

Question 8

- 1) For our first constraint, we want to make sure no negative numbers are recorded as the salaries of employees. Hence we will alter our table for EMPLOYEE such that it checks for SALARY to be > 0 on every entry created!

```
ALTER TABLE EMPLOYEE
ADD CONSTRAINT POSITIVE_SALARY_CONSTRAINT
CHECK (SALARY > 0);
```

OUTPUT:

```
sql> ALTER TABLE EMPLOYEE
      ADD CONSTRAINT POSITIVE_SALARY_CONSTRAINT
      CHECK (SALARY > 0)
[2017-02-23 13:28:50] completed in 18ms
```

And here is our attempt at violating the constraint:

```
INSERT INTO EMPLOYEE (ENAME, EMPLOYMENTDATE, SALARY) VALUES ('Nima Adibpour',
'2010-02-20', -23015);
```

And the DB2 response:

```
sql> INSERT INTO EMPLOYEE (ENAME, EMPLOYMENTDATE, SALARY) VALUES ('Nima Adibpour', '2010-02-20', -23015)
[2017-02-23 13:31:31] [23513][-545] The requested operation is not allowed because a row does not satisfy the check constraint "CS421G42
.EMPLOYEE.POSITIVE_SALARY_CONSTRAINT".. SQLCODE=-545, SQLSTATE=23513, DRIVER=4.7.85
```

- 2) In our second constraint, we want to make sure that the orders are handled after they are actually placed! This is a check constraint that makes sure handle date is after order date, in the order table.

```
ALTER TABLE ORDER
ADD CONSTRAINT ORDER_DATE_CONSTRAINT
CHECK (HANDLEDATE > ORDER.ORDERDATE)
```

OUTPUT:

```
sql> ALTER TABLE ORDER
      ADD CONSTRAINT ORDER_DATE_CONSTRAINT
      CHECK (HANDLEDATE > ORDER.ORDERDATE)
[2017-02-23 14:20:29] completed in 55ms
```

And here is our attempt at violating the constraint:

```
sql> INSERT INTO ORDER (ORDERID, ORDERTYPE, PAYMENTMETHOD, ORDERDATE, FINALAMOUNT, CUSTOMEREMAIL, HANDLEDATE, HANDLER, SHIPPINGID, BILLINGID,
CARTID, TRACKINGNUMBER)
VALUES ('1100', 'PURCHASE', 'VISA', '2017-01-01', '169.99', 'nima.adibpour@mail.mcgill.ca', '2016-12-12', 101, NULL, NULL, NULL, NULL)
[2017-02-23 14:25:58] [23513] [-545] The requested operation is not allowed because a row does not satisfy the check constraint "CS421G42.ORDER
.ORDER_DATE_CONSTRAINT".. SQLCODE=-545, SQLSTATE=23513, DRIVER=4.7.85
```

So as visible, order date was 2017-01-01 here but handle date was 2016-12-12!

- 3) **DO NOT CONSIDER THIS FOR MARKING:** This is another constraint that seemed very interesting for me so I wanted to show it to you but sadly it does not work yet!

```
CREATE FUNCTION EMPLOYMENTDATEEXTRACT(myEID INT)
RETURNS DATE
BEGIN
RETURN (SELECT EMPLOYMENTDATE from EMPLOYEE WHERE EMPLOYEE.EID =
myEID);
END;
```

```
ALTER TABLE ORDER
ADD CONSTRAINT HANDLE_DATE_CONSTRAINT
CHECK (HANDLEDATE > EMPLOYMENTDATEEXTRACT(HANDLER));
```

I tried running this, the function I created works, but the constraint could not be placed. Here's the output error which since I couldn't fix it within the given time I gave up on!

```
sql> ALTER TABLE ORDER
ADD CONSTRAINT HANDLE_DATE_CONSTRAINT
CHECK (HANDLEDATE > EMPLOYMENTDATEEXTRACT(HANDLER))
[2017-02-23 14:13:55] [42621] [-546] The check constraint "HANDLE_DATE_CONSTRAINT" is invalid.. SQLCODE=-546, SQLSTATE=42621, DRIVER=4.7.85
```