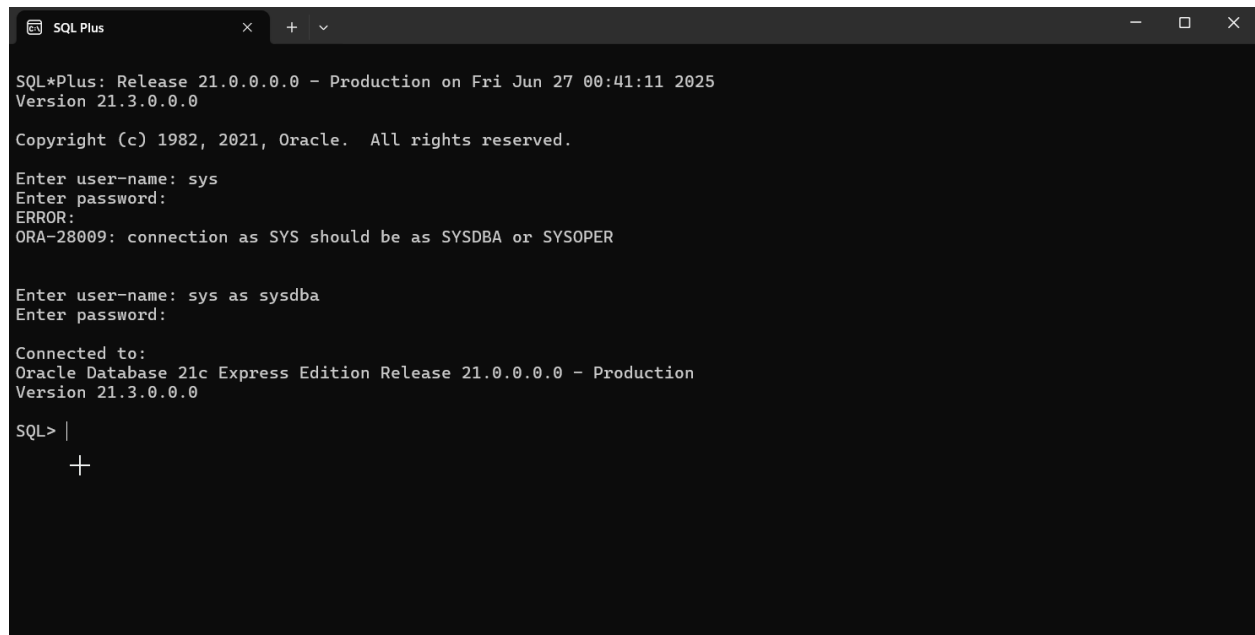


Question 1

Question 1.1

1.1.1



```
SQL*Plus
SQL*Plus: Release 21.0.0.0.0 - Production on Fri Jun 27 00:41:11 2025
Version 21.3.0.0.0

Copyright (c) 1982, 2021, Oracle. All rights reserved.

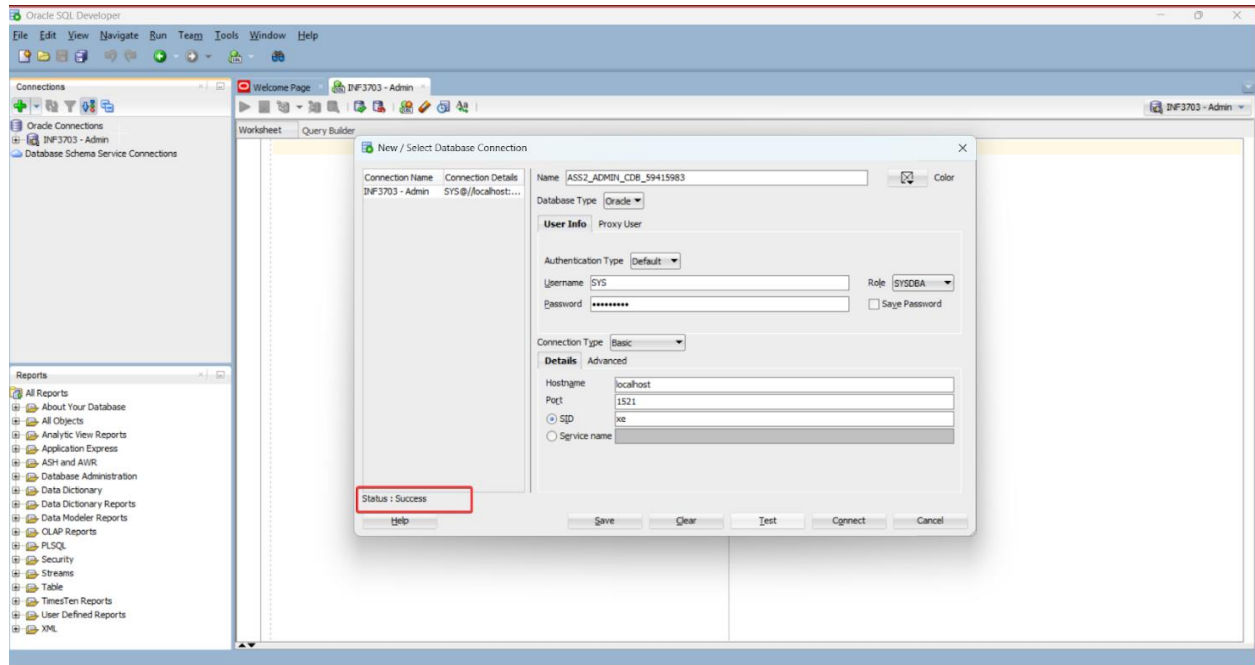
Enter user-name: sys
