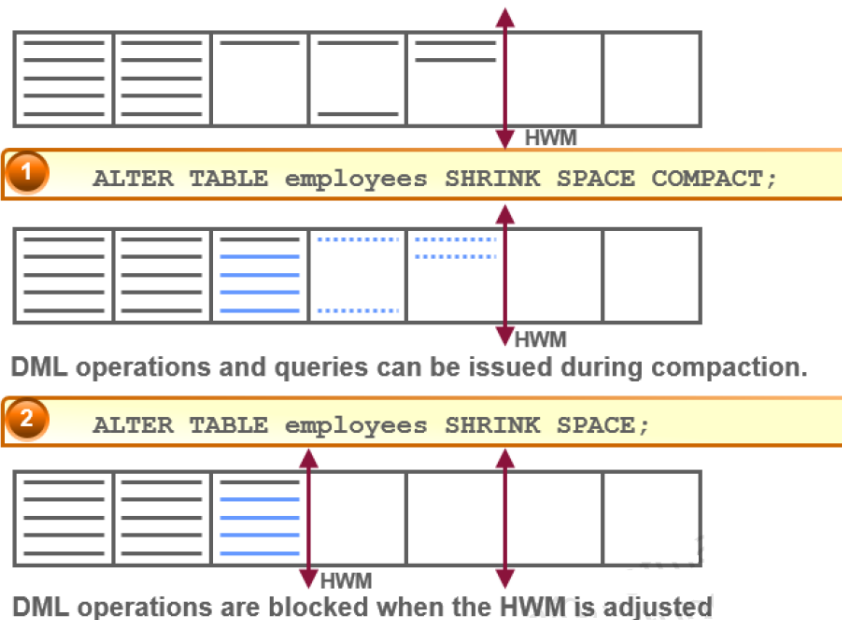


1. SEGMENT ADVISOR

- When there are lot updates, deletes inside database, it creates lot of empty pockets of space on blocks that are not large enough to insert new data.
- We call this type of empty space as fragmented free space. Database performance can be impacted by such fragmented space.
- The process of combining fragmented space into one big free space is known as de-fragmentation.
- We use the Segment Advisor to identify segments that would benefit from segment shrink.
- Only segments in locally managed tablespaces with automatic segment space management (ASSM) are eligible.
- Segment Advisor can be automatic or manual.
- But before you can directly shrink table/index, you must run Oracle segment advisor to get recommendations as to how much space can you reclaim.



- Create a tablespace segment_advisor.

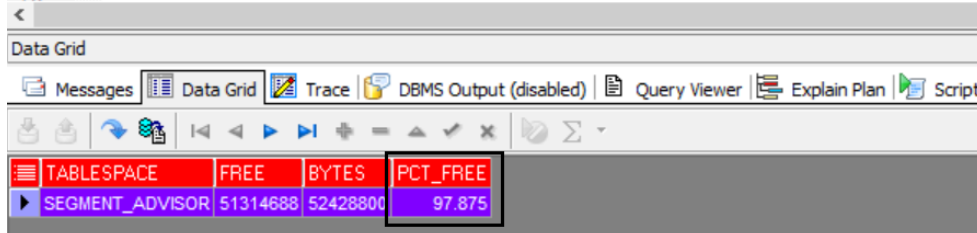
```
CREATE TABLESPACE segment_advisor
DATAFILE 'D:\Oracle\Database\test100.dbf'
SIZE 50M LOGGING EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO;
```

- Check the free space in tablespace is 97% .

```

5
6 ► SELECT df.tablespace_name tablespace, fs.bytes free, df.bytes,
7     fs.bytes*100/ df.bytes PCT_FREE
8     FROM dba_data_files df ,dba_free_space fs
9     WHERE df.tablespace_name = fs.tablespace_name
10    AND df.tablespace_name = 'SEGMENT_ADVISOR';
11

