DATABASE LOGICAL STRUCTURE

(Cap. 4)

Every running Oracle database is associated with an Oracle instance. When a database is started on a database server (regardless of the type of computer), Oracle allocates a memory area called the System Global Area (SGA) and starts one or more Oracle processes. This combination of the SGA and the Oracle processes is called an **Oracle instance**. The memory and processes of an instance manage the associated database's data efficiently and serve the one or multiple users of the database.

A) Oracle Database Logical Structure

A logical structure hierarchy exists as follows:

- An Oracle database contains at least one tablespace.
- A tablespace contains one or more segments.
- A segment is made up of extents.
- An extent is made up of logical blocks.
- A block is the smallest unit for read and write operations.

The Oracle database architecture includes logical and physical structures database.

- The physical structure includes the control files, online redo log files, that make up the database.
- The logical structure includes tablespaces, segments, extents, and data.

The Oracle server enables fine-grained control of disk space use through logical storage structures, including segments, extents, and data blocks.

Tablespaces

The data in an Oracle database is stored in tablespaces.

- An Oracle database can be logically grouped into smaller logical areas of space known as tablespaces.
- A tablespace can belong to only one database at a time.
- Each tablespace consists of one or more operating system files, which are called data files.
- A tablespace may contain one or more segments.
- Tablespaces can be brought online while the database is running.
- Except for the `SYSTEM` tablespace or a tablespace with an active undo segment, tablespaces can be taken offline, leaving the database running.
- Tablespaces can be switched between read/write and read-only status.

Data Files (Not a logical structure)

- Each tablespace in an Oracle database consists of one or more files called data files.

These are physical structures that conform with the operating system on which the Oracle server is running.

- A data file can belong to only one tablespace.
- An Oracle server creates a data file for a tablespace by allocating the specified amount of disk space plus a small amount of overhead.
- The database administrator can change the size of a data file after its creation or can

specify that a data file should dynamically grow as objects in the tablespace grow.

Segments

- A segment is the space allocated for a specific logical storage structure within a tablespace.
- A tablespace may consist of one or more segments.
- A segment cannot span tablespaces; however, a segment can span multiple data files that belong to the same tablespace.
- Each segment is made up of one or more extents.

Extents

Space is allocated to a segment by extents.

- One or more extents make up a segment.

- When a segment is created, it consists of at least one extent.
- As the segment grows, extents are added to the segment.
- The DBA can manually add extents to a segment.

- An extent is a set of contiguous Oracle blocks.
- An extent cannot span data files, and therefore, it must exist in one datafile.

Data Blocks

The Oracle server manages the storage space in the data files in units called Oracle blocks or data blocks.

- At the finest level of granularity, the data in an Oracle database is stored in data blocks.
- Oracle data blocks are the smallest units of storage that the Oracle server can allocate, read, or write.
- One data block corresponds to one or more operating system blocks allocated from an existing data file.
- The standard data block size for an Oracle database is specified by the `DB_BLOCK_SIZE` initialization parameter when the database is created.
- The data block size should be a multiple of the operating system block size to avoid unnecessary I/O.
- The maximum data block size is dependent on the operating system.

B) Creating a Database Manually

- Create the initialization parameter file.

The initialization parameter file is created using the sample `init.ora` file installed during the installation process. Copy the sample `init.ora` and name it `initSID.ora`. Make modifications to the file specific to the needs of the database you will be creating. If an SPFILE is to be used, the PFILE must be created first. Refer to the “Managing an Oracle Instance” lesson for instructions on how to create a database specific `initSID.ora` file and an SPFILE.

- Start the instance in `NOMOUNT`.

Connect as user `SYS` with `SYSDBA` privilege. The database must be placed in the `NOMOUNT` state in order to create a database. Refer to the “Managing an Oracle Instance” lesson for directions on how to place the database in a `NOMOUNT` state.

- Create and execute the `CREATE DATABASE` command.
  - Create an SQL script that contains the `CREATE DATABASE` command. Connect to SQL*Plus as the `SYS` user with the `SYSDBA` privilege. With the database in `NOMOUNT` state, execute the script.
  - The `CREATE DATABASE` command will be dramatically simplified if the database being created is to use Oracle Managed Files (OMF) to manage the operating system files. Refer to the “Managing an Oracle Instance” lesson for information regarding OMF.
- Run scripts.
  - Two scripts `catalog.sql` and `catproc.sql` must be run after the database is created. Both scripts must be run as the user `SYS` with `SYSDBA` privilege. Before executing the scripts the database must be placed in the `OPEN` state.
  - `catalog.sql`: Creates the views on the base tables and on the dynamic performance views, and their synonyms. It starts other scripts that create objects for:
    - Basic PL/SQL environment, including declarations for PL/SQL data types, predefined exceptions, built-in procedures and functions, SQL operations
    - Auditing
    - Import/Export
    - SQL*Loader
    - Installed options

Examples:

1)

```
SQL> connect sys as sysdba
SQL> startup nomount
ORACLE instance started.
Total System Global Area 21790532 bytes
Fixed Size 278340 bytes
Variable Size 16777216 bytes
Database Buffers 4194304 bytes
Redo Buffers 540672 bytes

SQL> CREATE DATABASE db01
      LOGFILE
      GROUP 1 (’$HOME/ORADATA/u03/log_01_01_db01.rdo’) SIZE 1M,
      GROUP 2 (’$HOME/ORADATA/u03/log_02_01_db01.rdo’) SIZE 1M
      DATAFILE ’$HOME/ORADATA/u01/system_01_db01.dbf’ SIZE 1M
      AUTOEXTEND ON NEXT 5M MAXSIZE 150M
      DEFAULT TEMPORARY TABLESPACE temp
      TEMPFILE ’$HOME/ORADATA/u02/temp_01_db01.dbf’ SIZE 1M
      AUTOEXTEND ON NEXT 5M MAXSIZE 1M
      CHARACTER SET WE8ISO8859P1
      NATIONAL CHARACTER SET AL16UTF16
      /
```

Statement processed.

2)

```
SQL>  CREATE DATABASE user01
      USER SYS IDENTIFIED BY ORACLE
      USER SYSTEM IDENTIFIED BY MANAGER
      CONTROLFILE REUSE
      LOGFILE
      GROUP 1 ('E:/student/redo01.log') SIZE 100M,
      GROUP 2 ('E:/student/redo02.log') SIZE 100M,
      GROUP 3 ('E:/student/redo03.log') SIZE 100M
      MAXLOGFILES 5
      MAXLOGMEMBERS 5
      MAXLOGHISTORY 1
      MAXDATAFILES 100
      MAXINSTANCES 1
      ARCHIVELOG
      FORCE LOGGING
      CHARACTER SET US7ASCII
      NATIONAL CHARACTER SET AL16UTF16
      /
```

3)

```
SQL>  CREATE DATABASE DBA01
      LOGFILE
      GROUP 1 (’/$HOME/ORADATA/u01/redo01.log’) SIZE 100M,
      GROUP 2 (’/$HOME/ORADATA/u02/redo02.log’) SIZE 100M,
      MAXLOGFILES 5
      MAXLOGMEMBERS 5
      MAXLOGHISTORY 1
      MAXDATAFILES 100
      MAXINSTANCES 1
      DATAFILE ’/$HOME/ORADATA/u01/system01.dbf’ SIZE 325M
      UNDO TABLESPACE undotbs
      DATAFILE ’/$HOME/ORADATA/u02/undotbs01.dbf’ SIZE 200
      DEFAULT TEMPORARY TABLESPACE temp
      TEMPFILE ’/$HOME/ORADATA/u03/temp01.dbf’ SIZE 4M
      CHARACTER SET US7ASCII
      /
```

DATA BASE DICTIONARY

(Cap. 5)

1) Structura dictionarului de date:

```
SQL> desc dictionary
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 TABLE_NAME                                         VARCHAR2(30)
 COMMENTS                                           VARCHAR2(4000)

SQL> select table_name from dictionary where table_name like 'USER%';

TABLE_NAME
------------------------------
USER_INDEXES
USER_IND_COLUMNS
USER_IND_EXPRESSIONS
USER_JOIN_IND_COLUMNS
USER_OBJECTS
USER_PROCEDURES
USER_STORED_SETTINGS
USER_PLSQL_OBJECT_SETTINGS
USER_ARGUMENTS
USER_RESUMABLE
USER_ROLE_PRIVS
USER_SYS_PRIVS
USER_SEQUENCES
USER_SYNONYMS
USER_TABLES
USER_OBJECT_TABLES
USER_ALL_TABLES
USER_TAB_COLS
USER_TAB_COLUMNS
USER_NESTED_TABLE_COLS
USER_TAB_COL_STATISTICS
USER_TAB_HISTOGRAMS
USER_TAB_COMMENTS
USER_TAB_PRIVS
USER_TAB_PRIVS_MADE
USER_TAB_PRIVS_RECD
USER_USERS
USER_PROXIES
USER_VIEWS
USER_CONSTRAINTS
```

2) Toate tabelele din userul crt.

```
SQL> desc user_tables
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 TABLE_NAME                                NOT NULL VARCHAR2(30)
 TABLESPACE_NAME                                    VARCHAR2(30)
 CLUSTER_NAME                                       VARCHAR2(30)
 IOT_NAME                                           VARCHAR2(30)
 PCT_FREE                                           NUMBER
 PCT_USED                                           NUMBER
 INI_TRANS                                          NUMBER
 MAX_TRANS                                          NUMBER
 INITIAL_EXTENT                                     NUMBER
 NEXT_EXTENT                                        NUMBER
 MIN_EXTENTS                                        NUMBER
 MAX_EXTENTS                                        NUMBER
 PCT_INCREASE                                       NUMBER
 FREELISTS                                          NUMBER
 FREELIST_GROUPS                                    NUMBER
 LOGGING                                            VARCHAR2(3)
 BACKED_UP                                          VARCHAR2(1)
 NUM_ROWS                                           NUMBER
 BLOCKS                                             NUMBER
 EMPTY_BLOCKS                                       NUMBER
 AVG_SPACE                                          NUMBER
 CHAIN_CNT                                          NUMBER
 AVG_ROW_LEN                                        NUMBER
 AVG_SPACE_FREELIST_BLOCKS                          NUMBER
 NUM_FREELIST_BLOCKS                                NUMBER
 DEGREE                                             VARCHAR2(10)
 INSTANCES                                          VARCHAR2(10)
 CACHE                                              VARCHAR2(5)
 TABLE_LOCK                                         VARCHAR2(8)
 SAMPLE_SIZE                                        NUMBER
 LAST_ANALYZED                                      DATE
 PARTITIONED                                        VARCHAR2(3)
 IOT_TYPE                                           VARCHAR2(12)
 TEMPORARY                                          VARCHAR2(1)
 SECONDARY                                          VARCHAR2(1)
 NESTED                                             VARCHAR2(3)
 BUFFER_POOL                                        VARCHAR2(7)
 ROW_MOVEMENT                                       VARCHAR2(8)
 GLOBAL_STATS                                       VARCHAR2(3)
 USER_STATS                                         VARCHAR2(3)
 DURATION                                           VARCHAR2(15)
 SKIP_CORRUPT                                       VARCHAR2(8)
 MONITORING                                         VARCHAR2(3)
 CLUSTER_OWNER                                      VARCHAR2(30)
 DEPENDENCIES                                       VARCHAR2(8)

SQL> select table_name from user_tables;

TABLE_NAME
------------------------------
BONUS
DEPT
EMP
SALGRADE
```

3) Vizualizare obiectelor create de un user

```
SQL> desc user_objects
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 OBJECT_NAME                                        VARCHAR2(128)
 SUBOBJECT_NAME                                     VARCHAR2(30)
 OBJECT_ID                                          NUMBER
 DATA_OBJECT_ID                                     NUMBER
 OBJECT_TYPE                                        VARCHAR2(18)
 CREATED                                            DATE
 LAST_DDL_TIME                                      DATE
 TIMESTAMP                                          VARCHAR2(19)
 STATUS                                             VARCHAR2(7)
 TEMPORARY                                          VARCHAR2(1)
 GENERATED                                          VARCHAR2(1)
 SECONDARY                                          VARCHAR2(1)

SQL> select object_name from user_objects;

OBJECT_NAME
--------------------------------------------------------------------------------
BONUS
DEPT
EMP
SALGRADE
```

4) Adaugarea unei constrangeri pe o tabela

```
SQL> alter table dept add constraint deptno_pk primary key (deptno);

Table altered.
```

```
SQL> alter table emp add constraint emp_fk foreign key (deptno) references dept(deptno);

Table altered.

SQL> select object_name from user_objects;

OBJECT_NAME
--------------------------------------------
BONUS
DEPT
DEPTNO_PK
EMP
SALGRADE
```

5) Vizualizare toate constrangerile aferente userului curent

```
SQL> desc user_constraints
 Name                                      Null?    Type
 ----------------------------------------------------------------------------------------------
 OWNER                                     NOT NULL VARCHAR2(30)
 CONSTRAINT_NAME                           NOT NULL VARCHAR2(30)
 CONSTRAINT_TYPE                                    VARCHAR2(1)
 TABLE_NAME                                NOT NULL VARCHAR2(30)
 SEARCH_CONDITION                                   LONG
 R_OWNER                                            VARCHAR2(30)
 R_CONSTRAINT_NAME                                  VARCHAR2(30)
 DELETE_RULE                                        VARCHAR2(9)
 STATUS                                             VARCHAR2(8)
 DEFERRABLE                                         VARCHAR2(14)
 DEFERRED                                           VARCHAR2(9)
 VALIDATED                                          VARCHAR2(13)
 GENERATED                                          VARCHAR2(14)
 BAD                                                VARCHAR2(3)
 RELY                                               VARCHAR2(4)
 LAST_CHANGE                                        DATE
 INDEX_OWNER                                        VARCHAR2(30)
 INDEX_NAME                                         VARCHAR2(30)
 INVALID                                            VARCHAR2(7)
 VIEW_RELATED                                       VARCHAR2(14)

SQL> select owner,constraint_name,constraint_type, table_name from user_constraints;

OWNER                          CONSTRAINT_NAME                C TABLE_NAME
------------------------------ ------------------------------ - ------------------------------
UBD1                           DEPTNO_PK                      P DEPT
UBD1                           EMP_FK                         R EMP
```

6) Vizualizare structura tabelara

```
SQL> desc user_tab_columns
 Name                                                          Null?    Type
 ------------------------------------------------------------- -------- -------------
 TABLE_NAME                                                    NOT NULL VARCHAR2(30)
 COLUMN_NAME                                                   NOT NULL VARCHAR2(30)
 DATA_TYPE                                                              VARCHAR2(106)
 DATA_TYPE_MOD                                                          VARCHAR2(3)
 DATA_TYPE_OWNER                                                        VARCHAR2(30)
 DATA_LENGTH                                                   NOT NULL NUMBER
 DATA_PRECISION                                                         NUMBER
 DATA_SCALE                                                             NUMBER
 NULLABLE                                                               VARCHAR2(1)
 COLUMN_ID                                                              NUMBER
 DEFAULT_LENGTH                                                         NUMBER
 DATA_DEFAULT                                                           LONG
 NUM_DISTINCT                                                           NUMBER
 LOW_VALUE                                                              RAW(32)
 HIGH_VALUE                                                             RAW(32)
 DENSITY                                                                NUMBER
 NUM_NULLS                                                              NUMBER
 NUM_BUCKETS                                                            NUMBER
 LAST_ANALYZED                                                          DATE
 SAMPLE_SIZE                                                            NUMBER
 CHARACTER_SET_NAME                                                     VARCHAR2(44)
 CHAR_COL_DECL_LENGTH                                                   NUMBER
 GLOBAL_STATS                                                           VARCHAR2(3)
 USER_STATS                                                             VARCHAR2(3)
 AVG_COL_LEN                                                            NUMBER
 CHAR_LENGTH                                                            NUMBER
 CHAR_USED                                                              VARCHAR2(1)
 V80_FMT_IMAGE                                                          VARCHAR2(3)
 DATA_UPGRADED                                                          VARCHAR2(3)
```

```
SQL>  select table_name,column_name,data_type from user_tab_columns where
table_name='EMP';

TABLE_NAME                     COLUMN_NAME                    DATA_TYPE
------------------------------ ------------------------------ ------------------------------
EMP                            EMPNO                          NUMBER
EMP                            ENAME                          VARCHAR2
EMP                            JOB                            VARCHAR2
EMP                            MGR                            NUMBER
EMP                            HIREDATE                       DATE
EMP                            SAL                            NUMBER
EMP                            COMM                           NUMBER
EMP                        DEPTNO                    NUMBER
```

