

embarcadero®

# Delphi Academy

Dicas rápidas, truques e técnicas



## Delphi CE

### Iniciando com Aplicações de Banco de Dados

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# AGENDA

- Bancos Relacional X Não-Relacional
- Client/Server X Flat-File X Embedded
- Visão Geral de Frameworks Disponíveis
  - FIREDAC Multi-Device Data Accesss Library
  - Plataformas e bancos suportados
- Controles Data Aware X LiveBindings
- Exemplos

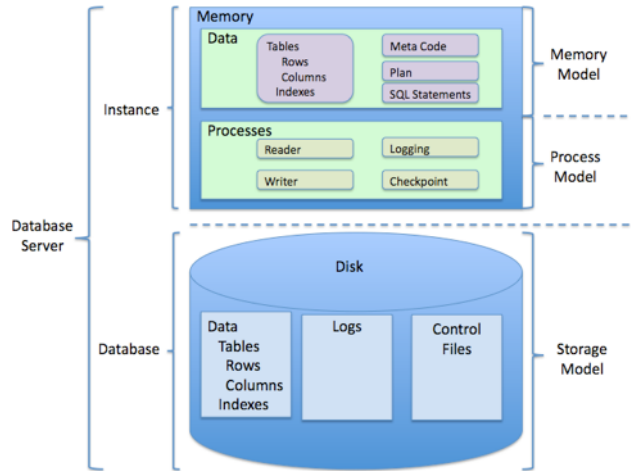
# BANCOS DE DADOS RELACIONAIS

- Baseado na teoria dos conjuntos
  - [https://pt.wikipedia.org/wiki/Teoria\\_dos\\_conjuntos](https://pt.wikipedia.org/wiki/Teoria_dos_conjuntos)
- Armazena dados em Tabelas, compostas por colunas (atributos) e linhas (tuplas ou registros)
- Dados são manipulados via SQL
  - <https://www.w3schools.com/sql/default.asp>
  - <https://www.codecademy.com/learn/learn-sql>
- Implementam o conceito ACID
  - Atomicidade, Consistência, Isolamento, Durabilidade

# BANCOS DE DADOS NÃO-RELACIONAIS

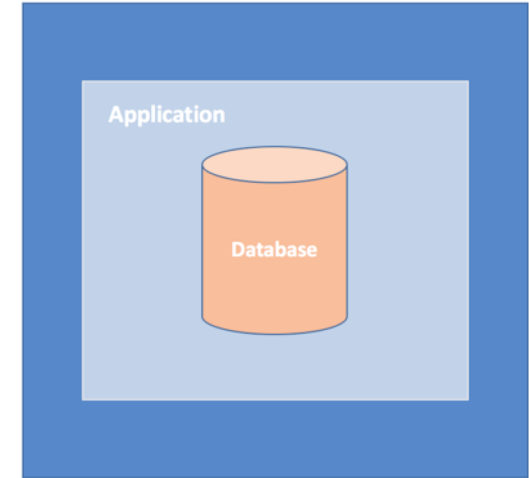
- Ideal para dados que não podem ser facilmente tabulados
- Não requer esquema previamente definido
- Altamente escalável
- Ausência de linguagem comum para acesso
- Diferentes padrões de armazenamento (graph-based, document-oriented, column-oriented, key-value)
- <https://www.bmc.com/blogs/sql-vs-nosql/>
- <https://db-engines.com/en/ranking>

# CLIENT/SERVER X FLAT-FILE X EMBEDDED



Flat File Model

	Route No.	Miles	Activity
Record 1	I-95	12	Overlay
Record 2	I-495	05	Patching
Record 3	SR-301	33	Crack seal



- [https://en.wikipedia.org/wiki/Client-server\\_model](https://en.wikipedia.org/wiki/Client-server_model)
- [https://en.wikipedia.org/wiki/Flat-file\\_database](https://en.wikipedia.org/wiki/Flat-file_database)
- [https://en.wikipedia.org/wiki/Embedded\\_database](https://en.wikipedia.org/wiki/Embedded_database)

# VISÃO GERAL DE FRAMEWORKS DISPONÍVEIS

- **BDE** = migrar para FireDAC
  - **DBX** = permanecer / migrar para FireDAC
  - **IBX** = focado em Interbase
  - **ADO (dbGo)** = focado em SQL Server, funciona com outros
  - **Terceiros:** ZeosLib, SynDB, UniDAC, RedisClient, Marshmallow
- 
- <http://zeoslib.sourceforge.net/index.php>
  - <https://synopse.info/fossil/wiki/Synopse+OpenSource>
  - <https://github.com/danieleteti/delphiredisclient>
  - <https://bitbucket.org/soundvibe/marshmallow/wiki/Home>
  - <https://www.devart.com/unidac/>

