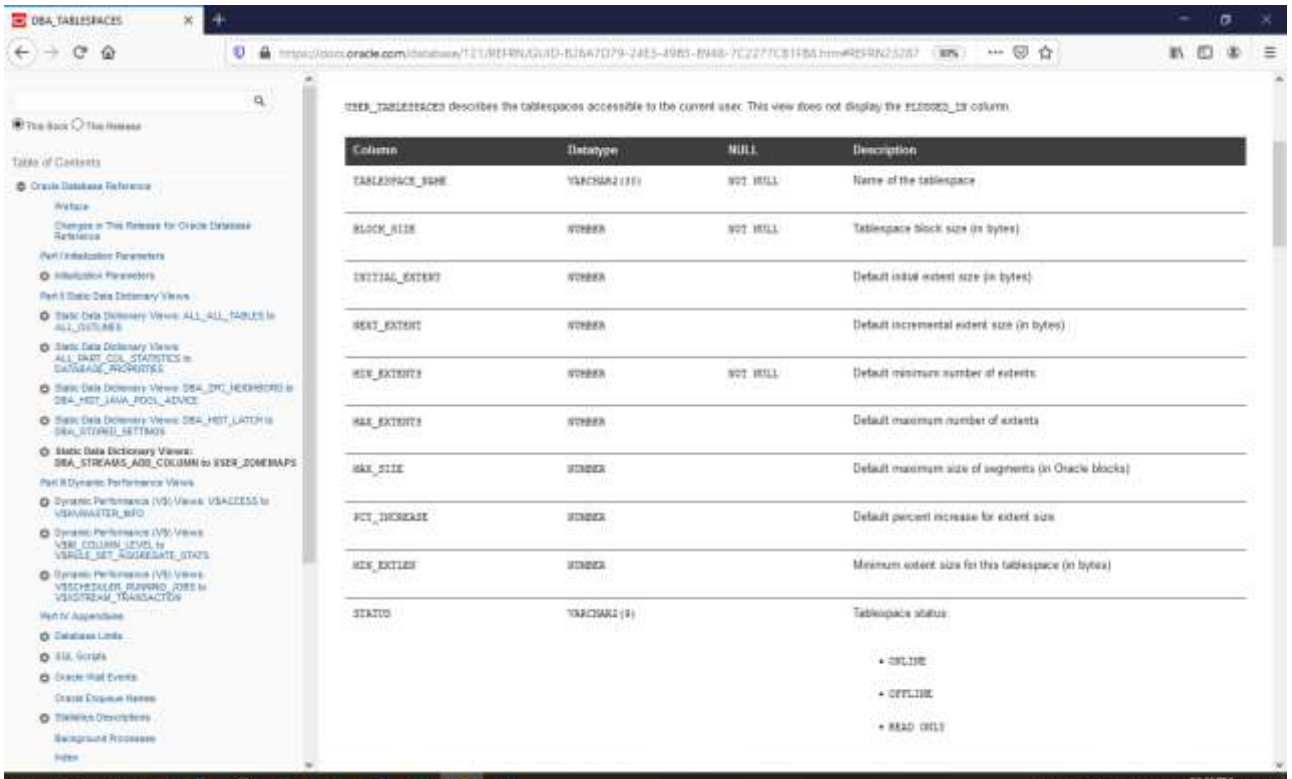
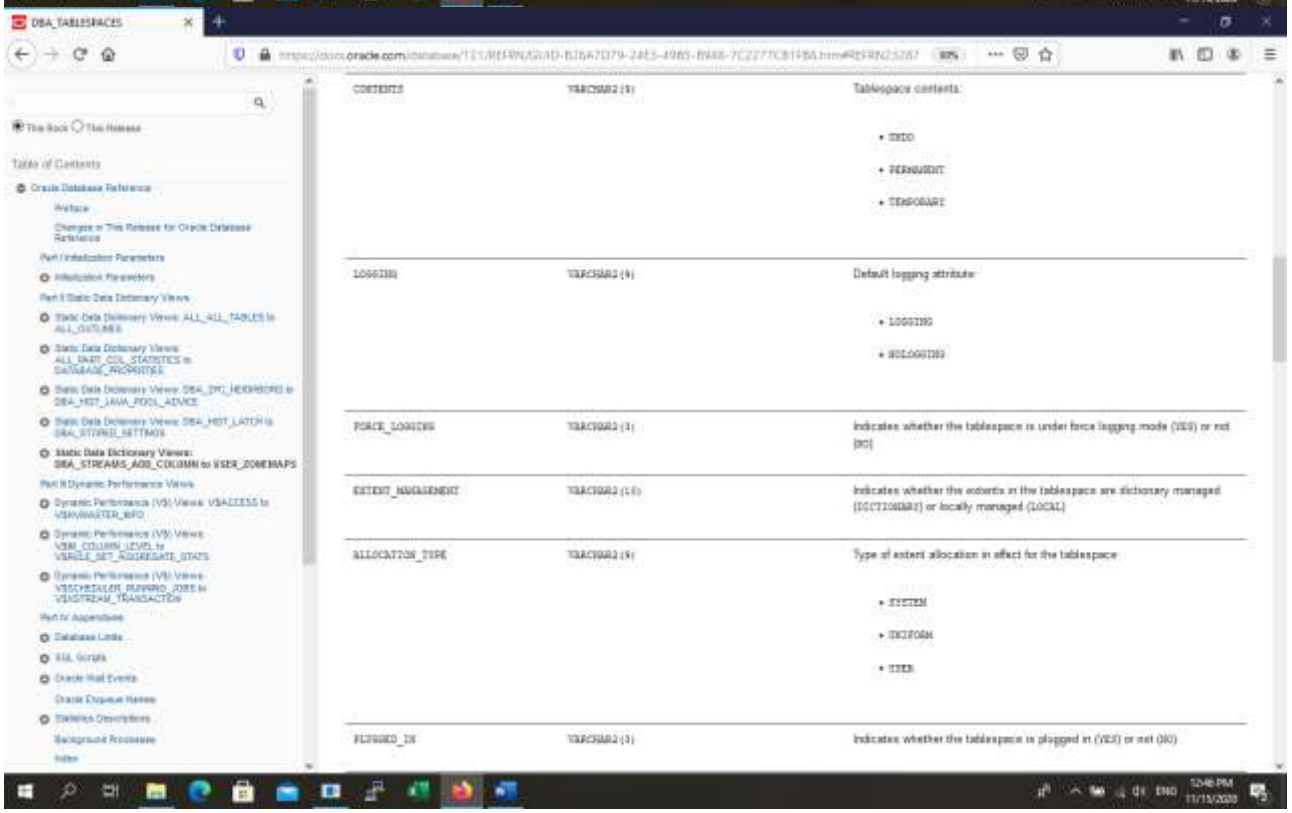
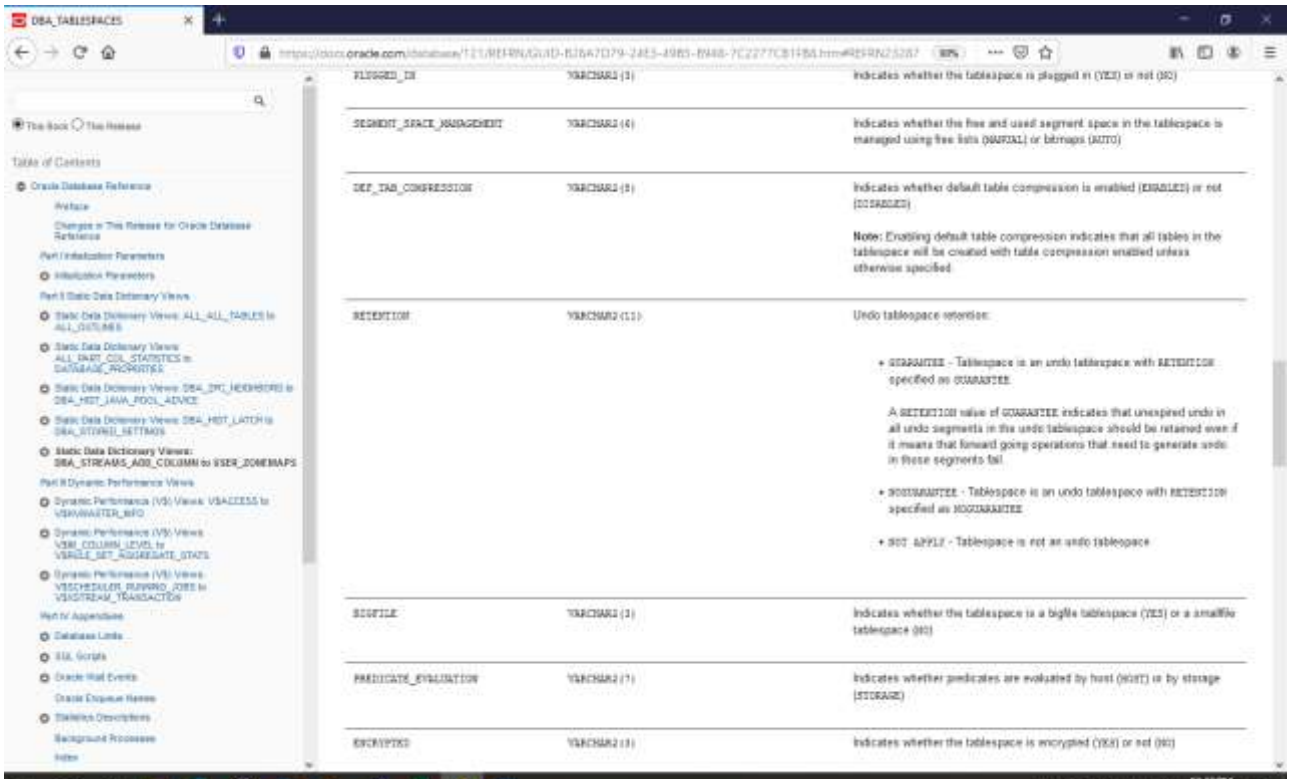
Stucturi de stocare a datelor
(Cap. 9)

