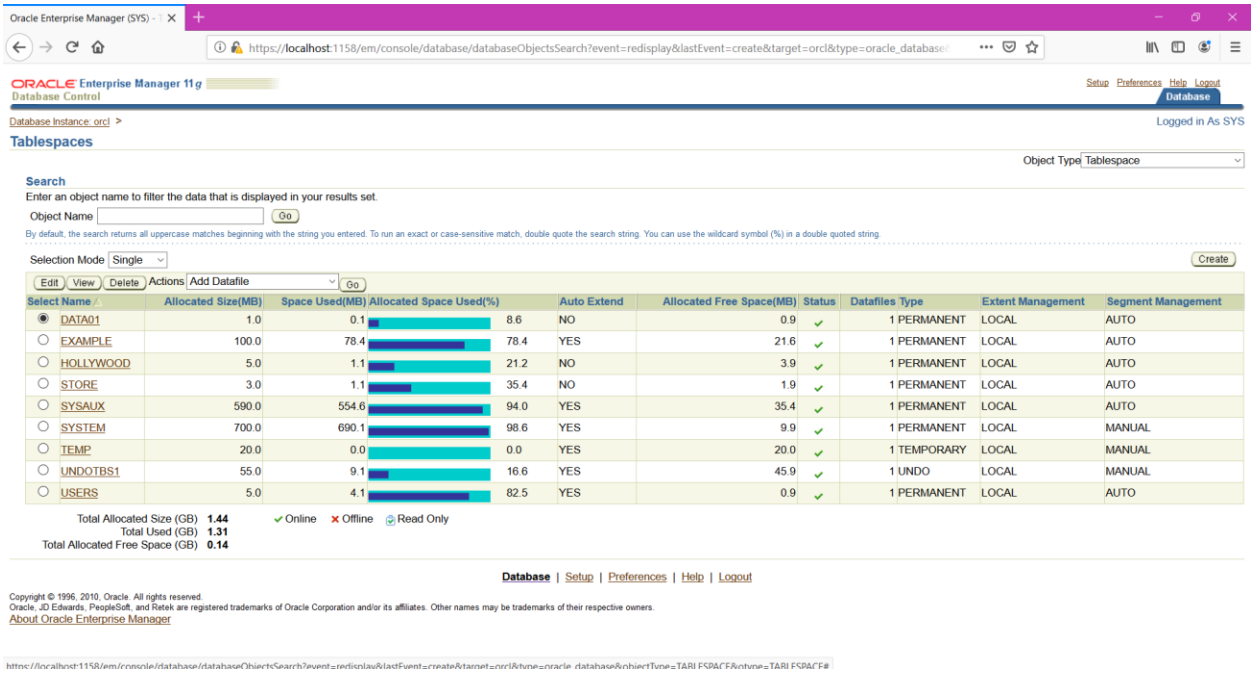
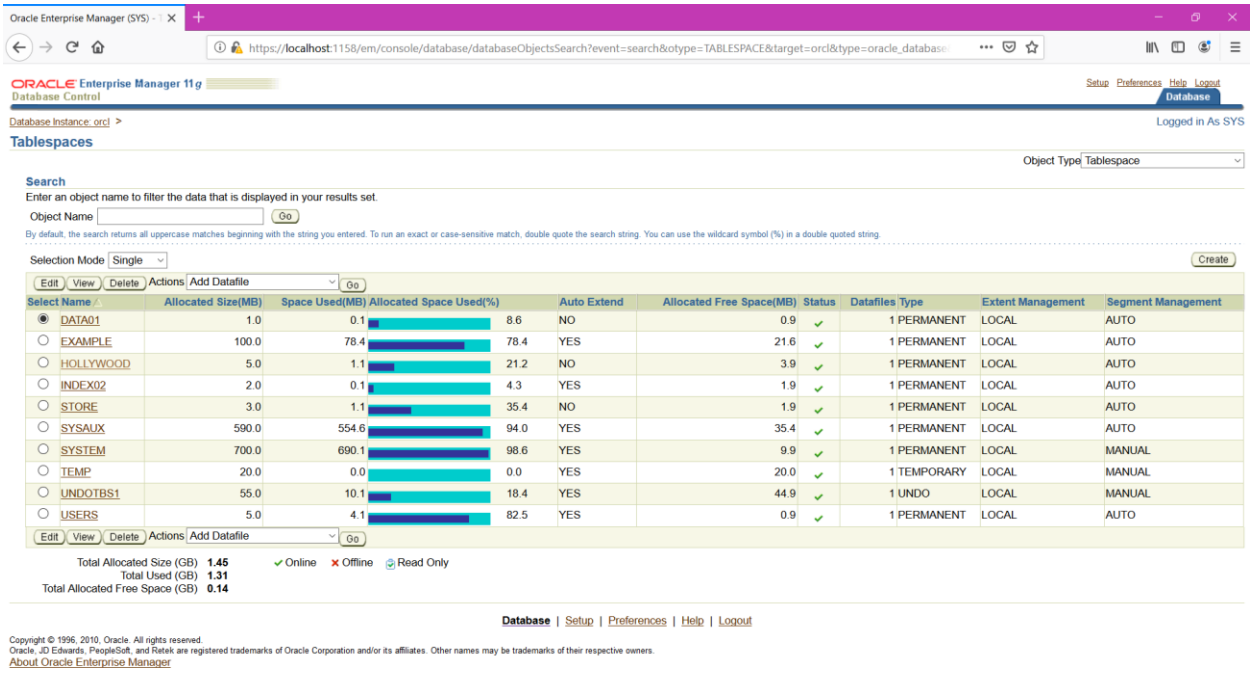
1. Create a permanent tablespace with the following name and storage - DATA01 (1MB) locally managed with uniform sized extents. Ensure that every used extent size in the tablespace is a multiple of 100 KB.

```
SQL> CREATE TABLESPACE DATA01
  2  DATAFILE 'C:\app\ylewi\oradata\orcl\DATA01.dbf' SIZE 1M
  3  EXTENT MANAGEMENT LOCAL UNIFORM SIZE 100K;

Tablespace created.
```



