Emily Zeng

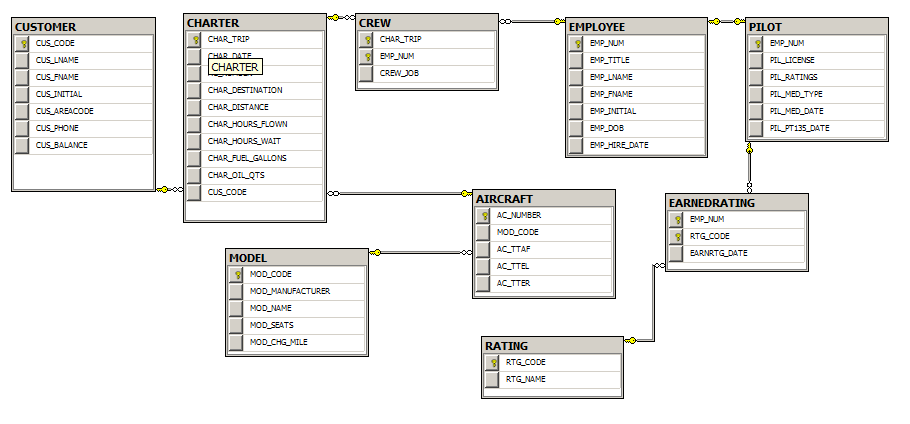
CIS 310-01

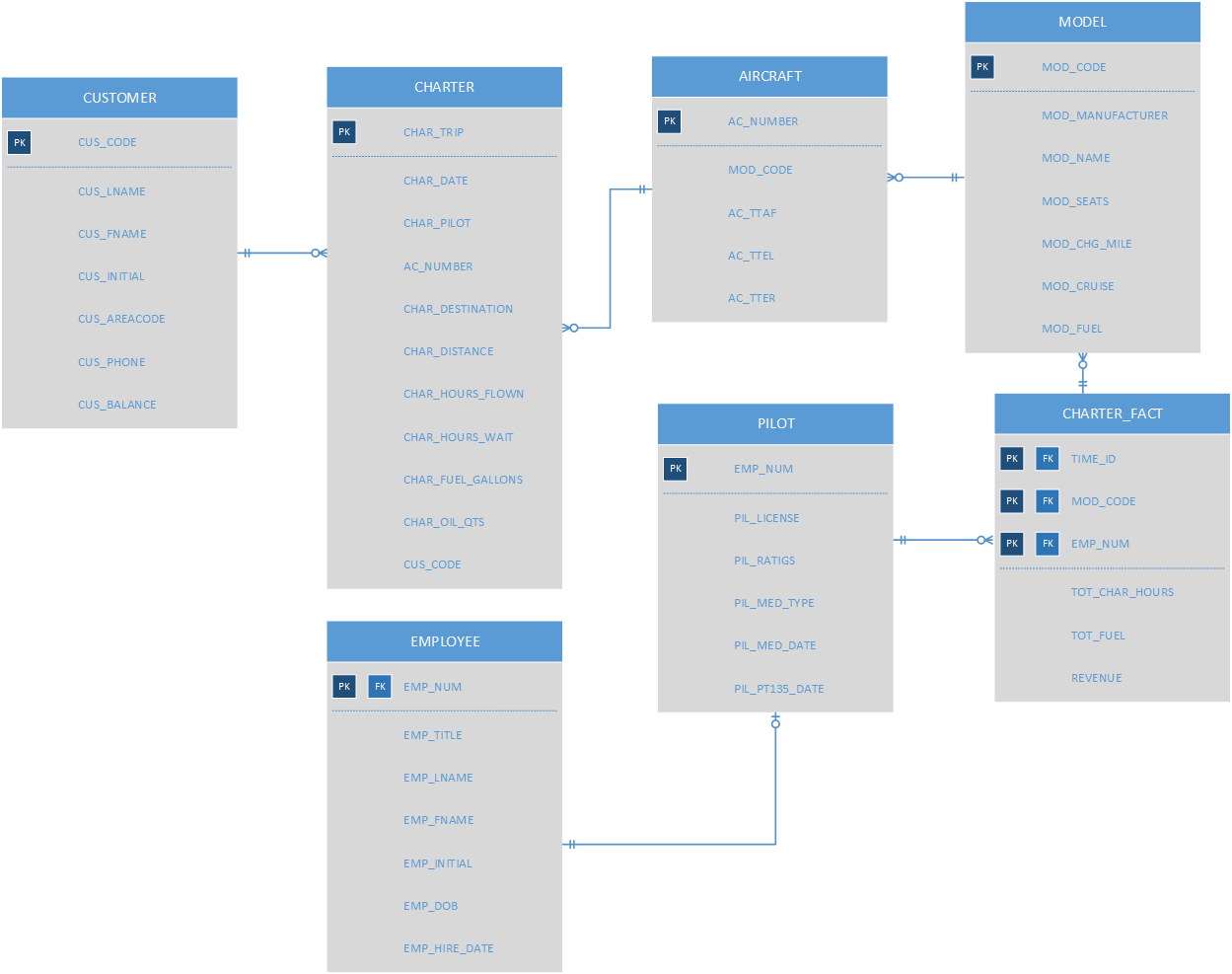
Professor Guan

4/12/17

Assignment 10

Part 0



Part 1

Part 2

/\* A10 Script \*/

CREATE TABLE CUSTOMERDIM (

CUS\_CODE int NOT NULL IDENTITY,

CUS\_LNAME varchar(15),

CUS\_FNAME varchar(15),

CUS\_INITIAL varchar(1),

CUS\_AREACODE varchar(3),

CUS\_PHONE varchar(8),

CUS\_BALANCE float(8)

);

ALTER TABLE CUSTOMERDIM

ADD CONSTRAINT PK\_CUSTOMERDIM PRIMARY KEY (CUS\_CODE)

ALTER TABLE CUSTOMERDIM

ADD CONSTRAINT FK\_CUS\_CODE FOREIGN KEY (CUS\_CODE) REFERENCES CHARTER

CREATE TABLE CHARTERDIM (

CHAR\_TRIP int NOT NULL IDENTITY,

CHAR\_DATE datetime,

AC\_NUMBER varchar(5),

CHAR\_DESTINATION varchar(3),

CHAR\_DISTANCE float(8),

CHAR\_HOURS\_FLOWN float(8),

CHAR\_HOURS\_WAIT float(8),

CHAR\_FUEL\_GALLONS float(8),