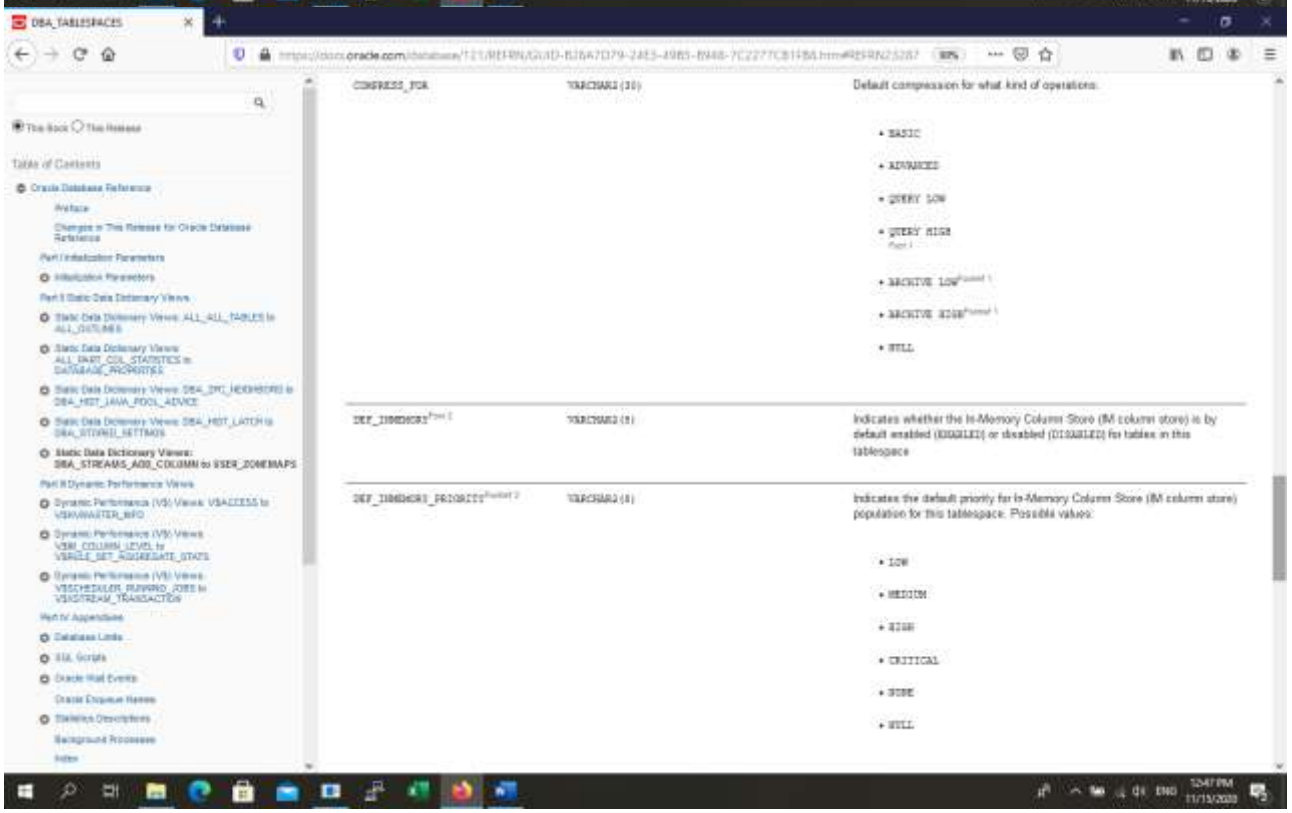
1) Informatii despre starea unui tablespace si parametrii specifici blocurilor de date:

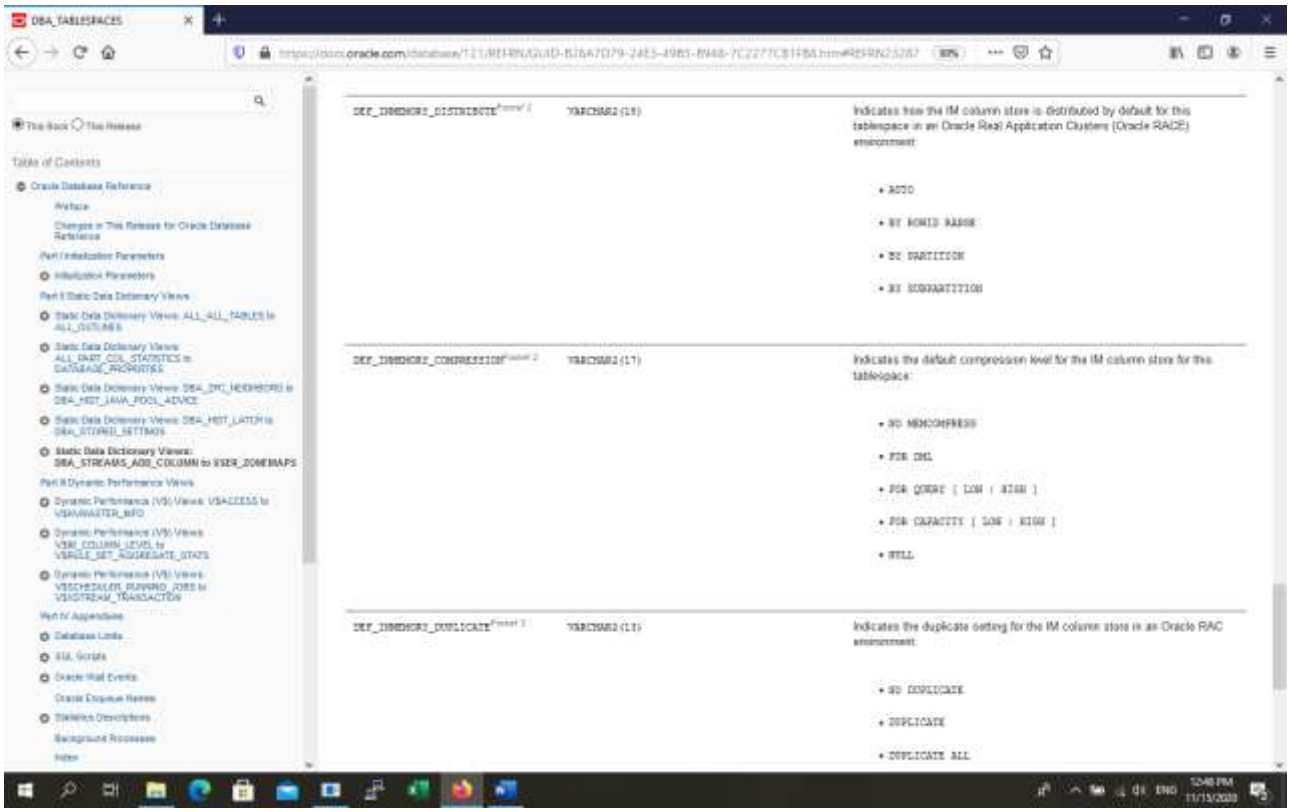
SQL> desc dba_tablespaces

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
MAX_SIZE		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)
PREDICATE_EVALUATION		VARCHAR2(7)
ENCRYPTED		VARCHAR2(3)
COMPRESS_FOR		VARCHAR2(30)
DEF_INMEMORY		VARCHAR2(8)
DEF_INMEMORY_PRIORITY		VARCHAR2(8)
DEF_INMEMORY_DISTRIBUTE		VARCHAR2(15)
DEF_INMEMORY_COMPRESSION		VARCHAR2(17)
DEF_INMEMORY_DUPLICATE		VARCHAR2(13)


