BTD310 – Fall 2017

# **Assignment 2**

# **7% of final mark**

Submit a page with a description of:

1. Your timeline for finishing the assignment with 3 to 5 milestones. Include team meetings or the questions you are going to finish by that date.

|  |  |
| --- | --- |
| Due Date | Milestone |
| Oct 20th, 2017 | 1,2 |
| Oct 24th, 2017 | 3,4,5 |
| Dec 1st,2017 | 6,7,8 |
| Dec 13th, 2017 | 7,9,10 |

1. How you are dividing the work among the group members (who is doing what?)

|  |  |
| --- | --- |
| Team Member | Tasks |
| **Khai** | 5, 8,10 |
| **Mahnoor** | 1,2,7 |
| **Hao** | 3,4,5,6,9 |

Submit all .sql files and script outputs with a clear table of contents.

In this assignment, you will be implementing a database for a company who rents out tools to contractors. More specifically, you will be implementing the following tables:

**RETAILER** [RETAILER\_NUM (PK), RETAILER\_NAME]

**TOOL** [TOOL\_NUM (PK), TOOL\_NAME, TOOL\_COST, TOOL\_LENGTH, TOOL\_WIDTH, TOOL\_HEIGHT, TOOL\_WEIGHTCLASS, RETAILER\_NUM(FK)]

**TOOLINSTANCE** [TI\_NUM (PK), TOOL\_NUM (PK, FK), TI\_PURCHASEDATE, TI\_STATUS]

**DETAILRENTAL** [RENT\_NUM (PK, FK), TI\_NUM (PK, FK), DETAIL\_FEE, DETAIL\_DUEDATE, DETAIL\_RETURNDATE, DETAIL\_DAILYLATEFEE]

**RENTAL** [RENT\_NUM (PK), CONTRACTOR\_NUM(FK), RENT\_DATE]

**CONTRACTOR** [CONTRACTOR\_NUM (PK), CONTRACTOR\_NAME, CONTRACTOR\_PHONE\_NUM, COTRACTOR\_ADDRESS\_STREET, CONTRACTOR\_ADDRESS\_CITY, CONTRACTOR\_ADDRESS\_STATEPROV, CONTRACTOR\_ADDRESS\_ZIP, CONTRACTOR\_JOIN\_DATE]

## Part I. Table creation and data insertion

1. Create the tables based on the following charts. Save the SQL commands in **Asg2\_Q1.sql**. Name the constraints using *tableName\_columnName\_constraint* format. For example, TOOL\_TOOL\_NAME\_NN.

**CONTRACTOR** table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Column Name | Key Type | Null/ Unique | Default Value | Data Type | Length |
| CONTRACTOR\_NUM | PK | NN, U |  | NUMBER | 10 |
| CONTRACTOR\_NAME |  | NN |  | VARCHAR2 | 25 |
| CONTRACTOR\_PHONE\_NUM |  | NN |  | VARCHAR2 | 15 |
| COTRACTOR\_ADDRESS\_STREET |  |  |  | VARCHAR2 | 100 |
| CONTRACTOR\_ADDRESS\_CITY |  |  |  | VARCHAR2 | 30 |
| CONTRACTOR\_ADDRESS\_STATEPROV |  |  | ON | VARCHAR2 | 20 |
| CONTRACTOR\_ADDRESS\_ZIP |  |  |  | VARCHAR2 | 10 |
| CONTRACTOR\_JOIN\_DATE |  | NN | System Date | DATE |  |

CREATE TABLE CONTRACTOR(CONTRACTOR\_NUM NUMBER(10) PRIMARY KEY

CONSTRAINT CONT\_CONTRACTOR\_NUM\_NN NOT NULL,

CONTRACTOR\_NAME VARCHAR2(25)

CONSTRAINT CONT\_CONTRACTOR\_NAME\_NN NOT NULL,

CONTRACTOR\_PHONE\_NUM VARCHAR2(15)

CONSTRAINT CONT\_CONTRACTOR\_PHONE\_NUM\_NN NOT NULL,

CONTRACTOR\_ADDRESS\_STREET VARCHAR2(100),

CONTRACTOR\_ADDRESS\_CITY VARCHAR2(30),

CONTRACTOR\_ADDRESS\_STATEPROV VARCHAR2(20) DEFAULT 'ON',

CONTRACTOR\_ADDDRESS\_ZIP VARCHAR2(10),

CONTRACTOR\_JOIN\_DATE DATE DEFAULT SYSDATE

CONSTRAINT CONT\_CONTRACTOR\_JOIN\_DATE\_NN NOT NULL

);

**RETAILER** table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Column Name | Key Type | Null/ Unique | Default Value | Data Type | Length |
| RETAILER\_NUM | PK | NN, U |  | NUMBER | 10 |
| RETAILER\_NAME |  | NN |  | VARCHAR2 | 30 |

CREATE TABLE RETAILER(RETAILER\_NUM NUMBER(10) NOT NULL

CONSTRAINT RET\_RETAILER\_NUM\_PK PRIMARY KEY,

RETAILER\_NAME VARCHAR2(30)

CONSTRAINT RET\_RETAILER\_NAME\_NN NOT NULL

);

**TOOL** table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Column Name | Key Type | Null/ Unique | Check | Data Type | Length |
| TOOL\_NUM | PK | NN, U |  | NUMBER | 10 |
| TOOL\_NAME |  | NN |  | VARCHAR2 | 100 |
| TOOL\_COST |  |  | >= 0 | NUMBER | 10, 2 |
| TOOL\_LENGTH |  |  | >= 0 | NUMBER | 10, 2 |
| TOOL\_WIDTH |  |  | >= 0 | NUMBER | 10, 2 |
| TOOL\_HEIGHT |  |  | >= 0 | NUMBER | 10, 2 |
| TOOL\_WEIGHTCLASS |  |  | LIGHT, MEDIUM, MEDIUM HEAVY, HEAVY, VERY HEAVY | VARCHAR2 | 20 |
| RETAILER\_NUM | FK | NN |  | NUMBER | 10 |