7) Toate obiectele create de alti useri la care are acces userul crt.

```
SQL> select table_name from dictionary where table_name like 'ALL%';

TABLE_NAME
------------------------------
ALL_XML_SCHEMAS
ALL_XML_SCHEMAS2
ALL_CATALOG
ALL_CLUSTERS
ALL_COL_COMMENTS
ALL_COL_PRIVS
ALL_COL_PRIVS_MADE
ALL_COL_PRIVS_RECD
ALL_ENCRYPTED_COLUMNS
ALL_DB_LINKS
ALL_INDEXES
ALL_IND_COLUMNS
ALL_IND_EXPRESSIONS
ALL_JOIN_IND_COLUMNS
ALL_OBJECTS
ALL_PROCEDURES
ALL_ERRORS
```

8) Vizualizare obiecte pentru toti userii

```
SQL> desc all_objects
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 OWNER                                     NOT NULL VARCHAR2(30)
 OBJECT_NAME                               NOT NULL VARCHAR2(30)
 SUBOBJECT_NAME                                     VARCHAR2(30)
 OBJECT_ID                                 NOT NULL NUMBER
 DATA_OBJECT_ID                                     NUMBER
 OBJECT_TYPE                                        VARCHAR2(18)
 CREATED                                   NOT NULL DATE
 LAST_DDL_TIME                             NOT NULL DATE
 TIMESTAMP                                          VARCHAR2(19)
 STATUS                                             VARCHAR2(7)
 TEMPORARY                                          VARCHAR2(1)
 GENERATED                                          VARCHAR2(1)
 SECONDARY                                          VARCHAR2(1)

SQL> select owner,object_name,object_type from all_objects where owner='SCOTT';
```

```
OWNER                          OBJECT_NAME                    OBJECT_TYPE
------------------------------ ------------------------------ ------------------
SCOTT                          BONUS                          TABLE
SCOTT                          DEPT                           TABLE
SCOTT                          EMP                            TABLE
SCOTT                          PK_DEPT                        INDEX
SCOTT                          PK_EMP                         INDEX
SCOTT                          SALGRADE                       TABLE
```

9) Vizualizare toate obiectele bazei de date

```
SQL> select table_name from dictionary where table_name like 'DBA%';
```

10) Vizualizare informatii despre userii creati pe baza de date

```
SQL> desc dba_users
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 USERNAME                                  NOT NULL VARCHAR2(30)
 USER_ID                                   NOT NULL NUMBER
 PASSWORD                                           VARCHAR2(30)
 ACCOUNT_STATUS                            NOT NULL VARCHAR2(32)
 LOCK_DATE                                          DATE
 EXPIRY_DATE                                        DATE
 DEFAULT_TABLESPACE                        NOT NULL VARCHAR2(30)
 TEMPORARY_TABLESPACE                      NOT NULL VARCHAR2(30)
 CREATED                                   NOT NULL DATE
 PROFILE                                   NOT NULL VARCHAR2(30)
 INITIAL_RSRC_CONSUMER_GROUP                        VARCHAR2(30)
 EXTERNAL_NAME                                      VARCHAR2(4000)
```

```
SQL> select username,password from dba_users;

USERNAME                       PASSWORD
------------------------------ ------------------------------
SYS                            C25502B5BB0A298F
SYSTEM                         13107DAA798B5279
STUD2                          8559EA3BEAC5C774
STUD3                          449984BB0BA7005B
UBD1                           6CB27176BF298E4B
STUD1                          A9F4036978CEC351
SCOTT                          F894844C34402B67
UBD2                           E8BEF81B3D8D339C
UBD3                           D02B9B6DE306737B
DBSNMP                         E066D214D5421CCC
OUTLN                          4A3BA55E08595C81
```

```
WMSYS                         7C9BA362F8314299
ORDSYS                        7EFA02EC7EA6B86F
HR                          6399F3B38EDF3288
MDSYS                        72979A94BAD2AF80
CTXSYS                       71E687F036AD56E5
QS_ES                       E6A6FA4BB042E3C2
QS_WS                        24ACF617DD7D8F2F
QS                           8B09C6075BDF2DC4
QS_ADM                        991CDDAD5C5C32CA
SH                          9793B3777CD3BD1A
PM                         72E382A52E89575A
OE                        9C30855E7E0CB02D
RMAN                         E7B5D92911C831E1
QS_CS                       91A00922D8C0F146
QS_CB                       CF9CFACF5AE24964
QS_CBADM                        7C632AFB71F8D305
QS_OS                       FF09F3EB14AE5C26
XDB                        88D8364765FCE6AF
WKSYS                        69ED49EE1851900D
WKPROXY                         B97545C4DD2ABE54
ODM                         C252E8FA117AF049
ODM_MTR                         A7A32CD03D3CE8D5
OLAPSYS                       3FB8EF9DB538647C

36 rows selected.
```

11) Vizualizare informatii despre tablespace-uri create pe baza de date

```
SQL> desc dba_tablespaces
 Name                                      Null?    Type
 ----------------------------------------- -------- --------------
 TABLESPACE_NAME                           NOT NULL VARCHAR2(30)
 BLOCK_SIZE                                NOT NULL NUMBER
 INITIAL_EXTENT                                     NUMBER
 NEXT_EXTENT                                        NUMBER
 MIN_EXTENTS                               NOT NULL NUMBER
 MAX_EXTENTS                                        NUMBER
 PCT_INCREASE                                       NUMBER
 MIN_EXTLEN                                         NUMBER
 STATUS                                             VARCHAR2(9)
 CONTENTS                                           VARCHAR2(9)
 LOGGING                                            VARCHAR2(9)
 FORCE_LOGGING                                      VARCHAR2(3)
 EXTENT_MANAGEMENT                                  VARCHAR2(10)
 ALLOCATION_TYPE                                    VARCHAR2(9)
 PLUGGED_IN                                         VARCHAR2(3)
 SEGMENT_SPACE_MANAGEMENT                      VARCHAR2(6)
 DEF_TAB_COMPRESSION                           VARCHAR2(8)
 RETENTION                                     VARCHAR2(11)
 BIGFILE                                       VARCHAR2(3)

SQL> select tablespace_name,block_size,max_extents,status from dba_tablespaces;

TABLESPACE_NAME                BLOCK_SIZE MAX_EXTENTS STATUS
------------------------------ ---------- ----------- ---------
SYSTEM                               8192  2147483645 ONLINE
UNDOTBS1                             8192  2147483645 ONLINE
SYSAUX                               8192  2147483645 ONLINE
TEMP                                 8192             ONLINE
USERS                                8192  2147483645 ONLINE
EXAMPLE                              8192  2147483645 ONLINE
TOP_DATA                             8192  2147483645 ONLINE
TOP_TEMP                             8192             ONLINE

8 rows selected.
```

12) Vizualizare informatii 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)
 IOT_REDUNDANT_PKEY_ELIM                             VARCHAR2(3)
 DROPPED                                           VARCHAR2(3)

SQL>  select owner,index_name,index_type,table_name from dba_indexes;
```

CONTROL FILES
(Cap. 6)

1) Informatii despre fisierele de control:

```
SQL> desc v$controlfile
Name                                                              Null?  Type
 -----------------------------------------------------------------       ---------
 STATUS                                                                   VARCHAR2(7)
 NAME                                                                     VARCHAR2(513)
 IS_RECOVERY_DEST_FILE                                                    VARCHAR2(3)
 BLOCK_SIZE                                                               NUMBER
 FILE_SIZE_BLKS                                                           NUMBER
SQL> select * from v$controlfile;

STATUS
-------
NAME
---------------------------------------------------
IS_ BLOCK_SIZE FILE_SIZE_BLKS
--- ---------- --------------

F:\ORA10G_DB\PRODUCT\10.2.0\ORADATA\UPB\CONTROL01.CTL
NO      16384           430


F:\ORA10G_DB\PRODUCT\10.2.0\ORADATA\UPB\CONTROL02.CTL
NO      16384           430
```

2) Informatii despre fisierele de control extrase din view-ul pentru parametri

```
SQL> desc v$parameter
 Name                           Null?        Type
 ------------------------------ --------     ----
 NUM                                         NUMBER
 NAME                                        VARCHAR2(64)
 TYPE                                        NUMBER
 VALUE                                       VARCHAR2(512)
 ISDEFAULT                                   VARCHAR2(9)
 ISSES_MODIFIABLE                            VARCHAR2(5)
 ISSYS_MODIFIABLE                            VARCHAR2(9)
 ISMODIFIED                                  VARCHAR2(10)
 ISADJUSTED                                  VARCHAR2(5)
 DESCRIPTION                                 VARCHAR2(64)
 UPDATE_COMMENT                              VARCHAR2(255)

SQL> select * from v$parameter where name='control_files';

    NUM NAME                                                   TYPE
--------- ---------------------------------------------------------------- ---------
VALUE
------------------------------------------------------------------------------------------
ISDEFAULT ISSES ISSYS_MOD ISMODIFIED ISADJ DESCRIPTION
--------- ----- --------- ---------- ----- ------------------------------------------------
UPDATE_COMMENT
```

```
--------------------------------------------------------------------------------------------
    219 control_files                                    2
g:\oracle\oradata\leu\CONTROL01.CTL, g:\oracle\oradata\leu\CONTROL02.CTL,
g:\oracle\oradata\leu\CONT
FALSE    FALSE FALSE    FALSE     FALSE control file names list
```

2) Informatii despre marimea inregistrarii, numarul total de inregistrari alocate si cele folosite referitoare la parametrii de control, :

```
SQL> desc v$controlfile_record_section


 Name                            Null?   Type
 --------------           ----------------- -------- ----
 TYPE                                   VARCHAR2(20)
 RECORD_SIZE                            NUMBER
 RECORDS_TOTAL                           NUMBER
 RECORDS_USED                           NUMBER
 FIRST_INDEX                            NUMBER
 LAST_INDEX                             NUMBER
 LAST_RECID                             NUMBER
```

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

TYPE                        RECORD_SIZE  RECORDS_TOTAL  RECORDS_USED  FIRST_INDEX  LAST_INDEX  LAST_RECID
---------------------------  ----------- ------------- ------------ ----------- ---------- ---------
DATABASE                        316        1        1       0       0       0
CKPT PROGRESS                   8180       11        0       0       0       0
REDO THREAD                     256        8        1       0       0       0
REDO LOG                        72        16        3       0       0       3
DATAFILE                        428       100       20       0       0     2025
FILENAME                        524       2298       26       0       0       0
TABLESPACE                      68       100       23       0       0       19
TEMPORARY FILENAME               56       100       3       0       0       3
RMAN CONFIGURATION              1108       50        0       0       0       0
LOG HISTORY                     56       292       292      126      125      709
OFFLINE RANGE                   200       163       0       0       0       0
ARCHIVED LOG                    584       28        0       0       0       0
BACKUP SET                      40       409       0       0       0       0
BACKUP PIECE                    736       200       0       0       0       0
BACKUP DATAFILE                 116       282       0       0       0       0
BACKUP REDOLOG                  76       215       0       0       0       0
DATAFILE COPY                   660       223       1       1       1       1
BACKUP CORRUPTION               44       371       0       0       0       0
COPY CORRUPTION                 40       409       0       0       0       0
DELETED OBJECT                  20       818       1       1       1       1
PROXY COPY                      852       249       0       0       0       0
BACKUP SPFILE                   36       454       0       0       0       0
```

4) Vizualizare fisiere de control

```
SQL> SHOW PARAMETER CONTROL_FILES

NAME                          TYPE      VALUE
---------------------------------- ----------- ----------------------------
control_files                 string    F:\ORA10G_DB\PRODUCT\10.2.0\OR
                                         ADATA\UPB\CONTROL01.CTL, F:\OR
                                         A10G_DB\PRODUCT\10.2.0\ORADATA
                                         \UPB\CONTROL02.CTL, F:\ORA10G_
                                         DB\PRODUCT\10.2.0\ORADATA\UPB\
                                         CONTROL03.CTL
```

5) Informatii despre fisierele de date

```
SQL> desc v$datafile
 Name                                      Null?    Type
 ----------------------------------------- -------- ----
 FILE#                                              NUMBER
 CREATION_CHANGE#                                   NUMBER
 CREATION_TIME                                      DATE
 TS#                                                NUMBER
 RFILE#                                             NUMBER
 STATUS                                             VARCHAR2(7)
 ENABLED                                            VARCHAR2(10)
 CHECKPOINT_CHANGE#                                 NUMBER
 CHECKPOINT_TIME                                    DATE
 UNRECOVERABLE_CHANGE#                              NUMBER
 UNRECOVERABLE_TIME                                 DATE
 LAST_CHANGE#                                       NUMBER
 LAST_TIME                                          DATE
 OFFLINE_CHANGE#                                    NUMBER
 ONLINE_CHANGE#                                     NUMBER
 ONLINE_TIME                                        DATE
 BYTES                                              NUMBER
 BLOCKS                                             NUMBER
 CREATE_BYTES                                       NUMBER
 BLOCK_SIZE                                         NUMBER
 NAME                                               VARCHAR2(513)
 PLUGGED_IN                                         NUMBER
 BLOCK1_OFFSET                                      NUMBER
 AUX_NAME                                           VARCHAR2(513)

SQL> select * from v$datafile;
    FILE# CREATION_CHANGE# CREATION_       TS#    RFILE# STATUS  ENABLED
CHECKPOINT_CHANGE# CHECKPOIN
--------- ---------------- --------- --------- --------- ------- ---------- ------------------ -----
NAME
--------------------------------------------------------------------------------
PLUGGED_IN BLOCK1_OFFSET
---------- -------------
AUX_NAME
--------------------------------------------------------------------------------
        1               11 12-MAY-02         0         1 SYSTEM  READ WRITE           48391344 19-OCT-08
0
G:\ORACLE\ORADATA\LEU\SYSTEM01.DBF
         0          8192
NONE

        2           187697 12-MAY-02         1         2 ONLINE  READ WRITE           48391344 19-OCT-08
0
G:\ORACLE\ORADATA\LEU\UNDOTBS01.DBF
         0          8192
NONE

        3             6283 12-MAY-02         3         3 ONLINE  READ WRITE           48391344 19-OCT-08
0
G:\ORACLE\ORADATA\LEU\CWMLITE01.DBF
```

```
         0          8192
NONE

         4            6302 12-MAY-02          4          4 ONLINE  READ WRITE           48391344 19-OCT-08
0
G:\ORACLE\ORADATA\LEU\DRSYS01.DBF
         0          8192
NONE

         5            6324 12-MAY-02          5          5 ONLINE  READ WRITE           48391344 19-OCT-08
0
G:\ORACLE\ORADATA\LEU\EXAMPLE01.DBF
         0          8192
NONE

         6            6343 12-MAY-02          6          6 ONLINE  READ WRITE           48391344 19-OCT-08
0
G:\ORACLE\ORADATA\LEU\INDX01.DBF
         0          8192
NONE

         7            6363 12-MAY-02          7          7 ONLINE  READ WRITE           48391344 19-OCT-08
0
G:\ORACLE\ORADATA\LEU\ODM01.DBF
         0          8192
NONE

         8            6382 12-MAY-02          8          8 ONLINE  READ WRITE           48391344 19-OCT-08
0
G:\ORACLE\ORADATA\LEU\TOOLS01.DBF
         0          8192
NONE

         9            6401 12-MAY-02          9          9 ONLINE  READ WRITE           48391344 19-OCT-08
0
G:\ORACLE\ORADATA\LEU\USERS01.DBF
         0          8192
NONE

        10            6420 12-MAY-02         10         10 ONLINE  READ WRITE           48391344 19-OCT-08
0
G:\ORACLE\ORADATA\LEU\XDB01.DBF
         0          8192
NONE
```

6) Informatii despre fisierele temporare

```
SQL> desc v$tempfile

 Name                                      Null?    Type
 ----------------------------------------- -------- ----
 FILE#                                              NUMBER
 CREATION_CHANGE#                                   NUMBER
 CREATION_TIME                                      DATE
 TS#                                                NUMBER
 RFILE#                                             NUMBER
 STATUS                                    VARCHAR2(7)
 ENABLED                                   VARCHAR2(10)
 BYTES                                     NUMBER
 BLOCKS                                    NUMBER
 CREATE_BYTES                              NUMBER
 BLOCK_SIZE                                NUMBER
 NAME                                      VARCHAR2(513)

SQL> select * from v$tempfile;

   FILE# CREATION_CHANGE# CREATION_      TS#    RFILE# STATUS  ENABLED       BYTES
BLOCKS CREATE_BYTES BLOC
--------- ---------------- --------- --------- --------- ------- ---------- --------- --------- ----
NAME
------------------------------------------------------------------------------------------------
       1              0               2        1 ONLINE  READ WRITE  41943040      5120     41943040      8192
G:\ORACLE\ORADATA\LEU\TEMP01.DBF
```