DBA_TABLESPACES
USER_TABLESPACES describes the tablespaces accessible to the current user. This view does not display the FLOODED_IN column.
Column
Datatype
NULL
Description
TABLESPACE_NAME
VARCHAR2 (30)
NOT NULL
Name of the tablespace
BLOCK_SIZE
NUMBER
NOT NULL
Tablespace block size (in bytes)
INITIAL_EXTENT
NUMBER
Default initial extent size (in bytes)
NEXT_EXTENT
NUMBER
Default incremental extent size (in bytes)
MIN_EXTENTS
NUMBER
NOT NULL
Default minimum number of extents
MAX_EXTENTS
NUMBER
Default maximum number of extents
MAX_SIZE
NUMBER
Default maximum size of segments (in Oracle blocks)
PCT_INCREASE
NUMBER
Default percent increase for extent size
MIN_EXTLEN
NUMBER
Minimum extent size for this tablespace (in bytes)
STATUS
VARCHAR2 (9)
Tablespace status
ONLINE
OFFLINE
READ ONLY

DBA_TABLESPACES
CONTENTS
VARCHAR2 (9)
Tablespace contents
UNDO
PERMANENT
TEMPORARY
LOGGING
VARCHAR2 (9)
Default logging attribute
LOGGING
NOLOGGING
FORCE_LOGGING
VARCHAR2 (3)
Indicates whether the tablespace is under force logging mode (YES) or not (NO)
EXTENT_MANAGEMENT
VARCHAR2 (10)
Indicates whether the extents in the tablespace are dictionary managed (DICTIONARY) or locally managed (LOCAL)
ALLOCATION_TYPE
VARCHAR2 (9)
Type of extent allocation in effect for the tablespace
SYSTEM
UNIFORM
USER
PLUGGED_IN
VARCHAR2 (3)
Indicates whether the tablespace is plugged in (YES) or not (NO)


DBA_TABLESPACES
PLUGGED_IN
VARCHAR2 (3)
Indicates whether the tablespace is plugged in (YES) or not (NO)
SEGMENT_SPACE_MANAGEMENT
VARCHAR2 (6)
Indicates whether the free and used segment space in the tablespace is managed using free lists (MANUAL) or bitmaps (AUTO)
DEF_TAB_COMPRESSION
VARCHAR2 (8)
Indicates whether default table compression is enabled (ENABLED) or not (DISABLED)
Note: Enabling default table compression indicates that all tables in the tablespace will be created with table compression enabled unless otherwise specified
RETENTION
VARCHAR2 (11)
Undo tablespace retention:
GUARANTEE - Tablespace is an undo tablespace with RETENTION specified as GUARANTEE
A RETENTION value of GUARANTEE indicates that unexpired undo in all undo segments in the undo tablespace should be retained even if it means that forward going operations that need to generate undo in those segments fail
NOGUARANTEE - Tablespace is an undo tablespace with RETENTION specified as NOGUARANTEE
NOT APPLY - Tablespace is not an undo tablespace
BIGFILE
VARCHAR2 (3)
Indicates whether the tablespace is a bigfile tablespace (YES) or a smallfile tablespace (NO)
PREDICATE_EVALUATION
VARCHAR2 (7)
Indicates whether predicates are evaluated by host (HOST) or by storage (STORAGE)
ENCRYPTED
VARCHAR2 (3)
Indicates whether the tablespace is encrypted (YES) or not (NO)


DBA_TABLESPACES
COMPRESS_FOR
VARCHAR2 (30)
Default compression for what kind of operations:
BASIC
ADVANCED
QUERY LOW
QUERY HIGH
ARCHIVE LOW
ARCHIVE HIGH
NULL
DEF_INMEMORY
VARCHAR2 (8)
Indicates whether the In-Memory Column Store (IM column store) is by default enabled (ENABLED) or disabled (DISABLED) for tables in this tablespace
DEF_INMEMORY_PRIORITY
VARCHAR2 (8)
Indicates the default priority for In-Memory Column Store (IM column store) population for this tablespace. Possible values:
LOW
MEDIUM
HIGH
CRITICAL
NONE
NULL



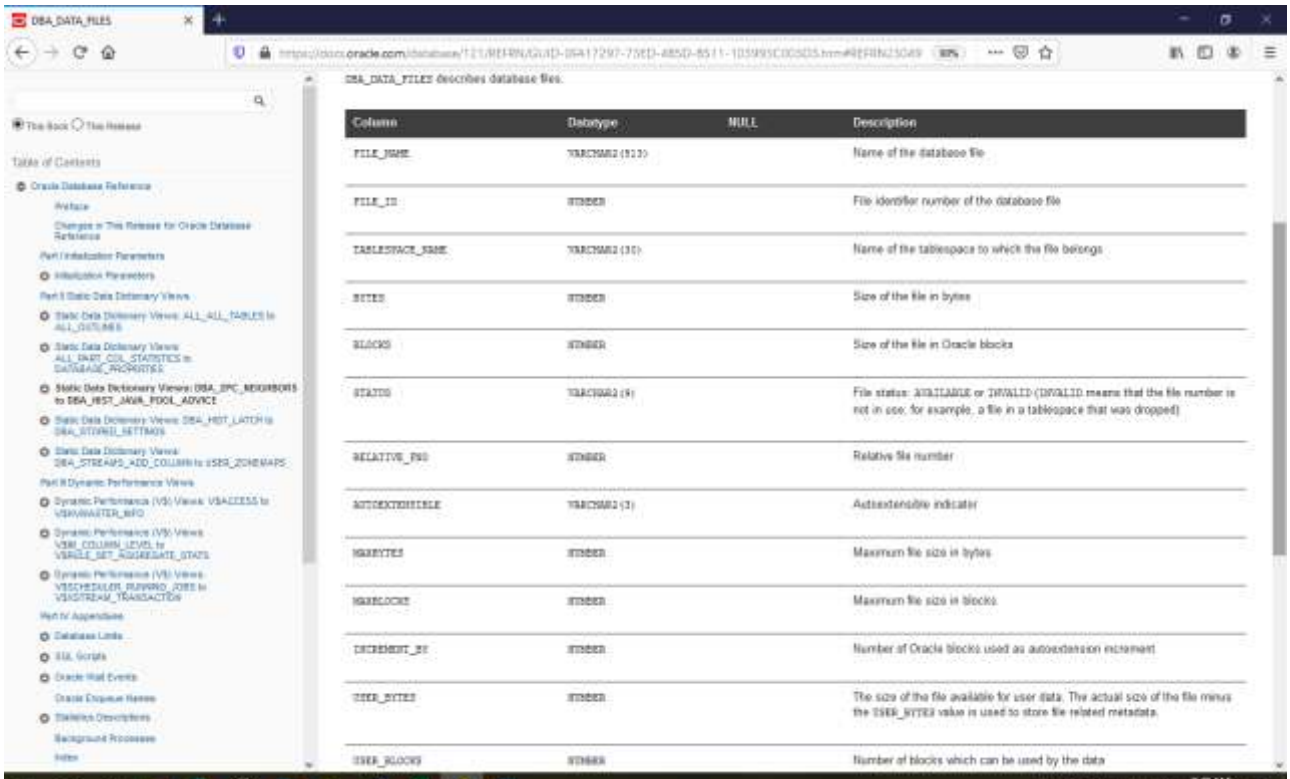
SQL> select tablespace_name,block_size,initial_extent,min_extents, max_extents, contents, status
from dba_tablespaces where tablespace_name='USERS';