CREATE TABLE TOOL(TOOL\_NUM NUMBER(10) PRIMARY KEY

CONSTRAINT TOOL\_TOOLO\_NUM\_NN NOT NULL,

TOOL\_NAME VARCHAR2(100)

CONSTRAINT TOOL\_TOOL\_NAME\_NN NOT NULL,

TOOL\_COST NUMBER(10,2)

CONSTRAINT TOOL\_TOOL\_COST\_CK CHECK(TOOL\_COST >= 0),

TOOL\_LENGTH NUMBER(10,2)

CONSTRAINT TOOL\_TOOL\_LENGTH\_CK CHECK(TOOL\_LENGTH >= 0),

TOOL\_WIDTH NUMBER(10,2)

CONSTRAINT TOOL\_TOOL\_WIDTH\_CK CHECK(TOOL\_WIDTH >= 0),

TOOL\_HEIGHT NUMBER(10,2)

CONSTRAINT TOOL\_TOOL\_HEIGHT\_CK CHECK(TOOL\_HEIGHT >= 0),

TOOL\_WEIGHTCLASS VARCHAR2(20)

CONSTRAINT TOOL\_TOOL\_WEIGHTCLASS\_CK CHECK(TOOL\_WEIGHTCLASS IN ('LIGHT','MEDIUM','MEDIUN HEAVY','HEAVY','VERY HEAVY')),

RETAILER\_NUM NUMBER(10)

CONSTRAINT TOOL\_RETAILER\_NUM\_NN NOT NULL,

FOREIGN KEY (RETAILER\_NUM) REFERENCES RETAILER(RETAILER\_NUM)

);

**TOOLINSTANCE** table

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Column Name | Key Type | Null/ Unique | Default Value | Check | Data Type | Length |
| TI\_NUM | PK | NN, U |  |  | NUMBER | 10 |
| TOOL\_NUM | FK | NN |  |  | NUMBER | 10 |
| TI\_PURCHASEDATE |  | NN | System Date |  | DATE |  |
| TI\_STATUS |  | NN |  | Available, Destroyed, Rented | VARCHAR2 | 15 |

CREATE TABLE TOOLINSTANCE(TI\_NUM NUMBER(10)PRIMARY KEY

CONSTRAINT T\_TI\_NUM\_NN NOT NULL,

TOOL\_NUM NUMBER(10)

CONSTRAINT T\_TOOL\_NUM\_NN NOT NULL,

FOREIGN KEY (TOOL\_NUM) REFERENCES TOOL(TOOL\_NUM),

TI\_PURCHASEDATE DATE DEFAULT SYSDATE

CONSTRAINT T\_TI\_PURCHASEDATE\_NN NOT NULL,

TI\_STATUS VARCHAR2(15) NOT NULL

CONSTRAINT T\_TI\_STATUS\_CK CHECK(TI\_STATUS IN ('Available','Destroyed','Rented'))

);

**DETAILRENTAL** table

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Column Name | Key Type | Null/ Unique | Default Value | Check | Data Type | Length |
| RENT\_NUM | PK, FK | NN, U |  |  | NUMBER | 10 |
| TI\_NUM | PK, FK | NN, U |  |  | NUMBER | 10 |
| DETAIL\_FEE |  | NN |  | >= 0 | NUMBER | 10, 2 |
| DETAIL\_DAILYLATEFEE |  |  | 100.00 | >= 0 | NUMBER | 10, 2 |
| DETAIL\_DUEDATE |  | NN |  |  | DATE |  |
| DETAIL\_RETURNDATE |  |  |  |  | DATE |  |

CREATE TABLE DETAILRENTAL(RENT\_NUM NUMBER(10)

CONSTRAINT DR\_RENT\_NUM\_NN NOT NULL,

FOREIGN KEY (RENT\_NUM) REFERENCES RENTAL(RENT\_NUM),

TI\_NUM NUMBER(10)

CONSTRAINT DR\_TI\_NUM NOT NULL,

FOREIGN KEY (TI\_NUM) REFERENCES TOOLINSTANCE(TI\_NUM),

DETAIL\_FEE NUMBER(10)NOT NULL

CONSTRAINT DR\_D\_FEE\_CK CHECK(DETAIL\_FEE >= 0),

DETAIL\_DAILYLATEFEE NUMBER(10) DEFAULT 100.00

CONSTRAINT DR\_D\_DF\_CK CHECK(DETAIL\_DAILYLATEFEE >= 0),

DETAIL\_DUEDATE DATE

CONSTRAINT DR\_D\_DD\_NN NOT NULL,

DETAIL\_RETURNDATE DATE,

PRIMARY KEY(RENT\_NUM, TI\_NUM)

);

**RENTAL** table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Column Name | Key Type | Null/ Unique | Default Value | Data Type | Length |
| RENT\_NUM | PK | NN, U |  | NUMBER | 10 |
| CONTRACTOR \_NUM | FK | NN |  | NUMBER | 10 |
| RENT\_DATE |  | NN | System Date | DATE |  |

CREATE TABLE RENTAL(RENT\_NUM NUMBER(10)PRIMARY KEY

CONSTRAINT RENTAL\_RENT\_NUM\_NN NOT NULL,

CONTRACTOR\_NUM NUMBER(10)

CONSTRAINT RENTAL\_CONTRACTOR\_NUM\_NN NOT NULL,

FOREIGN KEY (CONTRACTOR\_NUM) REFERENCES CONTRACTOR(CONTRACTOR\_NUM),

RENT\_DATE DATE DEFAULT SYSDATE

CONSTRAINT RENTAL\_RENT\_DATE\_NN NOT NULL

);

1. Verify that the tables and constraints were created properly by checking the data dictionary. Save the output in **Asg2\_Q2.txt.**

DESCRIBE CONTRACTOR;

DESCRIBE RETAILER;

DESCRIBE TOOL;

DESCRIBE TOOLINSTANCE;

DESCRIBE DETAILRENTAL;

DESCRIBE RENTAL;

1. Create sequences to uniquely identify each row in the CONTRACTOR, RETAILER, RENT, and TOOL tables as follows:
   1. Contractor number for the CONTRACTOR table: Start with 101; do not allow caching of the values. Name the sequence CONTRACTOR\_NUM\_SEQ.