```



TABLESPACE	FREE	BYTES	PCT_FREE
SEGMENT_ADVISOR	51314688	52428800	97.875

- Create a table test100. And some data in tset100 table.

```

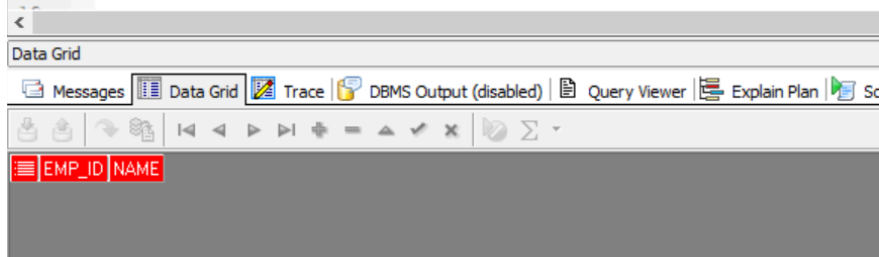
begin
for i in 1..1000000
loop
insert into test100 values ( i, 'any dummy name' );
end loop;
commit;
end;
/

```

```

11
12
13 • create table test100 ( emp_id number, name varchar2(100) )
14     tablespace SEGMENT_ADVISOR;
15
16 ► select * from test100;
17
18

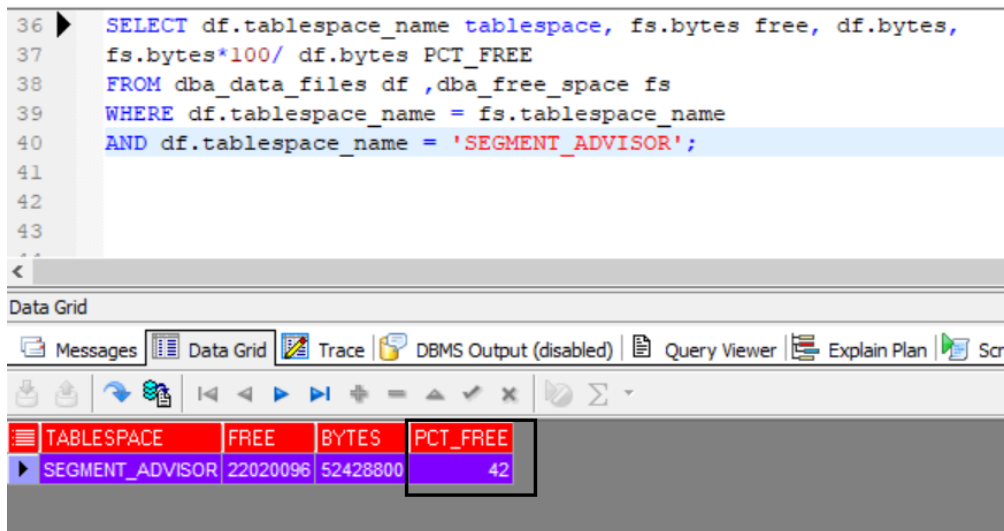
```



EMP_ID	NAME
--------	------

- Check the PCT_FREE is 42%.

```
SELECT df.tablespace_name tablespace, fs.bytes free, df.bytes,
fs.bytes*100/ df.bytes PCT_FREE
FROM dba_data_files df ,dba_free_space fs
WHERE df.tablespace_name = fs.tablespace_name
AND df.tablespace_name = 'SEGMENT_ADVISOR';
```



The screenshot shows the SQL Developer interface. The query window displays the following SQL statement:

```
36 ► SELECT df.tablespace_name tablespace, fs.bytes free, df.bytes,
37      fs.bytes*100/ df.bytes PCT_FREE
38 FROM dba_data_files df ,dba_free_space fs
39 WHERE df.tablespace_name = fs.tablespace_name
40 AND df.tablespace_name = 'SEGMENT_ADVISOR';
41
42
43
```

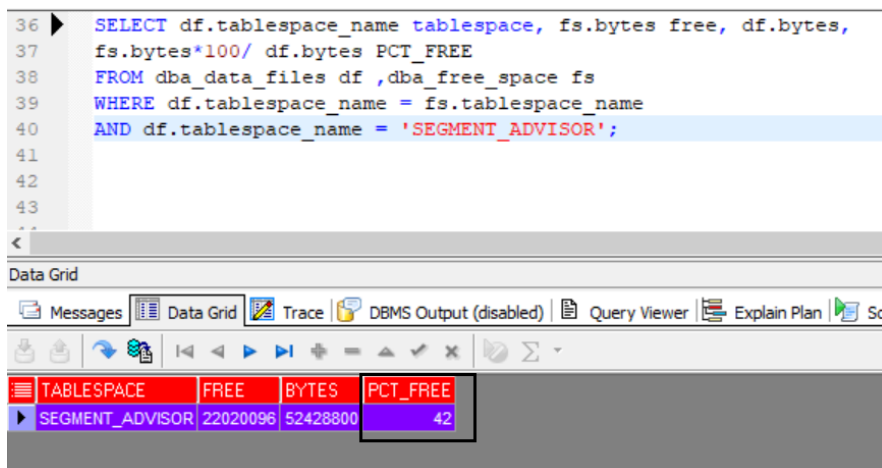
Below the query window, the Data Grid shows the results of the query:

