<epam>

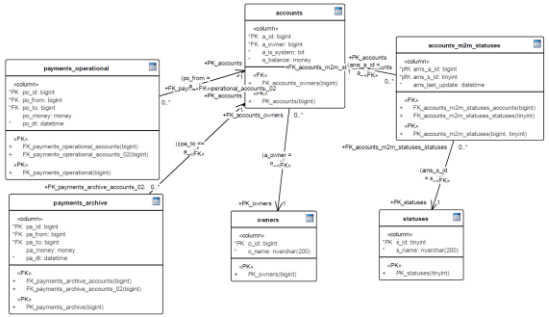
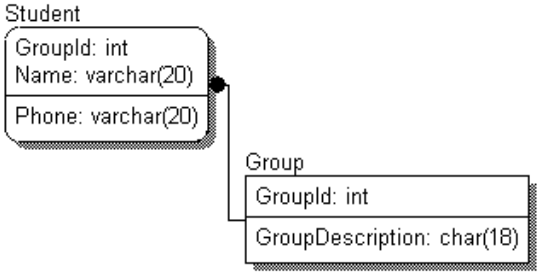
Physical Modelling Techniques and Tools

Relational Databases Basics

TRAINING
CENTER

<epam>

Physical level: representation types

Level		UML	IDEF1X
Logical	Conceptual (infological)		
	Logical (datalogical)		
Physical		Any other approach	
		This level representation highly depends on DBMS type, DBMS itself, goal to achieve and so on…	

Necessary knowledge

You really need!	At least…
Deep relational theory understanding	Basic relational theory understanding
Deep normalization understanding	Basic understanding of 1-3 normal forms
Deep SQL understanding	Basic SQL understanding
Deep knowledge of selected DBMS	Basic knowledge of selected DBMS
Deep modelling tool knowledge	Basic modelling tool knowledge
Some DevOps skills	Basic DevOps skills

All the techniques are similar to Datalogical modelling. Only tools differ…

Specific tools for each DBMS

- MySQL Workbench
- SQL Server Management Studio
- SQL Developer Data Modeler
- ...

Good for both common settings and specific settings!

Universal tools

- Sparx Enterprise Architect
- DbSchema
- DbDiagram.io
- ...

Good for most common settings, usually allow “workarounds” for specific settings.

Quick cheat-sheet

What	When to start thinking	When to finish implementing	Tools	General advice
Access permissions	Infological modelling	Production phase	SQL-scripts, DevOps tools	Use “type 2” for complex cases
Encodings	Infological modelling	Acceptance testing phase	Datalogical modelling tool	Set encodings explicitly!
Storage engines	Datalogical modelling	Acceptance testing phase	Datalogical modelling tool	Set storage engines explicitly!
Indexes	Datalogical modelling	Never	Datalogical modelling tool, SQL-scripts, performance testing tools	Use performance analysis tools
DB/DBMS settings	Datalogical modelling	Never	SQL-scripts, DevOps tools	Think carefully! ☺

<epam>

Physical Modelling Techniques and Tools

Relational Databases Basics

TRAINING
CENTER

<epam>