



## Database Implementation Coding Process

At the end of the database design process, the deliverable passed to the database implementation coding process is a database create DDL script for a particular DBMS. This script will create the tables of the database but this script does not implement the non-data requirements necessary for the database interface, database logging, security, etc.

Using the database create DDL script as the specification, most of the DDL scripts required for database implementation can be generated automatically.

For the database implementation the tasks are:

**Task 1** – Clean up the database by removing the previous version of the database from the DBMS. The scripts to remove the existing database from the DBMS are:

- The drop the synonym script
- The drop the triggers script
- The drop the tables script
- The drop the cursor function script
- The drop the create procedure script
- The drop the read procedure script
- The drop the update procedure script
- The drop the delete procedure script
- The drop the undelete procedure script

**Task 2** – Execute the database table DDL script to create the new database within the DBMS.

**Task 3** – The third step in implementing the database is to create two triggers for each table in the database:

- The insert trigger that updates the record metadata when a new record is created.
- The update trigger that updates the record metadata when an existing record is changed.

**Task 4** – Create six table interface stored procedures using DDL scripts. These scripts

- enhance security – no SQL hacking is possible.
- Enhance performance – better response time.
- Encapsulate the database requirements by implementing
  - the error handling compliance
  - the access logging compliance
  - the change logging compliance
  - the authorization compliance
  - the table security compliance
  - the column security compliance
  - the row security compliance.

The required interface procedure scripts are:

- Read a set of records
- Create a record
- Read a record
- Update a record
- Delete a record
- Undelete a record

The single table interface scripts can be generated using the information available in the database create DDL script

**Task 5** – The database is now ready to receive data. The fifth step is to create scripts that load the default table records into each table. The scripts load the unknown data record and system default data record into each table in the database.

**Task 6** – The database is now ready for use. This step grants the users access to the database. The access granted depends on the database environment: application development, application testing, production, or production backup. The default access for all users is no database access. The following scripts change this default access:

- Script to grant table read access
- Script to grant table write access
- Script to grant procedure execute access

**Task 7** – As the application programmers use the database and specify the business objects, create the six interface scripts for each business object. The interface scripts for the application business objects depend on how the mapping between the business object and the logical database tables is documented. These scripts may need to be individually programmed.