

Day Wise Agenda – Structure Query Language (SQL)

| Day | Topic | Sub Topic |
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| Day 1 | Introduction | ✓ DATA, DATABASE, OBJECTS & RDBMS. |
| Day 2 | Overview of various Oracle Versions | ✓ Differences – (What is 'l', 'g' and 'c') |
| Day 3 | Oracle Database Installation | ✓ Overview of Oracle Tool's for Execution of SQL |
| Day 4,5 | Overview of Oracle Multitenant Architecture | <ul style="list-style-type: none"> ✓ Container Database – (CDB) ✓ Pluggable Database – (PDB's) ✓ Creating a TNS entry for connecting to a PDB. (Net Service Name Creation) |
| Day 6 | Overview of SQLPLUS Command's | <ul style="list-style-type: none"> ✓ CONNECT, DISCONNECT, DESCRIBE, SET, SPOOL, START...etc. ✓ SQL and SQLPLUS - Scripting Usage and Examples |
| Day 7 | Overview of SQL Statement's | <ul style="list-style-type: none"> ✓ Data Manipulation Language - DML ✓ Data Definition Language - DDL ✓ Date Control Language - DCL ✓ Transaction Control - TC |
| Day 8,9 | Retrieving Data Using the SQL SELECT Statement (Projection) | <ul style="list-style-type: none"> ✓ SELECT clause – (Distinct, Alias, Arithmetic Expressions, Concatenation, Literals etc.) ✓ FROM clause – (Use of Special Table Called – Dual) |
| Day 10, 11, 12 | Restricting and Sorting Data (Selection) | <ul style="list-style-type: none"> ✓ WHERE clause –(Comparison Operators, Logical Operators and Rules of Precedence) ✓ ORDER BY clause – Ascending or Descending Orders - (Columns, Numeric Position, Alias, Expression, Nulls First & Nulls Last) ✓ ROW LIMITING clause (aka OFFSET FETCH clause) ✓ Substitution Variables (&,&&) – Define , Undefine, SET Verify |
| Day 13, 14, 15 | Using Single Row Functions to Customize Output | <ul style="list-style-type: none"> ✓ Character Functions - Input Arguments Supported By Single Row Function <ul style="list-style-type: none"> ○ Case Conversion – (UPPER,LOWER,INITCAP) ○ Character Manipulation – (SUBSTR, INSTR, LENGTH, REPLACE, TRIM, RPAD, LPAD...) ✓ Number Functions – (ROUND,TRUNC,MOD,FLOOR,CEIL,SIGN,ABS,SQRT & POWER) ✓ Date Functions – (SYSDATE, MONTHS_BETWEEN, ADD_MONTHS, NEXT_DAY...etc.) |
| Day 16,17 | Using Conversion Functions and Conditional Expressions | <ul style="list-style-type: none"> ✓ Conversion Functions – (TO_CHAR,TO_DATE & TO_NUMBER) ✓ General Functions – (NLV,NLV2,NULLIF & COALESCE) ✓ Conditional Expressions – (CASE & DECODE Functions) |
| Day 18 | Assessments Test 1 – Online MCQ Test | Test on topic covered in first 17 days |
| Day 19,20 | Reporting Aggregated Data Using the Group or Multi-Row or Aggregate Functions. | <ul style="list-style-type: none"> ✓ SUM,AVG,COUNT,MAX,MIN,VARIANCE,STDDEV,LISTAGG & MEDIAN ✓ GROUP BY clause & HAVING clause. |
| Day 21, 22, 23 , 24 , 25 | Displaying Data From Multiple Tables Using Joins | <ul style="list-style-type: none"> ✓ Inner Join – (Equi-Join or Simple Join) ✓ Outer Join – (Left, Right & Full) ✓ Self-Join ✓ Non Equi-Join ✓ Cross Join or Cartesian Product |
| Day 26, 27, 28 | Using Subqueries To Solve Queries | <ul style="list-style-type: none"> ✓ Scalar, Pair Wise, Non-Pair Wise, Single Row, Multi Row – Subqueries ✓ Group Functions in Subqueries, Subqueries in Having Clause and Null value in Subqueries |
| Day 29 | Using Set Operators | ✓ UNION, UNION ALL, INTERSECT & MINUS |
| Day 30 | Presentation: | One Presentation on the assigned topic. |
| Day 31 | Assessments Test 2 – Online MCQ Test | Test on topic covered days 19 to 29. |
| Day 32, 33, 34, 35, 36, 37 | Data Control Language (DCL) & Controlling User Access | <ul style="list-style-type: none"> ✓ Creating A USER, Default Tablespace & Quota ✓ Granting Privileges to User or Role (System or Object Privileges) |