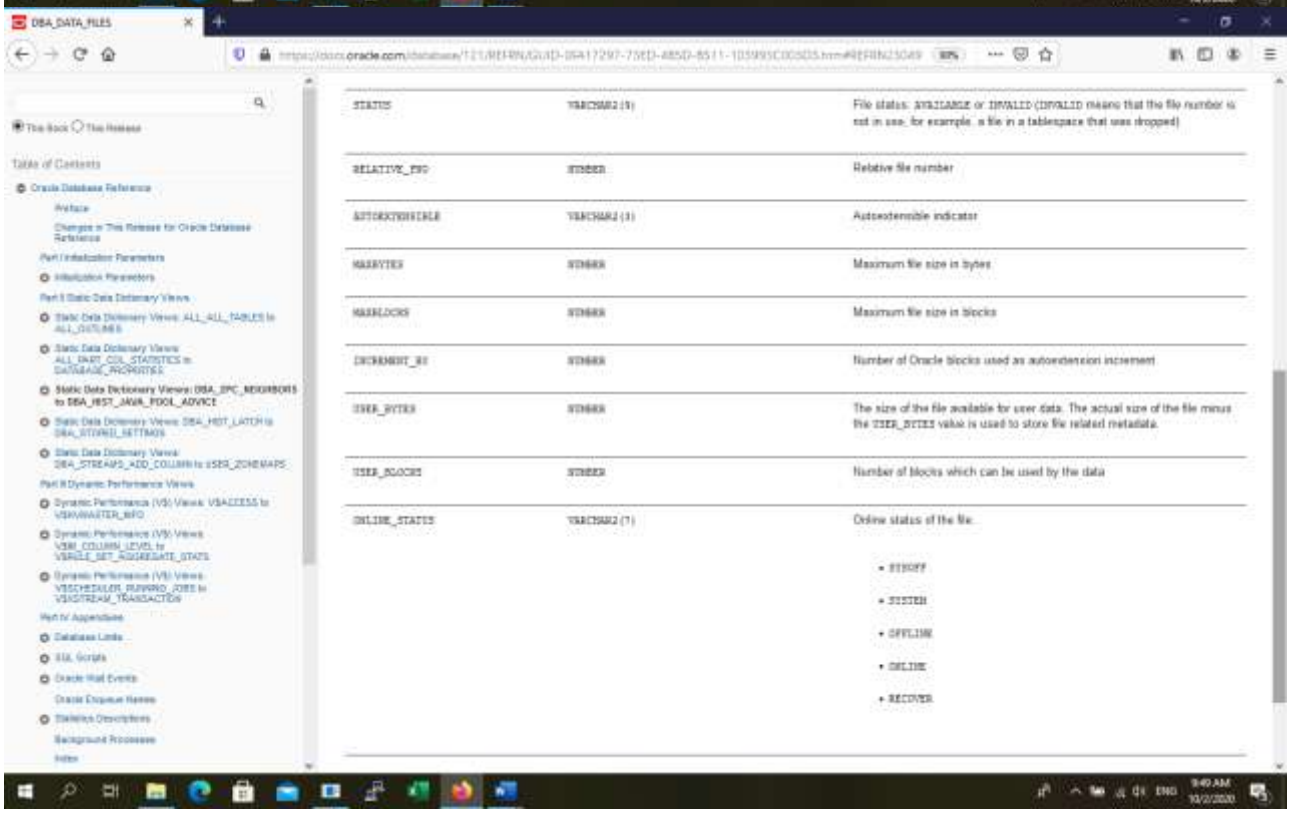
TABLESPACE_NAME	BLOCK_SIZE	INITIAL_EXTENT	MIN_EXTENTS	MAX_EXTENTS	CONTENTS	STATUS
USERS	8192	65536	1	2147483645	PERMANENT	ONLINE

2) Informatii despre un tablespace, fisierul de date alocat, numarul total de blocuri si dimensiunea lor:

SQL> desc dba_data_files;

Name	Null?	Type
FILE_NAME		VARCHAR2(513)
FILE_ID		NUMBER
TABLESPACE_NAME		VARCHAR2(30)
BYTES		NUMBER
BLOCKS		NUMBER
STATUS		VARCHAR2(9)
RELATIVE_FNO		NUMBER
AUTOEXTENSIBLE		VARCHAR2(3)
MAXBYTES		NUMBER
MAXBLOCKS		NUMBER
INCREMENT_BY		NUMBER
USER_BYTES		NUMBER
USER_BLOCKS		NUMBER
ONLINE_STATUS		VARCHAR2(7)





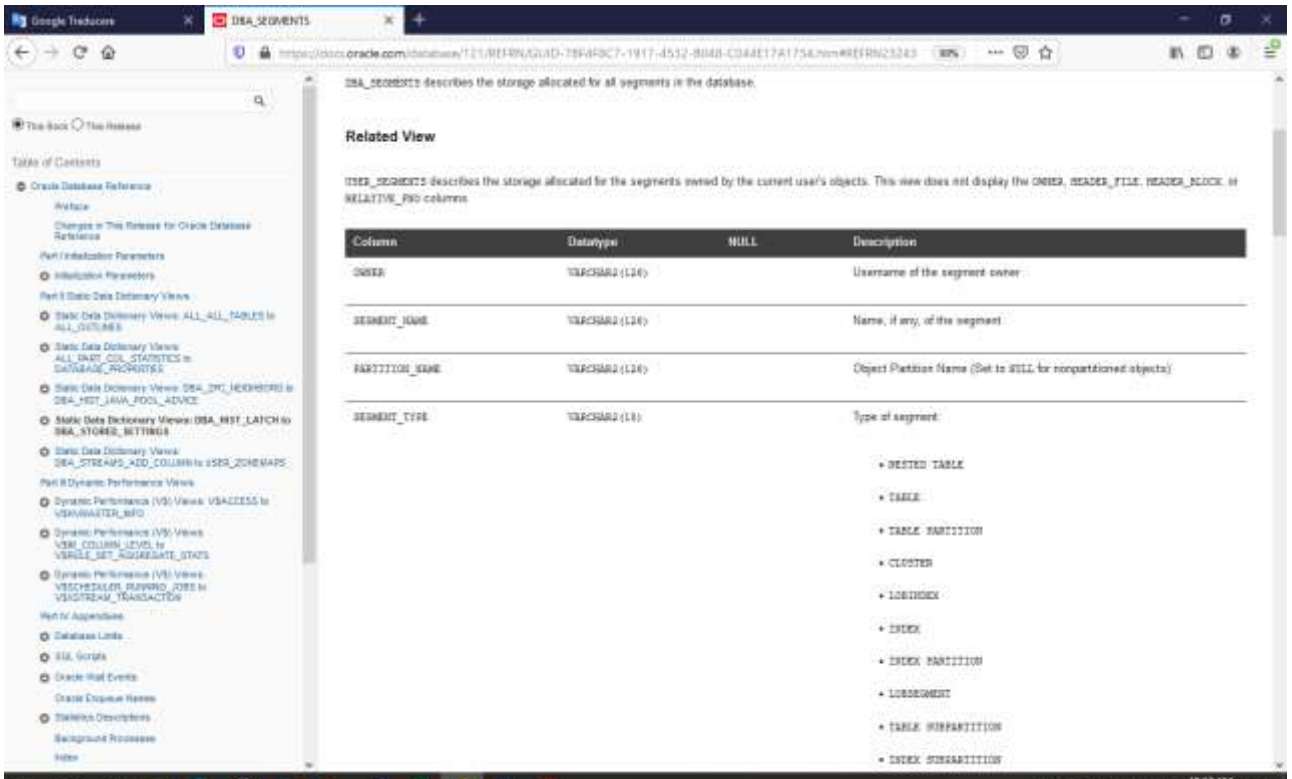
SQL> select tablespace_name, file_id, file_name, blocks, bytes from dba_data_files
where tablespace_name='USERS';