7) Informatii despre tablespace-uri

```
SQL> desc v$tablespace
 Name                                      Null?             Type
 -------------------------------           --------          ----
 TS#                                                         NUMBER
 NAME                                                        VARCHAR2(30)
 INCLUDED_IN_DATABASE_BACKUP                                 VARCHAR2(3)

SQL> select * from v$tablespace;

     TS# NAME                          I     NC
--------- ------------------------------      ---
       3 CWMLITE                             YES
       4 DRSYS                               YES
       5 EXAMPLE                             YES
       6 INDX                                YES
       7 ODM                                 YES
       0 SYSTEM                              YES
       8 TOOLS                               YES
       1 UNDOTBS1                            YES
       9 USERS                               YES
      10 XDB                                 YES
       2 TEMP                                YES

11 rows selected.
```

8) Informatii despre baza de date

```
SQL> desc v$database
 Name                        Null?              Type
 -----------------------     --------           -------- ----
 DBID                                            NUMBER
 NAME                                           VARCHAR2(9)
 CREATED                                        DATE
 RESETLOGS_CHANGE#                              NUMBER
 RESETLOGS_TIME                                 DATE
 PRIOR_RESETLOGS_CHANGE#                        NUMBER
 PRIOR_RESETLOGS_TIME                           DATE
 LOG_MODE                                          VARCHAR2(12)
 CHECKPOINT_CHANGE#                                NUMBER
 ARCHIVE_CHANGE#                                   NUMBER
 CONTROLFILE_TYPE                                  VARCHAR2(7)
 CONTROLFILE_CREATED                               DATE
 CONTROLFILE_SEQUENCE#                             NUMBER
 CONTROLFILE_CHANGE#                               NUMBER
 CONTROLFILE_TIME                                  DATE
 OPEN_RESETLOGS                                    VARCHAR2(11)
 VERSION_TIME                                      DATE
 OPEN_MODE                                         VARCHAR2(10)
 PROTECTION_MODE                                   VARCHAR2(20)
 PROTECTION_LEVEL                                  VARCHAR2(20)
 REMOTE_ARCHIVE                                    VARCHAR2(8)
 ACTIVATION#                                       NUMBER
 DATABASE_ROLE                                     VARCHAR2(16)
 ARCHIVELOG_CHANGE#                                NUMBER
 SWITCHOVER_STATUS                                 VARCHAR2(18)
 DATAGUARD_BROKER                                  VARCHAR2(8)
 GUARD_STATUS                                      VARCHAR2(7)
 SUPPLEMENTAL_LOG_DATA_MIN                         VARCHAR2(3)
 SUPPLEMENTAL_LOG_DATA_PK                          VARCHAR2(3)
 SUPPLEMENTAL_LOG_DATA_UI                          VARCHAR2(3)
 FORCE_LOGGING                                     VARCHAR2(3)
```

```
SQL> select * from v$database;
      DBID NAME      CREATED   RESETLOGS_CHANGE# RESETLOGS
PRIOR_RESETLOGS_CHANGE# PRIOR_RES LOG_MODE
--------- --------- --------- ----------------- --------- ---------------------- --------- --------
CHECKPOINT_CHANGE# ARCHIVE_CHANGE# CONTROL CONTROLFI
CONTROLFILE_SEQUENCE# CONTROLFILE_CHANGE# CONTR
------------------ --------------- ------- --------- -------------------- ------------------- -----
VERSION_T OPEN_MODE  PROTECTION_MODE      PROTECTION_LEVEL     REMOTE_A
ACTIVATION# DATABASE_ROLE    AR
--------- ---------- -------------------- -------------------- -------- ----------- ----------------
SWITCHOVER_STATUS  DATAGUAR GUARD_S SUP SUP SUP FOR
------------------ -------- ------- --- --- --- ---
1.248E+09 LEU       17-MAR-07           190578 17-MAR-07                    1 12-MAY-02
NOARCHIVELOG
          48391344        48301579 CURRENT 17-MAR-07               10100           48391344 19-OCT-08 NOT
ALLOWED
17-MAR-07 READ WRITE MAXIMUM PERFORMANCE  UNPROTECTED          ENABLED
1.248E+09 PRIMARY                          0
SESSIONS ACTIVE    DISABLED NONE    NO  NO  NO  NO
```

8) Informatii despre fisierele de log

```
SQL> desc V$LOGFILE;
 Name                                                                      Null?    Type
 ------------------------------------------------------------------------------- -------- ------
 GROUP#                                                                             NUMBER
 STATUS                                                                             VARCHAR2(7)
 TYPE                                                                               VARCHAR2(7)
 MEMBER                                                                             VARCHAR2(513)
 IS_RECOVERY_DEST_FILE                                                              VARCHAR2(3)
```

```
SQL> select * from V$LOGFILE;

    GROUP# STATUS  TYPE
---------- ------- -------
MEMBER                                                                      IS_REC
--------------------------------------------------                          ---
         3 STALE   ONLINE
F:\ORA10G_DB\PRODUCT\10.2.0\ORADATA\UPB\REDO03.LOG                          NO

         2 STALE   ONLINE
F:\ORA10G_DB\PRODUCT\10.2.0\ORADATA\UPB\REDO02.LOG                          NO
```

REDO LOG FILES
(Cap.7)

1) Informatii despre fisierele de log si starea lor

```
SQL> desc v$logfile

 Name                                      Null?    Type
 ----------------------------------------- -------- ----
 GROUP#                                             NUMBER
 STATUS                                             VARCHAR2(7)
 TYPE                                               VARCHAR2(7)
 MEMBER                                             VARCHAR2(513)

SQL> select * from v$logfile;

GROUP#   STATUS  TYPE    MEMBER
-------  ------  ------- --------------------------------------------------------------------------------
     3   STALE   ONLINE  F:\ORA10G_DB\PRODUCT\10.2.0\ORADATA\UPB\REDO03.LOG
     2   STALE   ONLINE  F:\ORA10G_DB\PRODUCT\10.2.0\ORADATA\UPB\REDO02.LOG
     1           ONLINE  F:\ORA10G_DB\PRODUCT\10.2.0\ORADATA\UPB\REDO01.LOG
```

2) Informatii legate de modul de lucru al bazei de date (cu arhivare sau fara arhivare a fisierelor de log, data cand au fost resetate fisierele de log, etc.)

```
SQL> desc v$database

Name                                      Null?    Type
 ----------------------------------------- -------- ----
 DBID                                               NUMBER
 NAME                                               VARCHAR2(9)
 CREATED                                            DATE
 RESETLOGS_CHANGE#                                  NUMBER
 RESETLOGS_TIME                                     DATE
 PRIOR_RESETLOGS_CHANGE#                            NUMBER
 PRIOR_RESETLOGS_TIME                               DATE
 LOG_MODE                                           VARCHAR2(12)
 CHECKPOINT_CHANGE#                                 NUMBER
 ARCHIVE_CHANGE#                                    NUMBER
 CONTROLFILE_TYPE                                   VARCHAR2(7)
 CONTROLFILE_CREATED                                DATE
 CONTROLFILE_SEQUENCE#                               NUMBER
 CONTROLFILE_CHANGE#                                NUMBER
 CONTROLFILE_TIME                                   DATE
 OPEN_RESETLOGS                                     VARCHAR2(11)
 VERSION_TIME                                       DATE
 OPEN_MODE                                          VARCHAR2(10)
 PROTECTION_MODE                                    VARCHAR2(20)
 PROTECTION_LEVEL                                   VARCHAR2(20)
 REMOTE_ARCHIVE                                     VARCHAR2(8)
 ACTIVATION#                                        NUMBER
 DATABASE_ROLE                                      VARCHAR2(16)
 ARCHIVELOG_CHANGE#                                 NUMBER
 SWITCHOVER_STATUS                          VARCHAR2(18)
 DATAGUARD_BROKER                           VARCHAR2(8)
 GUARD_STATUS                               VARCHAR2(7)
 SUPPLEMENTAL_LOG_DATA_MIN                  VARCHAR2(3)
 SUPPLEMENTAL_LOG_DATA_PK                   VARCHAR2(3)
 SUPPLEMENTAL_LOG_DATA_UI                   VARCHAR2(3)
 FORCE_LOGGING                              VARCHAR2(3)

SQL> select name,log_mode, resetlogs_time from v$database;

NAME          LOG_MODE                      RESETLOGS
---------     ------------                  ---------------
UPB           NOARCHIVELOG                  13-FEB-11
```

3) Informatii legate de starea instantei si a grupurilor

```
SQL> desc v$thread

 Name                            Null?      Type
 ------------------------------- --------   ----
 THREAD#                                    NUMBER
 STATUS                                     VARCHAR2(6)
 ENABLED                                    VARCHAR2(8)
 GROUPS                                     NUMBER
 INSTANCE                                   VARCHAR2(16)
 OPEN_TIME                                  DATE
 CURRENT_GROUP#                             NUMBER
 SEQUENCE#                                  NUMBER
 CHECKPOINT_CHANGE#                         NUMBER
 CHECKPOINT_TIME                            DATE
 ENABLE_CHANGE#                             NUMBER
 ENABLE_TIME                                DATE
 DISABLE_CHANGE#                            NUMBER
 DISABLE_TIME                                DATE

SQL> select groups, sequence#, instance, status from v$thread;

  GROUPS     SEQUENCE#        INSTANCE           STATUS
---------    ---------        ----------------    ------
     3       951               UPB                OPEN
```

4)Informatii despre gupuri si membri

```
SQL> desc v$log
 Name                            Null?   Type
 ------------------------------- --------  ----
 GROUP#                                  NUMBER
 THREAD#                                 NUMBER
 SEQUENCE#                           NUMBER
 BYTES                               NUMBER
 MEMBERS                             NUMBER
 ARCHIVED                            VARCHAR2(3)
 STATUS                              VARCHAR2(16)
 FIRST_CHANGE#                        NUMBER
 FIRST_TIME                          DATE

SQL> select group#,members,bytes, archived,status from v$log;

   GROUP#    MEMBERS     BYTES         ARC    STATUS
----------   ----------   ----------   ---    ----------------
        1        1        52428800     NO     CURRENT
        2        1        52428800     NO     INACTIVE
        3        1        52428800     NO     INACTIVE
```

5) Adaugarea unui membru la un grup (adaugarea unui nou fisier de log)

```
SQL> alter database add logfile member 'e:\temp\log2.rdo' to group 1;

Database altered.
```

6) Stergerea unui membru din grup (stergerea unui fisier de log VALID)

6.1) Se verifica starea fiserului care va fi sters

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

  GROUP#     STATUS        TYPE
---------    -------       -------
MEMBER
------------------------------------------------------------
       3       STALE         ONLINE
E:\ORACLE\ORADATA\LEU\REDO03.LOG

       2                     ONLINE
E:\ORACLE\ORADATA\LEU\REDO02.LOG

       1       STALE         ONLINE
E:\ORACLE\ORADATA\LEU\REDO01.LOG

       1       VALID         ONLINE
C:\TEMP\LOG2.RDO
```

6.2) Se sterge fisierul de log (numai daca este VALID)

```
SQL> alter database drop logfile member 'c:\temp\LOG2.RDO';
```

7) Informatii legate de modul de lucru al instantei (modul arhiva sau nonarhiva)

```
SQL> desc v$instance
 Name                                      Null?    Type
 ----------------------------------------- -------- ---------------
 INSTANCE_NUMBER                                     NUMBER
 INSTANCE_NAME                                      VARCHAR2(16)
 HOST_NAME                                          VARCHAR2(64)
 VERSION                                            VARCHAR2(17)
 STARTUP_TIME                                        DATE
 STATUS                                             VARCHAR2(12)
 PARALLEL                                           VARCHAR2(3)
 THREAD#                                            NUMBER
 ARCHIVER                                           VARCHAR2(7)
 LOG_SWITCH_WAIT                                    VARCHAR2(15)
 LOGINS                                             VARCHAR2(10)
 SHUTDOWN_PENDING                                   VARCHAR2(3)
 DATABASE_STATUS                                    VARCHAR2(17)
 INSTANCE_ROLE                                      VARCHAR2(18)
 ACTIVE_STATE                                       VARCHAR2(9)
 BLOCKED                                            VARCHAR2(3)

SQL> select instance_name, database_status, archiver from v$instance;

INSTANCE_NAME        DATABASE_STATUS            ARCHIVE
----------------     -----------------          -------
UPB                  ACTIVE                     STOPPED
```

MANAGING TABLESPACES and DATA FILES

(Cap. 8)

1) Crearea unui tablespace permanent ‘UBD’ cu un fisier de date UBD1 cu dimensiunea de 1 M, cu sau fara extensie :

a) cu specificarea tipului si dimensiunea extensiei

```
  SQL> CREATE TABLESPACE userdata DATAFILE 'E:/Student /userdata01.dbf’ SIZE  1M
          EXTENT MANAGEMENT LOCAL UNIFORM SIZE 128K;
```

b) fara specificarea extensiei (implicit AUTOALLOCATE)

```
  SQL >CREATE TABLESPACE ubd
          DATAFILE  'E:/Student/ubd1.dbf' SIZE 1M;
```

2) Extinderea spatiului alocat unui tablespace

a) extinderea spatiului cu autoextensie

```
SQL> ALTER DATABASE
         DATAFILE 'E:/Student/ubd1.dbf'
        AUTOEXTEND ON NEXT 2M;
```

c) extinderea spatiului cu marime fixa

```
SQL> ALTER DATABASE
         DATAFILE 'E:/Student/ubd1.dbf' RESIZE 2M;
```

3) Adaugarea unui nou fisier de date la un tablespace

```
SQL> ALTER TABLESPACE bd_data
         ADD DATAFILE 'E:/Student/ubd1.dbf'
         SIZE 1M;
```

4) Informatii despre tablespace-uri (la nivel de baza de date)

```
SQL> desc DBA_TABLESPACES
 Name                                      Null?    Type
 ----------------------------------------- -------- ---------------------
 TABLESPACE_NAME                           NOT NULL VARCHAR2(30)
 BLOCK_SIZE                                NOT NULL NUMBER
 INITIAL_EXTENT                                     NUMBER
 NEXT_EXTENT                                        NUMBER
 MIN_EXTENTS                               NOT NULL NUMBER
 MAX_EXTENTS                                        NUMBER
 PCT_INCREASE                                       NUMBER
 MIN_EXTLEN                                         NUMBER
 STATUS                                             VARCHAR2(9)
 CONTENTS                                           VARCHAR2(9)
 LOGGING                                            VARCHAR2(9)
 FORCE_LOGGING                                      VARCHAR2(3)
 EXTENT_MANAGEMENT                                  VARCHAR2(10)
 ALLOCATION_TYPE                                    VARCHAR2(9)
 PLUGGED_IN                                         VARCHAR2(3)
 SEGMENT_SPACE_MANAGEMENT                           VARCHAR2(6)
```

```
SQL> select tablespace_name,block_size,status from DBA_TABLESPACES;
```

```
TABLESPACE_NAME       BLOCK_SIZE   STATUS
------------------------------        ----------          ---------
SYSTEM                          8192          ONLINE
UNDOTBS1                        8192          ONLINE
TEMP                           8192          ONLINE
CWMLITE                        8192          ONLINE
DRSYS                         8192          ONLINE
EXAMPLE                        8192          ONLINE
INDX                          8192           ONLINE
ODM                          8192           ONLINE
TOOLS                         8192          ONLINE
USERS                        8192          ONLINE
XDB                          8192          ONLINE
BD_DATA                        8192           ONLINE
BD_TEMP                       8192          ONLINE
```

5) Starea unui tablespace (existent sau sters din baza de date)

```
SQL> desc V$TABLESPACE
 Name                                        Null?              Type
 -----------------------------------------              --------           -----------------
 TS#                                                             NUMBER
 NAME                                                           VARCHAR2(30)
 INCLUDED_IN_DATABASE_BACKUP                       VARCHAR2(3)
```

```
SQL> select * from V$TABLESPACE;

       TS# NAME                           INC
---------- ------------------------------ ---
         3 CWMLITE                        YES
         4 DRSYS                          YES
         5 EXAMPLE                        YES
         6 INDX                           YES
         7 ODM                            YES
         0 SYSTEM                         YES
         8 TOOLS                          YES
         1 UNDOTBS1                       YES
         9 USERS                          YES
        10 XDB                            YES
         2 TEMP                           YES
        12 BD_DATA                        YES
        13 BD_TEMP                        YES
```

6) Informatii despre tablespace-uri si fiserele de date aferente (la nivelul bazei de date)

```
SQL> desc DBA_DATA_FILES;
 Name
 -------------------------------------------------
 FILE_NAME
 FILE_ID
 TABLESPACE_NAME
 BYTES
 BLOCKS
 STATUS
 RELATIVE_FNO
 AUTOEXTENSIBLE
 MAXBYTES
 MAXBLOCKS
 INCREMENT_BY
 USER_BYTES
 USER_BLOCKS

SQL> select tablespace_name,file_name,status from DBA_DATA_FILES

TABLESPACE_NAME
------------------------------
FILE_NAME
---------------------------------------------------
STATUS
---------
SYSTEM
C:\ORACLE\ORADATA\BD\SYSTEM01.DBF
AVAILABLE