Enter password:
ERROR:
ORA-28009: connection as SYS should be as SYSDBA or SYSOPER

Enter user-name: sys as sysdba
Enter password:

Connected to:
Oracle Database 21c Express Edition Release 21.0.0.0.0 - Production
Version 21.3.0.0.0

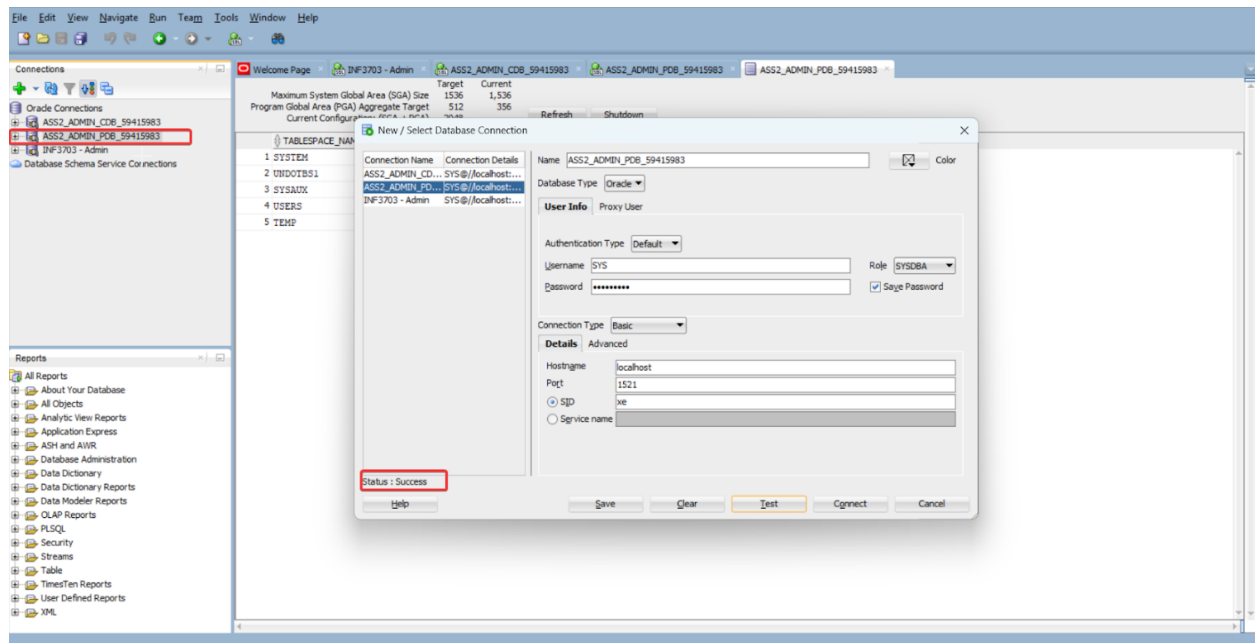
SQL> |
+
```