TABLESPACE_NAME	FILE_ID	FILE_NAME	BLOCKS	BYTES
USERS	6	C:\ORACLE_12C\ORADATA\BD\USERS01.DBF	640	5242880

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

SQL> desc dba_segments;

Name	Null?	Type
OWNER		VARCHAR2(128)
SEGMENT_NAME		VARCHAR2(128)
PARTITION_NAME		VARCHAR2(128)
SEGMENT_TYPE		VARCHAR2(18)
SEGMENT_SUBTYPE		VARCHAR2(10)
TABLESPACE_NAME		VARCHAR2(30)
HEADER_FILE		NUMBER
HEADER_BLOCK		NUMBER
BYTES		NUMBER
BLOCKS		NUMBER
EXTENTS		NUMBER
INITIAL_EXTENT		NUMBER
NEXT_EXTENT		NUMBER
MIN_EXTENTS		NUMBER
MAX_EXTENTS		NUMBER
MAX_SIZE		NUMBER
RETENTION		VARCHAR2(7)
MINRETENTION		NUMBER
PCT_INCREASE		NUMBER
FREELISTS		NUMBER
FREELIST_GROUPS		NUMBER
RELATIVE_FNO		NUMBER
BUFFER_POOL		VARCHAR2(7)
FLASH_CACHE		VARCHAR2(7)
CELL_FLASH_CACHE		VARCHAR2(7)
INMEMORY		VARCHAR2(8)
INMEMORY_PRIORITY		VARCHAR2(8)
INMEMORY_DISTRIBUTE		VARCHAR2(15)
INMEMORY_DUPLICATE		VARCHAR2(13)
INMEMORY_COMPRESSION		VARCHAR2(17)

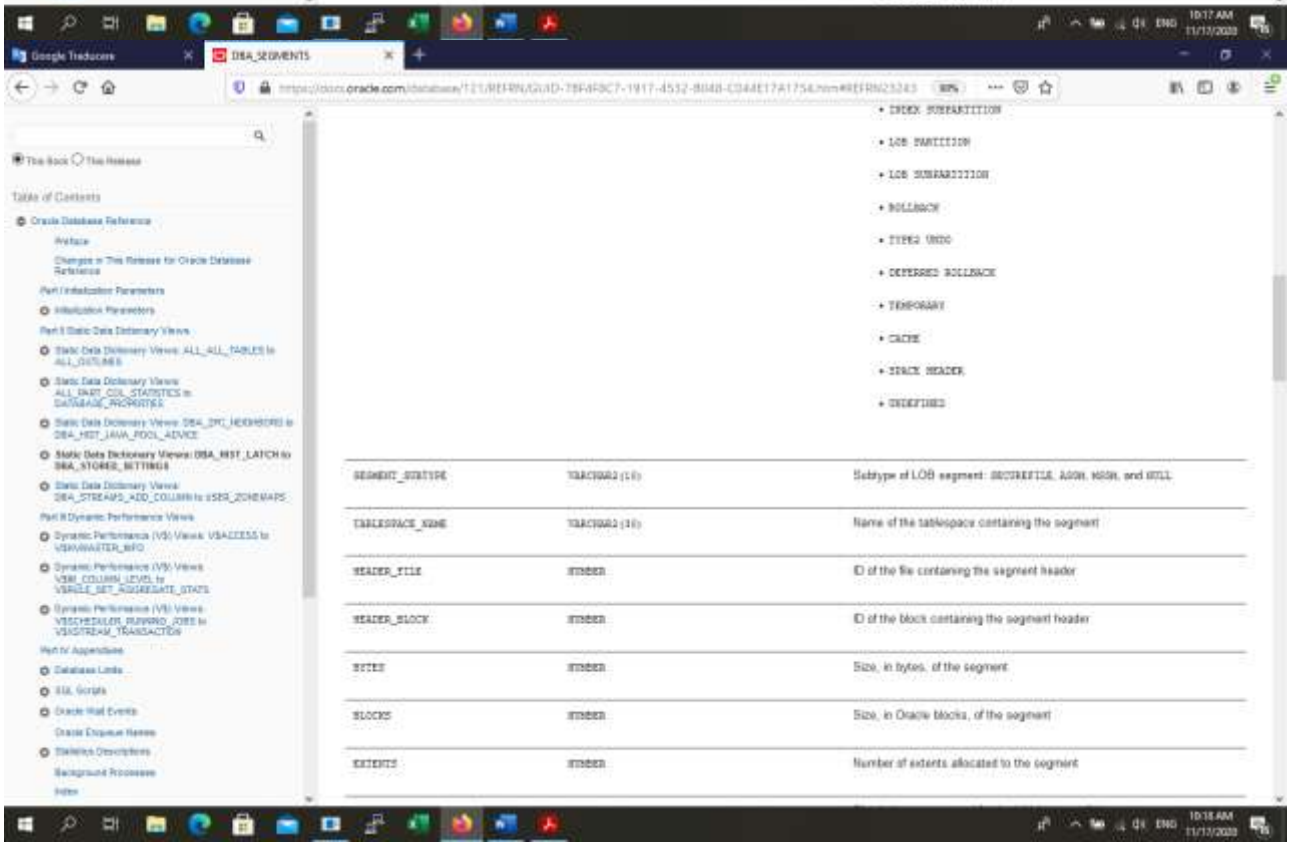


DBA_SEGMENTS describes the storage allocated for all segments in the database.

Related View

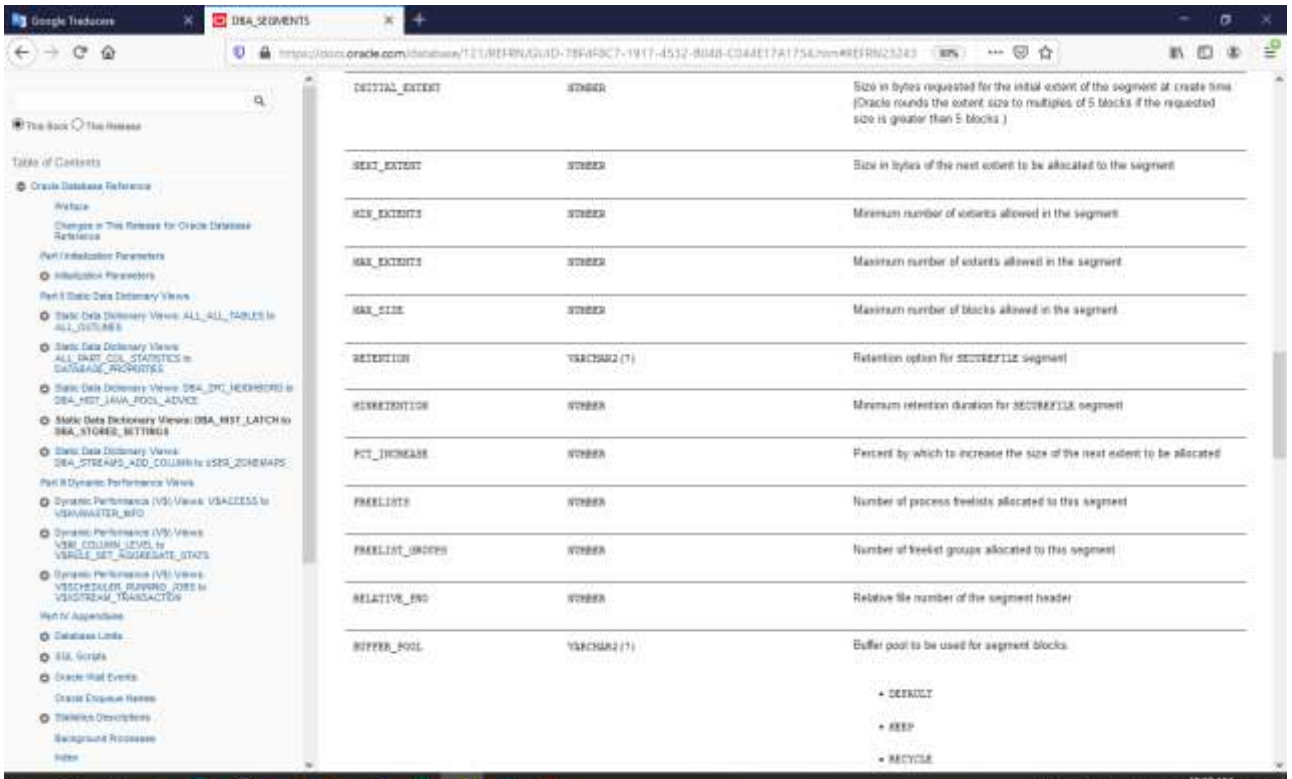
USER_SEGMENTS describes the storage allocated for the segments owned by the current user's objects. This view does not display the OWNER, HEADER_FILE, HEADER_BLOCK, or RELATIVE_FNO columns.