UNDOTBS1
C:\ORACLE\ORADATA\BD\UNDOTBS01.DBF
AVAILABLE

CWMLITE
C:\ORACLE\ORADATA\BD\CWMLITE01.DBF
AVAILABLE

DRSYS
C:\ORACLE\ORADATA\BD\DRSYS01.DBF
AVAILABLE

EXAMPLE
C:\ORACLE\ORADATA\BD\EXAMPLE01.DBF
AVAILABLE

INDX
C:\ORACLE\ORADATA\BD\INDX01.DBF
AVAILABLE

ODM
C:\ORACLE\ORADATA\BD\ODM01.DBF
AVAILABLE

TOOLS
C:\ORACLE\ORADATA\BD\TOOLS01.DBF
AVAILABLE

USERS
C:\ORACLE\ORADATA\BD\USERS01.DBF
```

```
AVAILABLE

XDB
C:\ORACLE\ORADATA\BD\XDB01.DBF
AVAILABLE

BD_DATA
C:\ORACLE\ORADATA\BD\BD_DATA.ORA
AVAILABLE
```

7) Informatii despre fisierele de date (la nivel de baza de date)

```
SQL> desc V$DATAFILE
 Name                                      Null?    Type
 ----------------------------------------- -------- ------
 FILE#                                              NUMBER
 CREATION_CHANGE#                                   NUMBER
 CREATION_TIME                                      DATE
 TS#                                                NUMBER
 RFILE#                                             NUMBER
 STATUS                                             VARCHAR2(7)
 ENABLED                                            VARCHAR2(10)
 CHECKPOINT_CHANGE#                                 NUMBER
 CHECKPOINT_TIME                                    DATE
 UNRECOVERABLE_CHANGE#                              NUMBER
 UNRECOVERABLE_TIME                                 DATE
 LAST_CHANGE#                                       NUMBER
 LAST_TIME                                          DATE
 OFFLINE_CHANGE#                                    NUMBER
 ONLINE_CHANGE#                                     NUMBER
 ONLINE_TIME                                        DATE
 BYTES                                              NUMBER
 BLOCKS                                             NUMBER
 CREATE_BYTES                                       NUMBER
 BLOCK_SIZE                                         NUMBER
 NAME                                               VARCHAR2(513)
 PLUGGED_IN                                         NUMBER
 BLOCK1_OFFSET                                      NUMBER
 AUX_NAME                                           VARCHAR2(513)

SQL> select file#,name,creation_time,status,enabled from V$DATAFILE;

     FILE#
----------
NAME
--------------------------------------------------------------------------------
CREATION_ STATUS  ENABLED
--------- ------- ----------
         1
C:\ORACLE\ORADATA\BD\SYSTEM01.DBF
12-MAY-02 SYSTEM  READ WRITE

         2
```

```
C:\ORACLE\ORADATA\BD\UNDOTBS01.DBF
12-MAY-02 ONLINE  READ WRITE

         3
C:\ORACLE\ORADATA\BD\CWMLITE01.DBF
12-MAY-02 ONLINE  READ WRITE

         4
C:\ORACLE\ORADATA\BD\DRSYS01.DBF
12-MAY-02 ONLINE  READ WRITE

         5
C:\ORACLE\ORADATA\BD\EXAMPLE01.DBF
12-MAY-02 ONLINE  READ WRITE

         6
C:\ORACLE\ORADATA\BD\INDX01.DBF
12-MAY-02 ONLINE  READ WRITE

         7
C:\ORACLE\ORADATA\BD\ODM01.DBF
12-MAY-02 ONLINE  READ WRITE

         8
C:\ORACLE\ORADATA\BD\TOOLS01.DBF
12-MAY-02 ONLINE  READ WRITE

         9
C:\ORACLE\ORADATA\BD\USERS01.DBF
12-MAY-02 ONLINE  READ WRITE

        10
C:\ORACLE\ORADATA\BD\XDB01.DBF
12-MAY-02 ONLINE  READ WRITE

        11
C:\ORACLE\ORADATA\BD\BD_DATA.ORA
08-OCT-08 ONLINE  READ WRITE
```

8) Informatii despre fisierele de date temporare la nivel de baza de date

```
SQL> desc DBA_TEMP_FILES
 Name                                                Null?        Type
 ----------------------------------------------------------------------------- -------- ------
 FILE_NAME                                                  VARCHAR2(513)
 FILE_ID                                                    NUMBER
 TABLESPACE_NAME                                            NOT NULL VARCHAR2(30)
 BYTES                                                      NUMBER
 BLOCKS                                                     NUMBER
 STATUS                                                     CHAR(9)
 RELATIVE_FNO                                               NUMBER
 AUTOEXTENSIBLE                                             VARCHAR2(3)
 MAXBYTES                                                   NUMBER
 MAXBLOCKS                                          NUMBER
 INCREMENT_BY                                       NUMBER
 USER_BYTES                                         NUMBER
 USER_BLOCKS                                        NUMBER
```

```
SQL> select file_name,tablespace_name, status from DBA_TEMP_FILES;

FILE_NAME
--------------------------------------------------------------------------------
TABLESPACE_NAME          STATUS
------------------------------ ---------
C:\ORACLE\ORADATA\BD\TEMP01.DBF
TEMP                     AVAILABLE

C:\ORACLE\ORADATA\BD\BD_TEMP.ORA
BD_TEMP                  AVAILABLE
```

9) Informatii despre fisierele temporare la nivel de user

```
SQL> desc V$TEMPFILE
 Name                                      Null?    Type
 ----------------------------------------- -------- ------
 FILE#                                              NUMBER
 CREATION_CHANGE#                                   NUMBER
 CREATION_TIME                                      DATE
 TS#                                                NUMBER
 RFILE#                                             NUMBER
 STATUS                                             VARCHAR2(7)
 ENABLED                                            VARCHAR2(10)
 BYTES                                              NUMBER
 BLOCKS                                             NUMBER
 CREATE_BYTES                                       NUMBER
 BLOCK_SIZE                                         NUMBER
 NAME                                               VARCHAR2(513)
```

```
SQL> select file#,name, creation_time, status from V$TEMPFILE;

FILE# NAME                           CREATION_  STATUS
----- ------------------------------ ---------  -------
    1 F:\ORA10G_DB\PRODUCT\10.2.0\OR 13-FEB-11  ONLINE
      ADATA\UPB\TEMP01.DBF

    2 F:\ORA10G_DB\PRODUCT\10.2.0\OR 05-NOV-11  ONLINE
      ADATA\UPB\BD_TEMP

    3 F:\ORA10G_DB\PRODUCT\10.2.0\DB 25-FEB-12  ONLINE
      _1\DATABASE\BD_REPOS_TEMP
```

10) Informatii despre parametrii bazei de date

```
SQL> desc DATABASE_PROPERTIES;
Name                                               Null?          Type
-------------------------------------------------------------------------------- -------- ------
PROPERTY_NAME                                      NOT NULL       VARCHAR2(30)
PROPERTY_VALUE                                                    VARCHAR2(4000)
DESCRIPTION                                                       VARCHAR2(4000)
```

```
SQL> select * from DATABASE_PROPERTIES;
PROPERTY_NAME                  PROPERTY_VALUE                           DESCRIPTION
------------------------------ ---------------------------------------- ----------------------------
DICT.BASE                                2                                    dictionary base tables version #
DEFAULT_TEMP_TABLESPACE                  TEMP                          Name of default temporary tablespace
DEFAULT_PERMANENT_TABLESPACE             USERS                          Name of default permanent tablespace
DEFAULT_TBS_TYPE                          SMALLFILE                            Default tablespace type
NLS_LANGUAGE                             AMERICAN                              Language
NLS_TERRITORY                            AMERICA                              Territory
NLS_CURRENCY                                    $                               Local currency
NLS_ISO_CURRENCY                         AMERICA                               ISO currency
NLS_CHARACTERSET                         WE8MSWIN1252                          Character set
NLS_CALENDAR                             GREGORIAN                            Calendar system
NLS_DATE_FORMAT                          DD-MON-RR                             Date format
NLS_NCHAR_CHARACTERSET                   AL16UTF16                        NCHAR Character set
NLS_RDBMS_VERSION                        10.2.0.3.0                    RDBMS version for NLS parameters
GLOBAL_DB_NAME                     UPB.REGRESS.RDBMS.DEV.US.ORACLE.COM      Global database name
```

11) Stergerea din dictionar a unui tablespace

```
SQL> DROP TABLESPACE userdata
        INCLUDING CONTENTS AND DATAFILES;
```

STORAGE STRUCTURE
(SEGMENTS AND DATABASE BLOCKS)

(Cap. 9)

1) Informatii despre starea unui tablespace si parametrii specifici blocurilor de date

```
SQL> desc dba_tablespaces;

 Name                           Null?    Type
 ------------------------------ -------- --------------------
 TABLESPACE_NAME                NOT NULL VARCHAR2(30)
 BLOCK_SIZE                     NOT NULL NUMBER
 INITIAL_EXTENT                          NUMBER
 NEXT_EXTENT                             NUMBER
 MIN_EXTENTS                    NOT NULL NUMBER
 MAX_EXTENTS                             NUMBER
 PCT_INCREASE                            NUMBER
 MIN_EXTLEN                              NUMBER
 STATUS                                  VARCHAR2(9)
 CONTENTS                                VARCHAR2(9)
 LOGGING                                 VARCHAR2(9)
 FORCE_LOGGING                           VARCHAR2(3)
 EXTENT_MANAGEMENT                       VARCHAR2(10)
 ALLOCATION_TYPE                         VARCHAR2(9)
 PLUGGED_IN                              VARCHAR2(3)
 SEGMENT_SPACE_MANAGEMENT                VARCHAR2(6)
```

```
SQL> select tablespace_name,block_size,initial_extent,min_extents, max_extents,  status
        from dba_tablespaces where tablespace_name='BD_DATA';


TABLESPACE_NAME               BLOCK_SIZE  INITIAL_EXTENT  MIN_EXTENTS  MAX_EXTENTS  STATUS
----------------------------- ----------  --------------  -----------  -----------  -----------
BD_DATA                             8192           65536            1    2,147E+09  ONLINE
```

2) Informatii despre segmentele de tip tabela create intr-un tablespace

```
SQL> select owner,segment_name,segment_type, tablespace_name, blocks, extents
        from dba_segments where owner='SCOTT'and segment_type='TABLE'

OWNER                          SEGMENT_NAME                                     SEGMENT_TYPE
------------------------------ -----------------------                          ---------------
TABLESPACE_NAME                    BLOCKS   EXTENTS
------------------------------  ---------  ---------
SCOTT                          DEPT                                             TABLE
SYSTEM                                  8          1

SCOTT                          EMP                                              TABLE
SYSTEM                                  8          1

SCOTT                          BONUS                                            TABLE
SYSTEM                                  8          1

SCOTT                          SALGRADE                                         TABLE
SYSTEM                                  8          1
```

3) Informatii despre dimensiunea extensiilor alocate unui segment

```
SQL> desc dba_extents


 Name                              Null?             Type
 -------------------------------   --------          ----
 OWNER                                              VARCHAR2(30)
 SEGMENT_NAME                                       VARCHAR2(81)
 PARTITION_NAME                                     VARCHAR2(30)
 SEGMENT_TYPE                                       VARCHAR2(18)
 TABLESPACE_NAME                                     VARCHAR2(30)
 EXTENT_ID                                           NUMBER
 FILE_ID                                             NUMBER
 BLOCK_ID                                            NUMBER
 BYTES                                               NUMBER
 BLOCKS                                             NUMBER
 RELATIVE_FNO                                       NUMBER
```

```
SQL> select owner, segment_name, segment_type, tablespace_name, bytes, blocks from dba_extents
        where owner='SCOTT' and segment_name='EMP';

OWNER                  SEGMENT_NAME     SEGMENT_TYPE     TABLESPACE_NAME         BYTES   BLOCKS
------------------------------       -------------         ---------------------       ----------------------------         --------   -----------
SCOTT                              EMP                   TABLE             SYSTEM                 65536       8
```

```
SQL>select  segment_name, extent_id, file_id,block_id, blocks from dba_extents
       where owner='SCOTT' and segment_name='EMP' ;


SEGMENT_NAME                                                   EXTENT_ID   FILE_ID        BLOCK_ID    BLOCKS
--------------------------------------------------------                  ---------------   ---------           --------     -----------
EMP                                                                   0           1              50465        8
```

4) Informatii despre extensiile libere dintr-un tablespace

```
SQL> desc dba_free_space

 Name                              Null?            Type
 -------------------------------    --------          ----
 TABLESPACE_NAME                                    VARCHAR2(30)
 FILE_ID                                            NUMBER
 BLOCK_ID                                           NUMBER
 BYTES                                              NUMBER
 BLOCKS                                             NUMBER
 RELATIVE_FNO                                       NUMBER
```

```
SQL> select tablespace_name, count(*), max(blocks), sum(blocks) from dba_free_space
        group by tablespace_name;

TABLESPACE_NAME              COUNT(*)         MAX(BLOCKS)        SUM(BLOCKS)
------------------------------         ---------            -----------              -----------
CWMLITE                             2                1328                      1360
DRSYS                               1                1320                      1320
```

```
EXAMPLE                    1              19032                  19032
INDX                        1             3192                   3192
PBD_DATA                   2              166648                 166664
ODM                        1              1368                   1368
SYSTEM                     2              12536                  12568
TOOLS                      1               504                  504
UNDOTBS1                   10            19960                  24264
USERS                      1              2736                   2736
```

5) Unificarea spatiilor contigue dintr-un tablespace

```
SQL> desc dba_free_space_coalesced
 Name                                      Null?         Type
 ----------------------------------------- --------      -------------
 TABLESPACE_NAME                                         VARCHAR2(30)
 TOTAL_EXTENTS                                           NUMBER
 EXTENTS_COALESCED                                       NUMBER
 PERCENT_EXTENTS_COALESCED                               NUMBER
 TOTAL_BYTES                                             NUMBER
 BYTES_COALESCED                                         NUMBER
 TOTAL_BLOCKS                                            NUMBER
 BLOCKS_COALESCED                                        NUMBER
 PERCENT_BLOCKS_COALESCED                                NUMBER


SQL> ALTER TABLESPACE  BD COALESCE ;

SQL> select tablespace_name,total_extents, percent_extents_coalesced from dba_free_space_coalesced;

TABLESPACE_NAME                 TOTAL_EXTENTS       PERCENT_EXTENTS_COALESCED
------------------------------          -------------             -------------------------
SYSTEM                                        2                              100
UNDOTBS1                                      10                             100
CWMLITE                                        2                             100
DRSYS                                         1                              100
EXAMPLE                                       1                              100
INDX                                          1                              100
ODM                                           1                              100
TOOLS                                         1                              100
USERS                                         1                              100
XDB                                           1                              100
BD_DATA                                       2                              100
```

UNDO SEGMENTS and SORT SEGMENTS

(Cap. 10)

1) Crearea unui tablespace de undo

```
SQL> create undo tablepace  BD_UNDO datafile ’e:\student\undo_db01.dbf’ size 2M;
```

2) Crearea unui segment de undo in tablespace-ul de undo

```
SQL> create rollback segment UBD_UNDO   tablespace BD_UNDO
         storage (initial  100k next 100k optimal 4M minextents 20 maxextents 100);

Rollback segment created.
```

3) Informatii din dictionar privind segmentele de undo

```
SQL> desc dba_rollback_segs

 Name                              Null?              Type
 -------------------------------   --------           ----
 SEGMENT_NAME                      NOT NULL           VARCHAR2(30)
 OWNER                                                VARCHAR2(6)
 TABLESPACE_NAME                   NOT NULL           VARCHAR2(30)
 SEGMENT_ID                        NOT NULL           NUMBER
 FILE_ID                           NOT NULL           NUMBER
 BLOCK_ID                          NOT NULL           NUMBER
 INITIAL_EXTENT                    NUMBER
 NEXT_EXTENT                       NUMBER
 MIN_EXTENTS                       NOT NULL           NUMBER
 MAX_EXTENTS                       NOT NULL           NUMBER
 PCT_INCREASE                                         NUMBER
 STATUS                                               VARCHAR2(16)
 INSTANCE_NUM                                         VARCHAR2(40)
 RELATIVE_FNO                      NOT NULL            NUMBER

SQL> select segment_name,tablespace_name,owner,status from dba_rollback_segs;

