MANAGING INDEXES
(Cap. 12)

1) Crearea unui index de tip B-Tree

```
SQL>  CREATE INDEX scott.emp_name_idx
          ON scott.emp(ename)
          PCTFREE 30
          STORAGE(INITIAL 200K NEXT 200K
          PCTINCREASE 0 MAXEXTENTS 50)
          TABLESPACE bd_data;
```

2) Crearea unui index de tip BITMAP

```
SQL>  CREATE  BITMAP INDEX scott.dept_name_idx
          ON scott.dept(dname)
          PCTFREE 30
          STORAGE(INITIAL 200K NEXT 200K
          PCTINCREASE 0 MAXEXTENTS 50)
          TABLESPACE   bd_data;
```

3) Modificarea parametrilor unui index

```
SQL> ALTER INDEX scott.emp_name_idx
          STORAGE(NEXT 400K
          MAXEXTENTS 100);
```

4) Alocarea unei extensii pentru un index de tip B-Tree

```
SQL> ALTER INDEX emp_name_idx
          ALLOCATE EXTENT (SIZE 200K
          DATAFILE  'e:/DISK6/indx01.dbf')
```

5) Eliberarea spatiului nealocat pentru un index de tip B-Tree

```
SQL> ALTER INDEX emp_name_idx
    DEALLOCATE UNUSED;
```

6) Mutarea unui index in alt tablespace

```
SQL> ALTER INDEX emp_name_idx REBUILD
    TABLESPACE SYSTEM;
```

7) Defragmentarea blocurilor unui index

```
SQL> ALTER INDEX emp_name_idx COALESCE;
```

8) Informatii din dictionar despre indecsi

SQL> desc dba_indexes

Name	Null?	Type
OWNER	NOT NULL	VARCHAR2(30)
INDEX_NAME	NOT NULL	VARCHAR2(30)
INDEX_TYPE		VARCHAR2(27)
TABLE_OWNER	NOT NULL	VARCHAR2(30)
TABLE_NAME	NOT NULL	VARCHAR2(30)
TABLE_TYPE		VARCHAR2(11)
UNIQUENESS		VARCHAR2(9)
COMPRESSION		VARCHAR2(8)
PREFIX_LENGTH		NUMBER
TABLESPACE_NAME		VARCHAR2(30)
INI_TRANS		NUMBER
MAX_TRANS		NUMBER
INITIAL_EXTENT		NUMBER
NEXT_EXTENT		NUMBER
MIN_EXTENTS		NUMBER
MAX_EXTENTS		NUMBER
PCT_INCREASE		NUMBER
PCT_THRESHOLD		NUMBER
INCLUDE_COLUMN		NUMBER
FREELISTS		NUMBER
FREELIST_GROUPS		NUMBER
PCT_FREE		NUMBER
LOGGING		VARCHAR2(3)
BLEVEL		NUMBER
LEAF_BLOCKS		NUMBER
DISTINCT_KEYS		NUMBER
AVG_LEAF_BLOCKS_PER_KEY		NUMBER
AVG_DATA_BLOCKS_PER_KEY		NUMBER
CLUSTERING_FACTOR		NUMBER
STATUS		VARCHAR2(8)
NUM_ROWS		NUMBER
SAMPLE_SIZE		NUMBER
LAST_ANALYZED		DATE
DEGREE		VARCHAR2(40)
INSTANCES		VARCHAR2(40)
PARTITIONED		VARCHAR2(3)
TEMPORARY		VARCHAR2(1)
GENERATED		VARCHAR2(1)
SECONDARY		VARCHAR2(1)
BUFFER_POOL		VARCHAR2(7)

USER_STATS	VARCHAR2(3)
DURATION	VARCHAR2(15)
PCT_DIRECT_ACCESS	NUMBER
ITYP_OWNER	VARCHAR2(30)
ITYP_NAME	VARCHAR2(30)
PARAMETERS	VARCHAR2(1000)
GLOBAL_STATS	VARCHAR2(3)
DOMIDX_STATUS	VARCHAR2(12)
DOMIDX_OPSTATUS	VARCHAR2(6)
FUNCIDX_STATUS	VARCHAR2(8)
JOIN_INDEX	VARCHAR2(3)

```
SQL>  SELECT  index_name, index_type, table_name, status from dba_indexes
          where owner='SCOTT' ;
```

INDEX_NAME	INDEX_TYPE	TABLE_NAME	STATUS
DECIZII_PRIM	NORMAL	DECIZII	VALID
DEPT_NAME_IDX	BITMAP	DEPT	VALID
EMP_NAME_IDX	NORMAL	EMP	VALID
PK_DEPT	NORMAL	DEPT	VALID
PK_EMP	NORMAL	EMP	VALID
PK_FUN	NORMAL	FUNCTII1	VALID
PK_INT	NORMAL	INTRARI_GESTIUNE	VALID
PK_STOC	NORMAL	STOCURI	VALID

