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Description: A1, Task2

Save text editor as 7020466-TanShuFei-A1-Task2B.sql

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-- T2Q1

SP00L 7020466-A1-Task2B.txt

SET echo ON

SET feedback ON

SET linesize 100

SET pagesize 1000

-- Before Index

-- Table Access Full | Cost 24480

EXPLAIN PLAN FOR

SELECT l_discount

FROM lineitem

WHERE to_char(l_shipdate, 'yymmdd') = (
 SELECT max(to_char(l_shipdate, 'yymmdd'))
 FROM lineitem);

SELECT * FROM TABLE(dbms_xplan.display);

CREATE INDEX T2Q1 on lineitem(to_char(l_shipdate, 'yymmdd'), l_discount);

-- After creating an index to speed up the processing

-- Index Full Scan | Cost 27

EXPLAIN PLAN FOR

SELECT l_discount

FROM lineitem

WHERE to_char(l_shipdate, 'yymmdd') = (
 SELECT max(to_char(l_shipdate, 'yymmdd'))
 FROM lineitem);

SELECT * FROM TABLE(dbms_xplan.display);

DROP INDEX T2Q1;

-- T2Q2

-- Before Index

-- Table Access Full Scan | Cost 12243

EXPLAIN PLAN FOR

SELECT COUNT(*)

FROM lineitem

WHERE to_char(l_shipdate, 'yyyy') = '1998'
AND l_shipmode = 'AIR';

SELECT * FROM TABLE(dbms_xplan.display);

CREATE INDEX T2Q2 on lineitem(to_char(l_shipdate, 'yyyy'), l_shipmode);

-- After creating an index to speed up the processing

```
-- Index Range Scan | Cost 106
EXPLAIN PLAN FOR
SELECT COUNT(*)
FROM lineitem
WHERE to_char(l_shipdate, 'yyyy') = '1998'
AND l_shipmode = 'AIR';
SELECT * FROM TABLE(dbms_xplan.display);
DROP INDEX T2Q2;
```

```
-- T2Q3
```

```
-- Before Index
-- Table Access Full Scan | Cost 24449
EXPLAIN PLAN FOR
SELECT l_orderkey, l_linenumbr
FROM lineitem
WHERE l_discount = (SELECT max(l_discount) FROM lineitem)
ORDER BY l_orderkey ASC;
SELECT * FROM TABLE(dbms_xplan.display);
```

```
CREATE INDEX T2Q3 on lineitem(l_discount);
```

```
-- After creating an index to speed up the processing
-- Index Fast Full Scan | Cost 1736
EXPLAIN PLAN FOR
SELECT l_orderkey, l_linenumbr
FROM lineitem
WHERE l_discount = (SELECT max(l_discount) FROM lineitem);
SELECT * FROM TABLE(dbms_xplan.display);
DROP INDEX T2Q3;
```

```
-- T2Q4
```

```
-- Before Index
-- Table Access Full Scan | Cost 12273
EXPLAIN PLAN FOR
SELECT COUNT(*) AS COUNT, l_linestatus AS STATUS
FROM lineitem
GROUP BY l_linestatus;
SELECT * FROM TABLE(dbms_xplan.display);
```

```
CREATE INDEX T2Q4 on lineitem(l_linestatus);
```

```
-- After creating an index to speed up the processing
-- Index Fast Full Scan | Cost 1305
EXPLAIN PLAN FOR
SELECT COUNT(*) AS COUNT, l_linestatus AS STATUS
FROM lineitem
GROUP BY l_linestatus;
SELECT * FROM TABLE(dbms_xplan.display); -- Display generated plan
DROP INDEX T2Q4; -- Drop created index
```

```
-- T2Q5
```

```
-- Before Index
-- Index Range Scan | 358 Lines | Cost 1061
EXPLAIN PLAN FOR
SELECT l_orderkey, l_linenumber, l_linestatus, l_shipdate, l_shipmode
FROM lineitem
WHERE l_orderkey IN (1795718, 1799046, 1794626);
SELECT * FROM TABLE(dbms_xplan.display);

CREATE INDEX T2Q5 on lineitem(l_orderkey, l_linenumber, l_linestatus, l_shipdate,
l_shipmode);

-- After creating an index to speed up the processing
-- Index Range Scan | 358 Lines | Cost 44
EXPLAIN PLAN FOR
SELECT l_orderkey, l_linenumber, l_linestatus, l_shipdate, l_shipmode
FROM lineitem
WHERE l_orderkey IN (1795718, 1799046, 1794626) ;
SELECT * FROM TABLE(dbms_xplan.display);
DROP INDEX T2Q5;

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SPOOL OFF
-- END OF QUERY --
```