CREATE SEQUENCE CONTRACTOR\_NUM\_SEQ

START WITH 101

NOCACHE;

* 1. Retailer number for the RETAILER table: Start with 1; do not allow caching of the values. Name the sequence RETAILER\_NUM\_SEQ.  
     CREATE SEQUENCE RETAILER\_NUM\_SEQ

START WITH 1

NOCACHE;

* 1. Rent number for the RENT table: Start with 100001; Go up to 999999; cycle through the numbers; do not allow caching of the values. Name the sequence RENT\_NUM\_SEQ.

CREATE SEQUENCE RENT\_NUM\_SEQ

START WITH 100001

MAXVALUE 999999

NOCACHE

CYCLE;

* 1. Tool number for the TOOL table: Start with 9999; *decrement* 2; do not allow caching of the values. Name the sequence TOOL\_NUM\_SEQ.

CREATE SEQUENCE TOOL\_NUM\_SEQ

START WITH 9999

MAXVALUE 10000

INCREMENT BY -2

NOCACHE;

Save the statements in a script named **Asg2\_Q3.sql.**

1. Add data to the tables. Create a script to enter the information. Save the statements in a script named **Asg2\_Q4.sql**. Query all rows of all tables and save output in **Asg2\_Q4.txt**.
   1. Add the following tools to the TOOL and the Retailer tables. You need the Retailer number to enter tools. Use RETAILER\_NUM\_SEQ for RETAILER\_NUM and TOOL\_NUM\_SEQ for TOOL\_NUM. Note the single quotation mark in Retailer name.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name | Cost | Length | Width | Height | Weight | Retailer |
| Tractor / mower | 5001.99 | 100 | 20 | 150 | HEAVY | John Deer |
| Tree pruning shears | 499.50 | 100 | 20 | 5 | MEDIUM | XXX’s manufacturing |
| Grass trimmer | 150.89 | 100 | 30 | 30 | LIGHT | Johnson |
| Tractor | 6000.00 | 100 | 30 | 200 | VERY HEAVY | YYY Tractors |

INSERT INTO RETAILER(RETAILER\_NUM, RETAILER\_NAME) VALUES (RETAILER\_NUM\_SEQ.NEXTVAL,'John Deer');

INSERT INTO RETAILER(RETAILER\_NUM, RETAILER\_NAME) VALUES (RETAILER\_NUM\_SEQ.NEXTVAL,'XXX''s manufacturing');

INSERT INTO RETAILER(RETAILER\_NUM, RETAILER\_NAME) VALUES (RETAILER\_NUM\_SEQ.NEXTVAL,'Johnson');

INSERT INTO RETAILER(RETAILER\_NUM, RETAILER\_NAME) VALUES (RETAILER\_NUM\_SEQ.NEXTVAL,'YYY Tractors');

INSERT INTO TOOL

SELECT TOOL\_NUM\_SEQ.NEXTVAL,'Tractor/mower',5001.99,100,20,150,'HEAVY', RETAILER\_NUM FROM RETAILER WHERE RETAILER\_NAME='John Deer';

INSERT INTO TOOL

SELECT TOOL\_NUM\_SEQ.NEXTVAL,'Tree pruning shears',499.50,100,20,5,'MEDIUM',RETAILER\_NUM FROM RETAILER WHERE RETAILER\_NAME='XXX''s manufacturing';

INSERT INTO TOOL

SELECT TOOL\_NUM\_SEQ.NEXTVAL,'Grass trimmer',150.89,100,30,30,'LIGHT',RETAILER\_NUM FROM RETAILER WHERE RETAILER\_NAME='Johnson';

INSERT INTO TOOL

SELECT TOOL\_NUM\_SEQ.NEXTVAL,'Tractor',6000.00,100,30,200,'VERY HEAVY',RETAILER\_NUM FROM RETAILER WHERE RETAILER\_NAME='YYY Tractors';

* 1. Add the following contractors to the CONTRACTOR table. Use CONTRACTOR\_NUM\_SEQ for CONTRACTOR\_NUM. Enter the dates in DD-MON-YYYY format.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name | Phone number | Street | City | State/province | ZIP | Join Date |
| Carmen’s | 905-111-2222 | 285 King Street | King City | ON | L5C 2X6 | 08-MAR-1990 |
| Audry’s | 647-666-8888 | 86 Chu Street | North York | ON | M2A 4X9 | 18-JAN-1991 |
| John Adams | 416-555-9999 | 234 Bloor W | Toronto | ON | M2S 4S3 | 05-JUL-2002 |
| ABC Contractors | 416-123-4567 | 123 Pond Road | North York | ON | M3J 1P3 | 19-OCT-2016 |

INSERT INTO CONTRACTOR

VALUES (CONTRACTOR\_NUM\_SEQ.nextval,'Carmen''s','905-111-2222','285 King Street','King City','ON', 'L5C 2X6', to\_date('08-MAR-1990','DD-MON-YYYY'));

INSERT INTO CONTRACTOR

VALUES (CONTRACTOR\_NUM\_SEQ.nextval,'Audry''s','647-666-8888','86 Chu Street','North York','ON', 'M2A 4X9', to\_date('18-JAN-1991','DD-MON-YYYY'));

INSERT INTO CONTRACTOR

VALUES (CONTRACTOR\_NUM\_SEQ.nextval,'John Adams','416-555-9999','234 Bloor W','Toronto','ON', 'M2S 4S3', to\_date('05-JUL-2002','DD-MON-YYYY'));

