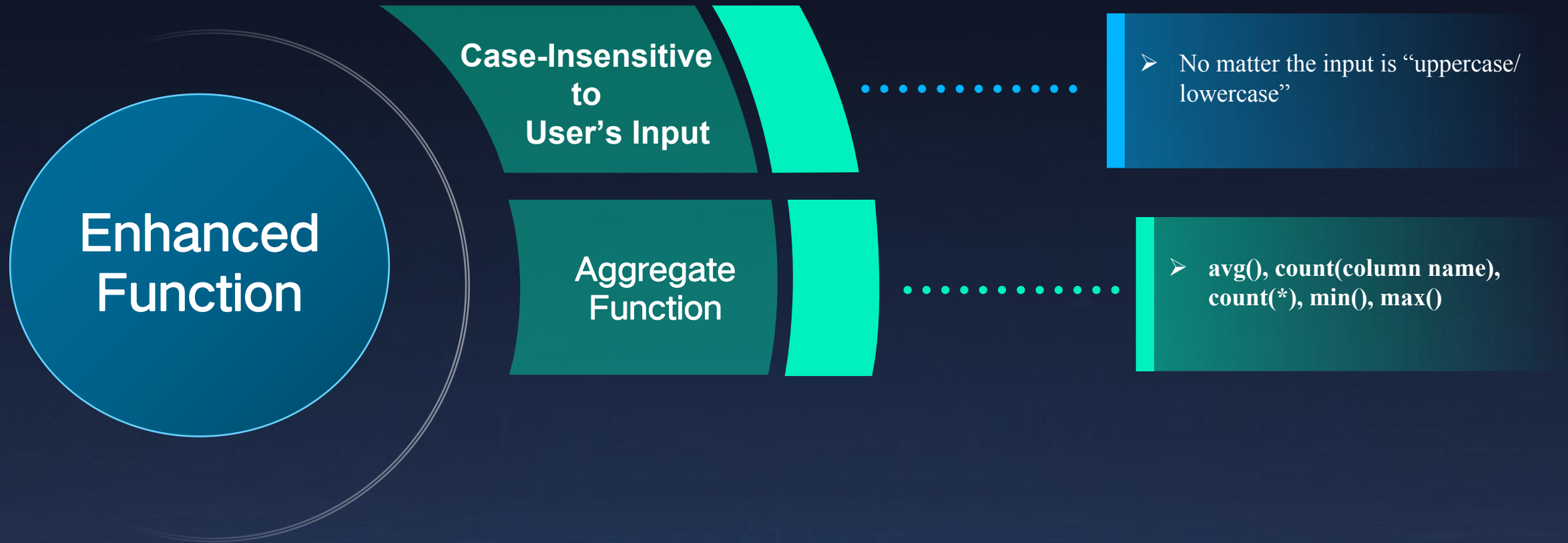
Join two
tables

Create table
from select
clause

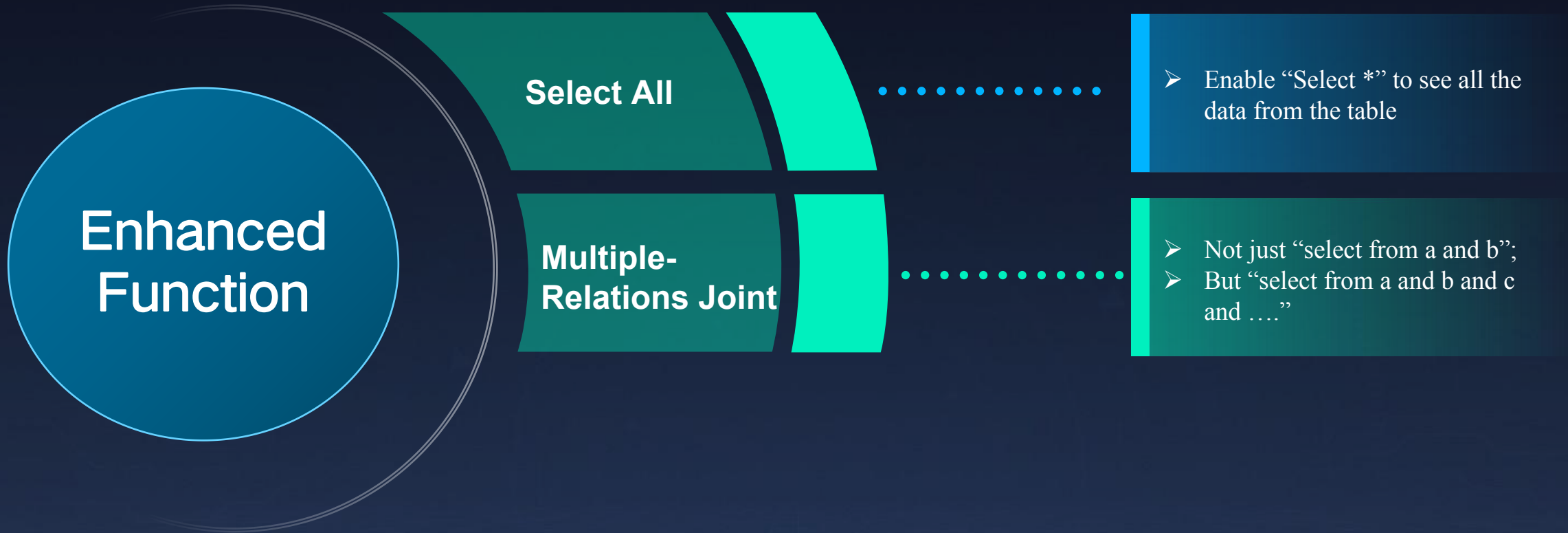
