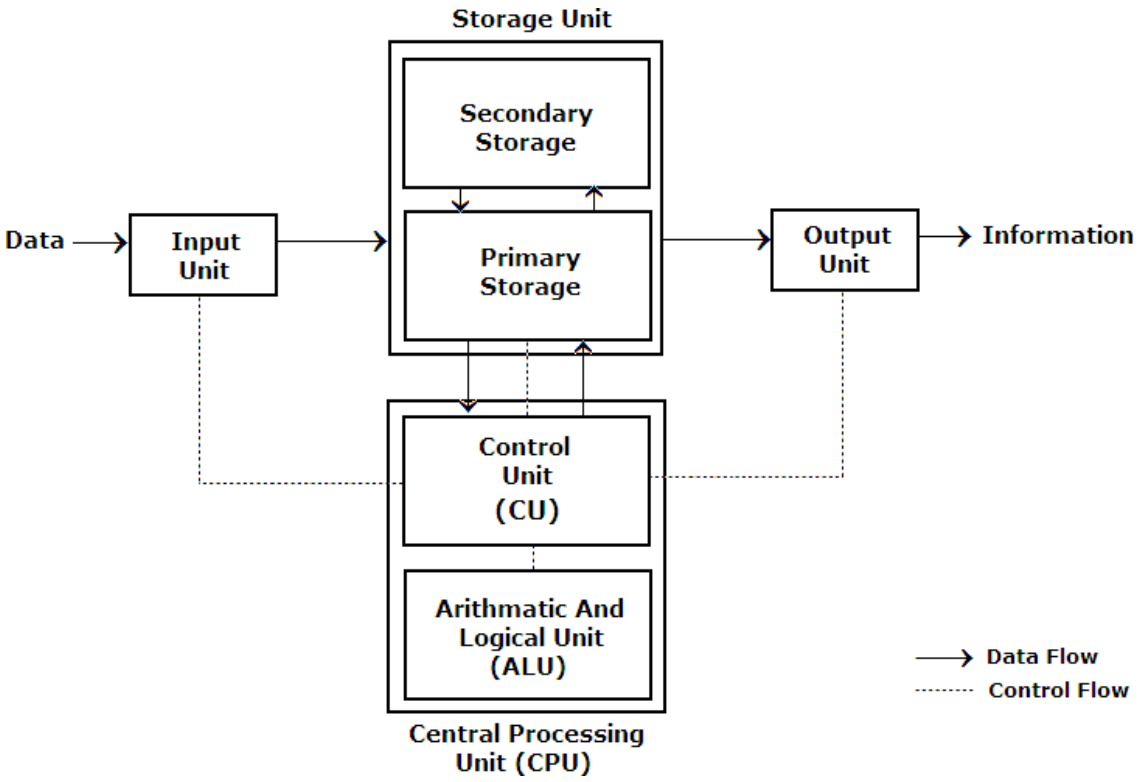
AIM: INTRODUCTION TO ORACLE ARCHITECTURE

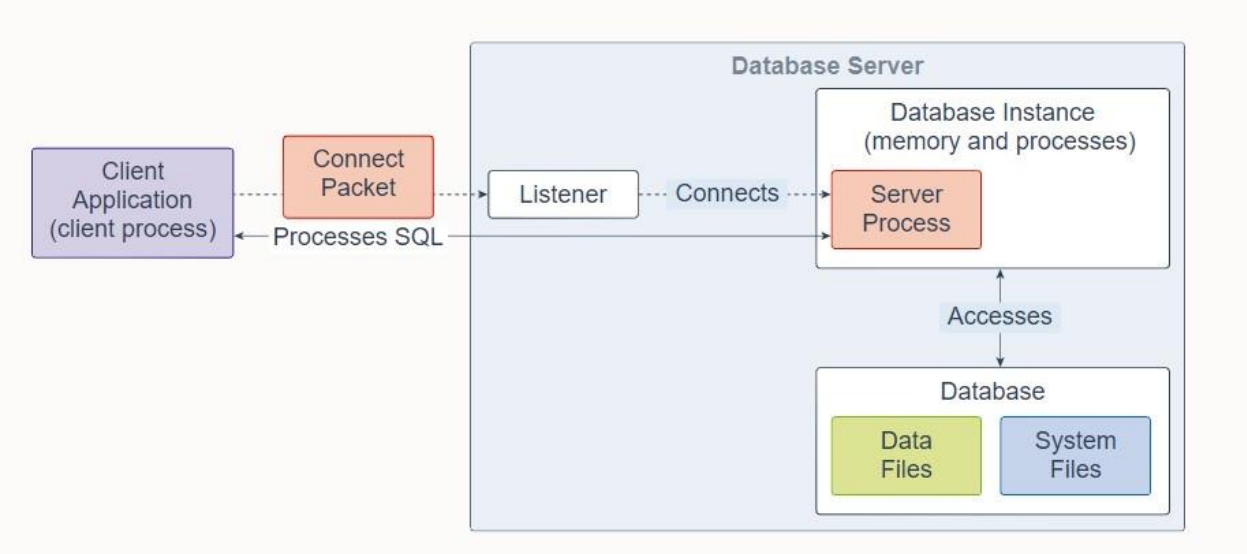
Computer Architecture: Computer architecture is a set of rules and methods that describe the functionality, organization, and implementation of computer system Some definitions of architecture define it as describing the capabilities and programming model of a computer but not a particular implementation.