CHAR\_OIL\_QTS integer,

CUS\_CODE int

);

ALTER TABLE CHARTERDIM

ADD CONSTRAINT PK\_CHARTERDIM PRIMARY KEY (CHAR\_TRIP)

ALTER TABLE CHARTERDIM

ADD CONSTRAINT FK\_AC\_NUMBER FOREIGN KEY (AC\_NUMBER) REFERENCES AIRCRAFT

CREATE TABLE EMPLOYEEDIM (

EMP\_NUM int NOT NULL IDENTITY,

EMP\_TITLE varchar(4),

EMP\_LNAME varchar(15),

EMP\_FNAME varchar(15),

EMP\_INITIAL varchar(1),

EMP\_DOB datetime,

EMP\_HIRE\_DATE datetime

);

ALTER TABLE EMPLOYEEDIM

ADD CONSTRAINT PK\_EMPLOYEEDIM PRIMARY KEY (EMP\_NUM)

ALTER TABLE EMPLOYEEDIM

ADD CONSTRAINT FK\_EMP\_NUM FOREIGN KEY (EMP\_NUM) REFERENCES PILOT

CREATE TABLE AIRCRAFTDIM (

AC\_NUMBER varchar(5) NOT NULL,

MOD\_CODE varchar(10) NOT NULL,

AC\_TTAF float(8),

AC\_TTEL float(8),

AC\_TTER float(8)

);

ALTER TABLE AIRCRAFTDIM

ADD CONSTRAINT PK\_AIRCRAFTDIM PRIMARY KEY (AC\_NUMBER)

