DBMS Lab8

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**QUESTION 1**

Minimal FD set:

• {TN,DAY} -> {SRC\_SCODE,DST\_SCODE}

• {TN,SCODE,DATE} -> {EAT,SAT,SDT}

BCNF Decomposition:

• R(TN,DAY,SRC\_SCODE,DST\_SCODE)

• R(TN,SCODE,DATE,EAT,SAT,SDT)

**QUESTION 2**

**AVEREAGE LATE TIME FUNCTION:**

CREATE OR REPLACE FUNCTION AVG\_LATE()

RETURNS SETOF AVERAGE AS $AVG\_LATE$

DECLARE

SUM INTEGER;

RECORD AVERAGE;

TOTAL INTEGER;

AVG\_TIME NUMERIC;

SEC Schedule%ROWTYPE;

RUN Runlog%ROWTYPE;

BEGIN

FOR SEC IN SELECT \* FROM Schedule LOOP

SUM :=0 ;

TOTAL :=0;

IF SEC.Scheduled\_Arrival\_Time IS NOT NULL THEN

FOR RUN IN SELECT\* FROM Runlog WHERE Train\_Number=SEC.Train\_Number AND

Station\_code=SEC.Station\_code LOOP

IF RUN.Actual\_Arrival\_Time IS NOT NULL THEN

IF RUN.Actual\_Arrival\_Time >SEC.Scheduled\_Arrival\_Time THEN

SUM := SUM + RUN.Actual\_Arrival\_Time - SEC.Scheduled\_Arrival\_Time; TOTAL:=TOTAL+1;

END IF;

END IF;

END LOOP;

RECORD.Train\_Number: = SEC.Train\_Number;

RECORD.Station\_Code:=SEC.Station\_Code;

IF TOTAL>0 THEN

AVG\_TIME := SUM/TOTAL;

ELSE

AVG\_TIME := 0;

END IF;

RECORD.AVG\_TIME :=AVG\_TIME;

RETURN NEXT RECORD;

END IF;

END LOOP;

RETURN;

END $AVG\_LATE$ LANGUAGE 'plpgsql';

**QUESTION 3**

**Trigger function:**

CREATE OR REPLACE FUNCTION sales\_change()

RETURNS TRIGGER AS $$

BEGIN

IF TG\_OP = 'INSERT' THEN

UPDATE Item SET Stock=Stock+NEW.Qty WHERE

Code=NEW.ItemCode;

RETURN NEW;

ELSIF TG\_OP='UPDATE' THEN

UPDATE Item SET Stock=Stock+NEW.Qty-OLD.Qty WHERE

Code=NEW.ItemCode;

RETURN NEW;

ELSIF TG\_OP='DELETE' THEN

UPDATE Item SET Stock=Stock-OLD.Qty WHERE

Code=NEW.ItemCode;

RETURN NEW;

END IF;

END $$ LANGUAGE 'plpgsql';

**Create Trigger:**

CREATE TRIGGER set\_sales

AFTER INSERT OR UPDATE OR DELETE

ON SalesDetails FOR EACH ROW

EXECUTE PROCEDURE sales\_change();