



**Information  
Integration  
Systems**

**Sisteme de  
Integrare  
Informațională  
EVP Plan**

*SDBIS & SIA 2025*

# Assessment CRITERIA

- EVP Criteria 75%
  - Project: Federated Database Architecture
  - Project: Integrated Data Services Architecture
- Examen Test Quiz 25%

# EVP. Practical Project (team) 75%

- Project Specs:
  - Team: max 3 members
  - Business Integration Model Composition:
    - Data Sources (heterogeneous): min 3, recommendation:
      - 2 SQL.DS(ORCL+PG),
      - 1 NoSQL.DS, 1 Document.DS
    - Analytical Queries/Views: min 3
    - Web Views
      - REST Web API
      - (bonus) Web Views (HTML/JS)

# EVP. Practical Project (team)

- Integration Strategies to implement
  - FDB Project: Federated Database System Architecture
    - L1..L5 FDB Architectural Models
    - L6 FDB Project Assessment
  - DSA Project: Integrated Data Services Architecture
    - L7..L11 DSA Architectural Models
    - L12 DSA Project Assessment

# EVP. Practical Project (team)

- Architectural Models for Integration
  - Data Access Model
  - Integration and Analytical Model
  - Web Model (REST/UIX)

# Distributed Data Sources

## Heterogeneous Access Protocol

Access Protocol	SQL Data Sources	NoSQL Data Sources	Document Data Sources
ODBC (Federated DB Connector)	ORCL DBLink		
JDBC	ORCL OJDBC	Neo4J JDBC Driver	
Local File System			Excel Access API
REST/HTTP	PG PostgREST	MongoDB RestHeart	
FTP (Remote File System)			FTP Client Excel Access API
SQL Client		MongoDB Java Client	

# Plan Laborator: Team Project

Theme	Obs
L1. Design Integration case study (integrated data model) - team project	
L2. Federated Database Architecture (FDB Oracle). Access Model: SQL data sources and structured documents (JSON, XML, XLS)	
L3. FDB Oracle. Access Model: NoSQL data sources	
L4. FDB Oracle. Integration and Analytical Processing Model: Oracle SQL ROLAP	
L5. FDB Oracle. Web Integration Model: Oracle APEX ORDS	
L6. FDB Projects Assessments	

# Plan Laborator: Team Project

Theme	Obs
L7. Data Service Architecture (DSA). Access Model: Access Model: SQL data sources and structured documents (JSON, XML, XLS)	
L8. DSA. Access Model: Access Model: NoSQL Data Sources	
L9. DSA. Integration and Analytical Processing Model: Spring Boot data service orchestration with Spring Cloud	
L10. DSA. Integration and Analytical Processing Model: SparkSQL	
L11. DSA: REST Web API	
L12. FDB Projects Assessments	



# Tools and Frameworks

- Docker Engine (Desktop)
- Oracle Database XE 18/21, PG Database etc.
- Oracle SQL Developer, PG Admin, DBeaver
- PL/SQL Libraries: Standard UTL\_HTTP, ExcelTable Library
- Java IDE: IntelliJ with Spring Module (Eclipse Spring ToolSuite)
- JDK 17, JDK 21
- SpringBoot and SpringCloud Framework and Runtime (maven)
- SparkSQL Framework and Runtime (maven)