SEGMENT_NAME                TABLESPACE_NAME            OWNER        STATUS
------------------------------ ------------------------------          ------        --------
SYSTEM                      SYSTEM                        SYS       ONLINE
_SYSSMU1$                  UNDOTBS1                     PUBLIC      ONLINE
_SYSSMU2$                  UNDOTBS1                     PUBLIC      ONLINE
_SYSSMU3$                  UNDOTBS1                     PUBLIC      ONLINE
_SYSSMU4$                  UNDOTBS1                     PUBLIC      ONLINE
_SYSSMU5$                  UNDOTBS1                      PUBLIC      ONLINE
_SYSSMU6$                  UNDOTBS1                     PUBLIC      ONLINE
_SYSSMU7$                  UNDOTBS1                     PUBLIC      ONLINE
_SYSSMU8$                  UNDOTBS1                     PUBLIC       ONLINE
_SYSSMU9$                  UNDOTBS1                     PUBLIC      ONLINE
UBD_UNDO                    BD_UNDO                      SCOTT       OFFLINE
```

4) Segmentele de undo folosite de instanta curenta

```
SQL> desc v$rollname
 Name                      Null?            Type
 ----------------------    --------         ------------
 USN                                        NUMBER
 NAME                       NOT NULL        VARCHAR2(30)

SQL> select * from v$rollname;

     USN              NAME
---------        ------------------------------
       0           SYSTEM
       1          _SYSSMU1$
       2          _SYSSMU2$
       3          _SYSSMU3$
       4           _SYSSMU4$
       5          _SYSSMU5$
       6          _SYSSMU6$
       7          _SYSSMU7$
       8          _SYSSMU8$
       9          _SYSSMU9$
      10          _SYSSMU10$
```

5) Statistici despre segmentele de undo

```
SQL> desc v$rollstat
 Name                             Null?   Type
 --------------------------       -----   -------- ----
 USN                                      NUMBER
 LATCH                                    NUMBER
 EXTENTS                                  NUMBER
 RSSIZE                                   NUMBER
 WRITES                                   NUMBER
 XACTS                                    NUMBER
 GETS                                     NUMBER
 WAITS                                    NUMBER
 OPTSIZE                                  NUMBER
 HWMSIZE                                  NUMBER
 SHRINKS                                  NUMBER
 WRAPS                                    NUMBER
 EXTENDS                                  NUMBER
 AVESHRINK                                NUMBER
 AVEACTIVE                                NUMBER
 STATUS                                   VARCHAR2(15)
 CUREXT                                   NUMBER
 CURBLK                                   NUMBER

SQL> select usn, rssize, extents, status from v$rollstat;

     USN    RSSIZE   EXTENTS       STATUS
--------- ---------         ---------          ---------------
       0   385024         6         ONLINE
       1  1171456         3         ONLINE
       2  1171456         3         ONLINE
       3   1171456        3         ONLINE
       4   1171456        3         ONLINE
       5   1171456        3         ONLINE
       6   1171456        3         ONLINE
       7   1171456        3          ONLINE
       8    385024        6          ONLINE
       9   1171456        3          ONLINE
      10    1171456       3          ONLINE
```

6) Informatii despre useri si sesiuni

```
SQL> desc v$session

 Name                                  Null?    Type
 ------------------------------ --------      -------- ----
 SADDR                                         RAW(4)
 SID                                           NUMBER
 SERIAL#                                       NUMBER
 AUDSID                                        NUMBER
 PADDR                                         RAW(4)
 USER#                                         NUMBER
 USERNAME                                      VARCHAR2(30)
 COMMAND                                       NUMBER
 OWNERID                                       NUMBER
 TADDR                                         VARCHAR2(8)
 LOCKWAIT                                      VARCHAR2(8)
 STATUS                                        VARCHAR2(8)
 SERVER                                        VARCHAR2(9)
 SCHEMA#                                       NUMBER
 SCHEMANAME                                     VARCHAR2(30)
 OSUSER                                        VARCHAR2(30)
 PROCESS                                       VARCHAR2(12)
 MACHINE                                       VARCHAR2(64)
 TERMINAL                                      VARCHAR2(16)
 PROGRAM                                       VARCHAR2(64)
 TYPE                                          VARCHAR2(10)
 SQL_ADDRESS                                   RAW(4)
 SQL_HASH_VALUE                                NUMBER
 PREV_SQL_ADDR                                 RAW(4)
 PREV_HASH_VALUE                              NUMBER
 MODULE                                        VARCHAR2(48)
 MODULE_HASH                                    NUMBER
 ACTION                                        VARCHAR2(32)
 ACTION_HASH                                   NUMBER
 CLIENT_INFO                                   VARCHAR2(64)
 FIXED_TABLE_SEQUENCE                           NUMBER
 ROW_WAIT_OBJ#                                  NUMBER
 ROW_WAIT_FILE#                                 NUMBER
 ROW_WAIT_BLOCK#                                NUMBER
 ROW_WAIT_ROW#                                  NUMBER
 LOGON_TIME                                     DATE
 LAST_CALL_ET                                  NUMBER
 PDML_ENABLED                                    VARCHAR2(3)
 FAILOVER_TYPE                                   VARCHAR2(13)
 FAILOVER_METHOD                                 VARCHAR2(10)
 FAILED_OVER                          VARCHAR2(3)
 RESOURCE_CONSUMER_GROUP VARCHAR2(32)
 PDML_STATUS                          VARCHAR2(8)
 PDDL_STATUS                           VARCHAR2(8)
 PQ_STATUS                            VARCHAR2(8)
 CURRENT_QUEUE_DURATION    NUMBER
 CLIENT_IDENTIFIER                 VARCHAR2(64)
```

```
SQL> select username, sid, saddr from v$session;

USERNAME              SID    SADDR
------------------------------ --------- --------
                                 1       14A34758
                                 2       14A350C8
                                 3       14A35A38
                                 4       14A363A8
                                 5       14A36D18
                                 6       14A37688
                                 8       14A38968
SYS                              9       14A392D8
SCOTT                           10       14A39C48
```

7) Informatii despre tranzactii(adresele tranzactiilor pot fi join-ate cu sesiunile prin ses_addr).

```
SQL> desc v$transaction
 Name                              Null?    Type
 ------------------------------ --------    ---------
 ADDR                                       RAW(4)
 XIDUSN                                     NUMBER
 XIDSLOT                                    NUMBER
 XIDSQN                                     NUMBER
 UBAFIL                                     NUMBER
 UBABLK                                     NUMBER
 UBASQN                                     NUMBER
 UBAREC                                     NUMBER
 STATUS                                     VARCHAR2(16)
 START_TIME                                 VARCHAR2(20)
 START_SCNB                                 NUMBER
 START_SCNW                                 NUMBER
 START_UEXT                                 NUMBER
 START_UBAFIL                               NUMBER
 START_UBABLK                                NUMBER
 START_UBASQN                                NUMBER
 START_UBAREC                                NUMBER
 SES_ADDR                                   RAW(4)
 FLAG                                       NUMBER
 SPACE                                      VARCHAR2(3)
 RECURSIVE                                  VARCHAR2(3)
 NOUNDO                                     VARCHAR2(3)
 PTX                                        VARCHAR2(3)
 NAME                                       VARCHAR2(256)
 PRV_XIDUSN                                 NUMBER
 PRV_XIDSLT                                 NUMBER
 PRV_XIDSQN                                 NUMBER
 PTX_XIDUSN                                 NUMBER
 PTX_XIDSLT                    NUMBER
 PTX_XIDSQN                    NUMBER
 DSCN-B                        NUMBER
 DSCN-W                        NUMBER
 USED_UBLK                     NUMBER
 USED_UREC                     NUMBER
 LOG_IO                        NUMBER
 PHY_IO                        NUMBER
 CR_GET                        NUMBER
 CR_CHANGE                     NUMBER
```

```
SQL> insert into emp values (999, 'TEST','TRANZACT',1111,sysdate, 100,0,10)
1 row created.

SQL> select addr, xidusn, used_ublk,start_uext, start_ubafil from v$transaction

ADDR        XIDUSN     USED_UBLK        START_UEXT    START_UBAFIL
--------     ---------   ---------          ----------          ------------
143ACE8C      4              1                   2              2
```

ADDR – adresa sesiunii
XIDUSN – nr. segmentului de undo
USED_UBLK – nr. de blocuri de undo generate de tranzactie
START_UEXT- extensia segmentului de undo pentru care tranzactia a inceput scrierea
START_UBAFIL – fisierul de undo in care tranzactia curenta a inceput scrierea

8) Informatii despre blocurile de undo folosite de tranzactia curenta

```
SQL> SELECT s.username, t.xidusn, t.ubafil, t.ubablk, t.used_ublk FROM v$session s,
          v$transaction t WHERE s.saddr = t.ses_addr;

USERNAME                   XIDUSN    UBAFIL        UBABLK      USED_UBLK
------------------------------      ----------     ----------        ---------        ----------
SCOTT                             7         2             4196              1
```

9) Statistici despre dimensiunea spatiului de undo

```
SQL> desc v$undostat
 Name                              Null?   Type
 ----------------------------------------- --------    ------------
 BEGIN_TIME                                DATE
 END_TIME                                   DATE
 UNDOTSN                                   NUMBER
 UNDOBLKS                                  NUMBER
 TXNCOUNT                                  NUMBER
 MAXQUERYLEN                               NUMBER
 MAXQUERYID                                VARCHAR2(13)
 MAXCONCURRENCY                             NUMBER
 UNXPSTEALCNT                              NUMBER
 UNXPBLKRELCNT                              NUMBER
 UNXPBLKREUCNT                               NUMBER
 EXPSTEALCNT                               NUMBER
 EXPBLKRELCNT                              NUMBER
 EXPBLKREUCNT                             NUMBER
 SSOLDERRCNT                               NUMBER
 NOSPACEERRCNT                              NUMBER
 ACTIVEBLKS                                 NUMBER
 UNEXPIREDBLKS                              NUMBER
 EXPIREDBLKS                                NUMBER
 TUNED_UNDORETENTION                        NUMBER
```

```
SQL> SELECT to_char(begin_time, ’dd-mm-yyyy hh:mi:ss’) start_time, to_char(end_time,’dd-mm-yyyy hh:mi:ss’) end_time, ((end_time-begin_time)* 24)*60 minute, undoblks FROM v$undostat;

START_TIME               END_TIME             MINUTE     UNDOBLKS
-------------------      -------------------  ----------  ----------
23-11-2013 10:35:02      23-11-2013 10:36:04    1.03              0
23-11-2013 10:25:02      23-11-2013 10:35:02      10            218
23-11-2013 10:15:02      23-11-2013 10:25:02      10             38
23-11-2013 10:05:02      23-11-2013 10:15:02      10             23
```

```
SQL> SELECT (SUM(undoblks) / SUM ((end_time - begin_time) * 24*60*60)) nr_med_blocuri_undo_sec FROM v$undostat;

NR_MED_BLOCURI_UNDO_SEC
-----------------------------------------
         0 .114826753
```

10) Stergerea din dictionar a unui segment de undo

```
SQL> drop rollback segment ubd;

Rollback segment dropped.
```

11) Informatii despre **segmentele temporare de sortare** (folosite in comenzile SQL de sortare)

```
SQL> desc v$sort_segment
 Name                          Null?        Type
 ----------------------------- --------     ----
 TABLESPACE_NAME                            VARCHAR2(31)
 SEGMENT_FILE                               NUMBER
 SEGMENT_BLOCK                              NUMBER
 EXTENT_SIZE                                NUMBER
 CURRENT_USERS                              NUMBER
 TOTAL_EXTENTS                              NUMBER
 TOTAL_BLOCKS                               NUMBER
 USED_EXTENTS                               NUMBER
 USED_BLOCKS                                NUMBER
 FREE_EXTENTS                               NUMBER
 FREE_BLOCKS                                NUMBER
 ADDED_EXTENTS                              NUMBER
 EXTENT_HITS                                NUMBER
 FREED_EXTENTS                              NUMBER
 FREE_REQUESTS                              NUMBER
 MAX_SIZE                                   NUMBER
 MAX_BLOCKS                                 NUMBER
 MAX_USED_SIZE                              NUMBER
 MAX_USED_BLOCKS                            NUMBER
 MAX_SORT_SIZE                              NUMBER
 MAX_SORT_BLOCKS                        NUMBER
 RELATIVE_FNO                           NUMBER
```

```
SQL> select tablespace_name,max_sort_size,extent_size,max_sort_blocks from v$sort_segment;

TABLESPACE_NAME            MAX_SORT_SIZE          EXTENT_SIZE  MAX_SORT_BLOCKS
------------------------------            -------------              -----------              ---------------
TEMP                                                  1              128                      128
```

12) Informatii despre sesiuni si tablespace-ul in care se afla segmentele temporare de sortare folosite in sesiunea curenta

```
SQL> desc v$sort_usage
 Name                           Null?    Type
 ------------------------------- --------    ----
 USERNAME                                VARCHAR2(30)
 USER                                    VARCHAR2(30)
 SESSION_ADDR                            RAW(4)
 SESSION_NUM                             NUMBER
 SQLADDR                                 RAW(4)
 SQLHASH                                 NUMBER
 TABLESPACE                              VARCHAR2(31)
 CONTENTS                                VARCHAR2(9)
 SEGTYPE                                 VARCHAR2(9)
 SEGFILE#                                NUMBER
 SEGBLK#                                 NUMBER
 EXTENTS                                 NUMBER
 BLOCKS                                  NUMBER
 SEGRFNO#                                NUMBER
```

```
SQL> select username,user,tablespace,contents,extents,blocks from v$sort_usage;

USERNAME            USER             TABLESPACE        CONTENTS       EXTENTS    BLOCKS
-------------------    -----------------     --------------------           -----------          ------           -------
SYS                 SCOTT               TEMP              TEMPORARY       1             128
```

13) Setarea zonei de memorie utilizata pentru sortare in sesiunea curenta la 10K.

```
      SQL> alter system set sort_area_size=10240 deferred;
```

MANAGING TABLES
(Capitol 11)

1) Vizualizarea ID-rilor pentru fiecare linie din tabela.

```
SQL>   CREATE TABLE  emp_test as select * from scott.emp;
SQL> SELECT rowid, empno, ename FROM emp_test;
```

2) Alocarea unei extensii la o tabela

```
ALTER TABLE scott.emp_test
ALLOCATE EXTENT(SIZE 500K
DATAFILE  ’e:/DISK3/DATA01.DBF’);
```

3) Stergerea unei coloane dintr-o tabela

```
ALTER TABLE scott.emp_test
DROP COLUMN comm
CASCADE CONSTRAINTS CHECKPOINT 1000;
```

4) Redenumirea unei coloane dintr-o tablela

```
ALTER TABLE scott.emp_test
RENAME COLUMN sal
TO salary;
```

5) Dezactivarea unei coloane dintr-o tabela

```
ALTER TABLE scott.emp_test
SET UNUSED COLUMN comm
CASCADE CONSTRAINTS;
```

6) Stergerea din dictionar a coloanelor dezactivate dintr-o tabela

```
ALTER TABLE scott.emp_test
DROP UNUSED COLUMNS CHECKPOINT 1000;
```

7) Informatii despre coloane numarul coloanelor dezactivate

```
SQL> desc dba_unused_col_tabs;
 Name                                      Null?          Type
 ----------------------------------------- --------       ---------------
 OWNER                                     NOT NULL     VARCHAR2(30)
 TABLE_NAME                                NOT NULL     VARCHAR2(30)
 COUNT                                     NUMBER
```

```
SQL> SELECT * FROM dba_unused_col_tabs;

OWNER                          TABLE_NAME                          COUNT
------------------------------ ------------------------------ ----------
UBD1                           EMP_TEST                                1
```

8) Informatii despre tabelele din baza de date

```
SQL> desc dba_tables;
 Nume                                      Nul?     Tip
 ----------------------------------------- -------- ------------------
 OWNER                                     NOT NULL VARCHAR2(30)
 TABLE_NAME                                NOT NULL VARCHAR2(30)
 TABLESPACE_NAME                                    VARCHAR2(30)
 CLUSTER_NAME                                       VARCHAR2(30)
 IOT_NAME                                           VARCHAR2(30)
 PCT_FREE                                           NUMBER
 PCT_USED                                           NUMBER
 INI_TRANS                                          NUMBER
 MAX_TRANS                                          NUMBER
 INITIAL_EXTENT                                     NUMBER
 NEXT_EXTENT                                        NUMBER
 MIN_EXTENTS                                        NUMBER
 MAX_EXTENTS                                        NUMBER
 PCT_INCREASE                                       NUMBER
 FREELISTS                                          NUMBER
 FREELIST_GROUPS                                    NUMBER
 LOGGING                                            VARCHAR2(3)
 BACKED_UP                                          VARCHAR2(1)
 NUM_ROWS                                           NUMBER
 BLOCKS                                             NUMBER
 EMPTY_BLOCKS                                       NUMBER
 AVG_SPACE                                          NUMBER
 CHAIN_CNT                                          NUMBER
 AVG_ROW_LEN                                        NUMBER
 AVG_SPACE_FREELIST_BLOCKS                          NUMBER
 NUM_FREELIST_BLOCKS                                NUMBER
 DEGREE                                             VARCHAR2(10)
 INSTANCES                                          VARCHAR2(10)
 CACHE                                              VARCHAR2(5)
 TABLE_LOCK                                         VARCHAR2(8)
 SAMPLE_SIZE                                        NUMBER
 LAST_ANALYZED                                      DATE
 PARTITIONED                                        VARCHAR2(3)
 IOT_TYPE                              VARCHAR2(12)
 TEMPORARY                                VARCHAR2(1)
 SECONDARY                                VARCHAR2(1)
 NESTED                               VARCHAR2(3)
 BUFFER_POOL                              VARCHAR2(7)
 ROW_MOVEMENT                                 VARCHAR2(8)
 GLOBAL_STATS                              VARCHAR2(3)
 USER_STATS                              VARCHAR2(3)
 DURATION                               VARCHAR2(15)
 SKIP_CORRUPT                              VARCHAR2(8)
 MONITORING                               VARCHAR2(3)
 CLUSTER_OWNER                              VARCHAR2(30)
 DEPENDENCIES                               VARCHAR2(8)
```