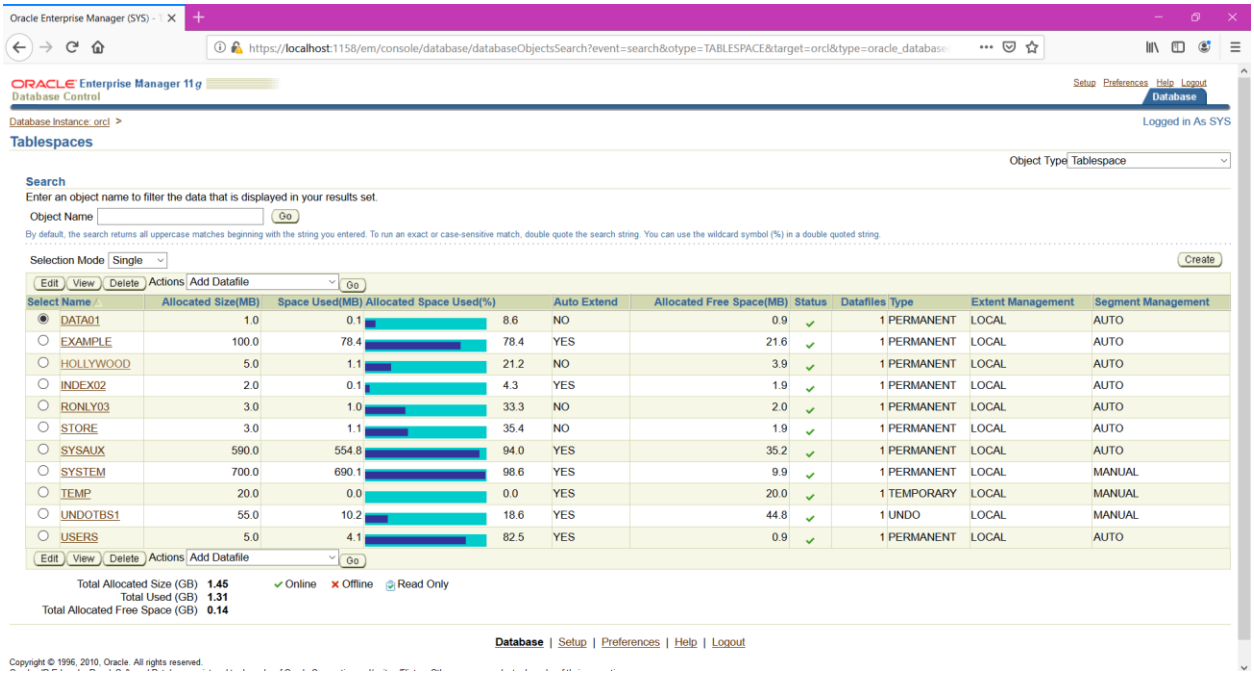
2. Create a permanent tablespace with the following name and storage - INDEX02 (2MB) locally managed with uniform
sized extents of 40K. Enable automatic extension of 500 KB when more extents are required with a maximum size of 5 MB.

```
SQL> CREATE TABLESPACE INDEX02
  2  DATAFILE 'C:\app\ylewi\oradata\orcl\INDEX02.dbf' SIZE 2M
  3  AUTOEXTEND ON NEXT 500K MAXSIZE 5M
  4  EXTENT MANAGEMENT LOCAL UNIFORM SIZE 40K;

Tablespace created.
```