PART FOUR

Enhanced Test

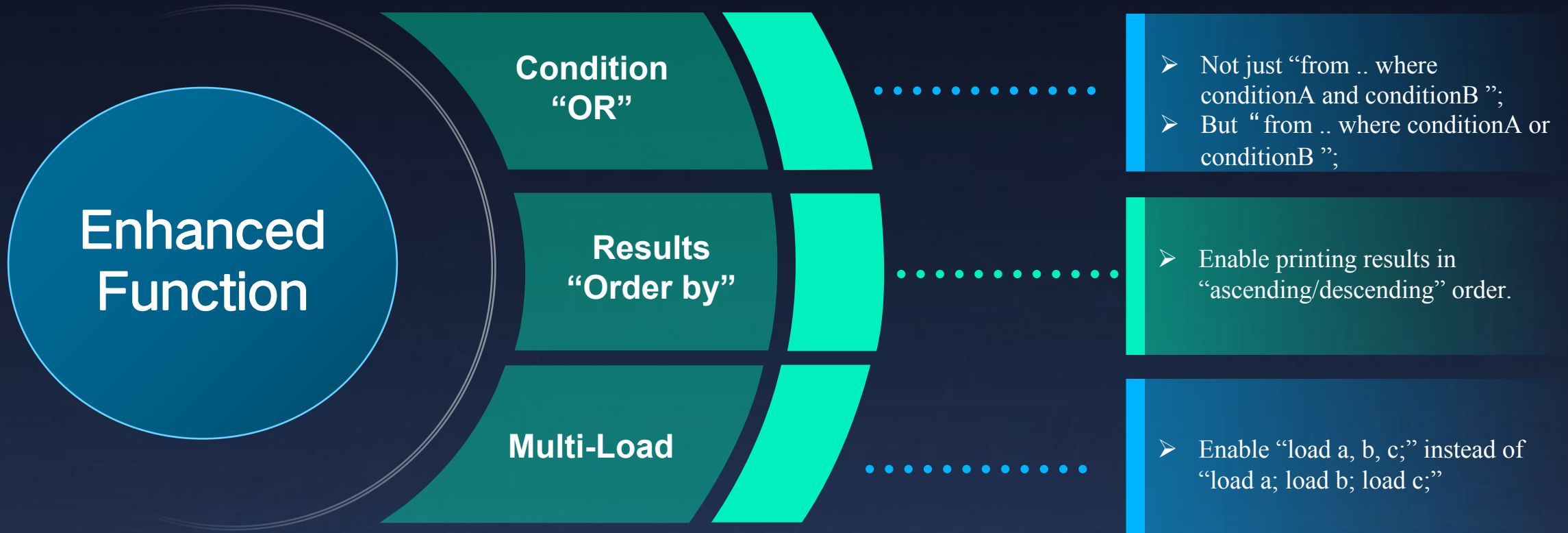
Enhanced Test



Enhanced Test



Enhanced Test



THANKS

