

2.1. Star schema implementation - Level 1

The following is the SQL script for implementing the star schema of version 1 (Level 1).

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-- ===== SharedDim =====

-- DIM: CarbodyDIM
DROP TABLE CarBodyTypeDIM CASCADE CONSTRAINTS PURGE;
CREATE TABLE CarBodyTypeDIM AS
(SELECT DISTINCT(CARBODYTYPE), numseats FROM moncity.car);

-- DIM: CarDim
DROP TABLE CarDIM CASCADE CONSTRAINTS PURGE;
CREATE TABLE CarDIM AS
(SELECT DISTINCT registrationno, CARBODYTYPE, numseats
FROM moncity.car);

-- ===== AccidentFact =====

-- DIM: AccidentZoneDIM
DROP TABLE AccidentZoneDIM CASCADE CONSTRAINTS PURGE;
CREATE TABLE AccidentZoneDIM AS
(SELECT DISTINCT accidentzone
FROM clean_accidentinfo);

-- DIM: AccidentInfoDIM_V1
DROP TABLE AccidentInfoDIM_V1 CASCADE CONSTRAINTS PURGE;
CREATE TABLE AccidentInfoDIM_V1 AS
(
SELECT ai.accidentid,
1.0/count(ca.accidentid) As WeightFactor,
LISTAGG (ca.registrationno, '_') Within Group (Order By ai.accidentid) As TeamGroupList
FROM clean_accidentinfo ai, moncity.caraccident ca
WHERE ai.accidentid = ca.accidentid
Group By ai.accidentid
);

-- DIM: CarAccidentDIM
DROP TABLE CarAccidentDIM CASCADE CONSTRAINTS PURGE;
CREATE TABLE CarAccidentDIM AS
(SELECT REGISTRATIONNO, accidentid FROM moncity.caraccident);

-- DIM: ErrorDIM
DROP TABLE ErrorDIM CASCADE CONSTRAINTS PURGE;
CREATE TABLE ErrorDIM AS
(SELECT errorcode FROM moncity.error);

-- DIM: CarDamageSeverityDIM
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DROP TABLE CarDamageSeverityDIM CASCADE CONSTRAINTS PURGE;
CREATE TABLE CarDamageSeverityDIM AS
(SELECT DISTINCT (CAR_DAMAGE_SEVERITY)
FROM clean_accidentinfo);

-- ===== MaintenanceFact =====

-- DIM: MaintenanceTypeDIM
DROP TABLE MaintenanceTypeDIM CASCADE CONSTRAINTS PURGE;
CREATE TABLE MaintenanceTypeDIM AS
(SELECT maintenancetype
FROM moncity.maintenancetype);

-- DIM: (B) MaintenanceTeamDIM_V1
DROP TABLE MaintenanceTeamDIM_V1 CASCADE CONSTRAINTS PURGE;
CREATE TABLE MaintenanceTeamDIM_V1 AS
(
SELECT T.TEAMID,
1.0/count(B.CENTERID) As WeightFactor,
LISTAGG (B.CENTERID, '_') Within Group (Order By B.CENTERID) As TeamGroupList
FROM moncity.maintenanceTeam T, moncity.belongto B
WHERE T.TEAMID = B.TEAMID
Group By T.TEAMID
);

-- DIM: (B) BridgeTable
DROP TABLE BridgeTable CASCADE CONSTRAINTS PURGE;
CREATE TABLE BridgeTable
AS (SELECT * FROM moncity.belongto);

-- DIM: (B) ResearchCenterDIM
DROP TABLE ResearchCenterDIM CASCADE CONSTRAINTS PURGE;
CREATE TABLE ResearchCenterDIM
AS(
SELECT CENTERID, CENTERNAME
FROM moncity.researchcenter
);

-- ===== BookingFact =====

-- DIM: FacultyDIM
DROP TABLE FacultyDIM CASCADE CONSTRAINTS PURGE;
CREATE TABLE FacultyDIM AS
(SELECT FACULTYID, FACULTYNAME
FROM moncity.faculty);