3. Create a permanent tablespace with the following name and storage – RONLY03 (3MB) for read-only tables with the default storage. DO NOT make the tablespace read only at this time.

```
SQL> CREATE TABLESPACE RONLY03
  2  DATAFILE 'C:\app\ylewi\oradata\orcl\RONLY03.dbf' SIZE 3M
  3  DEFAULT STORAGE(initial 1M NEXT 1M PCTINCREASE 0);

Tablespace created.
```



4. Display the tablespace information from the data dictionary.
Hint: DBA_TABLESPACES or V$TABLESPACE

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

       TS# NAME                           INC BIG FLA ENC
---------- ------------------------------ --- --- --- ---
         0 SYSTEM                         YES NO  YES
         1 SYSAUX                         YES NO  YES
         2 UNDOTBS1                       YES NO  YES
         4 USERS                          YES NO  YES
         3 TEMP                           NO  NO  YES
         6 EXAMPLE                        YES NO  YES
         9 HOLLYWOOD                      YES NO  YES
        10 STORE                          YES NO  YES
        11 DATA01                         YES NO  YES
        12 INDEX02                        YES NO  YES
        13 RONLY03                        YES NO  YES

11 rows selected.
```

```
SQL> SELECT TABLESPACE_NAME, contents,extent_management from DBA_TABLESPACES;

TABLESPACE_NAME                CONTENTS  EXTENT_MAN
------------------------------ --------- ----------
SYSTEM                         PERMANENT LOCAL
SYSAUX                         PERMANENT LOCAL
UNDOTBS1                       UNDO      LOCAL
TEMP                           TEMPORARY LOCAL
USERS                          PERMANENT LOCAL
EXAMPLE                        PERMANENT LOCAL
HOLLYWOOD                      PERMANENT LOCAL
STORE                          PERMANENT LOCAL
DATA01                         PERMANENT LOCAL
INDEX02                        PERMANENT LOCAL
RONLY03                        PERMANENT LOCAL
```

5. Allocate 500K more disk space to tablespace DATA01 and verify the result. ***(Hint: Query v$datafile)***

```
SQL> ALTER database
  2  datafile 'C:\app\ylewi\oradata\orcl\DATA01.dbf'
  3  resize 500k;

Database altered.
```

```
SQL>  SELECT TABLESPACE_NAME, sum((bytes/1024)/1024)MB from dba_data_files GROUP BY tablespace_name;

TABLESPACE_NAME                        MB
------------------------------ ----------
UNDOTBS1                               55
SYSAUX                                590
USERS                                   5
RONLY03                                 3
SYSTEM                                700
EXAMPLE                               100
HOLLYWOOD                               5
STORE                                   3
DATA01                          .4921875
INDEX02                                 2
```

6. Create a new directory called U4 in C:\. Relocate tablespace INDEX02 to C:\U4. Verify relocation and status of INDEX02.