INSERT INTO CONTRACTOR

VALUES (CONTRACTOR\_NUM\_SEQ.nextval,'ABC Contractors','416-123-4567','123 Pond Road','North York','ON', 'M3J 1P3', to\_date('19-OCT-2016','DD-MON-YYYY'));

* 1. Add the following tool instances in the TOOLINSTANCE table. You need the TOOL\_NUM values from the TOOL table.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Contractor | Rent date | TI\_NUM | Fee | Daily Late Fee | Due Date | Return Date |
| Carmen’s | 01-FEB-2012 | 11 | 100 | 20 | 01-AUG-2012 | 15-JUL-2012 |
| Carmen’s | 15-JUL-2014 | 12 | 200 | 50 | 01-SEP-2015 | 30-AUG-2015 |
| Carmen’s | 30-AUG-2015 | 12 | 200 | 50 | 01-SEP-2016 |  |
| John Adams | 01-OCT-2016 | 16 | 45 | 10 | 15-DEC-2016 |  |
| Audry’s | 03-AUG-2015 | 17 | 50 | 10 | 01-OCT-2015 | 15-OCT-2015 |
| ABC Contractors | 10-JUL-2015 | 20 | 50 | 10 | 01-SEP-2015 | 25-AUG-2015 |
| Audry’s | 15-AUG-2016 | 21 | 50 | 10 | 01-NOV-2016 |  |
| John Adams | 01-MAR-2016 | 20 | 55 | 15 | 01-AUG-2016 | 15-OCT-2016 |

|  |  |  |  |
| --- | --- | --- | --- |
| Tool Retailer, name | TI\_NUM | Purchase Date | Status |
| John Deer, Tractor / mower | 11 | 01-JAN-2012 | Destroyed |
| 12 | 01-JUL-2014 | Rented |
| 13 | 15-AUG-2016 | Available |
| YYY Tractors, Tractor | 14 | 20-AUG-2016 | Available |
| 15 | 20-Aug-2016 | Available |
| Johnson, Grass trimmer | 16 | 01-MAR-2013 | Rented |
| 17 | 03-APR-2014 | Rented |
| 18 | 05-MAY-2014 | Destroyed |
| 19 | 07-JUN-2015 | Destroyed |
| 20 | 09-JUL-2015 | Rented |
| 21 | 11-AUG-2016 | Rented |
| XXX’s manufacturing, Tree pruning shears | 22 | 01-MAY-2016 | Available |
| 23 | 01-MAY-2016 | Available |

INSERT INTO TOOLINSTANCE

SELECT 11,tool\_num, to\_date('01-JAN-2012','DD-MON-YYYY'),'Destroyed' FROM TOOL WHERE TOOL.TOOL\_NAME = 'Tractor/mower';

INSERT INTO TOOLINSTANCE

SELECT 12,tool\_num, to\_date('01-JUL-2014','DD-MON-YYYY'),'Rented' FROM TOOL WHERE TOOL.TOOL\_NAME = 'Tractor/mower';

INSERT INTO TOOLINSTANCE

SELECT 13,tool\_num, to\_date('15-AUG-2016','DD-MON-YYYY'),'Available' FROM TOOL WHERE TOOL.TOOL\_NAME = 'Tractor/mower';

INSERT INTO TOOLINSTANCE

SELECT 14,tool\_num, to\_date('20-Aug-2016','DD-MON-YYYY'),'Available' FROM TOOL WHERE TOOL.TOOL\_NAME = 'Tractor';

INSERT INTO TOOLINSTANCE

SELECT 15,tool\_num, to\_date('20-Aug-2016','DD-MON-YYYY'),'Available' FROM TOOL WHERE TOOL.TOOL\_NAME = 'Tractor';

INSERT INTO TOOLINSTANCE

SELECT 16,tool\_num, to\_date('01-MAR-2013','DD-MON-YYYY'),'Rented' FROM TOOL WHERE TOOL.TOOL\_NAME = 'Grass trimmer';

INSERT INTO TOOLINSTANCE

SELECT 17,tool\_num, to\_date('03-APR-2014','DD-MON-YYYY'),'Rented' FROM TOOL WHERE TOOL.TOOL\_NAME = 'Grass trimmer';

INSERT INTO TOOLINSTANCE

SELECT 18,tool\_num, to\_date('05-MAY-2014','DD-MON-YYYY'),'Destroyed' FROM TOOL WHERE TOOL.TOOL\_NAME = 'Grass trimmer';

INSERT INTO TOOLINSTANCE

SELECT 19,tool\_num, to\_date('07-JUN-2015','DD-MON-YYYY'),'Destroyed' FROM TOOL WHERE TOOL.TOOL\_NAME = 'Grass trimmer';

INSERT INTO TOOLINSTANCE

SELECT 20,tool\_num, to\_date('09-JUL-2015','DD-MON-YYYY'),'Rented' FROM TOOL WHERE TOOL.TOOL\_NAME = 'Grass trimmer';

INSERT INTO TOOLINSTANCE

SELECT 21,tool\_num, to\_date('11-AUG-2016','DD-MON-YYYY'),'Rented' FROM TOOL WHERE TOOL.TOOL\_NAME = 'Grass trimmer';

INSERT INTO TOOLINSTANCE

SELECT 22,tool\_num, to\_date('01-MAY-2016','DD-MON-YYYY'),'Available' FROM TOOL WHERE TOOL.TOOL\_NAME = 'Tree pruning shears';

INSERT INTO TOOLINSTANCE

SELECT 23,tool\_num, to\_date('01-MAY-2016','DD-MON-YYYY'),'Available' FROM TOOL WHERE TOOL.TOOL\_NAME = 'Tree pruning shears';