9) Informatii din dictionar despre coloanele indecsilor

```
SQL> desc dba_ind_columns
```

Name	Null?	Type
INDEX_OWNER	NOT NULL	VARCHAR2(30)
INDEX_NAME	NOT NULL	VARCHAR2(30)
TABLE_OWNER	NOT NULL	VARCHAR2(30)
TABLE_NAME	NOT NULL	VARCHAR2(30)
COLUMN_NAME		VARCHAR2(4000)
COLUMN_POSITION	NOT NULL	NUMBER
COLUMN_LENGTH	NOT NULL	NUMBER
CHAR_LENGTH		NUMBER
DESCEND		VARCHAR2(4)

```
SQL> SELECT  index_name, table_owner, table_name, column_name
        from dba_ind_columns
        where index_owner='SCOTT'
```

INDEX_NAME	TABLE_OWNER	TABLE_NAME	COLUMN_NAME
DEPT_NAME_IDX	SCOTT	DEPT	DNAME
EMPNAME_IDX	SCOTT	EMP	ENAME
PK_COMP	SCOTT	COMPONENTE	COD_COMP
PK_COMP	SCOTT	COMPONENTE	PRET
PK_DEPT	SCOTT	DEPT	DEPTNO
PK_EMP	SCOTT	EMP	EMPNO
PK_INT	SCOTT	INTRARI_GESTIUNE	NR_DOC_IN
PK_INT	SCOTT	INTRARI_GESTIUNE	DATA_DOC_IN
PK_INT	SCOTT	INTRARI_GESTIUNE	COD_PRODUS
PK_INT	SCOTT	INTRARI_GESTIUNE	COD_UM
PK_STOC	SCOTT	STOCURI	COD_COMP
PK_STOC	SCOTT	STOCURI	PRET
PK_STOC	SCOTT	STOCURI	DATA_STOC

10) Startarea si stoparea monitorizarii unui index

```
SQL> ALTER INDEX emp_name_idx
       MONITORING USAGE

SQL> ALTER INDEX emp_name_idx
       NOMONITORING USAGE
```

11) Informatii din dictionar despre indecsii monitorizati

```
SQL> desc v$object_usage
```

Name	Null?	Type
INDEX_NAME	NOT NULL	VARCHAR2(30)
TABLE_NAME	NOT NULL	VARCHAR2(30)
MONITORING		VARCHAR2(3)
USED		VARCHAR2(3)
START_MONITORING		VARCHAR2(19)
END_MONITORING		VARCHAR2(19)

```
SQL> select * from v$object_usage;
```

INDEX_NAME	TABLE_NAME	MON	USE	START_MONITORING	END_MONITORING
EMPNAME_IDX	EMP	NO	NO	12/07/2008 15:38:30	12/07/2008 15:41:26

12) Startarea analizei structurii unui index (se populeaza view-ul INDEX_STATS cu informatii despre index)

```
SQL>   ANALYZE INDEX emp_name_idx VALIDATE STRUCTURE
```

13) Informatii din dictionar despre starea indecsilor

```
SQL> desc index_stats
 Name                           Null?    Type
 ------------------------------ -------- ----
 HEIGHT                                  NUMBER
 BLOCKS                                  NUMBER
 NAME                                    VARCHAR2(30)
 PARTITION_NAME                          VARCHAR2(30)
 LF_ROWS                                 NUMBER
 LF_BLKS                                 NUMBER
 LF_ROWS_LEN                             NUMBER
 LF_BLK_LEN                              NUMBER
 BR_ROWS                                 NUMBER
 BR_BLKS                                 NUMBER
 BR_ROWS_LEN                             NUMBER
 BR_BLK_LEN                              NUMBER
 DEL_LF_ROWS                             NUMBER
 DEL_LF_ROWS_LEN                         NUMBER
 DISTINCT_KEYS                           NUMBER
 MOST_REPEATED_KEY                       NUMBER
 BTREE_SPACE                             NUMBER
 USED_SPACE                              NUMBER
 PCT_USED                                NUMBER
 ROWS_PER_KEY                            NUMBER
 BLKS_GETS_PER_ACCESS                    NUMBER
 PRE_ROWS                                NUMBER
 PRE_ROWS_LEN                            NUMBER
 OPT_CMPR_COUNT                          NUMBER
 OPT_CMPR_PCTSAVE                        NUMBER
```

```
SQL> SELECT name, blocks, used_space, pct_used,
                distinct_keys,lf_rows, del_lf_rows
        FROM index_stats ;
```

NAME	BLOCKS	USED_SPACE	PCT_USED	DISTINCT_KEYS	LF_ROWS	DEL_LF_ROWS
EMPNAME_IDX	32	409	6	23	23	0

14) Stergerea unui index din dictionar

```
SQL>   DROP INDEX emp_name_idx ;
```