```
SQL> alter tablespace index02 offline;

Tablespace altered.

SQL> select name, status from v$datafile;
```

```
NAME
--------------------------------------------------------------------------------
STATUS
-------
C:\APP\YLEWI\ORADATA\ORCL\STORE.DBF
ONLINE

C:\APP\YLEWI\ORADATA\ORCL\DATA01.DBF
ONLINE

C:\APP\YLEWI\ORADATA\ORCL\INDEX02.DBF
OFFLINE
```

```
10 rows selected.

SQL> ALTER TABLESPACE INDEX02 RENAME
  2  DATAFILE 'C:\app\ylewi\oradata\orcl\INDEX02.DBF'
  3  TO 'C:\U4\INDEX02.dbf';

Tablespace altered.

SQL> ALTER TABLESPACE INDEX02 online;

Tablespace altered.

SQL> select name, status from V$datafile;
```

```
NAME
--------------------------------------------------------------------------------
STATUS
-------
C:\APP\YLEWI\ORADATA\ORCL\STORE.DBF
ONLINE

C:\APP\YLEWI\ORADATA\ORCL\DATA01.DBF
ONLINE

C:\U4\INDEX02.DBF
ONLINE
```

7. Create a table with only one column in tablespace RONLY03. Make tablespace RONLY03 read-only. Run a query to verify it.

```
Enter user-name: harry
Enter password:

Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 - 64bit Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options

SQL> create table TABLE1 (
  2  userid number)
  3  tablespace ronly03;

Table created.

SQL> alter tablespace ronly03 READ ONLY;

Tablespace altered.
```

```
SQL> SELECT TABLESPACE_NAME, STATUS FROM DBA_TABLESPACES;

TABLESPACE_NAME                STATUS
------------------------------ ---------
SYSTEM                         ONLINE
SYSAUX                         ONLINE
UNDOTBS1                       ONLINE
TEMP                           ONLINE
USERS                          ONLINE
EXAMPLE                        ONLINE
HOLLYWOOD                      ONLINE
STORE                          ONLINE
DATA01                         ONLINE
INDEX02                        ONLINE
RONLY03                        READ ONLY

11 rows selected.

SQL>
```

8. Attempt to create an additional table TABLE2 with only one column in RONLY03. Drop the first created table, TABLE1. What happens?

```
SQL> CREATE TABLE TABLE2 (
  2  USERID NUMBER)
  3  TABLESPACE RONLY03;

Table created.

SQL> DROP TABLE TABLE1;

Table dropped.

SQL> SELECT TABLESPACE_NAME, STATUS FROM DBA_TABLESPACES;

TABLESPACE_NAME                STATUS
------------------------------ ---------
SYSTEM                         ONLINE
SYSAUX                         ONLINE
UNDOTBS1                       ONLINE
TEMP                           ONLINE
USERS                          ONLINE
EXAMPLE                        ONLINE
HOLLYWOOD                      ONLINE
STORE                          ONLINE
DATA01                         ONLINE
INDEX02                        ONLINE
RONLY03                        READ ONLY

11 rows selected.
```

The table was dropped even though tablespace RONLY03 has a status of read only.

9. Drop tablespace RONLY03 and the associated datafile. Verify it.

```
SQL> drop tablespace ronly03 INCLUDING CONTENTS AND DATAFILES;

Tablespace dropped.

SQL> select tablespace_name, status from DBA_TABLESPACES;

TABLESPACE_NAME                STATUS
------------------------------ ---------
SYSTEM                         ONLINE
SYSAUX                         ONLINE
UNDOTBS1                       ONLINE
TEMP                           ONLINE
USERS                          ONLINE
EXAMPLE                        ONLINE
HOLLYWOOD                      ONLINE
STORE                          ONLINE
DATA01                         ONLINE
INDEX02                        ONLINE

10 rows selected.
```

10. Let's try to use OMF. Please set DB_CREATE_FILE_DEST to C:\U4 in memory only. Create tablespace DATA03 size 5M without specifying a file location. What's the datafile name associate with DATA03 tablespace? .