-- DIM: (M) MonthDIM
DROP TABLE MonthDIM CASCADE CONSTRAINTS PURGE;
CREATE TABLE MonthDIM AS
SELECT distinct to_char(BOOKINGDATE, 'MM') as MonthID,
to_char(BOOKINGDATE, 'MONTH') as Month_Des
FROM Clean_Booking;

-- DIM: (M) AgeDim
DROP TABLE AgeDim CASCADE CONSTRAINTS PURGE;
CREATE TABLE AgeDim

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(AgeID varchar2(10),
Age_grp_desc varchar2(50),
Start_age number(3),
End_age number(3));

-- Insert age group

Insert into AgeDim values ('Group 1', 'Young adult', 18, 35);
Insert into AgeDim values ('Group 2', 'Middle adult', 36, 59);
Insert into AgeDim values ('Group 3', 'Old-aged adult', 60, 110);


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-- Creating facts:
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-- ===== FACT: AccidentFACT =====

DROP TABLE AccidentFACT_V1 CASCADE CONSTRAINTS PURGE;
CREATE TABLE AccidentFACT_V1
AS (
SELECT accidentzone,
errorcode,
car_damage_severity,
accidentid,
count(accidentid) as num_of_accident
FROM clean_accidentinfo
GROUP BY
accidentzone,
car_damage_severity,
errorcode,
accidentid
);

-- ===== FACT: BookingFact =====
-- 1. Create BookingTempFact
DROP TABLE BookingTempFact CASCADE CONSTRAINTS PURGE;
CREATE TABLE BookingTempFact
AS (
SELECT to_char(bookingdate, 'MM') as MonthID, f.facultyid, c.carbodytype, p.passengerage, b.bookingid
FROM clean_booking b, clean_passenger p, moncity.faculty f, moncity.car c
WHERE b.passengerid = p.passengerid AND f.facultyid = p.facultyid AND b.REGISTRATIONNO = c.REGISTRATIONNO
);

-- 2. Create columns of AgeID and TimeID

ALTER table BookingTempFact
ADD(
AgeID varchar(15)
);

-- 3. Update values of ageDim
Update BookingTempFact

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Set ageid = 'Group 1'
WHERE ( passengerage between 18 AND 35);

Update BookingTempFact
Set ageid = 'Group 2'
WHERE ( passengerage between 36 AND 59);

Update BookingTempFact
Set ageid = 'Group 3'
WHERE ( passengerage between 60 AND 110);


-- 4. Create BookingFACT
DROP TABLE BookingFACT_V1 CASCADE CONSTRAINTS PURGE;
CREATE TABLE BookingFACT_V1
AS (
SELECT b.FACULTYID, b.CARBODYTYPE, b.AGEID , b.MONTHID,
count (b.BOOKINGID) as num_of_booking
FROM bookingtempfact b
GROUP BY b.FACULTYID, b.CARBODYTYPE, b.AGEID , b.MONTHID
);


-- ===== FACT: MaintenanceFact =====
DROP TABLE MaintenanceFact_V1 CASCADE CONSTRAINTS PURGE;
CREATE TABLE MaintenanceFact_V1
AS (
SELECT m.maintenancetype,
carbodytype,m.teamid,

count (DISTINCT m.maintenanceid) as num_of_main_record,
sum(m.maintenancecost) as main_cost

FROM clean_maintenance m,

(SELECT DISTINCT b.teamid FROM
moncity.maintenanceteam mte, moncity.belongto b, moncity.researchcenter r ) mTeam,

moncity.maintenancetype mty,
moncity.car c

WHERE m.teamid = mTeam.teamid AND
mty.maintenancetype = m.maintenancetype AND
c.registrationno = m.registrationno

GROUP BY m.maintenancetype, carbodytype,m.teamid
);

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