ALTER TABLE AIRCRAFTDIM

ADD CONSTRAINT FK\_MOD\_CODE FOREIGN KEY (MOD\_CODE) REFERENCES MODEL

CREATE TABLE PILOTDIM (

EMP\_NUM int NOT NULL IDENTITY,

PIL\_LICENSE varchar(25),

PIL\_RATINGS varchar(25),

PIL\_MED\_TYPE varchar(1),

PIL\_MED\_DATE datetime,

PIL\_PT135\_DATE datetime

);

ALTER TABLE PILOTDIM

ADD CONSTRAINT PK\_PILOTDIM PRIMARY KEY (EMP\_NUM)

ALTER TABLE PILOTDIM

ADD CONSTRAINT FK\_EMP\_NUM FOREIGN KEY (EMP\_NUM) REFERENCES CHARTER\_FACT

CREATE TABLE MODELDIM (

MOD\_CODE varchar(10) NOT NULL,

MOD\_MANUFACTURER varchar(15),

MOD\_NAME varchar(20),

MOD\_SEATS float(8),

MOD\_CHG\_MILE float(8)

);

ALTER TABLE MODELDIM

ADD CONSTRAINT PK\_MODELDIM PRIMARY KEY (MOD\_CODE)

ALTER TABLE MODELDIM

ADD CONSTRAINT FK\_MOD\_CODE FOREIGN KEY (MOD\_CODE) REFERENCES CHARTER\_FACT

CREATE TABLE CHARTER\_FACT (

TIME\_ID int NOT NULL IDENTITY,

MOD\_CODE int NOT NULL,

EMP\_NUM int NOT NULL,

TOTAL\_CHAR\_HOURS int,

TOT\_FUEL float(8),

REVENUE MONEY

);

ALTER TABLE CHARTER\_FACT

ADD CONSTRAINT PK\_CHARTER\_FACT PRIMARY KEY (TIME\_ID)

ALTER TABLE CHARTER\_FACT

ADD CONSTRAINT PK\_EMP\_NUM FOREIGN KEY (EMP\_NUM) REFERENCES EMPLOYEE

CREATE TABLE STAGING (

TIME\_ID INT,

MOD\_CODE INT,

EMP\_NUM INT,

CUS\_CODE INT,

TOTAL\_CHAR\_HOURS INT,

AC\_NUMBER INT,

CHAR\_TRIP INT,

TOT\_FUEL FLOAT(8),

REVENUE MONEY)

**Part 3**

--Create A10 procedure

CREATE PROCEDURE A10

AS

BEGIN

--DROP PK AND FK FOR ALL TABLES

ALTER TABLE CUSTOMERDIM

DROP CONSTRAINT PK\_CUS\_CODE

ALTER TABLE CUSTOMERDIM

DROP CONSTRAINT FK\_CUS\_CODE

ALTER TABLE CHARTERDIM

DROP CONSTRAINT PK\_CHARTERDIM

ALTER TABLE CHARTERDIM

DROP CONSTRAINT FK\_AC\_NUMBER

ALTER TABLE EMPLOYEEDIM

DROP CONSTRAINT PK\_EMPLOYEEDIM

ALTER TABLE EMPLOYEEDIM

DROP CONSTRAINT FK\_EMP\_NUM

ALTER TABLE AIRCRAFTDIM

DROP CONSTRAINT PK\_AIRCRAFTDIM

ALTER TABLE AIRCRAFTDIM

DROP CONSTRAINT FK\_MOD\_CODE

ALTER TABLE PILOTDIM

DROP CONSTRAINT PK\_PILOTDIM

ALTER TABLE PILOTDIM

DROP CONSTRAINT FK\_EMP\_NUM

ALTER TABLE MODELDIM

DROP CONSTRAINT PK\_MODELDIM

ALTER TABLE MODELDIM

DROP CONSTRAINT FK\_MOD\_CODE

ALTER TABLE CHARTER\_FACT

DROP CONSTRAINT PK\_CHARTER\_FACT

ALTER TABLE CHARTER\_FACT

DROP CONSTRAINT PK\_EMP\_NUM

--TRUNCATE TABLES

TRUNCATE TABLE CUSTOMERDIM

TRUNCATE TABLE CHARTERDIM

TRUNCATE TABLE AIRCRAFTDIM

TRUNCATE TABLE EMPLOYEEDIM

TRUNCATE TABLE PILOTDIM

TRUNCATE TABLE CHARTER\_FACT

TRUNCATE TABLE MODELDIM

TRUNCATE TABLE STAGING

--RE-ADD CONSTRAINTS

ALTER TABLE CUSTOMERDIM

ADD CONSTRAINT PK\_CUSTOMERDIM PRIMARY KEY (CUS\_CODE)

