ECE 9014A – GROUP PROJECT

RAILWAY SYSTEM

PART 3: ASSOCIATION RULE MINING FOR STATIONS BOOKED ON THE SAME DAY (10%)

GROUP– 11

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Objective:

- To implement association rule mining for stations booked on the same day.

Procedure of Association Mining:

- Create Transactional table containing stations that were booked on the same date
- Select command was used to display transactional table data
- Table containing association rule model settings was created
- Settings were inserted into model
- Select command was used to display setting table data
- Model is created
- The top ten rules which were ordered by support and confidence were displayed

Observations:

- Reason why we can't get the final table is that for every date there must be multiple stations, which is not present in our dataset.

RESULTS

SCRIPTS AND OUTPUT

```
create table station_transactional AS (
Select DISTINCT f.time_id, s.Station_id
from ADMIN.fact_table f, ADMIN.time_dim t, ADMIN.station s
where s.Station_id = f.station_id
and
t.Time_id = f.time_id
);
```

TIME_ID	STATION_ID
10100	10
10007	11
10045	10
10053	11
10068	10
10115	10

```
CREATE TABLE Railway_Stations_AR_Settings (
SETTING_NAME VARCHAR2(30),
SETTING_VALUE VARCHAR2(4000)
);
```

```
%script
BEGIN
INSERT INTO Railway_Stations_AR_Settings VALUES (DBMS_DATA_MINING.ASSO_MIN_SUPPORT, 0.04);
INSERT INTO Railway_Stations_AR_Settings VALUES (DBMS_DATA_MINING.ASSO_MIN_CONFIDENCE, 0.1);
INSERT INTO Railway_Stations_AR_Settings VALUES (DBMS_DATA_MINING.ASSO_MAX_RULE_LENGTH, 3);
INSERT INTO Railway_Stations_AR_Settings VALUES (DBMS_DATA_MINING.ODMS_ITEM_ID_COLUMN_NAME, 'Station_id');
commit;
END;
```

SETTING_NAME	SETTING_VALUE
ASSO_MIN_SUPPORT	.04
ASSO_MIN_CONFIDENCE	.01
ASSO_MAX_RULE_LENGTH	2
ODMS_ITEM_ID_COLUMN_NAME	Station_id

```
BEGIN
    DBMS_DATA_MINING.CREATE_MODEL(
    MODEL_NAME         =>'Railway_Stations_AR',
    MINING_FUNCTION     => DBMS_DATA_MINING.ASSOCIATION,
    DATA_TABLE_NAME     => 'station_transactional',
    CASE_ID_COLUMN_NAME     =>'time_id',
    SETTINGS_TABLE_NAME     => 'Railway_Stations_AR_Settings'
    );
END;

SELECT RULE_ID,
        A.ATTRIBUTE_SUBNAME ANTECEDENT,
        C.ATTRIBUTE_SUBNAME CONSEQUENT,
        RULE_SUPPORT SUPP,
        RULE_CONFIDENCE CONF
    FROM TABLE(DBMS_DATA_MINING.GET_ASSOCIATION_RULES('Railway_Stations_AR',10)) T,
        TABLE(T.CONSEQUENT) C,
        TABLE(T.ANTECEDENT) A
    ORDER BY CONF DESC,SUPP DESC;
```

RULE_ID	ANTECEDENT	CONSEQUENT	SUPP	CONF