

# New Scenarios for Database Design

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# GeneXus

Program Generator for Data Oriented Applications

Multi  
language

- C#, Java, Ruby, etc.

Multi  
DBMS

- Oracle, SQL Server, DB2, MySQL, etc.

# GeneXus Database Specific Features

## Automatic database normalization

- Designers just focus on 'user views'

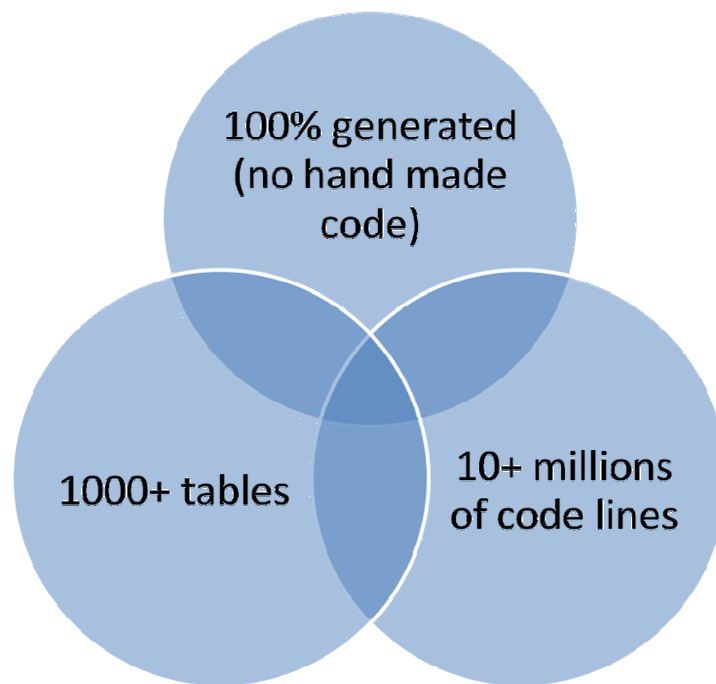
## Support for complex schema changes

- Programs for moving data are automatically generated

## Automatic inference of complex SQL sentences

- Ex: GeneXus knows how to join tables

# GeneXus Typical Application



# Traditional Scenario for Database Design

A corporation developing an in-house database

# New Scenario

A software house selling a package to multiple customers

# New needs

Customization

Semi structured data

Data Traceability/Time based data

Implementation of new versions

Interoperability with existing databases

## Problem: customization / semi structured data

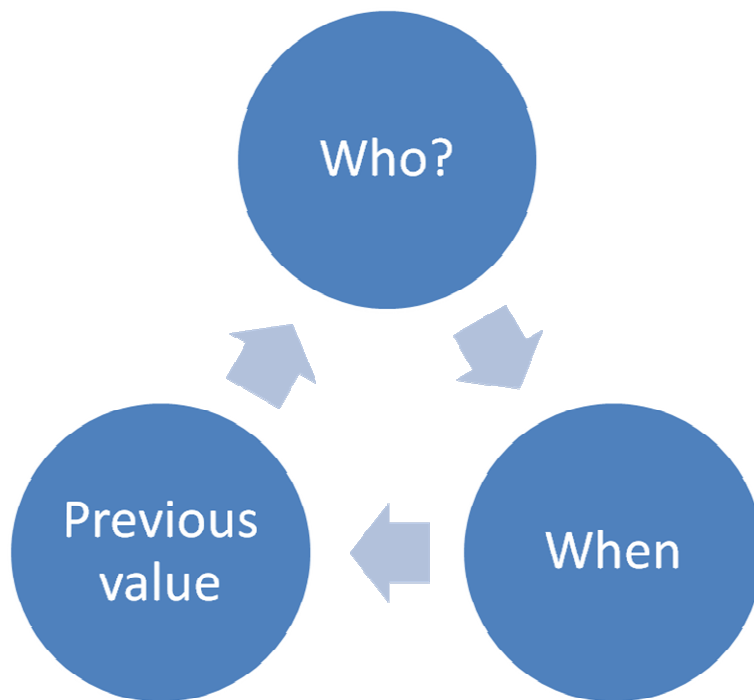
- Current solution: Object/Attribute/Value tables

CustomerId	CustomerName
1	John
2	Tony Pacheco

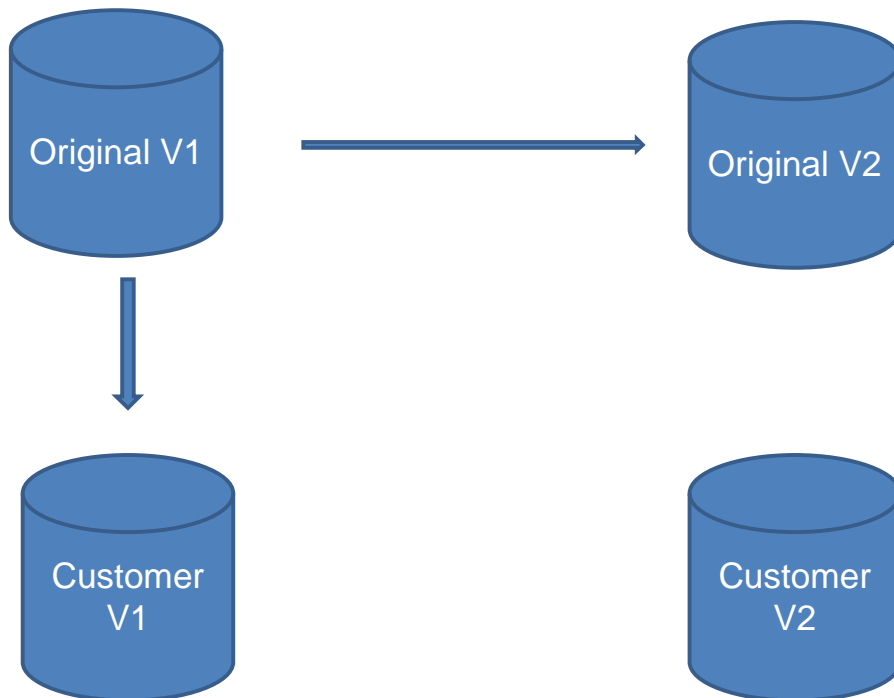
CustomerId	CustomerAttribu	CustomerValue
1	Eyes color	blue
2	Eyes color	brown
2	Soccer team	Penarol



# Data Traceability/Time based data



# Problem: new package versions



# Problem: interop with existing database

- Current: Entity Aggregation pattern

EmployeeId	EmployeeName
1	John Smith
2	Tony Pacheco



ISVEmployeeId	CustomerEmployee	ISVEmployeeNam	ISVEmployeeSalar
9	1	John Smith	60000
20	2	Tony Pacheco	75000