```
SQL>SELECT owner, tablespace_name,table_name  FROM dba_tables
        WHERE owner = 'SCOTT'
```

9) Informatii despre obiectele din baza de date

```
SQL> desc dba_objects
 Nume                                                          Nul?     Tip
 ------------------------------------------------------------------------------- -------- ------
 OWNER                                                              VARCHAR2(30)
 OBJECT_NAME                                                        VARCHAR2(128)
 SUBOBJECT_NAME                                                     VARCHAR2(30)
 OBJECT_ID                                                          NUMBER
 DATA_OBJECT_ID                                                     NUMBER
 OBJECT_TYPE                                                        VARCHAR2(18)
 CREATED                                                            DATE
 LAST_DDL_TIME                                                      DATE
 TIMESTAMP                                                          VARCHAR2(19)
 STATUS                                                             VARCHAR2(7)
 TEMPORARY                                                          VARCHAR2(1)
 GENERATED                                                          VARCHAR2(1)
 SECONDARY                                                          VARCHAR2(1)
```

```
SQL> SELECT object_name, created
        FROM DBA_OBJECTS
        WHERE object_name like ’EMP%’ AND owner = ‘SCOTT’;

OBJECT_NAME                  CREATED
--------------------         ----------
EMP                          02-10-2008
```

```
EMP1                    01-12-2008
```

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) 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')
```

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

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

5) Mutarea unui index in alt tablespace

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

6) 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
```

7) 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
```

8) Startarea si stoparea monitorizarii unui index

```
SQL> ALTER INDEX emp_name_idx
         MONITORING USAGE

SQL> ALTER INDEX emp_name_idx
         NOMONITORING USAGE
```

9) 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
```

10) Startarea analizei structurii unui index

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

11) 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
```

1) Sa se faca o lista cu toti userii creati in baza de date curenta, cu ce tablespace permanent lucreaza si data cand au fost creati.

```
select username, default_tablespace, created from dba_users;
```

2) Creati un nou fisier de date cu dimensiunea de 1M si alocati fisierul la tablespace-ul permanent asociat userului curent.
Verificati apoi in dictionar, daca a fost creat.

```
select tablespace_name from dba_users where username='C##UBD1';

alter tablespace BD_DATA
add datafile 'E:\UBD_lab\UBD1.txt'
size 1M;

select file_name, tablespace_name from dba_data_files where tablespace_name='BD_DATA';
```

3) Faceti o inserare in tabela EMP1 (o copie a tabelei EMP), apoi verificati in dictionar adresa sesiunii, nr segmentului de rollback si numarul de blocuri de undo generate de tranzactie.

```
create table EMP1 as select * from EMP;
insert into EMP1 values (1, 'TEST', 'TEST', 2, SYSDATE, 1200, 0, 12);
select ses_addr, xidusn, used_ublk from v$transaction;
```

4) Creati un index de tip arbore pe tabela EMP1, apoi aratati din dictionar numarul de blocuri alocate indexului
si care este procentul utilizat din spatiul alocat.

```
create index EMP_IDX on EMP1(ename)
pctfree 30
storage (
initial 200k
next 200k
pctincrease 0
maxextents 50
)
tablespace BD_DATA;

analyze index EMP_IDX validate structure;
select blocks, pct_used, used_space from index_stats;
```

2. Faceti o lista cu numele, tipul si starea tuturor obiectelor create de userul curent.

```
select object_name, object_type, status from user_objects;
```

3. Sa se creeze o copie a tabelei EMP, apoi pe aceasta copies a se creeze un index de tip arbore. Verificati apoi in dictionary numarul de blocuri allocate indexului si care este procentul tuilizat din spatial alocat.(analog mai sus)

```
create table EMP1 as select * from EMP;
```

4. Faceti o lista cu numele instantei curente, numele tablespaceului permanent userului curent, numele tabelelor si numarul maxim de extensii premise pe fiecare tabela.

```
select instance_name from v$instance; ??
select dba_users.default_tablespace, dba_tables.table_name, dba_tables.max_extents from dba_users,
dba_tables where
dba_users.username=dba_tables.owner;
```

2. Faceti o lista cu numele tablespace-urilor si numarul total de blocuri libere pentru fiecare tablespace.

```
select dba_tablespaces.tablespace_name, dba_free_space.blocks from dba_free_space,
dba_tablespaces where dba_tablespaces.tablespace_name= dba_free_space.tablespace_name;
```

3. Faceti o lista cu numele, marimea in bytes, numarul de extensii si starea segmentelor de rollback in starea ONLINE din sesiunea curenta.

```
select dba_rollback_segs.segment_name, dba_rollback_segs.status, dba_rollback_segs.max_extents,
dba_tablespaces.block_size
from dba_rollback_segs, dba_tablespaces where dba_rollback_segs.tablespace_name =
dba_tablespaces.tablespace_name;
```

4. Faceti o copie a tabelei EMP si dezactivati 2 coloane din tabela copie. Aratati apoi din dictionar cu cate coloane dezactivate figureaza tabela copie.

```
create table EMP1 as select * from EMP;

ALTER TABLE EMP1 set unused column comm CASCADE CONSTRAINTS;

SELECT * from dba_unused_col_tabs;
```

1. Sa se creeze un tablespace temporar temp_test intr-un fisier test.dbf cu dimensiunea de 2M

```
create temporary tablespace temp_test tempfile 'test.dbf' size 2M extent management local uniform
size 512K;
```

2. Sa se faca o lista cu numele instantei curente, numele tablespace-ului permanent aferent userului curent, numele tabelelor si dimensiunea maxima a blocurilor de extensie alocate tablespaceului permanent exprimata in MB.

```
select i.instance_name, t.tablespace_name, t.max_extents from dba_tablespaces t, v$instance i where
tablespace_name = (select default_tablespace from dba_users where username = 'C##UBD1')
```

1. Toate tabelele create de userul SCOTT:

```
SELECT owner,object_name,object_type FROM all_objects WHERE owner='SCOTT' AND
object_type='TABLE';
SELECT owner, table_name FROM all_tables WHERE owner='SCOTT';
```

2. In userul UBD1 să se creeze un view care este o copie a tabelei SALGRADE din userul SCOTT. Să se verifice apoi în dicţionar dacă view-ul a fost creat.

```
CREATE OR REPLACE VIEW salgrade_view AS SELECT * FROM scott.salgrade;
SELECT object_name, object_type FROM user_objects WHERE object_type='VIEW';
```

3. Pe tabela SALGRADE din UBD1 să se creeze o cheie unică şi apoi să se verifice în dicţionar dacă a fost creată constrângerea.

```
ALTER TABLE salgrade ADD CONSTRAINT salgrade_pk PRIMARY KEY (grade);
SELECT owner, constraint_name FROM user_constraints WHERE owner=’UBD1’;
```

1. Aratati din dictionar calea si numele tuturor fisierele de ctrl atasate bazei de date curente.

```
SELECT * FROM v$controlfile;
SELECT name, value FROM v$parameter WHERE name='control_files';
```

3. Aratati din dictionar care sunt prveligiile acor de scott pt alti useri si pe ce tabela.

```
SELECT * FROM USER_TAB_PRIVS WHERE owner='SCOTT';
SELECT * FROM DBA_TAB_PRIVS WHERE owner='SCOTT';
```

4. Aratati din dictionar care esre structura tabelara a tabelei emp din userul stud1. (numele si tipul coloanei).

```
SELECT owner, table_name, column_name, data_type FROM ALL_TAB_COLS WHERE OWNER='STUD1'
AND TABLE_NAME='EMP';
```

1. Sa se arate din dictionar numele instantei curente si grupurile fisierelor redo-log aflate in starea open.

```
SELECT v$instance.instance_name, v$logfile.MEMBER FROM v$instance, v$logfile WHERE
v$logfile.STATUS = 'ONLINE';
```

2. Sa se arate din dictionar grupurile fisierelor de redo-log si care unde au fost create fizic.

```
SELECT GROUP#, MEMBER
FROM v$logfile;
```

3. Sa se arate din dictionar starea instantei curente si data ultimului checkpoint (ora, minut, secunda).

```
SELECT instance_name, TO_CHAR(checkpoint_time, 'dd-mm-yy hh:mi:ss')
FROM v$instance, v$thread where v$instace.instance_name = v$thread.instance;
```

4. Sa se arate din dictionar data cand a fost creata si data la care au fost resetate fisierele redo log (ora, minut, secunda).

```
SELECT TO_CHAR(created, 'dd-mm-yy hh:mi:ss') AS data_creare, to_char(prior_resetlogs_time, 'dd-mm-yy hh:mi:ss') AS data_resetare
FROM v$database;
```

1. Sa se creeze un tabespace de tip undo care se numeste undoisbd si care are un singur fisier de date isbd10 cu dimensiunea de 1M

```
CREATE undo tablespace undoisbd
datafile 'E:/Student/isbd10.bdf'
size 1M;
```

2. Sa se arate din dictionar numele, fisierul si starea tablespace-ului permanent aferent userului curent.

```
SELECT a.tablespace_name, b.file_name, a.STATUS
FROM dba_tablespaces a, dba_data_files b
WHERE a.contents ='PERMANENT' AND a.tablespace_name = b.tablespace_name;
```

3. Sa se mareasca dimensiunea fisierului isbd10 la 2M apoi sa se verifice in dictionar noua dimensiune

```
ALTER DATABASE DATAFILE 'E:/Student/SABD1.dbf' RESIZE 2M;
SELECT BYTES FROM DBA_TEMP_FILES WHERE FILE_NAME LIKE 'E:\STUDENT\SABD1.DBF';
```

4. Aratati din dictionar care este cel mai mare fisier temporar ca nr de bytes al userului curent, data cand a fost creat si starea lui

```
SELECT name, creation_time, STATUS, block_size FROM V$TEMPFILE WHERE STATUS='ONLINE';
```

1. Care este spatiul liber ca numar de blocuri in tablespace-ul permanent aferent userului curent?

```
SELECT a.tablespace_name, a.blocks
FROM dba_free_space a, dba_users b
WHERE b.default_tablespace = a.tablespace_name AND b.username = 'C##UBD1'
```

2. Sa se arate din dictionar numele table spaceului permanent aferent userului curent si extensia sa initiala.

```
select INITIAL_EXTENT from dba_tablespaces where tablespace_name = (select default_tablespace from dba_users where username='C##UBD1')
```

2. Sa se arate din dictionar numele table spaceului permanent aferent userului curent si extensia sa initiala.

```
select INITIAL_EXTENT from dba_tablespaces where tablespace_name = (select default_tablespace from dba_users where username='UBD1')
```

3. Sa se arate din dictionar care sunt tabelele partitionate aferente userului sistem.

```
select owner, partition_name from dba_segments where segment_type='TABLE PARTITION' and owner='SYSTEM';
```

4. Sa se arate din dictionar numele celui mai mare segment de rollback, numele tablespace-ului pe care este creat si dimensiunea lui in bytes.

```
SELECT segment_name, tablespace_name, bytes
FROM dba_segments
WHERE segment_type = 'ROLLBACK' AND bytes = (SELECT MAX(bytes) FROM dba_segments WHERE segment_type = 'ROLLBACK' GROUP BY bytes);
```

5. Care este spatiul liber ca numar de blocuri in tablespace-ul permanent aferent userului current.

```
select tablespace_name, sum(blocks)
from dba_free_space
where tablespace_name='BD_DATA'
group by tablespace_name;

select tablespace_name, sum(blocks)
from dba_free_space
where tablespace_name='PBD_DATA'
group by tablespace_name
```

6. Sa se creeze o copie a tabelei emp numita emp1_ubd apoi sa se arate din dictionar proprietarul, numele, tipul si marimea in blocuri aacestei tabele;

```
create table emp1_ubd as select * from emp;
select owner, segment_name,segment_type, blocks
from dba_segments
where segment_name='EMP1_UBD';
```

7. Sa se arate din dictionary cea mai mare extensie de segment de rollback, numele txt in care este creat segmental si dimensuinea in bytes a extensiei;

```
select segment_name, tablespace_name, bytes
from dba_segments
where segment_type='ROLLBACK' and extents = (select max(extents) from dba_segments where segment_type='ROLLBACK' group by tablespace_name);
```

8. care sunt indecsii creati pe tabelele din userul scott , in ce table space sunt creati si cate blocuri au alocate

```
select tablespace_name,blocks,segment_name
from dba_segments
where owner='SCOTT'and segment_type='INDEX'
```

1. Faceti o lista cu numele, marimea in bytes si starea segmentelor undo din sesiunea curenta.

```
SELECT addr, used_ublk, member FROM v$transaction, v$logfile WHERE start_ubafil = GROUP#
SELECT addr, used_ublk, file_name FROM v$transaction, dba_data_files WHERE start_ubafil = file_id
select a.usn,b.name,rssize,status from v$rollstat a, v$rollname b where a.usn = b.usn
```

2. faceti o inserare in tabela emp, apoi faceti o lista cu adresa tranzactiei, segmentul de rollback pe care il foloseste, numarul de blocuri generate si numele fisierului de rollback utilizat.

```
insert into emp values (1000, 'TEST','TRANZACT',1111,sysdate, 100,0,10);
select a.addr, a.xidusn, a.used_ublk, b.file_name
from v$transaction a left join dba_data_files b
on a.start_ubafil = b.file_id;
```

3.Sa se faca o lista cu userul curent , idul sesiunii curente , starea ei si tablespaceul permanent ascoiat

```
select a.username,a.sid,b.tablespace_name , a.status from v$session a , dba_rollback_segs b where
a.username ='UBD1' and b.owner='UBD1'
```

4. Faceti o lista cu numele tablespace-ului alocat pentru segmentele temporare de sortare din sesiunea curenta, numarul de extensii si blocuri libere, precum si fisierul alocat.

```
SELECT v$sort_segment.tablespace_name, free_extents, free_blocks, file_name
FROM v$sort_segment, dba_temp_files
WHERE v$sort_segment.tablespace_name = dba_temp_files.tablespace_name
SELECT v$sort_segment.tablespace_name, free_extents, free_blocks, file_name, segment_file
FROM v$sort_segment, dba_data_files
WHERE v$sort_segment.segment_file = dba_data_files.file_id
```

5. Faceti o lista cu userul curent , adresa sesiunii , adresa tranzactiei, si numele segmentului de rollback fol in sesiunea curenta

```
select a.username, a.saddr, a.taddr , b.name
from v$session a, v$rollname b
where b.name = (select x.name from v$rollname x, v$transaction y where x.usn=y.xidusn) and
a.username='UBD1';
select a.username, a.saddr, b.addr, b.start_ubablk
from v$session a
inner join v$transaction b
on a. saddr = b.ses_addr;
```

6. sa se faca o lista cu idul sesiunii curente userul curent numele si tipul tablespaceului pt segmentele temporrare de sortare , nr de extensii si numarul total de blocuri alocate

```
select a.sid,a.username , t.tablespace_name , t.total_extents , t.total_blocks,d.status
from v$session a, v$sort_segment t,dba_temp_files v
where v.tablespace_name = t.tablespace_name and t.CURRENT_USERS = a.USER#
```

7. faceti o lista cu numele, tipul si starea tablespace+ului alocat pt segmentele temporare de sortare din sesiunea curenta precum si nr maxim de blocuri de sortare alocate fiecarui segment temporar.

```
select a.tablespace_name, a.max_sort_size,a.max_sort_blocks, b.contents
from v$sort_segment a
inner join dba_tablespaces b
on a.tablespace_name = b.tablespace_name;
```

1. Sa se creeze o cheie externa pe tabela EMP, ca fiind o relatie pe coloana dept_no din tabela dept si sa se verifice in dictionar daca a fost creata constrangerea prin vizualizarea tuturor constrangerilor tabelelor aferente userului curent.

```
alter table dept add constraint deptno_pk primary key (deptno);
alter table emp add constraint emp_fk foreign key (deptno) references dept(deptno);
select constraint_name from user_constraints;
```