ALTER TABLE CUSTOMERDIM

ADD CONSTRAINT FK\_CUS\_CODE FOREIGN KEY (CUS\_CODE) REFERENCES CHARTER

ALTER TABLE CHARTERDIM

ADD CONSTRAINT PK\_CHARTERDIM PRIMARY KEY (CHAR\_TRIP)

ALTER TABLE CHARTERDIM

ADD CONSTRAINT FK\_AC\_NUMBER FOREIGN KEY (AC\_NUMBER) REFERENCES AIRCRAFT

ALTER TABLE EMPLOYEEDIM

ADD CONSTRAINT PK\_EMPLOYEEDIM PRIMARY KEY (EMP\_NUM)

ALTER TABLE EMPLOYEEDIM

ADD CONSTRAINT FK\_EMP\_NUM FOREIGN KEY (EMP\_NUM) REFERENCES PILOT

ALTER TABLE AIRCRAFTDIM

ADD CONSTRAINT PK\_AIRCRAFTDIM PRIMARY KEY (AC\_NUMBER)

ALTER TABLE AIRCRAFTDIM

ADD CONSTRAINT FK\_MOD\_CODE FOREIGN KEY (MOD\_CODE) REFERENCES MODEL

ALTER TABLE PILOTDIM

ADD CONSTRAINT PK\_PILOTDIM PRIMARY KEY (EMP\_NUM)

ALTER TABLE PILOTDIM

ADD CONSTRAINT FK\_EMP\_NUM FOREIGN KEY (EMP\_NUM) REFERENCES CHARTER\_FACT

ALTER TABLE MODELDIM

ADD CONSTRAINT PK\_MODELDIM PRIMARY KEY (MOD\_CODE)

ALTER TABLE MODELDIM

ADD CONSTRAINT FK\_MOD\_CODE FOREIGN KEY (MOD\_CODE) REFERENCES CHARTER\_FACT

ALTER TABLE CHARTER\_FACT

ADD CONSTRAINT PK\_CHARTER\_FACT PRIMARY KEY (TIME\_ID)

ALTER TABLE CHARTER\_FACT

ADD CONSTRAINT PK\_EMP\_NUM FOREIGN KEY (EMP\_NUM) REFERENCES EMPLOYEE

--INSERT DATA FROM ORIGINAL DATABASE

INSERT INTO CUSTOMERDIM

SELECT \*

FROM CUSTOMER

INSERT INTO CHARTERDIM

SELECT \*

FROM CHARTER

INSERT INTO EMPLOYEEDIM

SELECT \*

FROM EMPLOYEE

INSERT INTO AIRCRAFTDIM

SELECT \*

FROM AIRCRAFT

INSERT INTO PILOTDIM

SELECT \*

FROM PILOT

INSERT INTO MODELDIM

SELECT \*

FROM MODEL

INSERT INTO CHARTER\_FACT

SELECT C.CHAR\_HOURS\_FLOWN, C.CHAR\_FUEL\_GALLONS, (C.CHAR\_FUEL\_GALLONS \* M.MOD\_CHG\_MILE) AS REVENUE

FROM CHARTER C INNER JOIN AIRCRAFT A ON C.AC\_NUMBER = A.AC\_NUMBER INNER JOIN

MODEL M ON A.MOD\_CODE = M.MOD\_CODE

INSERT INTO STAGING

SELECT C.CUS\_CODE, CH.CHAR\_TRIP, A.AC\_NUMBER, E.EMP\_NUM, P.EMP\_NUM, CF.TIME\_ID, CF.TOT\_CHAR\_HOURS, CF.TOT\_FUEL, CF.REVENUE, M.MOD\_NUM