Column	Datatype	NULL	Description
OWNER	VARCHAR2(128)		Username of the segment owner
SEGMENT_NAME	VARCHAR2(128)		Name, if any, of the segment
PARTITION_NAME	VARCHAR2(128)		Object Partition Name (Set to NULL for nonpartitioned objects)
SEGMENT_TYPE	VARCHAR2(18)		Type of segment • NESTED TABLE • TABLE • TABLE PARTITION • CLUSTER • LOBINDEX • INDEX • INDEX PARTITION • LOBSEGMENT • TABLE SUBPARTITION • INDEX SUBPARTITION

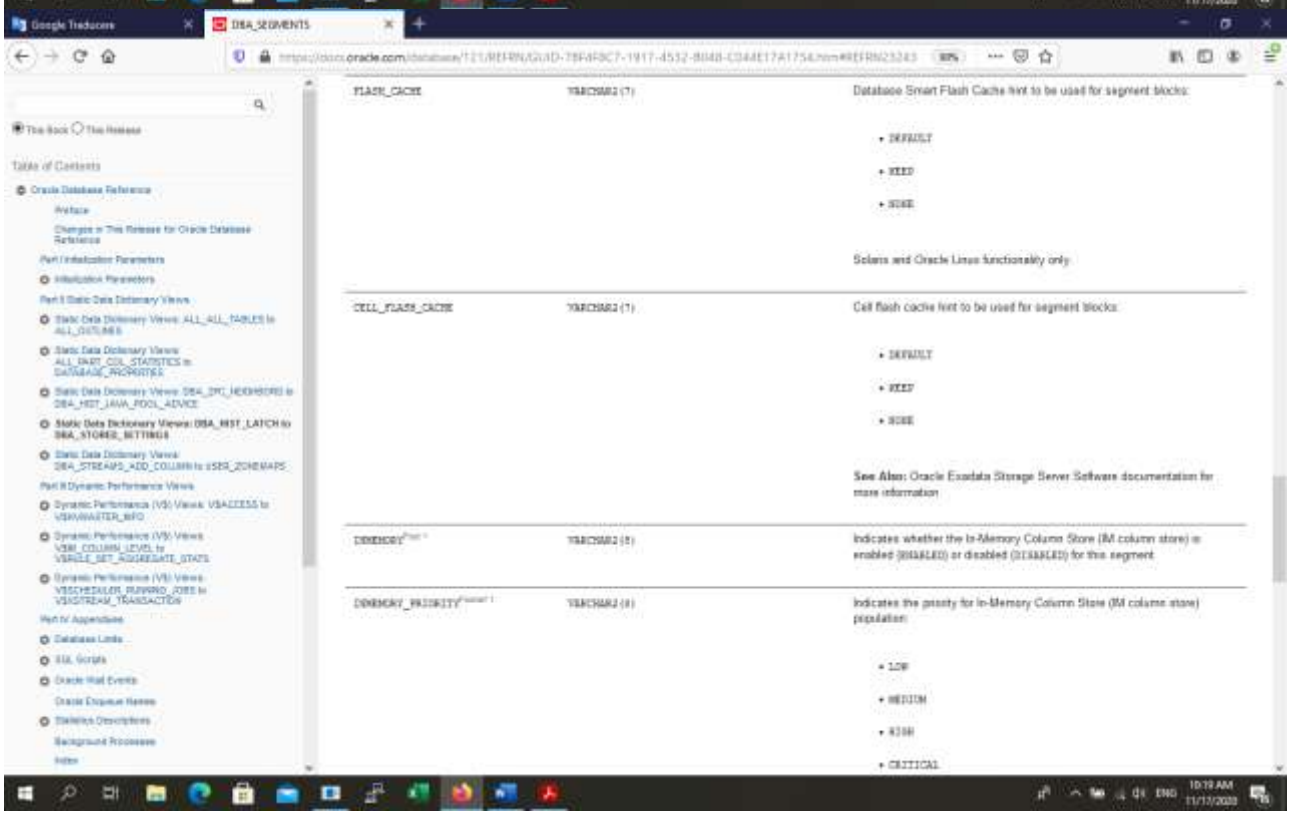


• INDEX SUBPARTITION
• LOB PARTITION
• LOB SUBPARTITION
• ROLLBACK
• TYPE2 UNDO
• DEFERRED ROLLBACK
• TEMPORARY
• CACHE
• SPACE HEADER
• UNDEFINED

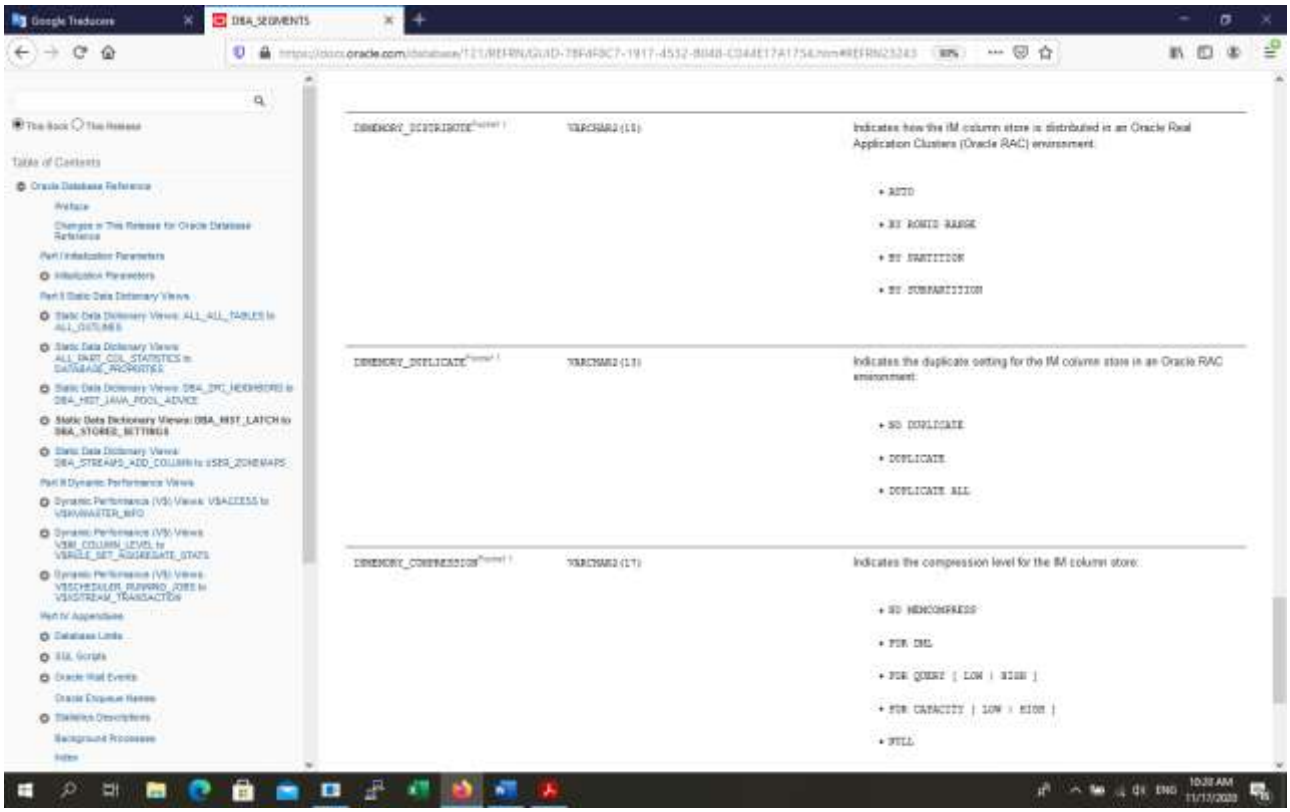
SEGMENT_SUBTYPE	VARCHAR2(10)		Subtype of LOB segment: SECUREFILE, ASSM, MSSM, and NULL
TABLESPACE_NAME	VARCHAR2(30)		Name of the tablespace containing the segment
HEADER_FILE	NUMBER		ID of the file containing the segment header
HEADER_BLOCK	NUMBER		ID of the block containing the segment header
BYTES	NUMBER		Size, in bytes, of the segment
BLOCKS	NUMBER		Size, in Oracle blocks, of the segment
EXTENTS	NUMBER		Number of extents allocated to the segment