```
SQL> ALTER SYSTEM SET DB_CREATE_FILE_DEST = 'C:\U4';

System altered.

SQL> CREATE TABLESPACE DATA03 DATAFILE SIZE 5M;

Tablespace created.

SQL> SELECT FILE#, STATUS, SUBSTR(NAME,0,50) FROM V$DATAFILE;

     FILE# STATUS  SUBSTR(NAME,0,50)
---------- ------- --------------------------------------------------
         1 SYSTEM  C:\APP\YLEWI\ORADATA\ORCL\SYSTEM01.DBF
         2 ONLINE  C:\APP\YLEWI\ORADATA\ORCL\SYSAUX01.DBF
         3 ONLINE  C:\APP\YLEWI\ORADATA\ORCL\UNDOTBS01.DBF
         4 ONLINE  C:\APP\YLEWI\ORADATA\ORCL\USERS01.DBF
         5 ONLINE  C:\APP\YLEWI\ORADATA\ORCL\EXAMPLE01.DBF
         6 ONLINE  C:\APP\YLEWI\ORADATA\ORCL\HOLLYWOOD.DBF
         7 ONLINE  C:\APP\YLEWI\ORADATA\ORCL\STORE.DBF
         8 ONLINE  C:\APP\YLEWI\ORADATA\ORCL\DATA01.DBF
         9 ONLINE  C:\U4\INDEX02.DBF
        10 ONLINE  C:\U4\ORCL\DATAFILE\O1_MF_DATA03_GOMOD5SB_.DBF

10 rows selected.
```

The datafile name is: C:\U4\ORCL\DATAFILE\O1_MF_DATA03_GOMOD5SB_.DBF.

PART II : CONTROL FILES AND REDO LOG FILES

```
SQL> ALTER DATABASE BACKUP CONTROLFILE TO TRACE;

Database altered.

SQL> CREATE PFILE ='C:\app\ylewi\admin\orcl\pfile\initORCL.ora' FROM SPFILE;

File created.

SQL> CREATE PFILE ='C:\app\ylewi\admin\orcl\pfile\initORCL3.ora' FROM SPFILE;

File created.

SQL> SHUTDOWN IMMEDIATE
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> SYS AS SYSDBA
SP2-0734: unknown command beginning "SYS AS SYS..." - rest of line ignored.
SQL> connect sys/             as sysdba
ERROR:
ORA-01031: insufficient privileges


Warning: You are no longer connected to ORACLE.
SQL> connect sys/             as sysdba
Connected to an idle instance.
SQL> startup
ORACLE instance started.

Total System Global Area  417546240 bytes
Fixed Size                  2176328 bytes
Variable Size             264243896 bytes
Database Buffers          142606336 bytes
Redo Buffers                8519680 bytes
Database mounted.
Database opened.
SQL> select name,value from V$PARAMETER WHERE name = 'control_files';

NAME
--------------------------------------------------------------------------------
VALUE
--------------------------------------------------------------------------------
control_files
C:\APP\YLEWI\ORADATA\ORCL\CONTROL01.CTL, C:\APP\YLEWI\FLASH_RECOVERY_AREA\ORCL\C
ONTROL02.CTL
```

11. Where is the existing control file located and what is the name?

```
SQL> select name from V$CONTROLFILE;

NAME
--------------------------------------------------------------------------------
C:\APP\YLEWI\ORADATA\ORCL\CONTROL01.CTL
C:\APP\YLEWI\FLASH_RECOVERY_AREA\ORCL\CONTROL02.CTL

SQL>
```

The control files are located at: C:\APP\YLEWI\ORADATA\ORCL\CONTROL01.CTL

C:\APP\YLEWI\FLASH_RECOVERY_AREA\ORCL\CONTROL02.CTL.

The control files names are control01 and control02.

12. Try to start the database without any control files. Simulate this by changing one of the control file in the parameter file or deleting one of the control file. What happens in the startup? What are the error messages in the Alert log?

