**1. Initial Setup**

Am creat un container nou folosind Rancher Desktop, denumit davax-db, pe care a rulat o instanta de Oracle XE. Ulterior, am configurat trei conexiuni in SQL Developer:

* DavaX – conexiune administrativa pentru crearea utilizatorilor si a containerului de baze de date.
* DavaX\_Source – conexiune pe utilizatorul Source, unde am definit toate tabelele sursa (schema Source).
* DavaX\_Target – conexiune pe utilizatorul Target, unde am definit toate tabelele tinta (schema Target).

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Din conexiunea DavaX am deschis un sql worksheet, ca sa pot crea userii Source si Target (cu tot cu parole) si le-am acordat toate privilegiile.   
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**2. Tabele si importuri in Source**

In schema Source, am creat urmatoarele 6 tabele:

* SRC\_DEPARTAMENT
* SRC\_ANGAJAT
* SRC\_PONTAJ
* SRC\_ATTENDANCE
* SRC\_ABSENCES
* SRC\_EXAM\_ABSENCES

Pentru fiecare tabel a fost creat cate un trigger care inregistreaza metadatele fiecarui set de date importat:

* loading\_timestamp – momentul incarcarii
* dataset\_nume – denumirea setului de date (ex: week\_1, exam\_absences etc.)

Importul fisierelor s-a realizat folosind SQL Developer Wizard:

* Timesheet – seturi de date mock-uite pentru departamente, angajati si pontaje
* Attendance – date reale exportate din Microsoft Teams, convertite in UTF-8 Comma-delimited CSV
* Absences – fisiere simulate pentru concedii medicale/odihna
* Exam Absences – fisiere in format matrice, convertite in format tabular folosind Power Query si operatia Unpivot
* SRC\_DEPARTAMENT

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* SRC\_ANGAJAT

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* SRC\_PONTAJ

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* SRC\_ATTENDANCE

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* SRC\_ABSENCES

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* SRC\_EXAM\_ABSENCES

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Trigger pentru metadate  
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**3. Tabele in Target**

In schema Target, am creat cate un tabel pentru fiecare entitate din Source:

* TGT\_DEPARTAMENT
* TGT\_ANGAJAT
* TGT\_PONTAJ
* TGT\_ATTENDANCE
* TGT\_ABSENCES
* TGT\_EXAM\_ABSENCES

Fiecare tabel contine trigger propriu pentru generarea automata de metadate (loading\_timestamp, dataset\_nume) exact ca in schema Source.

**4. ETL in Python**

Am scris cate un script Python pentru fiecare tabel din Source, folosind biblioteca **cx\_Oracle** pentru conectare si **pandas** pentru transformari:

* etl\_src\_to\_tgt\_departament.py
* etl\_src\_to\_tgt\_angajat.py
* etl\_src\_to\_tgt\_pontaj.py
* etl\_src\_to\_tgt\_attendance.py
* etl\_src\_to\_tgt\_absences.py
* etl\_src\_to\_tgt\_exam\_absences.py

Transformarile efectuate:

* Curatare de date (spatii, duplicari, valori lipsa)
* Standardizare format (gen, nume, email)
* Conversii intre text si numeric (ex: ore lucrate din VARCHAR2 in NUMBER sau INTERVAL)
* Incarcare finala in tabelele din Target

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**5. View-uri pentru interogare**

Ulterior, dupa ce am reusit sa populez toate tabelele din Target cu ajutorul Python, am create 2 View-uri

* VW\_EMPLOYEE\_HISTORY – create pe baza tabelelor TGT\_ANGAJAT, TGT\_PONTAJ, TGT\_ATTENDANCE, TGT\_ABSENCES, TGT\_EXAM\_ABSENCES
* VW\_EMPLOYEE\_UPDATE – pe baza tabelelor TGT\_DEPARTAMENT si TGT\_ANGAJAT

**View: VW\_EMPLOYEE\_UPDATE**

Scop: ofera o imagine actualizata a starii fiecarui angajat.

**Contine:**

* id\_angajat, nume\_complet, email, gen, functie, salariu, status, departament, data\_angajare

**Utilizare:**

* Vizualizarea angajatilor activi
* Filtrare dupa gen, functie, salariu sau departament
* Rapoarte de tip payroll sau administrative

**View: VW\_EMPLOYEE\_HISTORY**

Scop: ofera traseul istoric al activitatilor si evenimentelor angajatilor.

**Evenimente:**

* PONTAJ – ore lucrate
* ABSENTA – concedii medicale/odihna
* EXAMEN – lipsa motivata pentru examen
* PREZENTA – participare la cursuri / training

**Utilizare:**

* Vizualizare istoric per angajat
* Calcul ore lucrate (cu conversii HH:MM:SS in minute)
* Rapoarte agregate pe luna, saptamana sau sesiune

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**6. Query-uri rulate pe View-uri**

Si, in final, am rulat cateva query-uri pe baza celor 2 view-uri create.

Exemple de interogari pe view-uri:

* SELECT \* FROM VW\_EMPLOYEE\_UPDATE WHERE status = 'ACTIV';
* SELECT \* FROM VW\_EMPLOYEE\_HISTORY WHERE INITCAP(nume) = 'Tiberiu Gabriel Suditu' ORDER BY data\_eveniment;
* SELECT nume, SUM(...) AS total\_ore FROM VW\_EMPLOYEE\_HISTORY WHERE tip\_eveniment = 'PONTAJ';  
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