# Oracle Architecture Cheat Sheet

A no-BS guide to understanding how Oracle's architecture fits together.

## 📦 Oracle Database Structure Overview

📦 CDB (Container Database)  
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├── 🧩 PDB1 (Pluggable DB: XEPDB1)  
│ ├── 👤 SCHEMA: MAGNUS  
│ ├── 👤 SCHEMA: CORY  
│ ├── 📁 TABLESPACE: USERS  
│ └── 📁 TABLESPACE: TEMP  
│  
├── 🧩 PDB$SEED (Template PDB)  
└── 🧩 PDB2 (Optional, more DBs)

## 1. 🧱 CDB (Container Database)

- The top-level Oracle instance (the whole system)  
- Hosts PDBs, Oracle metadata, internal objects  
- You shouldn’t store application data here

## 2. 🧩 PDB (Pluggable Database)

- Self-contained database inside the CDB  
- Where you create users and store app data (like XEPDB1)  
- Use this for day-to-day SQL work and schemas

## 3. 👤 Schema = User Who Owns Objects

- A schema is created when you create a user  
- That user/schema owns tables, views, sequences, etc.  
- Schemas live inside a PDB

## 4. 📁 Tablespace = Storage Folder

- Logical container for storing actual table/index data  
- Not tied to one user  
- Users need quota (or UNLIMITED TABLESPACE) to use one

## 5. 👥 Common User vs Local User

- Common User: Starts with C##, exists across all PDBs, lives in CDB$ROOT  
- Local User: Regular user, only exists in one PDB (like CORY or MAGNUS)  
- Always create local users inside your working PDB

## 🎯 How They All Connect

|  |  |  |
| --- | --- | --- |
| Concept | Lives Inside | Used For... |
| User/Schema | A PDB | Creating & owning tables/views/etc. |
| Tablespace | A PDB | Physically storing the table data |
| PDB | The CDB | Hosting schemas, real workspaces |
| CDB | The whole DB system | Central management, Oracle internals |
| Common User | The CDB | System-wide DBA or cross-PDB accounts |
| Local User | A PDB | Real users that work with data |

## 🧠 TL;DR — Remember This

- Always work inside a PDB (like XEPDB1)  
- Create local users inside that PDB  
- Grant them quota or UNLIMITED TABLESPACE to store data  
- Don’t create tables or users in CDB$ROOT or ADB$ROOT  
- Use SYS\_CONTEXT('USERENV', 'CON\_NAME') to check where you are