FROM CUSTOMER C INNER JOIN CHARTER CH ON C.CUS\_CODE = CH.CUS\_CODE INNER JOIN

AIRCRAFT A ON CH.AC\_NUMBER = A.AC\_NUMBER INNER JOIN

MODEL M ON A.MOD\_CODE = M.MOD\_CODE INNER JOIN

CHARTER\_FACT CF ON M.MOD\_CODE = CF.MOD\_CODE INNER JOIN

PILOT P ON CF.EMP\_NUM = P.EMP\_NUM INNER JOIN

EMPLOYEE E ON E.EMP\_NUM = P.EMP\_NUM INNER JOIN

--UPDATE STAGING TABLE WITH DIMENSION TABLE PK INFO

UPDATE STAGING

SET CUS\_CODE = D.CUS\_CODE

FROM STAGING S INNER JOIN CUSTOMERDIM D

ON S.CUS\_CODE = D.CUS\_CODE

UPDATE STAGING

SET CHAR\_TRIP = CH.CHAR\_TRIP

FROM STAGING S INNER JOIN CHARTERDIM CH

ON S.CHAR\_TRIP = CH.CHAR\_TRIP

UPDATE STAGING

SET AC\_NUMBER = A.AC\_NUMBER

FROM STAGING S INNER JOIN AIRCRAFT A

ON S.AC\_NUMBER = A.AC\_NUMBER

UPDATE STAGING

SET EMP\_NUM = E.EMP\_NUM

FROM STAGING S INNER JOIN EMPLOYEE E

ON S.EMP\_NUM = E.EMP\_NUM

UPDATE STAGING

SET TIME\_ID = CF.TIME\_ID

FROM STAGING S INNER JOIN CHARTER\_FACT CF

ON S.TIME\_ID = CF.TIME\_ID

UPDATE STAGING

SET TOTAL\_CHAR\_HOURS = CF.TOTAL\_CHAR\_HOURS

FROM STAGING S INNER JOIN CHARTER\_FACT CF

ON S.TOTAL\_CHAR\_HOURS = CF.TOTAL\_CHAR\_HOURS

UPDATE STAGING

SET REVENUE = CF.REVENUE

FROM STAGING S INNER JOIN CHARTER\_FACT CF

ON S.REVENUE = CF.REVENUE

UPDATE STAGING

SET MOD\_CODE = M.MOD\_CODE

FROM STAGING S INNER JOIN MODEL M

ON S.MOD\_CODE = M.MOD\_CODE

--INSERT DW KEYS AND FACTS INTO CHARTER\_FACT TABLE

INSERT INTO CHARTER\_FACT (TIME\_ID, MOD\_CODE, EMP\_NUM, TOTAL\_CHAR\_HOURS, TOT\_FUEL, REVENUE)

SELECT TIME\_ID, MOD\_CODE, EMP\_NUM, TOTAL\_CHAR\_HOURS, TOT\_FUEL, REVENUE

FROM STAGING

END

--RUN STORED PROCEDURE

EXEC A10

SELECT \*

FROM STAGING

**Part 4**

--Q1

--List names of pilots who have flown the most miles

SELECT E.EMP\_FNAME

FROM CHARTER\_FACT CF

INNER JOIN EMPLOYEE E ON CF.EMP\_NUM = E.EMP\_NUM INNER JOIN

PILOT P ON CF.EMP\_NUM = P.EMP\_NUM INNER JOIN

MODEL M ON CF.MOD\_CODE = M.MOD\_CODE INNER JOIN

AIRCRAFT A ON M.MOD\_CODE = A.MOD\_CODE INNER JOIN

CHARTER C ON A.AC\_NUMBER = C.AC\_NUMBER

WHERE C.CHAR\_DISTANCE = (SELECT MAX(CHAR\_DISTANCE)

FROM CHARTER)

--Q2

--List revenue by model and month in ascending order

SELECT REVENUE

FROM CHARTER\_FACT CF

INNER JOIN MODEL M ON CF.MOD\_CODE = M.MOD\_CODE INNER JOIN

AIRCRAFT A ON M.MOD\_CODE = A.MOD\_CODE INNER JOIN

CHARTER C ON A.AC\_NUMBER = C.AC\_NUMBER

ORDER BY M.MOD\_CODE, MONTH(C.CHAR\_DATE)