* 1. Add the following rentals to the RENTAL and DETAILRENTAL tables. Use the appropriate sequence. You need the contractor numbers from the CONTRACTOR table.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Contractor | Rent date | TI\_NUM | Fee | Daily Late Fee | Due Date | Return Date |
| Carmen’s | 01-FEB-2012 | 11 | 100 | 20 | 01-AUG-2012 | 15-JUL-2012 |
| Carmen’s | 15-JUL-2014 | 12 | 200 | 50 | 01-SEP-2015 | 30-AUG-2015 |
| Carmen’s | 30-AUG-2015 | 12 | 200 | 50 | 01-SEP-2016 |  |
| John Adams | 01-OCT-2016 | 16 | 45 | 10 | 15-DEC-2016 |  |
| Audry’s | 03-AUG-2015 | 17 | 50 | 10 | 01-OCT-2015 | 15-OCT-2015 |
| ABC Contractors | 10-JUL-2015 | 20 | 50 | 10 | 01-SEP-2015 | 25-AUG-2015 |
| Audry’s | 15-AUG-2016 | 21 | 50 | 10 | 01-NOV-2016 |  |
| John Adams | 01-MAR-2016 | 20 | 55 | 15 | 01-AUG-2016 | 15-OCT-2016 |

INSERT INTO RENTAL

SELECT RENT\_NUM\_SEQ.nextval, contractor\_num,to\_date('01-FEB-2012','DD-MON-YYYY') FROM CONTRACTOR WHERE CONTRACTOR\_NAME = 'Carmen''s';

INSERT INTO DETAILRENTAL

SELECT RENT\_NUM\_SEQ.currval,11,100,20, to\_date('01-AUG-2012','DD-MON-YYYY'),to\_date('15-JUL-2012','DD-MON-YYYY') FROM SYS.DUAL;

INSERT INTO RENTAL

SELECT RENT\_NUM\_SEQ.nextval, contractor\_num,to\_date('15-JUL-2014','DD-MON-YYYY') FROM CONTRACTOR where CONTRACTOR\_NAME = 'Carmen''s';

INSERT INTO DETAILRENTAL

SELECT RENT\_NUM\_SEQ.currval,12,200,50, to\_date('01-SEP-2015','DD-MON-YYYY'),to\_date('30-AUG-2015','DD-MON-YYYY') FROM SYS.DUAL;

INSERT INTO RENTAL

SELECT RENT\_NUM\_SEQ.nextval, contractor\_num,to\_date('30-AUG-2015','DD-MON-YYYY') FROM CONTRACTOR WHERE CONTRACTOR\_NAME = 'Carmen''s';

INSERT INTO DETAILRENTAL

SELECT RENT\_NUM\_SEQ.currval,12,200,50, to\_date('01-SEP-2016','DD-MON-YYYY'), null from sys.dual;

INSERT INTO RENTAL

SELECT RENT\_NUM\_SEQ.nextval, contractor\_num,to\_date('01-OCT-2016','DD-MON-YYYY') FROM CONTRACTOR WHERE CONTRACTOR\_NAME = 'John Adams';

INSERT INTO DETAILRENTAL

SELECT RENT\_NUM\_SEQ.currval,16,45,10, to\_date('15-DEC-2016','DD-MON-YYYY'), null FROM sys.dual;

INSERT INTO RENTAL

SELECT RENT\_NUM\_SEQ.nextval, contractor\_num,to\_date('03-AUG-2015','DD-MON-YYYY') FROM CONTRACTOR WHERE CONTRACTOR\_NAME = 'Audry''s';

INSERT INTO DETAILRENTAL

SELECT RENT\_NUM\_SEQ.currval,17,50,10, to\_date('01-OCT-2015','DD-MON-YYYY'), to\_date('15-OCT-2015','DD-MON-YYYY') FROM sys.dual;

INSERT INTO RENTAL

SELECT RENT\_NUM\_SEQ.nextval, contractor\_num,to\_date('10-JUL-2015','DD-MON-YYYY') FROM CONTRACTOR WHERE CONTRACTOR\_NAME = 'ABC Contractors';

INSERT INTO DETAILRENTAL

SELECT RENT\_NUM\_SEQ.currval,20,50,10, to\_date('01-SEP-2015','DD-MON-YYYY'), to\_date('25-AUG-2015','DD-MON-YYYY') FROM sys.dual;

INSERT INTO RENTAL

SELECT RENT\_NUM\_SEQ.nextval, contractor\_num,to\_date('15-AUG-2016','DD-MON-YYYY') FROM CONTRACTOR WHERE CONTRACTOR\_NAME = 'Audry''s';

INSERT INTO DETAILRENTAL

SELECT RENT\_NUM\_SEQ.currval,21,50,10, to\_date('01-NOV-2016','DD-MON-YYYY'), null FROM sys.dual;

INSERT INTO RENTAL

SELECT RENT\_NUM\_SEQ.nextval, contractor\_num,to\_date('01-MAR-2016','DD-MON-YYYY') FROM CONTRACTOR WHERE CONTRACTOR\_NAME = 'John Adams';

