

Generate the Execution Plan:

1. Using SQL Developer's Execute Explain Plan button (F10)

The screenshot shows the Oracle SQL Developer interface. The main window displays a SQL script with the following content:

```
710 /* Name - Ankur Prajapati Assignment - 11(1)-Using EXPLAIN PLAN command StudentID: N01324892 */
711 EXPLAIN PLAN FOR
712 SELECT c.customer#, lastname, firstname, o.order#, shipdate
713 FROM customers c, orders o
714 WHERE c.customer# = o.customer#
715 AND c.customer# = 1014;
716
717 SELECT * FROM TABLE(DBMS_XPLAN.DISPLAY);
718
719 SELECT c.customer#, lastname, firstname, o.order#, shipdate
```

The 'Script Output' tab shows the execution plan for the query. The plan is as follows:

Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time
0	SELECT STATEMENT		1	32	4 (0)	00:00:01
1	NESTED LOOPS		1	32	4 (0)	00:00:01
2	TABLE ACCESS BY INDEX ROWID	CUSTOMERS	1	18	1 (0)	00:00:01
3	INDEX UNIQUE SCAN	CUSTOMERS_CUSTOMER#_PK	1	0	0 (0)	00:00:01
4	TABLE ACCESS FULL	ORDERS	1	14	3 (0)	00:00:01

Predicate Information (identified by operation id):

Id	Operation	Predicate
3	access	"C"."CUSTOMER#"=1014
4	filter	"O"."CUSTOMER#"=1014

The screenshot shows the Oracle SQL Developer interface. The main window displays a SQL script with the following content:

```
708 WHERE FNAME = 'LISA' AND LNAME = 'WHITE';
709
710 /* Name - Ankur Prajapati Assignment - 11(1)-Using SQL Developer's Execute Explain Plan button (F10) StudentID: N01324892 */
711 EXPLAIN PLAN FOR
712 SELECT c.customer#, lastname, firstname, o.order#, shipdate
713 FROM customers c, orders o
714 WHERE c.customer# = o.customer#
715 AND c.customer# = 1014;
716
```

The 'Script Output' tab shows the execution plan for the query. The plan is as follows:

OPERATION	OBJECT_NAME	OPTIONS	CARDINALITY	COST
SELECT STATEMENT			1	4
NESTED LOOPS			1	4
TABLE ACCESS	CUSTOMERS	BY INDEX ROWID	1	1
INDEX	CUSTOMERS_CUSTOMER#_PK	UNIQUE SCAN	1	0
TABLE ACCESS	ORDERS	FULL	1	3

Other XML:

```
<info type="db_version">12.2.0.1</info>
<info type="parse_schema">N01324892</info>
<info type="plan_hash_full">1260266750</info>
<info type="plan_hash">817087579</info>
<info type="plan_hash_2">1260266750</info>
```

2. Using the EXPLAIN PLAN command (SQL statement).

The screenshot shows the Oracle SQL Developer interface. The main window displays the SQL Worksheet with the following query:

```
713 FROM customers c, orders o
714 WHERE c.customer# = o.customer#
715 AND c.customer# = 1014;
716
717 SELECT c.customer#, lastname, firstname, o.order#, shipdate
718 FROM customers c JOIN orders o
719 ON c.customer# = o.customer#
720 AND c.customer# = 1014;
721
722
```

The SQL Worksheet shows the execution time as 0.054 seconds. The Explain Plan tab is selected, showing the following execution plan:

OPERATION	OBJECT_NAME	OPTIONS	CARDINALITY	COST
SELECT STATEMENT			1	4
NESTED LOOPS			1	4
TABLE ACCESS	CUSTOMERS	BY INDEX ROWID	1	1
INDEX	CUSTOMERS_CUSTOMER#_PK	UNIQUE SCAN	1	0
TABLE ACCESS	ORDERS	FULL	1	3