```
SQL> shutdown immediate
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> connect sys/Purpledesk44 as sysdba
Connected to an idle instance.
SQL> startup
ORACLE instance started.

Total System Global Area  417546240 bytes
Fixed Size                  2176328 bytes
Variable Size             264243896 bytes
Database Buffers          142606336 bytes
Redo Buffers                8519680 bytes
ORA-00205: error in identifying control file, check alert log for more info
```

The control file was not identified at startup.

```
Sun Aug 18 18:37:04 2019
MMNL started with pid=16, OS id=11968
starting up 1 dispatcher(s) for network address '(ADDRESS=(PARTIAL=YES)(PROTOCOL=TCP))'...
starting up 1 shared server(s) ...
ORACLE_BASE from environment = C:\app\ylewi
Sun Aug 18 18:37:05 2019
ALTER DATABASE   MOUNT
ORA-00210: cannot open the specified control file
ORA-00202: control file: 'C:\APP\YLEWI\ORADATA\ORCL\CONTROL01.CTL'
ORA-27041: unable to open file
OSD-04002: unable to open file
O/S-Error: (OS 2) The system cannot find the file specified.
ORA-205 signalled during: ALTER DATABASE   MOUNT...
Sun Aug 18 18:37:05 2019
Checker run found 1 new persistent data failures
```

Oracle error messages in screen shot above:

ORA-00210: cannot open the specified control file

ORA-00202: control file: 'C:\APP\YLEWI\ORADATA\ORCL\CONTROL01.CTL'

ORA-27041: unable to open file

OSD-04002: unable to open file

O/S-Error: (OS 2) The system cannot find the file specified.

ORA-205 signalled during: ALTER DATABASE   MOUNT...

Sun Aug 18 18:37:05 2019

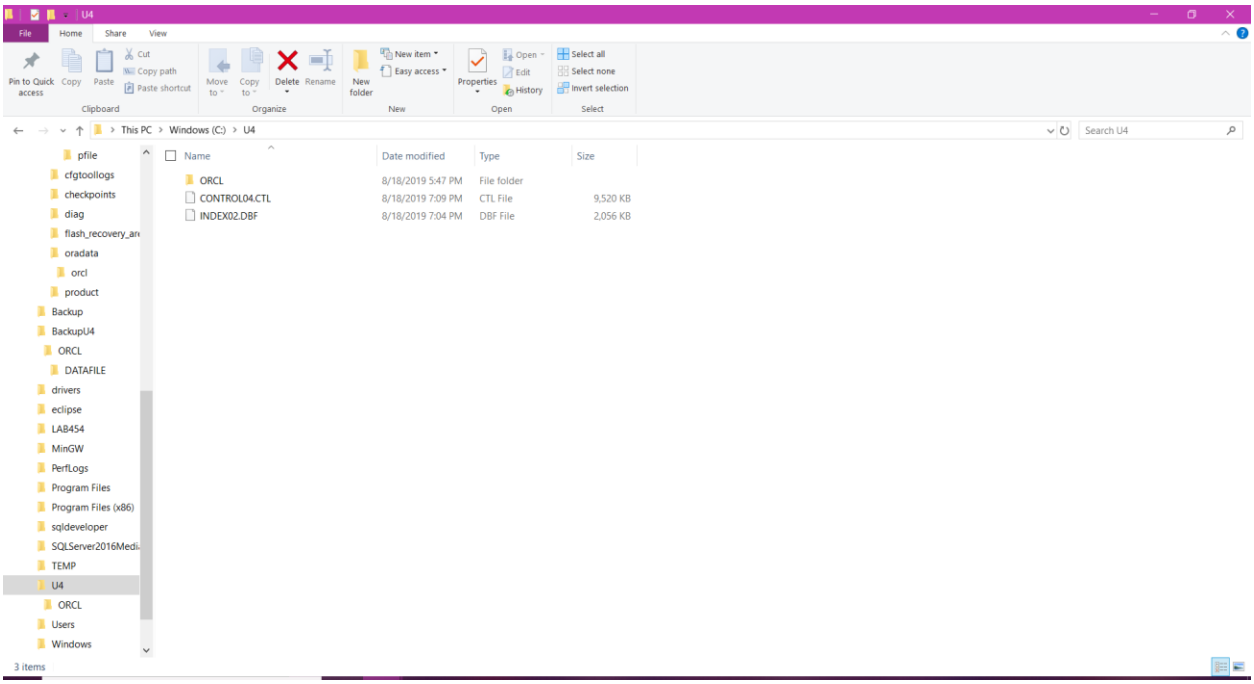
Checker run found 1 new persistent data failures

13. Restore Control01.CTL from your recycle bin and then restart Oracle.