TABLESPACE	FREE	BYTES	PCT_FREE
SEGMENT_ADVISOR	22020096	52428800	42

- Now we perform deletion.

```
delete from test100;
commit;
```

- Check again that space is released or not.



The screenshot shows the SQL Developer interface with the same query as in the previous image. The Data Grid shows the same results:

TABLESPACE	FREE	BYTES	PCT_FREE
SEGMENT_ADVISOR	22020096	52428800	42

- We find space is not released. Now we create a segment advisor and take advise what can I do to get our space back.
- Create a Segment Advisor Task.

```

DECLARE
tname VARCHAR2(128) := 'my_seg_task3';
tname_desc VARCHAR2(128) := 'Get shrink advice for segments in TBSALERT';
task_id NUMBER;
object_id NUMBER;
objectname VARCHAR2(100);
objecttype VARCHAR2(100);
BEGIN
dbms_advisor.create_task('Segment Advisor', task_id,tname,tname_desc,NULL);---
select * from DBA_ADVISOR_DEFINITIONS
dbms_advisor.create_object(tname,'TABLESPACE','SEGMENT_ADVISOR',' ',' '
,NULL, ' ',object_id) ;
dbms_advisor.set_task_parameter(tname,'RECOMMEND_ALL','TRUE');
END;

```

The screenshot displays the Oracle SQL Developer environment. The top pane shows the execution of a PL/SQL block, with line numbers 45 through 56 visible. The code defines variables for a segment advisor task and uses the DBMS_ADVISOR package to create a task, an object, and set parameters. The bottom pane shows the execution results, including a status bar at the bottom indicating '11:35:48 AM - PL/SQL procedure successfully completed'.

```

45 DECLARE
46 tname VARCHAR2(128) := 'my_seg_task3';
47 tname_desc VARCHAR2(128) := 'Get shrink advice for segments in TBSALERT';
48 task_id NUMBER;
49 object_id NUMBER;
50 objectname VARCHAR2(100);
51 objecttype VARCHAR2(100);
52 BEGIN
53 dbms_advisor.create_task('Segment Advisor', task_id,tname,tname_desc,NULL);---select * from DBA_ADVISOR_DEFINITIONS
54 dbms_advisor.create_object(tname,'TABLESPACE','SEGMENT_ADVISOR',' ',' '
55 ,NULL, ' ',object_id) ;
56 dbms_advisor.set_task_parameter(tname,'RECOMMEND_ALL','TRUE');
END;

```

Messages | Data Grid | Trace | DBMS Output (disabled) | Query Viewer | Explain Plan | Script Output

56: 6 | 32 msec | SCOTT@GINSYS2 | Modified | 11:35:48 AM - PL/SQL procedure successfully completed