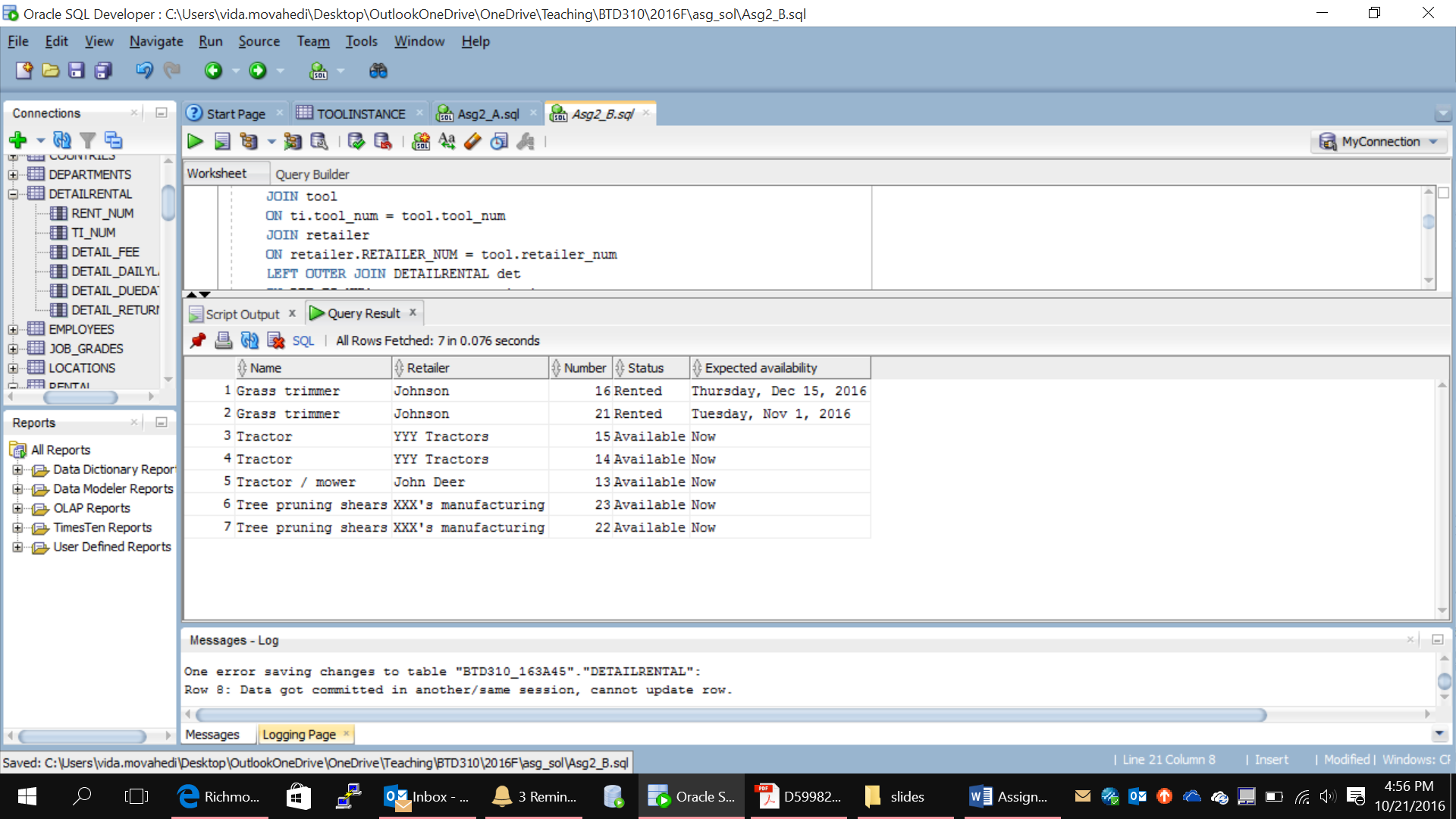
INSERT INTO DETAILRENTAL

SELECT RENT\_NUM\_SEQ.currval,20,55,15, to\_date('01-AUG-2016','DD-MON-YYYY'), to\_date('15-OCT-2016','DD-MON-YYYY') FROM sys.dual;

## Part II: Creating Views

**Save the SQL statement for questions 5 to 9 in Asg2\_PartII.sql. Save the outputs in Asg2\_PartII.txt.**

1. Create a view named AVAIL\_TOOLS that displays a list of available tools and rented tools that are not overdue. For the rented items, show the expected availability date. For available tools, show expected date as “Now”. Sort by the tool name. (Do not include destroyed tools, or those who are not returned by their due date.) Querying all rows in this view should give you the following rows:



CREATE VIEW Avail\_Tools AS

SELECT T.TOOL\_NAME as "Name", R.RETAILER\_NAME as "Retailer", TI.TI\_NUM as "Number",

TI.TI\_STATUS as "Status",

DECODE(TI.TI\_STATUS, 'Available', 'Now',

DETAIL\_DUEDATE) as "Expected Availability"

FROM RETAILER R JOIN TOOL T ON R.RETAILER\_NUM = T.RETAILER\_NUM

JOIN TOOLINSTANCE TI ON T.TOOL\_NUM = TI.TOOL\_NUM

JOIN DETAILRENTAL D ON TI.TI\_NUM = D.TI\_NUM

WHERE TI.TI\_STATUS <> 'Destroyed' AND D.DETAIL\_RETURNDATE < D.DETAIL\_DUEDATE

AND D.DETAIL\_RETURNDATE <> 'null'

ORDER BY T.TOOL\_NAME;

SELECT \*

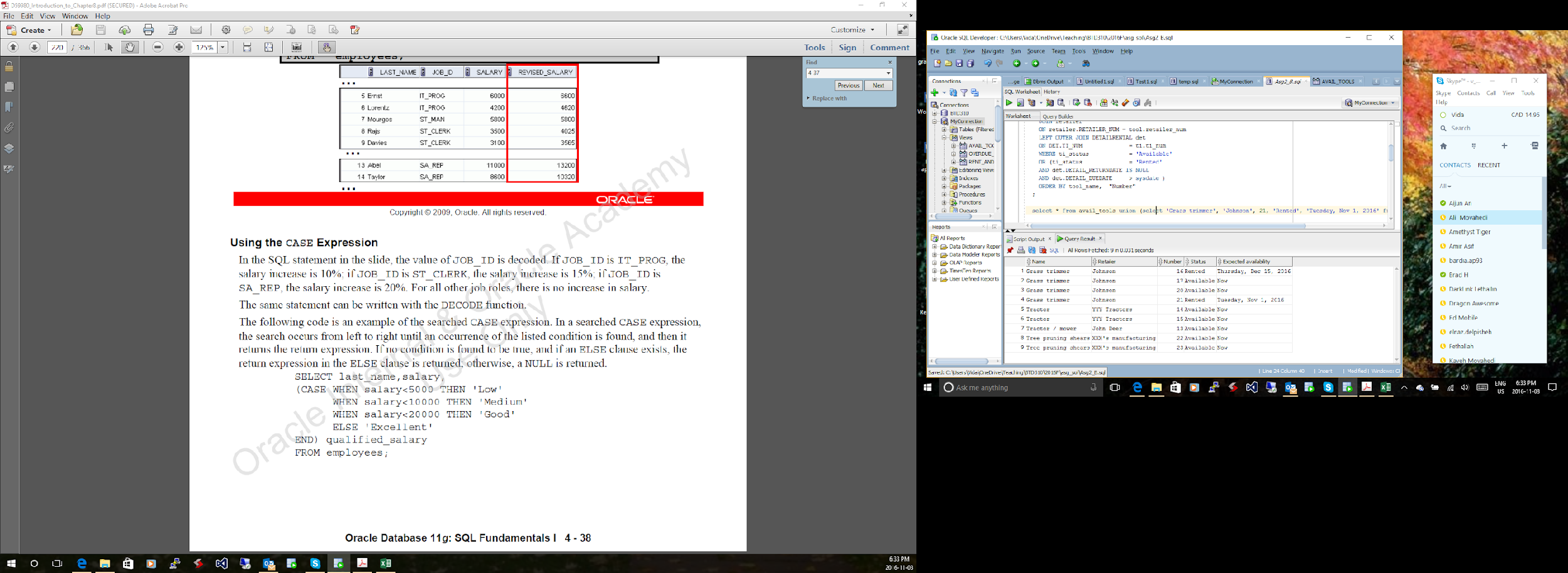
FROM AVAIL\_TOOLS;