1.1.2



Question 1.2

1.2.1



1.2.2

```
SQL Plus
SQL*Plus: Release 21.0.0.0.0 - Production on Fri Jun 27 01:17:43 2025
Version 21.3.0.0.0

Copyright (c) 1982, 2021, Oracle. All rights reserved.

Enter user-name: system@localhost:1521/ASS2_CDB_59415983 as sysdba

Connected to:
Oracle Database 21c Express Edition Release 21.0.0.0.0 - Production
Version 21.3.0.0.0

SQL> |
```

1.2.3

```
SQL Plus
SQL*Plus: Release 21.0.0.0.0 - Production on Fri Jun 27 01:23:33 2025
Version 21.3.0.0.0

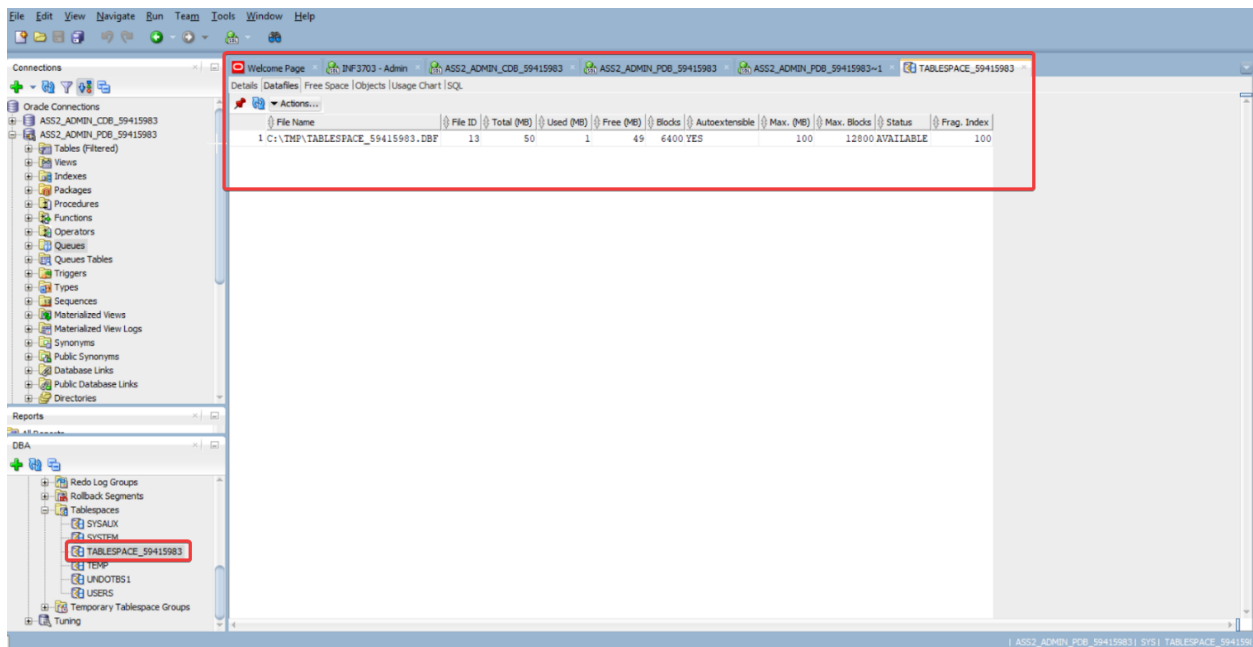
Copyright (c) 1982, 2021, Oracle. All rights reserved.

