NSHURO ARNAUD NELLIGAN

27960

PHASE V

PHASE V — Physical Database Implementation (DDL Scripts)

Objective:

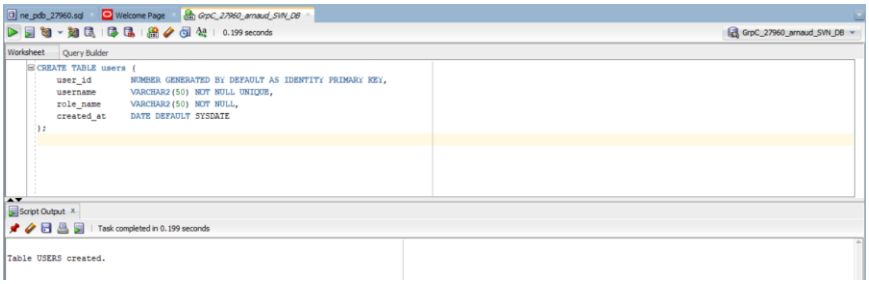
Convert the Phase 3 logical model into a physical Oracle database design using DDL scripts. Implement all entities, constraints, indexes, sequences, triggers (empty stubs), and auditing structures.

1. Physical Tables (DDL)

Below are the **full table creation scripts** based on your Security Violation Notifier project.

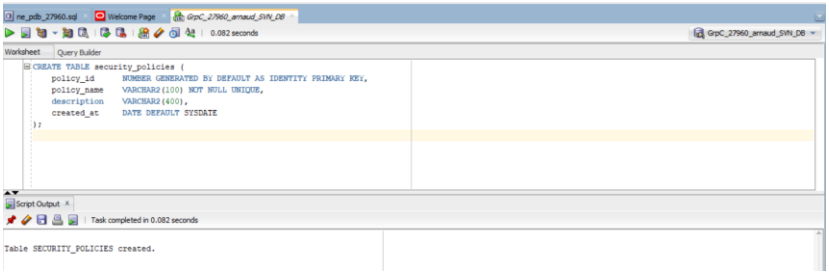
- **USERS Table**

Stores registered database users whose actions are being monitored.



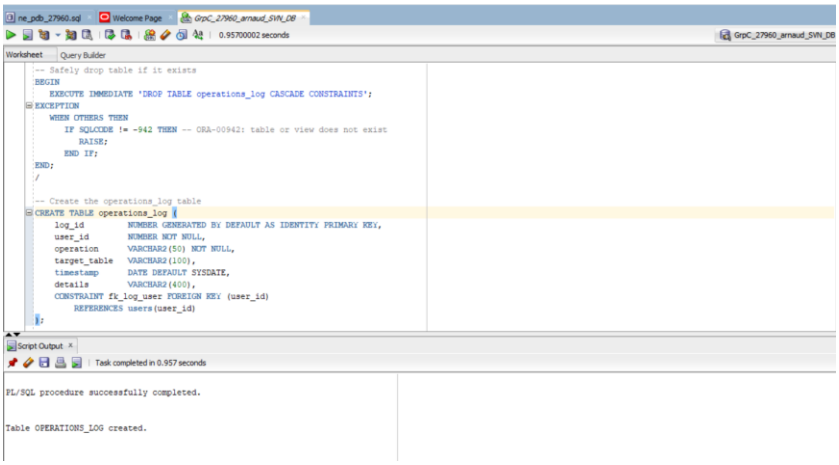
- **SECURITY_POLICIES Table**

Defines rules describing what is allowed and not allowed.



- **OPERATIONS_LOG Table**

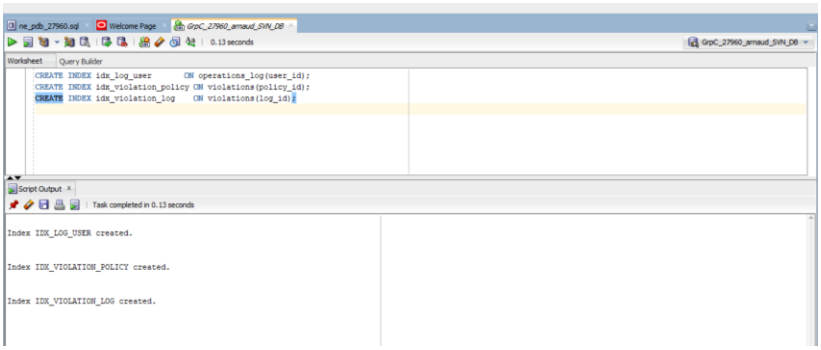
  Stores every monitored action (for auditing and BI).



- **VIOLATIONS Table**

Stores only *actual violations* detected by triggers.

2. Indexes



3. BI Considerations Integration

- Operations_Log → fact table (high volume)
- Users & Policies → dimension tables

- Violations → fact table with severity metrics
- Timestamps → support time-based analytics (daily, hourly)
- Possible SCD Type-2 on USERS (if roles change)

4. Constraints Summary

- PKs: All tables have a primary key.-
- FKs: Strong referential integrity between logs, users, and policies.
- UNIQUE: usernames, policy names.
- CHECK: status IN ('UNRESOLVED', 'RESOLVED').

5. Normalization

- 1NF: No repeating groups or multi-valued attributes.
- 2NF: All non-key attributes depend on full PK.
- 3NF: No transitive dependencies