```
SQL> shutdown immediate
ORA-01507: database not mounted


ORACLE instance shut down.
SQL> connect sys/Purpledesk44 as sysdba
Connected to an idle instance.
SQL> startup
ORACLE instance started.

Total System Global Area  417546240 bytes
Fixed Size                  2176328 bytes
Variable Size             264243896 bytes
Database Buffers          142606336 bytes
Redo Buffers                8519680 bytes
Database mounted.
Database opened.
SQL>
```

14. Multiplex the existing control file as follows.
a). Add a new control file CONTROL04.CTL in C:\U4.
b). Confirm that both control files are being used.

```
SQL> ALTER SYSTEM SET control_files = 'C:\app\ylewi\oradata\orcl\control01.ctl',
  2  'C:\U4\control04.ctl'
  3  SCOPE=SPFILE;

System altered.
```



Both control files are being used. See screen shot below.

```
NAME
--------------------------------------------------------------------------------
C:\APP\YLEWI\ORADATA\ORCL\CONTROL01.CTL
C:\U4\CONTROL04.CTL

SQL>
```

15. What is the initial sizing of the data file section in your control file?

```
SQL> SELECT TYPE, RECORD_SIZE, RECORDS_TOTAL, RECORDS_USED
  2  FROM V$CONTROLFILE_RECORD_SECTION
  3  WHERE TYPE = 'DATAFILE';

TYPE                         RECORD_SIZE RECORDS_TOTAL RECORDS_USED
---------------------------- ----------- ------------- ------------
DATAFILE                             520           100           10

SQL>
```

16. List the number and location of existing log files and display the number of redo log file groups and members your database has.

```
SQL> SELECT MEMBER, GROUP# FROM V$LOGFILE;

MEMBER
--------------------------------------------------------------------------------
    GROUP#
----------
C:\APP\YLEWI\ORADATA\ORCL\REDO03.LOG
         3

C:\APP\YLEWI\ORADATA\ORCL\REDO02.LOG
         2

C:\APP\YLEWI\ORADATA\ORCL\REDO01.LOG
         1
```

There are 3 existing log files.

```
SQL> SELECT GROUP#,MEMBERS FROM V$LOG;

    GROUP#    MEMBERS
---------- ----------
         1          1
         2          1
         3          1
```

17. Add a redo log member to each group in your database located on C:\u4, using the following naming conventions:
Add member to Group 1: redo01b.log
Add member to Group 2: redo02b.log
Add member to Group 3: redo03b.log
Verify the result.

```
SQL> ALTER DATABASE ADD LOGFILE MEMBER
  2  'C:\U4\REDO01b.log' TO GROUP 1,
  3  'C:\U4\REDO02b.log' TO GROUP 2,
  4  'C:\U4\REDO03b.log' TO GROUP 3;

Database altered.

SQL> SELECT MEMBER, GROUP# FROM V$LOGFILE;

MEMBER
--------------------------------------------------------------------------------
    GROUP#
----------
C:\APP\YLEWI\ORADATA\ORCL\REDO03.LOG
         3

C:\APP\YLEWI\ORADATA\ORCL\REDO02.LOG
         2

C:\APP\YLEWI\ORADATA\ORCL\REDO01.LOG
         1


MEMBER
--------------------------------------------------------------------------------
    GROUP#
----------
C:\U4\REDO01B.LOG
         1

C:\U4\REDO02B.LOG
         2

C:\U4\REDO03B.LOG
         3


6 rows selected.

