

- COURSE CODE:** ORAIND
- COURSE TITLE:** Oracle Indexes Demystified
- CURRENCY:** 10g & 11g
- AUDIENCE:** Database administrators, system administrators and performance analysts
- PREREQUISITES:** Working knowledge of Oracle architecture, processes and schema objects
- DURATION:** 1 day
- SUMMARY:** This course discusses all of the Oracle index options:
- B*tree
 - Bitmap
 - Hash
 - Partitioned
 - Index clustered table
 - Etc.
- in the following contexts:
- Structure and organisation
 - How to choose
 - Column selectivity
 - Maintenance
 - Performance
 - Monitoring
 - OLTP vs. data warehousing
- OBJECTIVES:** Upon completion of this presentation, the delegate should be able to choose amongst index options so as to optimise processing in OLTP and data warehousing environments.

1. USAGE CONSIDERATIONS

- Sort avoidance
- Index-only access
- Efficient row(s) access
- Unique constraint enforcement
- Primary key enforcement
- Partitioning
- Internal organisation
- Key compression
- Choice of indexed column(s)
- Advantages/disadvantages

2. INDEX OPTIONS – WHEN TO USE

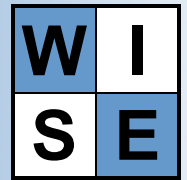
- B*tree
- Bitmap
- Bitmap join
- Index-organised tables
- Function based
- Hash clustered
- Reverse key
- Local
- Global
- Cluster

3. INDEX MANAGEMENT

- Create indexes before or after loads
- Index blocksize and free space
- Index sizing
- Index physical placement
- Index rebuilding and coalescing
- 'Online' index creation
- Index ALTERation
- PCTFREE/PCTUSED
- Reorg strategies
- Monitoring (e.g., unused indexes)

4. INDEX TUNING & GOOD PRACTICES

- Compression
- No-logging option



5. ORACLE B*TREE INDEX PHYSICAL PROPERTIES

- Structure
- Trace Dumps
- Block Dump
- Clock header
- Branch header
- Leaf header
- Leaf entries
- Index updates
- Index statistics
- Clustering factors, etc.
- Freespace controls
- Index splits
- Delete management
- Fragmentation
- Index rebuilds scenarios
- Selectivity
- Index coalesce