Enter user-name: system@localhost:1521/ASS2_PDB_59415983 as sysdba

Connected to:
Oracle Database 21c Express Edition Release 21.0.0.0.0 - Production
Version 21.3.0.0.0

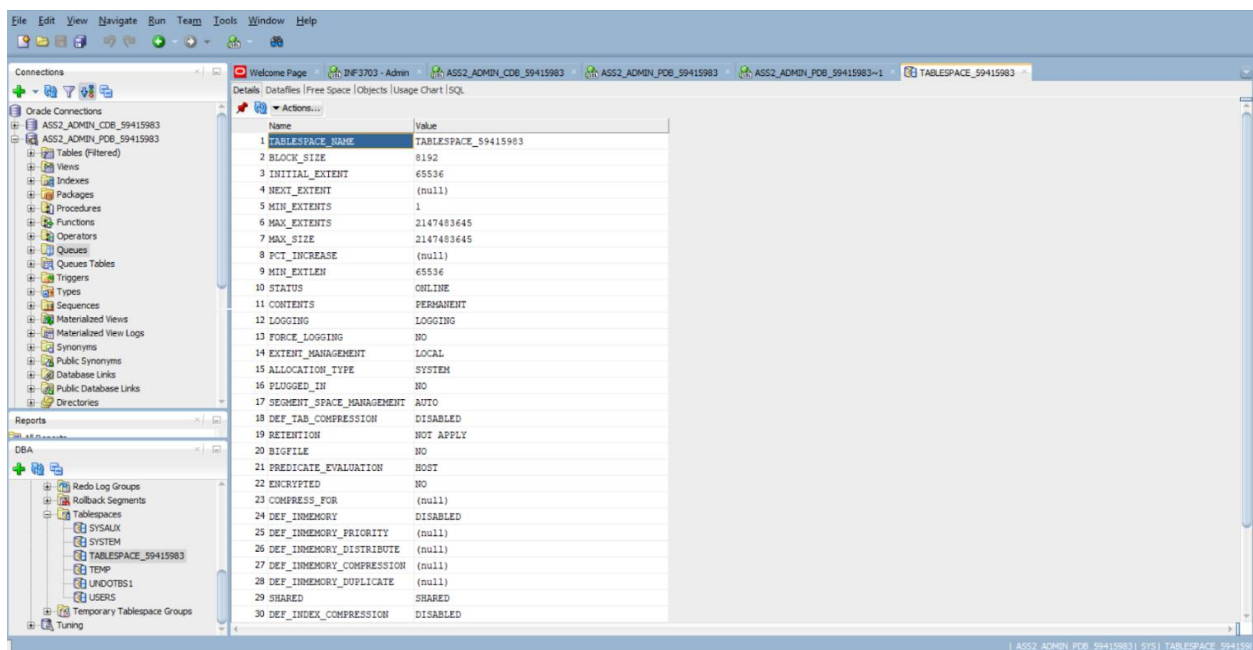
SQL> |
```

Question 1.3



The screenshot shows the Oracle SQL Developer interface. The 'Connections' pane on the left shows the 'ASS2_ADMIN_PDB_59415983' connection. The 'Reports' pane shows the 'TABLESPACE_59415983' report. The main window displays the 'Properties' dialog for 'TABLESPACE_59415983'. The 'Details' tab is selected, showing a table with the following data:

File Name	File ID	Total (MB)	Used (MB)	Free (MB)	Blocks	Autoextendable	Max. (MB)	Max. Blocks	Status	Frag. Index
C:\TMP\TABLESPACE_59415983.DBF	13	50	1	49	6400	YES	100	12000	AVAILABLE	100

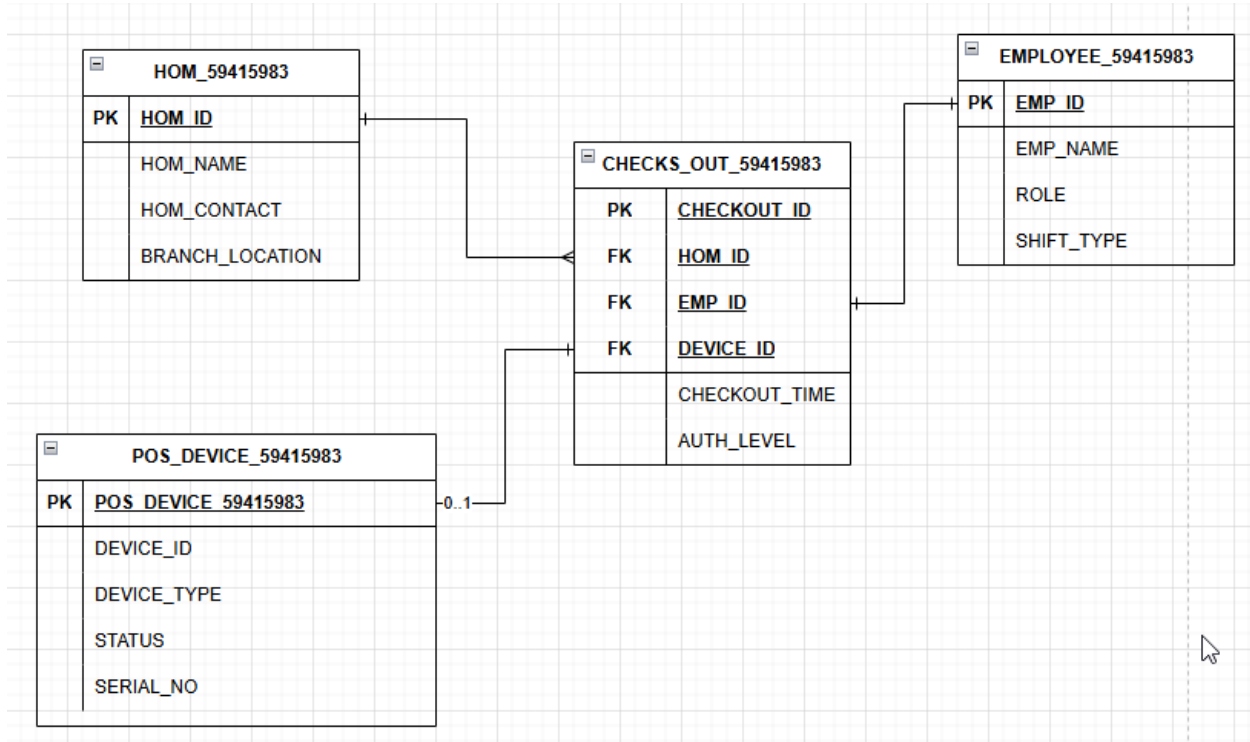


The screenshot shows the Oracle SQL Developer interface. The 'Connections' pane on the left shows the 'ASS2_ADMIN_PDB_59415983' connection. The 'Reports' pane shows the 'TABLESPACE_59415983' report. The main window displays the 'Properties' dialog for 'TABLESPACE_59415983'. The 'Details' tab is selected, showing a table with the following data:

Name	Value
1. TABLESPACE_NAME	TABLESPACE_59415983
2. BLOCK_SIZE	8192
3. INITIAL_EXTENT	65536
4. NEXT_EXTENT	(null)
5. MIN_EXTENTS	1
6. MAX_EXTENTS	2147483648
7. MAX_SIZE	2147483648
8. PCT_INCREASE	(null)
9. MIN_EXTLEN	65536
10. STATUS	ONLINE
11. CONTENTS	PERMANENT
12. LOGGING	LOGGING
13. FORCE_LOGGING	NO
14. EXTENT_MANAGEMENT	LOCAL
15. ALLOCATION_TYPE	SYSTEM
16. PLOGGED_IN	NO
17. SEGMENT_SPACE_MANAGEMENT	AUTO
18. DEF_TAB_COMPRESSION	DISABLED
19. RETENTION	NOT APPLY
20. BIGFILE	NO
21. PREDICATE_EVALUATION	HOST
22. ENCRYPTED	NO
23. COMPRESS_FOR	(null)
24. DEF_INMEMORY	DISABLED
25. DEF_INMEMORY_PRIORITY	(null)
26. DEF_INMEMORY_DISTRIBUTE	(null)
27. DEF_INMEMORY_COMPRESSION	(null)
28. DEF_INMEMORY_DUPLICATE	(null)
29. SHARED	SHARED
30. DEF_INDEX_COMPRESSION	DISABLED

Question 1.4

Question 2



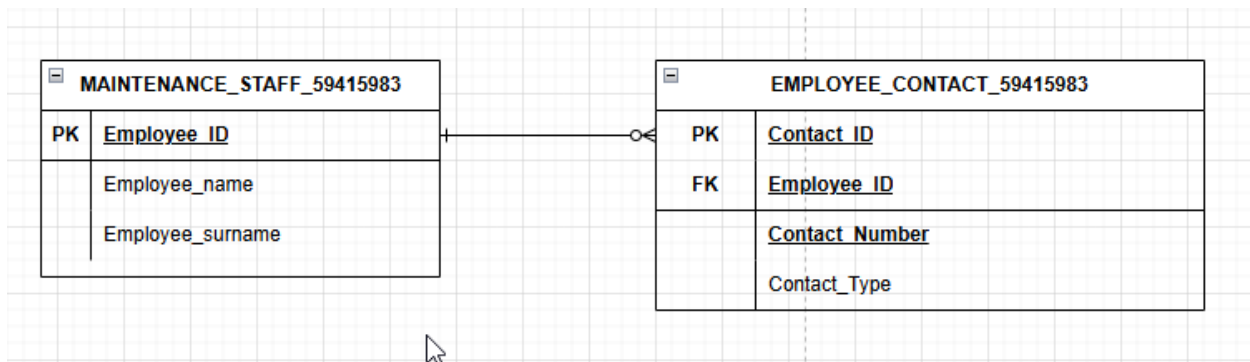
Question 3

3.1

The multivalued attribute is Employee_contact.

This is considered multivalued because a single employee may have multiple contact numbers (e.g., cellphone, landline, work phone), That against First Normal Form (1NF), which requires each attribute to contain single values only.

3.2



Question 4

4.1.1

The screenshot shows the Oracle SQL Developer interface. The 'Connections' pane on the left lists various database objects. The main window displays the 'INVOICE_59415983' table in a grid view. The table has three columns: INV_NUMBER, VEHICLE_REG, and INV_DATE. The data is as follows:

INV_NUMBER	VEHICLE_REG	INV_DATE
1 1111	CA 78501	25-MAY-24
2 2222	CA 87514	25-MAY-24
3 3333	CA 90712	26-MAY-24
4 4444	CA 78501	26-MAY-24