2. Faceti o lista cu numele tablespace-ului permanent aferent userului curent, fisierele atasate si starea lor.

```
select tablespace_name, file_name, status
from dba_data_files
where tablespace_name = (select default_tablespace from dba_users where username = 'UBD1');
```

3. Faceti o lista cu proprietarul, numele segmentului, numele tablespace-ului si numarul de bytes alocati segmentelor din userul curent.

```
select owner,segment_name, tablespace_name, bytes
from dba_segments where owner = 'UBD1';
```

4. Sa se creeze un nou fisier de date ubd1 cu marimea de 1 mb. In acest fisier sa se faca o extensie de 100k pentru indexul pk_emp creat pe tabela EMP.

```
ALTER TABLESPACE bd_data
ADD DATAFILE 'E:\DOC_Lab\UBD10.dbf'
SIZE 1M;
ALTER INDEX EMP.PK_EMP
ALLOCATE EXTENT (SIZE 100K
DATAFILE 'E:\DOC_Lab\UBD10.dbf');
```

1. Faceti o lista cu numele, marimea in bytes, numarul de extensii si starea segmentelor undo aflate in starea ONLINE din sesiunea curenta

```
select a.name, b.rssize, b.extents, b.status
from v$rollstat b, v$rollname a
where status='ONLINE' and a.usn=b.usn;
```

2. Faceti o inserare in tabela EMP apoi faceti o lista cu adresa tranzactiei, data cand a fost initiata (ORA-MINUT-SECUNDA), starea ei si numele segmentului de rollback pe care-l foloseste.

```
insert into emp
values (999, 'TEST','TRANZACT',1111,sysdate, 100,0,10);
```

```
select a.addr, a.start_time, a.status, b.name
from v$transaction a, v$rollname b
where a.xidusn = b.usn;
```

3. O lista cu userul curent, adresa sesiunii curente, adresa tranzactiei si numarul segmentului de rollback folosit in sesiunea curenta

```
select a.username, a.saddr, a.taddr , b.name
from v$session a, v$rollname b
where b.name = (select x.name from v$rollname x, v$transaction y where x.usn=y.xidusn) and
a.username='UBD1';
```

4. O lista cu numele tablespace-ului alocat pt segm temporare de sortare din sesiunea curenta, numarul de extensii si blocuri libere precum si fisierul alocat

```
select a.tablespace_name, a.free_extents, a.free_blocks, b.file_name
from v$sort_segment a, dba_temp_files b
where a.tablespace_name = b.tablespace_name;
```

1. faceti o lista cu numele, marimea in B, nr de extensii si starea segm undo online din sesiunea curenta.

```
select segment_name, block_id, initial_extent, status from dba_rollback_segs where status='ONLINE';
```

2. sa se faca o inserare in tabela emp, apoi sa se faca o lista cu adr tranzactiei, data cand a fost initiata (ora-min-sec), starea ei si numele segm de rollback pe care il foloseste.

```
insert into emp values (123, 'vlad','stud',321,sysdate, 213,0,29);
select addr, start_time, status, rlb.name from v$transaction, v$rollname rlb where usn=XIDUSN;
```

3. faceti o lista cu userul curent, adr sesiunii, adr tranzactiei si numele segm de rollback folosit in sesiunea curenta.

```
select username, saddr, addr, rlb.name from v$session, v$rollname rlb, v$transaction where
ses_addr=saddr and usn=XIDUSN;
```

4. faceti o lista cu numele, tipul si starea tablespaceului alocat pt segm temp de sortare dim sesiunea curenta, precum si nr max de blocuri de sortare alocate fiecarui segm temp

```
select tablespace, contents, MAX_SORT_BLOCKS from v$sort_usage, v$sort_segment where
tablespace=TABLESPACE_NAME;
select tablespace, contents from v$sort_usage where tablespace=TABLESPACE_NAME;
select a.tablespace_name, status, MAX_SORT_BLOCKS from v$sort_segment a, dba_temp_files b where
a.tablespace_name = b.tablespace_name;
```

1.lista cu numele marime in bytes si starea segm de rollback din ses curenta

```
select t1.usn t2.rsize. t2.status
from v$rollstat
where t1.usn=t2.usn
```

2.lista cu userii idurile tutror sesiunilor si starea lor
inserARE In EMP Apoi lista cu adresa tranzactiei segmentul de rollback pe care-l foloseste ,nr blockuri generate si idul fis rollback

3. lista cu userul curent ,adresa sesiuinii,adresa tranzactieisi numele segmentului de rollback folosit in ses curenta

```
select t1.usn,t2.saddr,t3.START_UBAFIL ,t3.XIDUSN from v$rollstat t1,v$session t2,v$transaction t3
where t2.saddr=t3.addr
```

4. faceti o lista cu userul curent,adresa sesiunii, adresa tranzactiei si numele segm de rollback in ses curenta

```
select sess.username, trans.addr, sess.taddr, name.name from v$session sess, v$transaction trans,
v$rollname name where sess.taddr = trans.addr
and name.usn = trans.xidusn
```

1) faceti o lista cu numele, marimea in bytes, starea segmentelor de undo din sesiunea
curenta

```
select a.extents,a.rssize, b.name from
v$rollstat a, v$rollname b
where a.usn = b.usn
```

2)faceti un update in emp si apoi o lista cu adresa tranzactiei , segmentul de rollback pe care il foloseste, numarul de blocuri generate si numele fisierului de rollback utilizat

```
select t.addr, t.xidusn, t.status,t.ses_addr, x.name , t.start_ubafil , y.file_name
from v$transaction t, v$session s, v$rollname x, dba_data_files y
where s.saddr = t.ses_addr and x.usn = t.xidusn and y.file_id = t.start_ubafil;
```

3) FACETI O lista cu userul curent, adresa sesiunii, adresa tranzactiei, si numaruk
segmentului de rollback folosit in sesiunea curenta

```
select s.username, s.saddr,t.addr, t.xidusn, y.name
from v$session s, v$transaction t, v$rollname y
where s.saddr = t.ses_addr and s.username='HR' and y.usn = t.xidusn;
```

4) faceti o lista cu numele tablespaceului alocat pentru segmentele temporare de sortare
din sesiunea curenta, numarul de extensii si blocuri libere, precum si fisierul alocat

```
select s.tablespace_name, s.total_extents, s.free_blocks, s.segment_file, f.file_name
from v$sort_segment s, dba_temp_files f
where f.tablespace_name = s.tablespace_name;
```

1. faceti o lista cu numele, marimea in bytes si starea segementelor din sesiunea curenta

```
select a. name, b.rssize, b.status
```

```
from v$rollname a
INNER JOIN v$rollstat b
ON a.USN = b.USN;
```

2. faceti o inserare in tabela emp, apoi faceti o lista cu adresa tranzactiei, segmentul de rollback pe care il foloseste, numarul de blocuri generate si numele fisierului de rollback utilizat.

```
insert into emp values (1000, 'TEST','TRANZACT',1111,sysdate, 100,0,10);
select a.addr, a.xidusn, a.used_ublk, b.file_name
from v$transaction a
left join dba_data_files b
on a.start_ubafil = b.file_id;
```

3. faceti o lista cu useru current, adresa sesiunii, adresa tranyactiei si numarul segmentului de rollback folosit in sesiunea curenta

```
select a.username, a.saddr, b.addr, b.start_ubablk
from v$session a
inner join v$transaction b
on a. saddr = b.ses_addr;
```

4. faceti o lista cu numele, tipul si starea tablespace+ului alocat pt segmentele temporare de sortare din sesiunea curenta precum si nr maxim de blocuri de sortare alocate fiecarui segment temporar.

```
select a.tablespace_name, a.max_sort_size,a.max_sort_blocks, b.contents
from v$sort_segment a
inner join dba_tablespaces b
on a.tablespace_name = b.tablespace_name;
```

1)faceti o lista cu userul curent, idul sesiunii curente, starea ei si tbls permanent asociat userului

```
select a.default_tablespace, b.username,b.sid, b.status from dba_users a, v$session b where
a.username=b.username
```

2)faceti un update in tabela emp apoi faceti o lista cu adresa tranzactiei, data cand a fost initiata (ora minut sec), starea ei,si numele segementului de rollback pe care il foloseste

```
select a.username, a.saddr,b.start_time, b.addr,b.status
from v$session a , v$transaction b
where a. saddr = b.ses_addr;
```

3) faceti o lista cu numele, tipul si starea tabls alocat ptr segmentele temporare de sortare din sesiunea curenta precum si nr maxim de blocuri de sortare alocate friecarui segment temporar

```
select a.tablespace_name, a.max_sort_size,a.max_sort_blocks, b.contents,b.status
from v$sort_segment a, dba_tablespaces b
where a.tablespace_name = b.tablespace_name;
```

4)faceti o lista cu numele tblsc alocat ptr segmentele temporare de sortare din sesiunea curenta, nr de extensii si blocuri libere precum si fisierul alocat

```
select a.tablespace_name, a.used_extents,a.free_blocks,b.contents, b.status,
a.segment_file,c.file_name
from v$sort_segment a, dba_tablespaces b, dba_data_files c
where a.tablespace_name = b.tablespace_name and a.tablespace_name=c.tablespace_name;
```

1.Sa se faca o lista cu numele , marimea in bytes si starea segemntelor de undo din sesiunea curenta.

```
select rn.usn, name, rssize, status from v$rollstat rs ,v$rollname rn where rs.usn=rn.usn;
```

2.faceti o lista cu userul curent, id-ul sesiunii curente, starea si tablespace-ul permanent asociat

```
select a.default_tablespace, b.username,b.sid, b.status from dba_users a, v$session b where
a.username=b.username
```

3. faceti o inserare in tabela emp apoi faceti o lista cu adresa tranzactiei segmentul de rollback pe care il foloseste numarul de blocuri generate si numele fisierului de rollback utilizat.

```
insert into emp values(1,'nume','job',5,null,5,6,7);
select t.addr, t.xidusn, rn.name, rs.rssize from v$transaction t, v$rollname rn, v$rollstat rs where rn.usn
= t.xidusn and rn.usn=rs.usn;
```

4. aflati din dictionar care este numele si tipul tablespace-ului folosit pentru segmentele temporare de sortare alocat sesiunii curente precum si tipul segmentelor.

```
select d.tablespace_name from dba_temp_files d, v$sort_segment ss where
d.tablespace_name=ss.tablespace_name;
select * from v$sort_segment;
select * from dba_temp_files;
desc dba_temp_files;
select d.tablespace_name, segment_file,segtype from dba_temp_files d, v$sort_segment ss ,
v$sort_usage su where d.tablespace_name=ss.tablespace_name and ss.tablespace_name=
su.tablespace;
select * from v$sort_segment;
```

1. Faceti o lista cu numele tabelelor din userul curent proprietarul si tablespaceul aferent.

```
SELECT owner, table_name, tablespace_name
FROM dba_tables WHERE owner=user;
```

2. Faceti o lista cu numele, tipul si data creeri tuturor triggerilor din BD creati in anul 2002

```
SELECT object_name, object_type, created
FROM dba_dba_objects
WHERE object_type='TRIGGER' AND created BETWEEN '01-JAN-02' AND '31-DEC-02';
```

3. Faceti o lista cu numele instantei curente, numele tablespaceului aferent userului curent, numele tabelelor si dimensiunea maxima a blocurilor de extensie alocate tablespaceului permanent (dim in MB)

```
SELECT tablespace_name, table_name, max_extents, instances
FROM dba_tables
WHERE TEMPORARY='N' AND owner=user;
```

4. Faceti o copie EMP10 a tabelei EMP apoi dezactivati coloanele de comision si salariu, aratati in dictionar ca au fost dezactivate dupa care reactivati-le.

```
CREATE TABLE emp10 AS SELECT * FROM emp;
ALTER TABLE emp10 SET UNUSED COLUMN sal CASCADE CONSTRAINTS;
ALTER TABLE emp10 SET UNUSED COLUMN comm CASCADE CONSTRAINTS;
SELECT table_name, count FROM dba_unused_col_tabs WHERE table_name='EMP10';
ALTER TABLE emp10 ADD comm Number(4);
ALTER TABLE emp10 ADD sal Number(4);
DROP TABLE emp10;
```

1. Creati o tabela emp2 copie a emp; pe col emp2 sa se creeze un index pe coloanele empno si depno apoi sa se arate din dictionar structura indexului (numele tabelei, numele coloanelor si proprietarul).

```
CREATE TABLE emp2 AS SELECT * FROM emp;
CREATE INDEX emp2_idx ON emp2(empno, deptno) PCTFREE 30 STORAGE(INITIAL 200K NEXT 200K
PCTINCREASE 0 MAXEXTENTS 50);
SELECT table_name, column_name, index_owner FROM dba_ind_columns WHERE
index_name='EMP2_IDX';
```

2. Monitorizati indexul creat si verificati in dictionar data si ora cand a inceput monitorizarea.

```
ALTER INDEX deptno_idx MONITORING USAGE;
SELECT start_monitoring FROM v$object_usage WHERE index_name='EMP2_IDX';
```

3. Aratati din dictionar numarul de blocuri alocate indexului creat de voi si care este procentul utilizat din spatiul alocat.

```
ANALYZE INDEX emp2_idx VALIDATE STRUCTURE
SELECT name, blocks, used_space/ btree_space * 100 FROM index_stats
```

4. Aratati din dictionar numele instantei curente, numele indecsilor si pe ce tabele au fost creati indecsii respectivi.

```
SELECT * FROM v$INSTANCE
SELECT a.index_name, b.instance_name, a.table_name FROM dba_indexes a, v$instance b WHERE
a.instances = b.instance_number AND b.instance_name='bd' AND owner='UBD1';
```

5.lista cu toate tabele din tablespaceul aferent userului curent

```
select owner,tablespace_name, table_name
from dba_tables where owner='UBD1';
```

6.aflarea tipurilor de obiect din dictionar

```
select object_type from dba_objects group by object_type;
```

7.lista cu indexii din baza de date in anul 2008

```
select OBJECT_NAME , CREATED, OBJECT_TYPE
from dba_objects
where object_type='INDEX' and created between '01-JAN-08' and '31-DEC-08';
```

8.dezactivare coloana de comision

```
ALTER TABLE emp11
SET UNUSED COLUMN sal
CASCADE CONSTRAINTS;
```

9.selectare numar de coloana nefolosite pentru tabela emp11

```
select * from dba_unused_col_tabs where table_name='EMP11';
```

10.numele instanteicurente, tablespaceul aferent userului curent , numele tabelelor si numele instantei

```
select a.TABLE_NAME, a.TABLESPACE_NAME , b.INSTANCE_NAME ,b.HOST_NAME
from dba_tables a , v$instance b
where a.OWNER='UBD1' and a.INSTANCES=b.INSTANCE_NUMBER;
CREATE GLOBAL TEMPORARY TABLE
hr.employees_temp
AS SELECT * FROM hr.employees;
ALTER TABLE hr.employees
PCTFREE 30
PCTUSED 50
STORAGE(NEXT 500K
MINEXTENTS 2
MAXEXTENTS 100);
ALTER TABLE hr.employees
ALLOCATE EXTENT(SIZE 500K
DATAFILE ‘/DISK3/DATA01.DBF’);
ALTER TABLE emp_test
DROP COLUMN comm
CASCADE CONSTRAINTS CHECKPOINT 1000;
ALTER TABLE emp_test
RENAME COLUMN sal
TO salary;
ALTER TABLE emp_test
SET UNUSED COLUMN comm
CASCADE CONSTRAINTS;
```

```
SELECT object_name, created
FROM DBA_OBJECTS
WHERE object_name like 'EMP%' AND owner = 'SCOTT';
ALTER INDEX emp_name_idx
DEALLOCATE UNUSED;
CREATE INDEX emp_name_idx
ON emp(ename)
PCTFREE 30
STORAGE(INITIAL 200K NEXT 200K
PCTINCREASE 0 MAXEXTENTS 50)
TABLESPACE bd_data;
ALTER INDEX emp_name_idx
MONITORING USAGE
ALTER INDEX emp_name_idx
NOMONITORING USAGE
//admin tabelelor
```

3. faceti o lista cu numelele tabelelor tbspace aferent perm si proprietarul ptr toate tabelele din userul curent

```
SELECT owner, tablespace_name,table_name FROM dba_tables
WHERE owner = 'UBD1'
```

2.faceti o lista cu numele tipul si data creeari tuturor trigerilor din baza de date creati in anul 2002

```
select OBJECT_NAME , CREATED, OBJECT_TYPE
from dba_objects
where object_type='TRIGGER' and created between '01-JAN-02' and '31-DEC-02';
//verificati in dict nr de blocuri alocate unui index si care este procentul utilizat din spatiul alocat
ANALYZE INDEX emp_name_idx VALIDATE STRUCTURE;
SELECT name, blocks, used_space, pct_used
FROM index_stats ;
```