# FIREDAC MULTI-DEVICE DATA ACCESS LIBRARY















- Tudo sobre FireDAC no Delphi Academy:
  - Acesso a Dados com FireDAC
  - Migrando de BDE e DBX para FireDAC
  - FireDAC Cached Updates e Campos Auto-Inc
  - FireDAC TFDMemTable - DataSets em Memória
  - FireDAC Tracing e Monitoring
  - FireDAC Local SQL Cache
  - FireDAC em Aplicações Mobile
  - FireDAC e Interbase Change Views
  - <http://embt.co/AcademyBR>
- <http://docwiki.embarcadero.com/RADStudio/Tokyo/en/FireDAC>

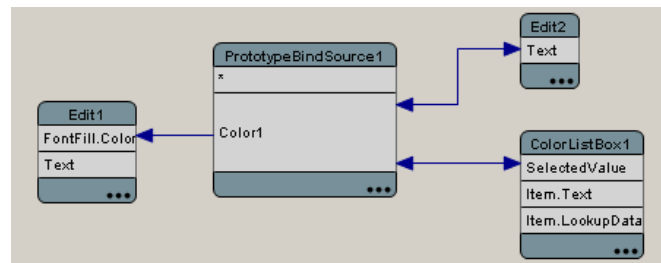
# PLATAFORMAS E BANCOS SUPORTADOS VIA FIREDAC

- Windows, MacOS, iOS, Android, Linux (somente Enterprise)
- **Edições Community/Professional**
  - Bancos de dados locais: Microsoft Access, SQLite, MariaDB, InterBase, Advantage Database, PostgreSQL, Firebird
  - Bancos de dados embutidos: IBLite e SQLite
- **Edições Enterprise+**
  - Todos do CE/Pro e mais MySQL, MariaDB, Microsoft SQL Server, Oracle Database, InterBase, PostgreSQL, Informix, Sybase SQL Anywhere, Microsoft Access, IBM DB2 Server, Firebird, Advantage Database, generic ODBC driver



# CONTROLES DATA AWARE X LIVEBINDINGS

Control	Description
 Vcl.DBGrids.TDBGrid	TDBGrid displays and manipulates records from a dataset in a tabular grid.
 Vcl.DBCtrls.TDBNavigator	TDBNavigator is used to move through the data in a dataset and perform operations on the data, such as inserting a blank record or posting a record.
 Vcl.DBCtrls.TDBText	TDBText represents a data-aware control that displays the value of a field on a form.
 Vcl.DBCtrls.TDBEdit	TDBEdit represents a single-line edit control that can display and edit a field in a dataset.
 Vcl.DBCtrls.TDBMemo	TDBMemo represents a multiline edit control that can display and edit a field in a dataset.
 Vcl.DBCtrls.TDBImage	TDBImage represents a graphic image from a BLOB (binary large object) field of the current record of a dataset.
 Vcl.DBCtrls.TDBListBox	TDBListBox represents a data-aware list box that allows users to change field values by selecting an item from a list.
 Vcl.DBCtrls.TDBComboBox	TDBComboBox represents a data-aware combo box control.
 Vcl.DBCtrls.TDBCheckBox	TDBCheckBox is a data-aware control that allows the user to select or deselect a single value.
 Vcl.DBCtrls.TDBRadioGroup	TDBRadioGroup represents a group of radio buttons connected to a database.
 Vcl.DBCtrls.TDBLookupListBox	TDBLookupListBox provides a list of lookup items for filling in fields that require data from another dataset.
 Vcl.DBCtrls.TDBLookupComboBox	TDBLookupComboBox represents a combo box that identifies a set of field values in one dataset with a corresponding set of values from another dataset.
 Vcl.DBCtrls.TDBRichEdit	TDBRichEdit represents a multiline edit control that can display and edit a rich text memo field in a dataset.
 Vcl.DBGrids.TDBCtrlGrid	TDBCtrlGrid displays records from a data source in a free-form layout.



- [http://docwiki.embarcadero.com/RADStudio/Tokyo/en/Data\\_Controls](http://docwiki.embarcadero.com/RADStudio/Tokyo/en/Data_Controls)
- [http://docwiki.embarcadero.com/RADStudio/Tokyo/en/LiveBindings\\_in\\_RAD\\_Studio](http://docwiki.embarcadero.com/RADStudio/Tokyo/en/LiveBindings_in_RAD_Studio)

DEMOS

# RECURSOS ADICIONAIS

- [http://docwiki.embarcadero.com/RADStudio/Tokyo/en/Developing Database Applications](http://docwiki.embarcadero.com/RADStudio/Tokyo/en/Developing_Database_Applications)
- [http://docwiki.embarcadero.com/RADStudio/Tokyo/en/Database and LiveBindings Tutorials](http://docwiki.embarcadero.com/RADStudio/Tokyo/en/Database_and_LiveBindings_Tutorials)
- [http://docwiki.embarcadero.com/RADStudio/Tokyo/en/Using data controls Index](http://docwiki.embarcadero.com/RADStudio/Tokyo/en/Using_data_controls_Index)
- <https://github.com/FrOsT-Brutal/awesome-delphi>
- <http://delphiparainiciantes.com.br/>

# OBRIGADO!

## Perguntas?

Você pode me encontrar em:

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Siga-nos em

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