The 'Messages - Log' pane at the bottom shows the following SQL statements and their execution results:

```
INSERT INTO "SYS"."INVOICE_59415983" (INV_NUMBER, VEHICLE_REG, INV_DATE) VALUES ('1111', 'CA 78501', '25-MAY-24')
INSERT INTO "SYS"."INVOICE_59415983" (INV_NUMBER, VEHICLE_REG, INV_DATE) VALUES ('2222', 'CA 87514', '25-MAY-24')
INSERT INTO "SYS"."INVOICE_59415983" (INV_NUMBER, VEHICLE_REG, INV_DATE) VALUES ('3333', 'CA 90712', '26-MAY-24')
INSERT INTO "SYS"."INVOICE_59415983" (INV_NUMBER, VEHICLE_REG, INV_DATE) VALUES ('4444', 'CA 78501', '26-MAY-24')
Commit Successful
```

The screenshot shows the Oracle SQL Developer interface. The 'Connections' pane on the left lists various database objects. The main window displays the 'INVOICE_59415983' table in a structure view. The table has three columns: INV_NUMBER, VEHICLE_REG, and INV_DATE. The data is as follows:

COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
1 INV_NUMBER	VARCHAR2 (20 BYTE)	No	(null)	1 (null)	
2 VEHICLE_REG	VARCHAR2 (20 BYTE)	Yes	(null)	2 (null)	
3 INV_DATE	VARCHAR2 (20 BYTE)	Yes	(null)	3 (null)	












The 'Messages - Log' pane at the bottom shows the following SQL statements and their execution results:

```
INSERT INTO "SYS"."INVOICE_59415983" (INV_NUMBER, VEHICLE_REG, INV_DATE) VALUES ('1111', 'CA 78501', '25-MAY-24')
INSERT INTO "SYS"."INVOICE_59415983" (INV_NUMBER, VEHICLE_REG, INV_DATE) VALUES ('2222', 'CA 87514', '25-MAY-24')
INSERT INTO "SYS"."INVOICE_59415983" (INV_NUMBER, VEHICLE_REG, INV_DATE) VALUES ('3333', 'CA 90712', '26-MAY-24')
INSERT INTO "SYS"."INVOICE_59415983" (INV_NUMBER, VEHICLE_REG, INV_DATE) VALUES ('4444', 'CA 78501', '26-MAY-24')
Commit Successful
```

Welcome Page x

INF3703 - Admin x

CLEANING_SERVICE_59415983 x








Worksheet

Query Builder

```
CREATE SEQUENCE LINE_INCREMENT_59415983
START WITH 1
INCREMENT BY 1;
```

Script Output x












Task completed in 0,131 seconds

Sequence LINE_INCREMENT_59415983 created.

Welcome Page

INF3703 - Admin

CLEANING_SERVICE_59415983








Worksheet

Query Builder

CREATE OR REPLACE TRIGGER LINE_TRIGGER_59415983
BEFORE INSERT ON INV_GENERATOR_59415983
FOR EACH ROW
DECLARE
 v_line NUMBER;
BEGIN
 SELECT NVL(MAX(LINE_NUMBER), 0) + 1 INTO v_line
 FROM INV_GENERATOR_59415983
 WHERE INV_NUMBER = :NEW.INV_NUMBER;

 :NEW.LINE_NUMBER := v_line;
END;










Script Output x

 Task completed in 0,878 seconds

Welcome Page x

INF3703 - Admin x






CLEANING_SERVICE_59415983 x



WorksheetQuery Builder

```
CREATE OR REPLACE VIEW VIEW_INVOICE_LINE_DETAILS_59415983 AS
SELECT
    g.INV_NUMBER,
    i.INV_DATE,
    i.VEHICLE_REG,
    g.LINE_NUMBER,
    g.SERVICE_CODE,
    g.LINE_PRICE
FROM
    INV_GENERATOR_59415983 g
JOIN
    INVOICE_59415983 i ON g.INV_NUMBER = i.INV_NUMBER
ORDER BY
    g.INV_NUMBER, g.LINE_NUMBER;
```

Script Output x



Task completed in 0,079 seconds

View VIEW_INVOICE_LINE_DETAILS_59415983 created.