SQL>
```

18. Add a new redo log group with two members located on C:\APP\oradata\INST1 and C:\U4 using the following naming conventions and verify the result. Add Group 4: redo04.log and redo04b.log.

```
SQL> ALTER DATABASE ADD LOGFILE GROUP 4;

Database altered.

SQL> ALTER DATABASE ADD LOGFILE MEMBER
  2  'C:\app\ylewi\oradata\orcl\redo04.log' TO GROUP 4,
  3  'C:\app\ylewi\oradata\orcl\redo04B.log' TO GROUP 4,
  4  'C:\U4\redo04.log' TO GROUP 4,
  5  'C:\U4\redo04B.log' TO GROUP 4;
```

```
SQL> SELECT MEMBER FROM V$LOGFILE;

MEMBER
--------------------------------------------------------------------------------
C:\APP\YLEWI\ORADATA\ORCL\REDO03.LOG
C:\APP\YLEWI\ORADATA\ORCL\REDO02.LOG
C:\APP\YLEWI\ORADATA\ORCL\REDO01.LOG
C:\U4\REDO01B.LOG
C:\U4\REDO02B.LOG
C:\U4\REDO03B.LOG
C:\U4\ORCL\ONLINELOG\O1_MF_4_GOMWQ16N_.LOG
C:\APP\YLEWI\FLASH_RECOVERY_AREA\ORCL\ONLINELOG\O1_MF_4_GOMWQ1OS_.LOG
C:\APP\YLEWI\ORADATA\ORCL\REDO04.LOG
C:\APP\YLEWI\ORADATA\ORCL\REDO04B.LOG
C:\U4\REDO04.LOG

11 rows selected.
```

```
SQL> SELECT GROUP#, MEMBERS FROM V$LOG;

    GROUP#    MEMBERS
---------- ----------
         1          2
         2          2
         3          2
         4          5
```

19. Remove the redo log group created in the previous step.

```
SQL> SELECT GROUP#, MEMBERS, STATUS FROM V$LOG;

    GROUP#    MEMBERS STATUS
---------- ---------- ----------------
         1          2 CURRENT
         2          2 INACTIVE
         3          2 INACTIVE
         4          5 UNUSED
```

```
SQL> ALTER DATABASE DROP LOGFILE GROUP 4;

Database altered.
```

20. Resize all online redo log files to 5 MB.

```
SQL> select group#, status from v$log;

    GROUP# STATUS
---------- ----------------
         1 INACTIVE
         2 INACTIVE
         3 INACTIVE
         5 INACTIVE
         6 CURRENT
         7 INACTIVE

6 rows selected.

SQL> alter database drop logfile group 1;

Database altered.

SQL> alter database drop logfile group 2;

Database altered.

SQL> alter database drop logfile group 3;

Database altered.

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

    GROUP# STATUS
---------- ----------------
         5 INACTIVE
         6 CURRENT
         7 INACTIVE

SQL>
```

Yolanda Lewis CSC454

```
SQL> select member, GROUP# from v$logfile;

MEMBER
--------------------------------------------------------------------------------
    GROUP#
----------
C:\U4\ORCL\ONLINELOG\O1_MF_5_GOMZZWPR_.LOG
         5

C:\APP\YLEWI\FLASH_RECOVERY_AREA\ORCL\ONLINELOG\O1_MF_5_GOMZZWQQ_.LOG
         5

C:\U4\ORCL\ONLINELOG\O1_MF_6_GON0077V_.LOG
         6


MEMBER
--------------------------------------------------------------------------------
    GROUP#
----------
C:\APP\YLEWI\FLASH_RECOVERY_AREA\ORCL\ONLINELOG\O1_MF_6_GON0078T_.LOG
         6

C:\U4\ORCL\ONLINELOG\O1_MF_7_GON00M5H_.LOG
         7

C:\APP\YLEWI\FLASH_RECOVERY_AREA\ORCL\ONLINELOG\O1_MF_7_GON00M6H_.LOG
         7


6 rows selected.
```