- **ORACLE ARCHITECTURE:**

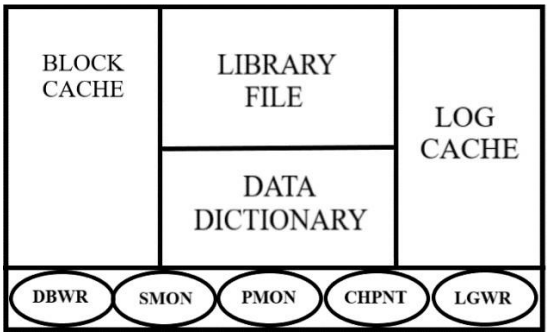
  An Oracle Real Application Clusters (Oracle RAC) database architecture consist of multiple instances that run on separate server machines. All of them share the same database. The cluster of server machines appears as a single server on one end, and end users and applications on the other end.

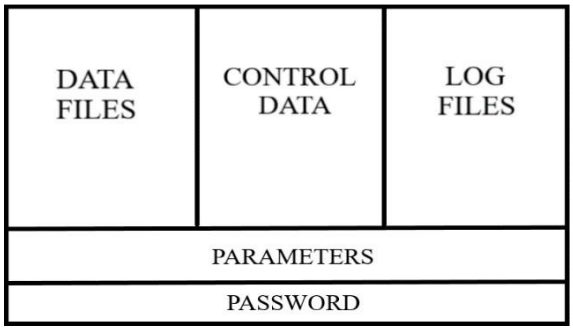
An Oracle Database consists of at least one database instance and one database. The database instance handles memory and processes. The database consists of physical files called data files, and can be a non-container database or a multitenant container database. An Oracle Database also uses several database system files during its operation.



A single-instance database architecture consists of one database instance and one database. A one-to-one relationship exists between the database and the database instance. Multiple single-instance databases can be installed on the same server machine. There are separate database instances for each database. This configuration is useful to run different versions of Oracle Database on the same machine.

An Oracle Real Application Clusters (Oracle RAC) database architecture consists of multiple instances that run on separate server machines. All of them share the same database. The cluster of server machines appears as a single server on one end, and end users and applications on the other end. This configuration is designed for high availability, scalability, and high-end performance.





COMPONENTS OF STORAGE IN ORACLE ARCHITECTURE:

Data File : All tables and relationships between the tables is stored here.
Control Data : All the System files are stored.
Log files : All logs are stored here.
Parameters : Values of various parameters like block size are stored here.
Password : Password of all users are stored here.

COMPONENTS OF MEMORY IN ORACLE ARCHITECTURE:

Block cache : Data retrieved from files is stored here.
Library files : All commands and Syntax are stored here for verification.
Data dictionary : Meta data is stored here.
Log cache : Log of all operation is stored here before data is commited.
Checkpoint: It syncronises LGWR and DBWR.
DBWR (Database Writer) : It fetches data from data files & writes it to block cache.
SMON (System monitor) : It monitors the system.
PMON (Process Monitor) : It monitors ongoing processes.
LGWR (Log Writer) : It fetches log from log cache & writes it to log files after data is committed.

CONCLUSION

In this Practical I learnt about Oracle Architecture