INITIAL_EXTENT	NUMBER	Size in bytes requested for the initial extent of the segment at create time (Oracle rounds the extent size to multiples of 5 blocks if the requested size is greater than 5 blocks.)
NEXT_EXTENT	NUMBER	Size in bytes of the next extent to be allocated to the segment
MIN_EXTENTS	NUMBER	Minimum number of extents allowed in the segment
MAX_EXTENTS	NUMBER	Maximum number of extents allowed in the segment
MAX_SIZE	NUMBER	Maximum number of blocks allowed in the segment
RETENTION	VARCHAR2 (7)	Retention option for SECUREFILE segment
MINRETENTION	NUMBER	Minimum retention duration for SECUREFILE segment
PCT_INCREASE	NUMBER	Percent by which to increase the size of the next extent to be allocated
FREELISTS	NUMBER	Number of process freelists allocated to this segment
FREELIST_GROUPS	NUMBER	Number of freelist groups allocated to this segment
RELATIVE_FNO	NUMBER	Relative file number of the segment header
BUFFER_POOL	VARCHAR2 (7)	Buffer pool to be used for segment blocks: • DEFAULT • KEEP • RECYCLE



FLASH_CACHE	VARCHAR2 (7)	Database Smart Flash Cache hint to be used for segment blocks: • DEFAULT • KEEP • NONE Solaris and Oracle Linux functionality only
CELL_FLASH_CACHE	VARCHAR2 (7)	Cell flash cache hint to be used for segment blocks: • DEFAULT • KEEP • NONE **See Also:** Oracle Exadata Storage Server Software documentation for more information
INMEMORY[Note 1]	VARCHAR2 (8)	Indicates whether the In-Memory Column Store (IM column store) is enabled (ENABLED) or disabled (DISABLED) for this segment
INMEMORY_PRIORITY[Note 1]	VARCHAR2 (8)	Indicates the priority for In-Memory Column Store (IM column store) population: • LOW • MEDIUM • HIGH • CRITICAL



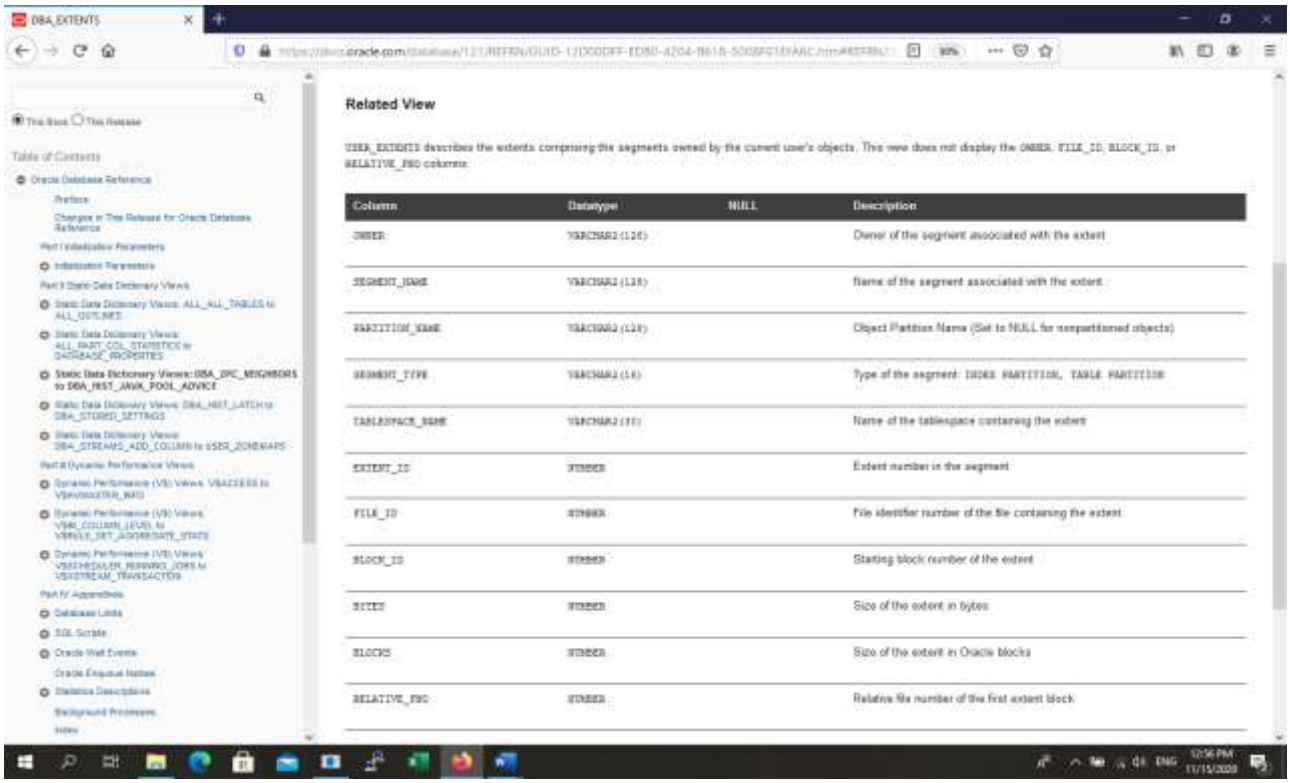
SQL> select owner,segment_name,segment_type, tablespace_name, blocks, extents
from dba_segments where owner='SCOTT'and segment_type='TABLE';

OWNER	SEGMENT_NA	SEGMENT_TYPE	TABLESPACE	BLOCKS	EXTENTS
SCOTT	DEPT	TABLE	USERS	8	1
SCOTT	EMP	TABLE	USERS	8	1
SCOTT	SALGRADE	TABLE	USERS	8	1

4) 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 from
dba_extents where owner='SCOTT' and segment_name='EMP';