DROP VIEW Avail\_Tools;

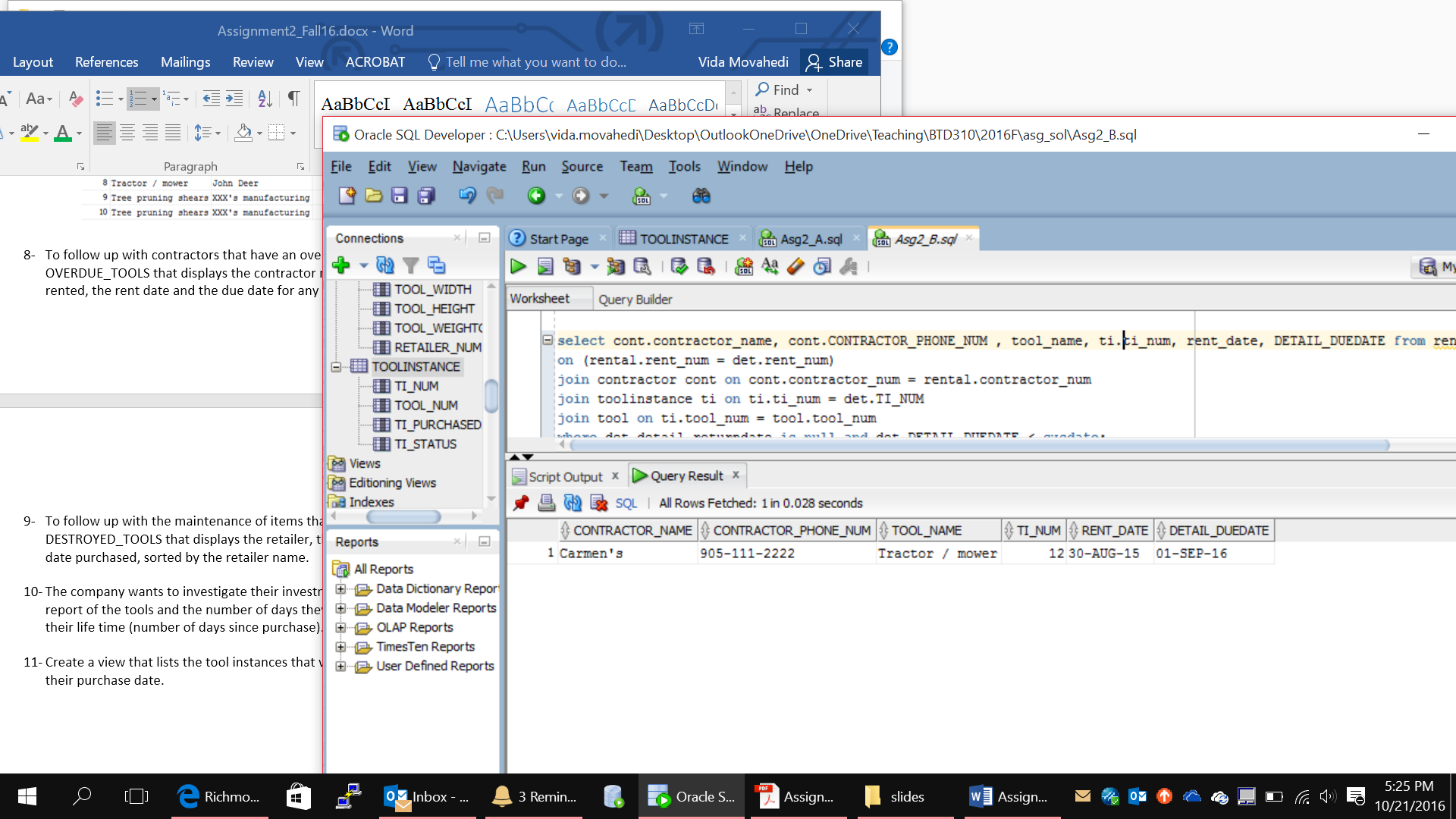
1. As the above view is prepared, you notice that some tools are returned, but are still listed as “Rented” as their status. Write a query to list these tool instances. You should get instance numbers 17 and 20.

(Hint. The return dates of these tools are earlier than the current system date.)

