



DATABASE ADMINISTRATION

DATABASE SERVERS

DBMS

2021

General Topics

- Database Systems **Architecture**
 - *What ... are we talking about?*
- **Physical Database Design** and Optimization principles
 - *How ... to proceed? What we can do about performance?*
- **Transactions** and concurrency
 - Database servers – *multi-user, multi-tenant* environment.
- **Backup&Recovery**. Security and availability
 - What and how we can control? How we can recover lost data?

*Some other database system options

- ◆ Versioning: Oracle flashback query.
- ◆ Distributed databases.
- ◆ Events (EDA): Oracle CQN (Continuous Query Notification).
- ◆ Auto-management, scheduling.
- ◆ Web (XML/HTTP) Integration: Oracle XDB Server.
- ◆ OS direct integration: interactions with file systems and security systems...

Evaluation

1. Course Quiz Test – 25%, individual
2. Project – 75%, teamwork
 - a. Initial physical design and implementation
 - b. SQL Query Optimization
 - c. Security Test Case + Backup&Recovery scenarios