The Other XML tab shows the XML representation of the execution plan:

```
USE_NL(@"SEL$S8A6D7F6"@"O"@"SEL$1")
LEADING(@"SEL$S8A6D7F6"@"C"@"SEL$1"@"O"@"SEL$1")
FULL(@"SEL$S8A6D7F6"@"O"@"SEL$1")
INDEX_RS_ASC(@"SEL$S8A6D7F6"@"C"@"SEL$1"("CUSTOMERS","CUSTOMER#"))
OUTLINE(@"SEL$1")
OUTLINE(@"SEL$2")
```

The screenshot shows the Oracle SQL Developer interface. The main window displays the SQL Worksheet with the following query:

```
716 EXPLAIN PLAN FOR
717 SELECT c.customer#, lastname, firstname, o.order#, shipdate
718 FROM customers c JOIN orders o
719 ON c.customer# = o.customer#
720 AND c.customer# = 1014;
721
722 SELECT * FROM TABLE(DBMS_XPLAN.DISPLAY);
723
724
725
```

The SQL Worksheet shows the execution time as 0.5299997 seconds. The Explain Plan tab is selected, showing the following execution plan:

Id	Operation	Name	Rows	Bytes	Cost	(%CPU)	Time
0	SELECT STATEMENT		1	32	4	(0)	00:00:01
1	NESTED LOOPS		1	32	4	(0)	00:00:01
2	TABLE ACCESS BY INDEX ROWID	CUSTOMERS	1	18	1	(0)	00:00:01
3	INDEX UNIQUE SCAN	CUSTOMERS_CUSTOMER#_PK	1		0	(0)	00:00:01
4	TABLE ACCESS FULL	ORDERS	1	14	3	(0)	00:00:01

The Predicate Information (identified by operation id):

```
3 - access("C"."CUSTOMER#"=1014)
4 - filter("O"."CUSTOMER#"=1014)
```

3. Display the generated explain plan information stored in a table named PLAN_TABLE:

The screenshot shows the Oracle SQL Developer interface. The SQL Worksheet contains the following SQL script:

```
717 EXPLAIN PLAN FOR
718 SELECT c.customer#, lastname, firstname, o.order#, shipdate
719 FROM customers c JOIN orders o
720 ON c.customer# = o.customer#
721 AND c.customer# = 1014;
722
723 SELECT * FROM TABLE(DBMS_XPLAN.DISPLAY);
724
725 /* Name - Ankur Prajapati Assignment - 11(3) StudentID: N01324892 */
726 EXPLAIN PLAN FOR
727 SELECT id, statement_id, plan_id, optimizer, object_owner, object_name, bytes,
728 cpu_cost, io_cost, operation, options
729 FROM plan_table
730 ORDER BY id;
731 SELECT * FROM TABLE(DBMS_XPLAN.DISPLAY);
732
733 select * from table(dbms_xplan.display_cursor(sql_id=>'7yhu6xmzq6fm', format=>'ALLSTATS LAST'));
```

The Script Output pane shows the results of the query, including the PLAN_TABLE_OUTPUT table structure and the execution plan details.

Id	Operation	Name	Rows	Bytes	Cost (CPU)	Time
0	SELECT STATEMENT		13	6357	3 (34)	00:00:01
1	SORT ORDER BY		13	6357	3 (34)	00:00:01
2	TABLE ACCESS FULL	PLAN_TABLE	13	6357	2 (0)	00:00:01

The screenshot shows the Oracle SQL Developer interface with the execution plan for the query. The SQL Worksheet contains the same SQL script as the previous screenshot.

The Script Output pane shows the execution plan details, including the PLAN_TABLE_OUTPUT table structure and the execution plan details.

OPERATION	OBJECT_NAME	OPTIONS	CARDINALITY	COST
SELECT STATEMENT				29
COLLECTION ITERATOR	DBMS_XPLAN.DISPLAY_CURSOR	PICKLER FETCH		29