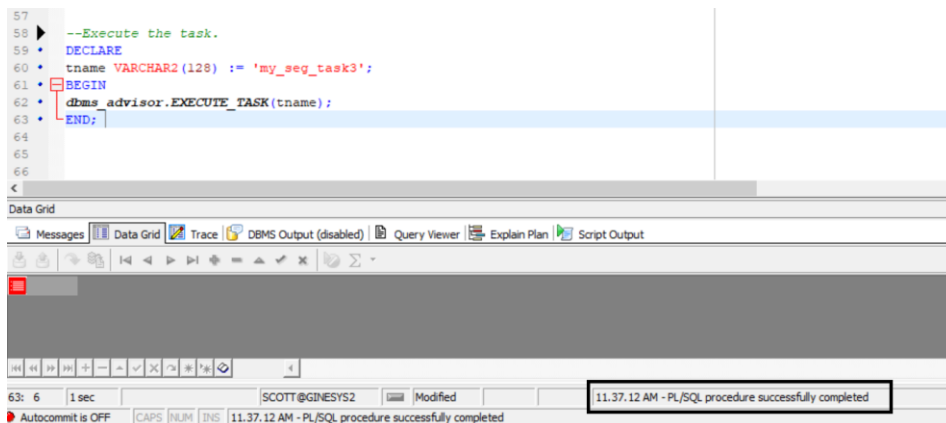
Autocommit is OFF | CAPS | NUM | INS

- Execute the task.

```

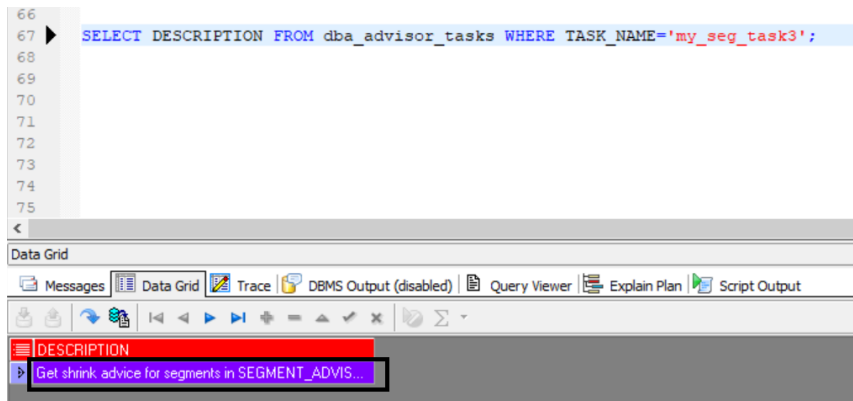
DECLARE
tname VARCHAR2(128) := 'my_seg_task3';
BEGIN
dbms_advisor.EXECUTE_TASK(tname);
END;

```



- Take the advisor from Oracle Segment Task Advisor.

SELECT DESCRIPTION FROM dba_advisor_tasks WHERE TASK_NAME='my_seg_task3';



- This task give us solution . what can I do.

```
SELECT attr1, attr2, message
FROM dba_advisor_findings f, dba_advisor_objects o
WHERE f.task_name = o.task_name
AND f.object_id = o.object_id
AND f.task_name = 'my_seg_task3';
```

The screenshot shows a SQL IDE interface. The top pane displays a SQL query with line numbers 69 to 78. The query is:

```
69
70 ► SELECT attr1, attr2, message
71 FROM dba_advisor_findings f, dba_advisor_objects o
72 WHERE f.task_name = o.task_name
73 AND f.object_id = o.object_id
74 AND f.task_name = 'my_seg_task3';
75
76
77
78
```

The bottom pane is titled "Data Grid" and contains a table with the following data:

ATTR1	ATTR2	MESSAGE
SCOTT	TEST100	Enable row movement of the table SCOTT.TEST100 and perform shrink, estimated savings is 24128706 bytes.

The interface includes a toolbar with icons for Messages, Data Grid, Trace, DBMS Output (disabled), Query Viewer, Explain Plan, and Script Output.

- Now we perform task according to oracle segment advisor. And finally we get the space.

```
ALTER TABLE test100 ENABLE ROW MOVEMENT;
```

```
ALTER TABLE test100 SHRINK SPACE;
```

```
SELECT df.tablespace_name tablespace, fs.bytes free, df.bytes,  
fs.bytes*100/ df.bytes PCT_FREE  
FROM dba_data_files df ,dba_free_space fs  
WHERE df.tablespace_name = fs.tablespace_name  
AND df.tablespace_name = 'SEGMENT_ADVISOR';
```

The screenshot shows the Oracle SQL Developer interface. The top pane displays a series of SQL commands: `alter table test100 enable row movement;`, `ALTER TABLE test100 SHRINK SPACE;`, and a `SELECT` query. The bottom pane shows the results of the `SELECT` query in a table format.

TABSPACE	FREE	BYTES	PCT_FREE
SEGMENT_ADVISOR	51314688	52428800	97.875

The status bar at the bottom indicates: 79: 1 | 20 msec | Row 1 of 1 Total Rows | SCOTT@GINESYS2 | Modified