1.afisati din dictionar numele instantei curente numele indecsilor si tabelele aferente

```
desc v$instance;
select a.TABLE_NAME, b.INSTANCE_NAME
from dba_tables a, v$instance b
where OWNER='UBD1' and a.;
select a.TABLE_NAME, b.INSTANCE_NAME
from dba_tables a , v$instance b
where a.OWNER='UBD1' and
a.INSTANCES=b.INSTANCE_NUMBER;
select a.index_name, a.table_name, b.instance_name
from dba_indexes a, v$instance b
```

```
where a.instances=b.instance_number;
```

1. faceti o lista cu numele tabelelor, tablespace-ul permanent aferent si proprietarul pt toate tabelele din userul curent.

```
SELECT table_name, tablespace_name, owner FROM dba_tables WHERE owner = 'UBD1';
```

2. lista cu numele, tipul si data crearii tuturor triggerilor din baza de date creati in anul 2002.

```
select object_name, object_type, created from dba_objects where object_type = 'TRIGGER' and
to_char(created, 'YYYY') = 2002;
```

3. verificati in dictionar numarul de blocuri alocate unui index si care este procentul utilizat din spatiul alocat.

```
ANALYZE INDEX scott.emp_name_idx VALIDATE STRUCTURE;
SELECT name, blocks, used_space, pct_used
FROM index_stats WHERE name = 'EMP_NAME_IDX';
```

4. afisati din dictionar numele instantei curente, numele indecsilor si tabelele aferente.

```
SELECT index_name, table_name, instance_name from dba_indexes a INNER JOIN v$instance b ON
a.instances = b.instance_number ;
```

1. creare index emp8_idx pe coloanele emp_no si deptno din tabela emp8 verif in dictionar componenta indexului

```
create table emp8 as select * from emp
CREATE INDEX emp8_idx
ON emp(empno), emp(deptno)
PCTFREE 30
STORAGE(INITIAL 200K NEXT 200K
PCTINCREASE 0 MAXEXTENTS 50)
TABLESPACE pbd_data
SELECT index_name, table_owner, table_name, column_name
from dba_ind_columns
where index_name='EMP8_IDX'
```

2. creare nou fis date ubd8 cu mar de 1m pt tablespace-ul curent; in acest fisier creare extensie 100k pt indexul emp8_idx

```
alter tablespace pbd_data add datafile 'e:/DISK6/ubd8.dbf' size 1M
ALTER INDEX emp8_idx
ALLOCATE EXTENT (SIZE 100K
DATAFILE 'e:/DISK6/ubd8.dbf')
```

3. verif in dictionar nr de blocuri alocate indexului si ce procent din spatiul alocat este utilizate

```
SELECT name, blocks, used_space/ btree_space *100 FROM index_stats
```

4. aflati din dictionari numele instantei curente, numele indecsilor si tabelele aferente

```
SELECT a. index_name, b.instance_name, a.index_type, a.table_name from dba_indexes a, v$instance b
where a.instances=b.instance_number and owner='UBD1'
```

1. Sa se creeze un index pe coloanele id angajat , data angajarii din tabela emp
Sa se porneasca apoi monitorizarea indexului si sa se arate din dictionar numele indexului , tabela pe care este creat , si ora si data la care a inceput monitorizarea

```
CREATE INDEX emp_idx
ON emp(empno,hiredate)
PCTFREE 30
STORAGE(INITIAL 200K NEXT 200K
PCTINCREASE 0 MAXEXTENTS 50)
TABLESPACE bd_data
ALTER INDEX emp_idx MONITORING USAGE
SELECT * from v$object_usage
```

2.Afisati din dictionar numele instantei curente , numele indexilor si tabelele pe care sunt creati pt userul curent

```
SELECT a. index_name, b.instance_name, a.table_name from dba_indexes a, v$instance b
where a.instances=b.instance_number and owner='UBD1'
```

1. creare index emp8_idx pe coloanele emp_no si deptno din tabela emp8
verif in dictionar componenta indexului

```
create table emp8 as select * from emp
CREATE INDEX emp8_idx
ON emp(empno), emp(deptno)
PCTFREE 30
STORAGE(INITIAL 200K NEXT 200K
PCTINCREASE 0 MAXEXTENTS 50)
TABLESPACE pbd_data
SELECT index_name, table_owner, table_name, column_name
from dba_ind_columns
where index_name='EMP8_IDX'
```

2. creare nou fis date ubd8 cu mar de 1m pt tablespace-ul curent; in acest fisier creare extensie 100k pt indexul emp8_idx

```
alter tablespace pbd_data add datafile 'e:/DISK6/ubd8.dbf' size 1M
ALTER INDEX emp8_idx
ALLOCATE EXTENT (SIZE 100K
DATAFILE 'e:/DISK6/ubd8.dbf')
```

3. verif in dictionar nr de blocuri alocate indexului si ce procent din spatiul alocat este utilizate

```
SELECT name, blocks, used_space/ btree_space *100
FROM index_stats
```

4. aflati din dictionari numele instantei curente, numele indecsilor si tabelele aferente

```
SELECT a. index_name, b.instance_name, a.index_type, a.table_name from dba_indexes a, v$instance b
where a.instances=b.instance_number and owner='UBD1'
```

1.aratati care e spatiul liber ca nr de blocuri in tablespaceul permanent aferent userului curent

```
select a.tablespace_name, a.blocks f
from dba_free_space a, dba_users b
where b.default_tablespace = a.tablespace_name
        and
        b.username = 'c##ubd1'
```

2.aratati din dictionar care sunt tabelele partitionate din userul system

```
select table_name from all_part_tables where owner = 'SYSTEM';
```

3.faceti o inserare in tabela emp1 care e o copie a tabelei emp, apoi faceti o lista cu adresa tranzactiei,id segm de roollback pe care il foloseste, nr de blocuri generate, numele fis de rollback utilizat

```
create table emp1 as select * from emp;
insert into emp1 values (999, 'TEST','TRANZACT',1111,sysdate, 100,0,10);
select a.addr, a.xidusn, a.used_ublk, b.file_name
from v$transaction a left join dba_data_files b on a.start_ubafil = b.file_id;
```

4.faceti o lista cu numele tablespaceului aco\locat pt segmentele temp de sortare din sesiunea curenta, nr de extensii si blocuri libere, precum si numele fisierul alocat

```
select a.tablespace_name, a.free_extents, a.free_blocks, a.file_name
from v$sort_segment a, dba_temp_files b
where a.tablespace_name = b.tablespace_name
```

1. Sa se faca o lista cu numele tablespace=-ului , numele fisierelor de date si starea acestora.

```
select tablespace_name, file_name, status from dba_data_files where tablespace_name = (select
default_tablespace from user_users)
```

2.Sa se faca o lista cu numele , tipul starea tuturor obiectellor create de userul curent

```
select object_name, object_type, status from all_objects where owner = (select username from
user_users)
```

3.Sa se faca o lista cu numele , tipul si starea tablespace-ului alocat pentru segmentele temporare de sortare din sesiunea curenta , precum si nr max de blocuri se sortare alocate fiecarui segment temporar.

```
select s.tablespace_name, t.status, t.contents,s.max_sort_blocks from dba_tablespaces t,
v$sort_segment s where t.tablespace_name = s.tablespace_name
```

4.Sa se creeze si sa se monitorizeze indexul pk_emp1 creat pe tabela emp1, care este o copie a tabelei emp.Sa se arate din dictionar numele indexului , tabela pe care a fost creat, data si ora la care s-a inceput monitorizarea.(data si ora)

```
create table emp1 as select * from emp;

create index pk_emp1 on emp1(empno) pctfree 30 storage(initial 200k next  200k pctincrease 0
maxextents 90) tablespace bd_data

alter index pk_emp1 monitoring usage;

select index_name, table_name , start_monitoring from v$object_usage where index_name='PK_EMP1'

select * from emp;
desc v$logfile;
select * from v$logfile;
select * from v$database;
select * from v$log;
```

1. sa se arate din dictionar grupurile si membrii fisierelor de log inactive
2. sa se arate din dictionar numele instantei curente , hostul, data startarii si starea ei
3. care sunt fisierele de control pentru instanta curenta si data cand au fost create
4. care este numarul maxim de fisiere de date pentru baza de date curenta?

```
1.select lf.GROUP#, lf.MEMBER, l.status
from V$LOGFILE lf , v$log l
where lf.group# = l.group#
and l.STATUS like '%INACTIVE%';

desc v$instance;

select instance_name, host_name, startup_time, status
```

```
from v$instance;

3.desc V$DATABASE;
desc v$controlfile;

select a.name , b.controlfile_created
from V$CONTROLFILE a, v$database b;

4.desc v$parameter;

select value from V$PARAMETER
where name like '%db_files%';
```

1. sa se creeze un tablesapce temporar temp_ubd care sa contina un fisier de date ubd1 cu dimensiunea de 2 mb, administrat local

2. sa se mareasca dimensiunea fisierulul de date ubd1 creat anterior la 3 MB, apoi sa se arate din dictionar noua dimensiune

3. aratati din dictionar numele fisierlor temporare aferente userului curent, aflate in starea online, data cand au fost create si dimensiunea lor in blocuri

4. aratati din dictionar numele si tipul tablespace-urilor temporare(inclusiv cele de sistem)

```
1.create temporary tablespace temp_ubd
tempfile 'E:/cursuri/ubd/ubd1.dbf' size 2M
extent management local uniform ;

2. alter database
tempfile   'E:/cursuri/ubd/ubd1.dbf' resize 3M;

select file_name, bytes from dba_temp_files where file_name like '%UBD1%';

3.select name, blocks , status , CREATION_TIME from V$TEMPFILE
where status = 'ONLINE';

4.select TABLESPACE_NAME, contents from DBA_TABLESPACES where CONTENTS = 'TEMPORARY';

desc dba_tablespaces;

desc dba_segments;
```

```sql
desc dba_extents;
desc DBA_FREE_SPACE;

create undo tablespace bd_undo datafile 'e:\cursuri\ubd\undo01.dbf' size 2M;

desc dba_rollack_segs;


/*
  1. aratati din dictionar care este spatiul lber ca numar de blocuri in tablespace-ul permanent
  aferent userului curent

  2. aratati din dictionar numele , marimea in B si blocuri, a tablespace-ului temporar
  aferent userului curent, si in ce fisier este creat spatiul respectiv

  3. faceti o lista cu numele, marimea in Bytes, numarul de extensii si starea segmentelor undo aflate in starea online
  din sesiunea curenta

  4. faceti o inserare in tabela EMP apoi faceti o lista cu adresa tranzactiei, data cand a fost initiata, (h-min-sec),
  starea ei si numele segmentului de rolback pe care il folosest

1.select *  from USER_TABLESPACES;

select sum(f.blocks) blocuri_libere
from  USER_FREE_SPACE f, USER_TABLESPACES t
where f.TABLESPACE_NAME = t.TABLESPACE_NAME
and t.contents = 'PERMANENT';

2.select * from DBA_TEMP_FILES;
select * from USER_TABLESPACES;

select t.TABLESPACE_NAME, f.blocks, f.bytes,  f.file_name
from USER_TABLESPACES t , dba_temp_files f
where t.TABLESPACE_NAME = f.TABLESPACE_NAME
and t.contents = 'TEMPORARY';

3.select * from V$ROLLNAME;
select * from  v$rollstat;
select * from DBA_ROLLBACK_SEGS;
select  s.segment_name, s.status , stat.RSSIZE, stat.EXTENDS
from DBA_ROLLBACK_SEGS s , v$rollname rol , v$rollstat stat
where  s.segment_name = rol.NAME
and rol.usn = stat.usn
and s.status = 'ONLINE';

4.select * from emp;
select * from v$session;
desc V$TRANSACTION;

insert into emp values  (9999, 'johnny', 'patron', 7782, '08-DEC-80', 1000, 100, 20);

select addr, status, start_time , r.name
from V$TRANSACTION  t, V$ROLLNAME r
where t.START_UBAFIL = r.usn;
```

1. sa se faca o lista cu numele tabelei , proprietarul, numele tablespace-ului, pentru toate tabelele la care userul curent are acces

2. faceti o copie emp_copy a tabelei emp, apoi dezactivati coloanele de salariu si comision din tabela creata
   verificati in dictionar cu cate coloane dezactivate figureaza tabela

3. faceti o lista cu numele instantei curente, numele tablespace-ului permanent aferent userului curent, si numele tabelelor si dimensiunea maxima a blocurilor de extensie alocate tablespace-ului. (in MB)

4. activati din nou coloanele dezctivate la punctul 2.

```
1.select * from dba_TAB_PRIVS where grantee = 'PUBLIC';

2.create table emp_copy as select * from emp;
select * from emp_copy;

alter table emp_copy
set unused column sal;

alter table emp_copy
set unused column comm;

3. select * from USER_TABLESPACES;
```

```
select i.instance_name , t.table_name, t.TABLESPACE_NAME, ut.MAX_SIZE
from v$instance i, USER_TABLES t, USER_TABLESPACES ut
where t.TABLESPACE_NAME = ut.TABLESPACE_NAME;

4.ALTER TABLE theo.emp_copy
DROP COLUMN comm
CASCADE CONSTRAINTS CHECKPOINT 1000;

ALTER TABLE theo.emp_copy
DROP COLUMN sal
CASCADE CONSTRAINTS CHECKPOINT 1000;

alter table emp_copy
add (comm number(4,2) NULL,
   sal number (4,2) NULL);

select * from EMP_COPY;
```

1. Folosind dictionarul faceti o lista cu toate tabelele din userul curent, tablespaceul in care sunt create si proprietarul.

```
   SELECT user FROM dual;

   SELECT table_name, tablespace_name, owner
   FROM dba_tables
      WHERE owner='UBD1';
```

2. Faceti o copie a tabelei dept numita deptnew, apoi dezactivati coloana de localitate si verificati in dictionar cu cate
coloane dezactivate figureaza tabela.

```
   CREATE TABLE deptnew AS SELECT * FROM UBD1.dept;

   ALTER TABLE UBD1.deptnew
   SET UNUSED COLUMN loc
   CASCADE CONSTRAINTS;

   SELECT * FROM dba_unused_col_tabs WHERE table_name='DEPTNEW';
```

3. Activati din nou coloana pentru localitate si populati-o cu date (inclusiv datele).

```
   ALTER TABLE UBD1.deptnew
   ADD (loc varchar(13));

   UPDATE UBD1.deptnew a SET a.loc = (SELECT b.loc FROM dept b WHERE a.deptno=b.deptno);
```

4. Alocati tabelei deptnew o extensie de 100K in fisierul E:\student\dept1ext.dbf creat in tablespace curent permanent

aferent userului curent.

```
 select DEFAULT_TABLESPACE
   from DBA_USERS
   where USERNAME='UBD1';

 ALTER TABLESPACE BD_DATA
 ADD DATAFILE 'E:\student\dept1ext.dbf' SIZE 1M;

 ALTER TABLE UBD1.deptnew ALLOCATE EXTENT(SIZE 100K DATAFILE 'E:\student\dept1ext.dbf');
```

1. Sa se creeze un index pe tabela emp, apoi sa se arate din dictionar tabelele si coloanele din tabele pentru fiecare index.

```
        CREATE INDEX scott.emp_name_idx2
        ON scott.emp(job)
        PCTFREE 30
        STORAGE(INITIAL 200K NEXT 200K PCTINCREASE 0 MAXEXTENTS 50)
        TABLESPACE bd_data;

        SELECT index_name, table_name, column_name
        FROM dba_ind_columns
        WHERE index_owner='SCOTT' AND index_name='EMP_NAME_IDX2';
```

2. Sa se creeze un nou fisier de date cu dimensiunea de 1M, iar in acest fisier sa se faca o extensie de 100K pentru indexul creat.

```
        ALTER TABLESPACE (SELECT tablespace_name FROM dba_indexes WHERE

index_name='emp_name_idx2');
        ADD DATAFILE 'e:/student/indx01.dbf' SIZE 1M;

        ALTER INDEX emp_name_idx2
        ALLOCATE EXTENT (SIZE 100K DATAFILE 'e:/student/indx01.dbf';
```

3. Aratati din dictionar numele instantei curente, numele indecsilor si tabelele aferente.

```
        SELECT instance_number
        FROM v$instance;

        SELECT a.index_name, a.table_name, a.instances
        FROM dba_indexes a, v$instance b
        WHERE a.instances = b.instance_number;
```

4. Monitorizati indexul creat, apoi verificati in dictionar data si ora cand a inceput monitorizarea.

```
ALTER INDEX emp_name_idx2
MONITORING USAGE;

SELECT index_name, start_monitoring
FROM v$object_usage
WHERE index_name='EMP_NAME_IDX2';
```