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| | | <ul style="list-style-type: none"> ✓ Revoking Privileges to User or Role (System or Object Privileges) ✓ Managing Roles |
| Day 38, 39, 40, 41, 42, 43, 45, 46 | Introduction to Data Definition Language - DDL | <ul style="list-style-type: none"> ✓ CREATE, ALTER, DROP, TRUNCATE, RENAME & COMMENT ✓ Constraints – (Not Null, Primary Key, Unique, Foreign Key & Check) ✓ Creating Table Using Subqueries – (CTAS), Creating Virtual Columns and Invisible Columns. |
| Day 47, 48, 49 | Managing Tables Using DML Statements, Locks, Deadlocks & For Update Clause. | <ul style="list-style-type: none"> ✓ INSERT, UPDATE, DELETE & MERGE ✓ SHUTDOWN MODES - NORMAL, TRANSACTIONAL, IMMEDIATE and ABORT |
| Day 50 | Control Transactions – TC | <ul style="list-style-type: none"> ✓ Commit, Savepoint & Rollback. |
| Day 51, 52, 53, 54, 55, 56 | Managing Other Schema Objects | <ul style="list-style-type: none"> ✓ Views, Sequences, Indexes, Synonyms, Temporary Tables (GTT PTT), External Tables & Directories. |
| Day 57 | Assessments Test 3 – Online MCQ Test | Test on topic covered days 32 to 56. |
| Day 58, 59, 60 | Flashback Technologies | <ul style="list-style-type: none"> ✓ Flashback Table, Flashback Drop, Flashback Query & Flashback Version Query. |
| Day 61 | Managing Objects with Data Dictionary Views. | <ul style="list-style-type: none"> ✓ USER_CONSTRAINTS, USER_CONS_COLUMNS, USER_CATALOG, USER_TABLES ... etc. |
| Day 62 | Manipulating Large Data Sets | <ul style="list-style-type: none"> ✓ Multi-table INSERT Statements |
| Day 63, 64, 65, 66 | Using Advance Subqueries | <ul style="list-style-type: none"> ✓ Correlated Subqueries ✓ Correlated Update & Delete. ✓ Subqueries using EXISTS and NOT EXISTS Operators ✓ WITH clause –(Containing Set of Subqueries) & Recursive WITH clause ✓ Subqueries in FROM clause –(Inline Views) |
| Day 67, 68, 69, 70, 71, 72 | Managing Data in Different Time Zones | <ul style="list-style-type: none"> ✓ Time Zones, TIME_ZONE session parameter, CURRENT_DATE, DBTIMEZONE, SESSIONTIMEZONE, TIMESTAMP Data Types, TIMESTAMP Fields, Difference Between DATE and TIMESTAMP, Comparing TIMESTAMP Data Types ✓ INTERVAL Data Types, INTERVAL Fields, INTERVAL YEAR TO MONTH, INTERVAL DAY TO SECOND data types ✓ EXTRACT, TZ_OFFSET, FROM_TZ, TO_TIMESTAMP, TO_YMINTERVAL, TO_DSINTERVAL, DST |
| Day 73 | E-R Diagram's or Model | <ul style="list-style-type: none"> ✓ Entity, Relationship, Attribute |
| Day 74, 75, 76 | Database Keys & Introduction to Normalization or Normal Forms | <ul style="list-style-type: none"> ✓ First Normal Form, Second Normal Form, Third Normal Form, BCNF, Fourth Normal Form. |
| Day 78 | Final Assessments 1 | Mock Exam of SQL I |
| Day 79 | Final Assessments 2 | Mock Exam of SQL II |
| Day 80 | Final Assessments 3 | Mock Exam of SQL III |
| Day 81 | Final Assessments 4 | Mock Exam of SQL IV |
| Day 82 | Final Assessments 5 | Mock Exam of SQL V |
| Day 83 | Final Assessments 6 | Mock Exam of SQL VI |
| Day 84 | Final Assessments 7 | Mock Exam of SQL VII |
| Day 85, 86, 87,88,89,90 | Exam Preparation | Doubt Session, Discussions on Mock Exam |

Note: Assignments or Practise Session are provided or conducted in class as and when required.

Schedules are approximately calculated. Actual schedule may vary as per learner's ability.

Average course duration will take approximately 90 classes. Excluding holidays.