OWNER	SEGMENT_NAME	SEGMENT_TYPE	TABLESPACE_NAME
SCOTT	EMP	TABLE	USERS

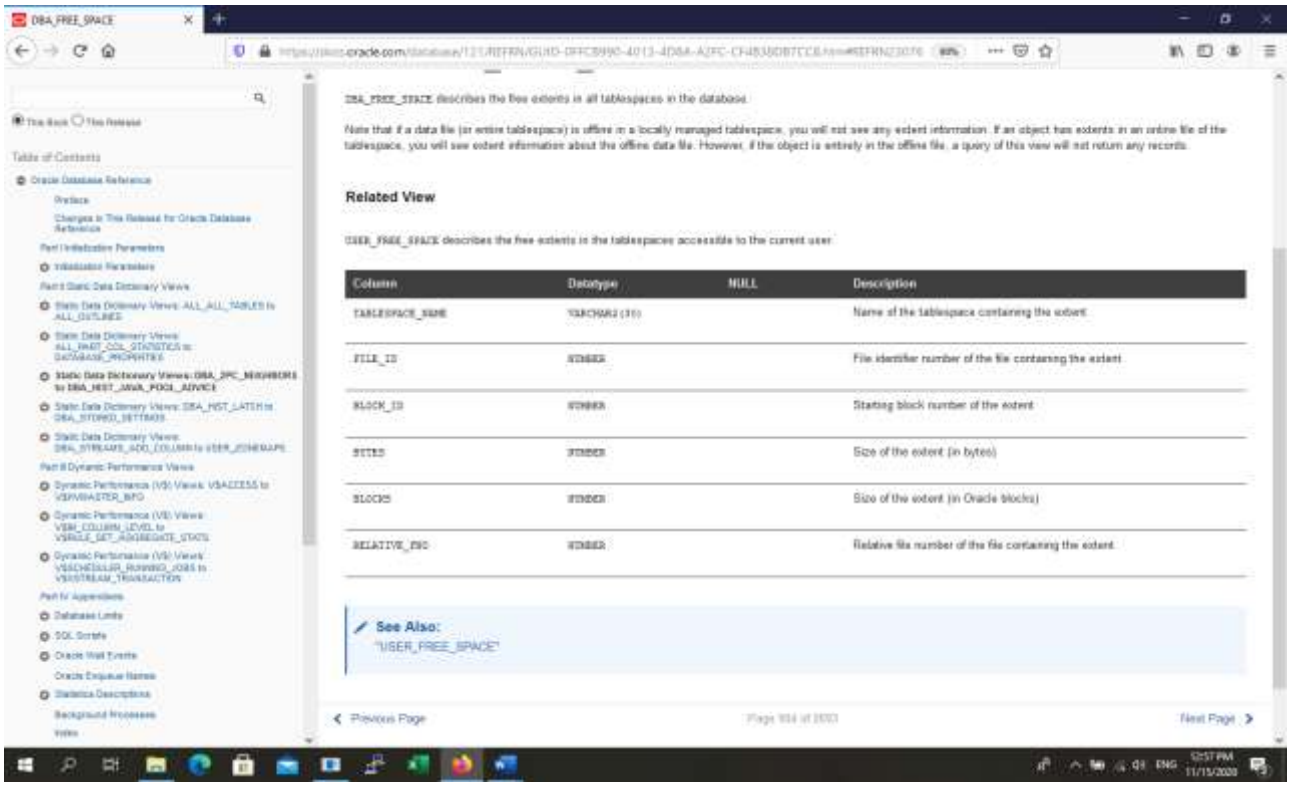
SQL> select segment_name, extent_id, file_id, block_id, blocks, bytes from dba_extents
where owner='SCOTT' and segment_name='EMP' ;

SEGMENT_NAME	EXTENT_ID	FILE_ID	BLOCK_ID	BLOCKS	BYTES
EMP	0	6	192	8	65536

5) Informatii despre tablespace, fisierul de date alocat, numarul de blocuri si spatiul liber in fiecare bloc :

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 * from dba_free_space where tablespace_name='USERS' ;

TABLESPACE	FILE_ID	BLOCK_ID	BYTES	BLOCKS	RELATIVE_FNO
USERS	6	216	3473408	424	6

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

TABLESPACE_NAME	COUNT(*)	MAX(BLOCKS)	SUM(BLOCKS)
BI_IAS_OPSS	1	384	384
SYSAUX	140	5104	9632
UNDOTBS1	12	76544	78416
BI_IAU	1	7488	7488
BI_STB	1	1040	1040
USERS	1	424	424
SYSTEM	3	128	304
EXAMPLE	2	5200	5328
BI_BIPLATFORM	1	14744	14744
BI_WLS	1	7520	7520
BI_IAS_UMS	1	11760	11760
BI_MDS	2	10496	10536

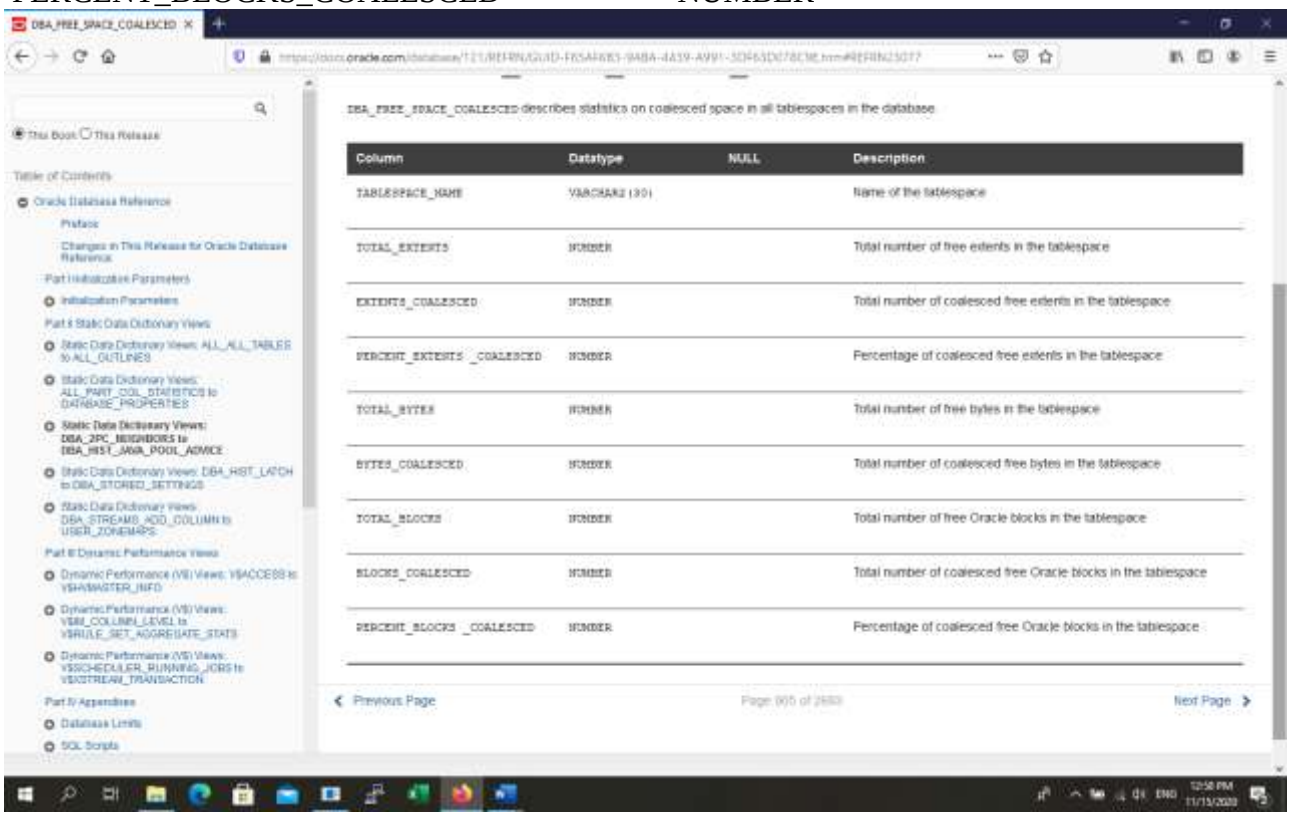
SQL> select tablespace_name, blocks from dba_free_space where
tablespace_name='SYSTEM';

TABLESPACE_NAME	BLOCKS
SYSTEM	64
SYSTEM	112
SYSTEM	128

6) Unificarea spatiilor contigue dintr-un tablespace(defragmentare):

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
SYSAUX	144	100
BI_IAS_OPSS	1	100
BI_BIPLATF	1	100
BI_STB	1	100
UNDOTBS1	10	100
USERS	1	100
EXAMPLE	2	100
BI_IAS_UMS	1	100

SYSTEM	3	100
BI_MDS	2	100
BI_IAU	1	100
BI_WLS	1	100

Exercitii (Cap 8 si Cap 9):

1. Sa se faca o lista cu numele tablespace-lui, fisierele asignate si starea tablespace-lui permanent asignat userului curent.

2. Sa se creeze un tablespace permanent ABD_LAB. Dupa ce se creeaza sa se mai adauge un nou fisier de date cu dimensiunea de 2 M la tablespace-ul ABD_LAB si apoi sa se verifice in dictionar daca a fost asignat.

3. Sa se arate din dictionar numele fisierelor temporare aflate in starea ONLINE asignate la baza de date curenta, data cand au fost create si dimensiunea lor in blocuri.

4. Sa se arate din dictionar care este spatiul liber, ca numar de blocuri, in tablespace-ul permanent asignat userului curent?

5. Sa se arate din dictionar care sunt tabelele partitionate create de userul SYSTEM .

6. Faceti o lista cu numele segmentului asociat cheii primare a tabelei EMP din schema curenta, numele fisierului in care este stocat si dimensiunea extensiei in bytes.