1. Write a statement that updates the status of the tool instances in Question 6 to “Available”. Now query all rows in AVAIL\_TOOLS. You should get these now:



1. To follow up with contractors that have an overdue item rented, create a view named OVERDUE\_TOOLS that displays the contractor name and phone number, the tool they rented, the rent date and the due date for any items that are overdue. On Oct. 21, querying this view gives the following information (your output might look different based on when you query this view):



CREATE VIEW OVERDUE\_TOOLS AS

SELECT C.CONTRACTOR\_NAME, C.CONTRACTOR\_PHONE\_NUM, T.TOOL\_NAME,

TI.TI\_NUM, R.RENT\_DATE, D.DETAIL\_DUEDATE

FROM CONTRACTOR C JOIN RENTAL R ON C.CONTRACTOR\_NUM = R.CONTRACTOR\_NUM

JOIN DETAILRENTAL D ON R.RENT\_NUM = D.RENT\_NUM

JOIN TOOLINSTANCE TI ON D.TI\_NUM = TI.TI\_NUM

JOIN TOOL T ON TI.TOOL\_NUM = T.TOOL\_NUM

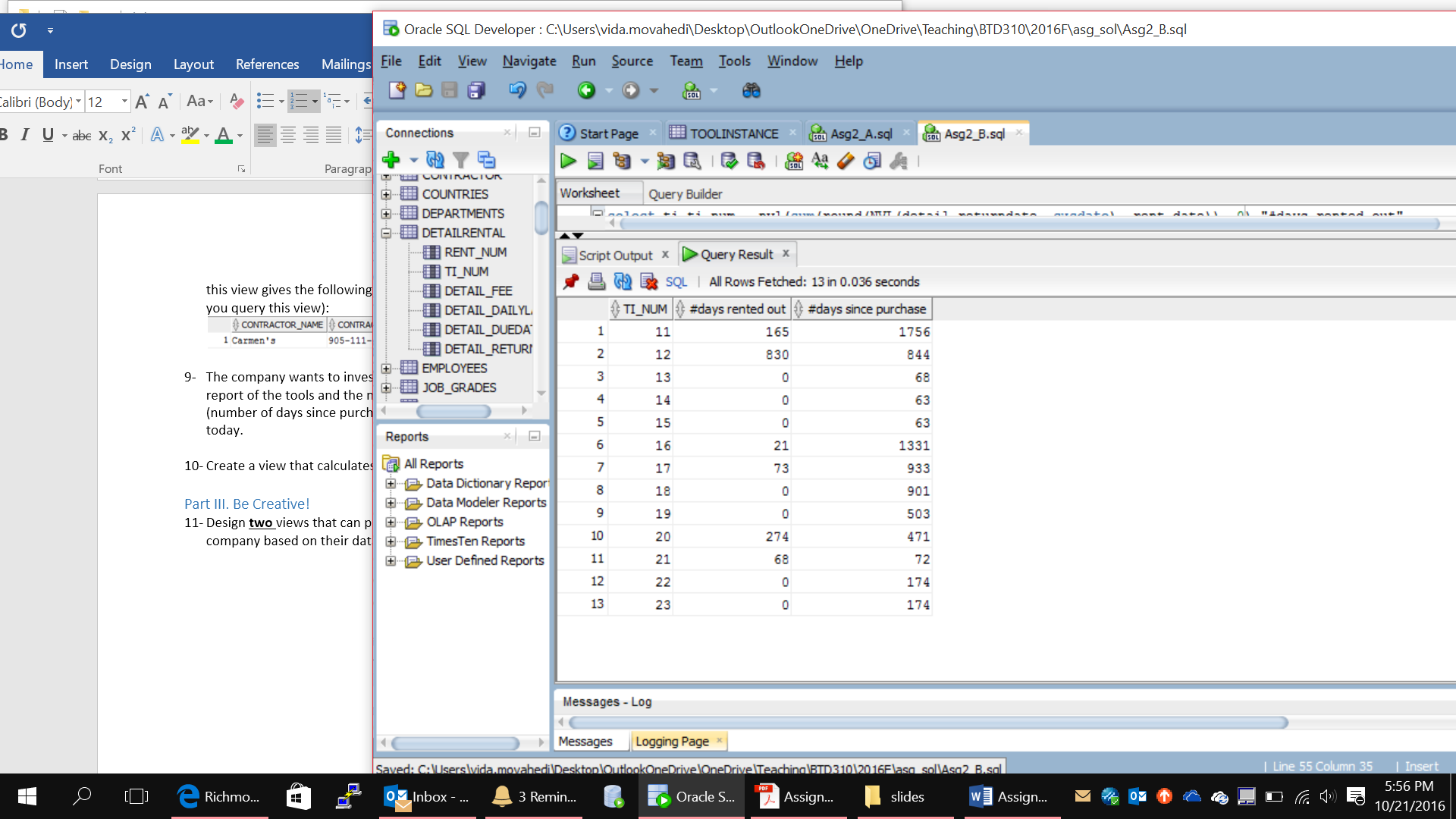
WHERE D.DETAIL\_DUEDATE < D.DETAIL\_RETURNDATE;

SELECT \*

FROM OVERDUE\_TOOLS;

DROP VIEW OVERDUE\_TOOLS;

1. The company wants to investigate their inventory. To get an idea, the manager wants a report of the tools and the number of days they have been rented out versus their life time (number of days since purchase). If an item is not returned yet, assume they are returned today. Order by tool instance number.



## Part III. Be Creative!

**Save the SQL statement for question 10 in Asg2\_PartIII.sql. Save the outputs in Asg2\_PartIII.txt.**

1. Design **two** views that can provide not so obvious information to the manager of this company based on their data. Provide the SQL statements as well as a short description of what it reveals.

**Submit the following files:**

|  |  |
| --- | --- |
| Asg2\_Q1.sql | Asg2\_Q2.txt |
| Asg2\_Q3.sql |  |
| Asg2\_Q4.sql | Asg2\_Q4.txt |
| Asg2\_PartII.sql | Asg2\_PartII.txt |
| Asg2\_PartIII.sql | Asg2\_PartIII.txt |

**Also, include what each member has done:**

|  |  |  |
| --- | --- | --- |
| Team Member 1 | Team Member 2 | Team Member 3 |
| (make this list as long as necessary) |  |  |