# **CPD-2154-Oracle Database with SQL**

# **Term Project**

Submitted by,

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## Appearance

# rEQUIREMENT ANALYSIS

## Ashley’s Lawn and Garden Equipment Sales & Service

Mention the name Ashley and the words quality and service immediately come to mind. Ashley's Lawn & Garden Equipment was founded in 2000 by Ashley and, under her ownership, has evolved into the most respected and longest established lawn and garden equipment dealer in the area. Currently, the company sells and services all brands of lawn and garden equipment with a focus on lawn mowers, snow blowers, generators, and chain saws. The company is an authorized service dealer for all the manufactures they deal with, including all engines used in the equipment they sell.

The company employs three full-time office employees and four service employees. Service employees perform the work when equipment is brought in for service. In addition, they hire part-time employees on a seasonal basis. Office employees receive a salary. Service employees are paid an hourly-rate and a bonus based on performance. Part-time employees are paid an hourly rate. Because of the different seasons, part-time employees are hired when needed. As a result, the company stores historical records on part-time employees maintaining their starting and ending dates, job title, and hourly rate during each employment.

Every customer owns at least one equipment. However, some customers may own several equipment. Some customers are in business and can own several equipment of the same model. Each customer is identified by a customer id and their first name, last name, email, and mobile number is retained in the system

As mentioned, the company services several types of equipment. Each equipment is identified by its unique serial number. In addition, the system stores the brand and model of each equipment. For lawnmowers, the system stores the propulsion type, starter type, drive control, speed control, cutting width, wheel size, discharge, and bag capacity. For snow blowers, the system stores amprange, driveway size, clearing width range, chute control, intake height range, electric start, usage. For generators, the system stores remote starter, wattage range, and fuel type. For each chain saws, the system stores the power type, chain saw length, chain oiling, and if the case is included.

When equipment is purchased, it is recorded in the database. As a result, some equipment may not have been serviced yet. When equipment is brought in for service, a service request is generated with a unique service id and assigned to one service employee. For each service, the service date, service description, and hourly labor rate are recorded. Once a service is completed, the actual number of hours spend on the job are recorded. Over time, each equipment may generate several service requests. However, each service request is for only one equipment. An employee can be working on several service requests at any one time. However, an employee may be off and not be working on any service requests.

An equipment service may require a part with some services requiring several parts. For example, the yearly check-up of a lawn mower may include the installation of a new oil filter, a new air filter, and blade. But cleaning the fuel line does not require a part.

Each part is identified by part id. The part description, cost, and quantity on hand are recorded for reorder purposes.

# ER Diagram based on Requirements Analysis

## Entities and Attributes List

## EMPLOYEE:



## FULL\_TIME:



## PART\_TIME:



## SERVICE:



## JOB\_HISTORY:



## PART:



## SERVICE\_PART:



## SERVICE\_REQUEST:



## CUSTOMER:



## COMPANY:



## PURCHASE:



## EQUIPMENT:



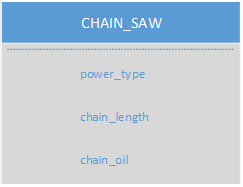
## GENERATOR:



## LAWN\_MOVER:



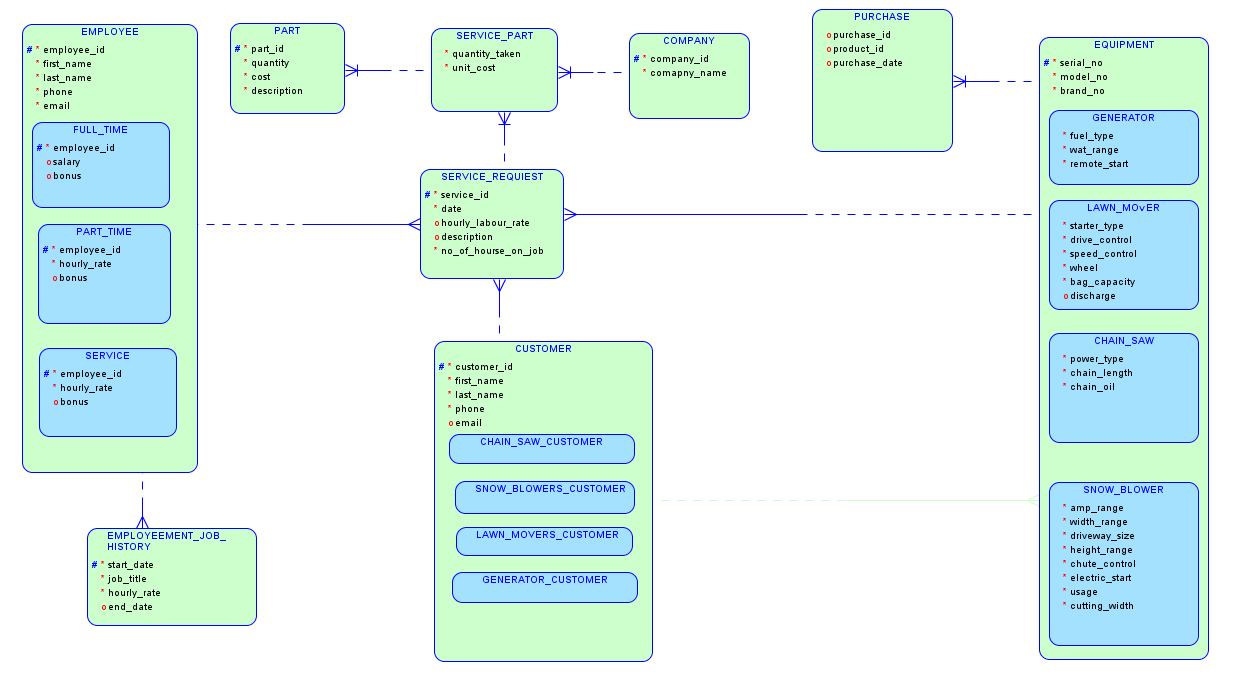
## CHAIN\_SAW:



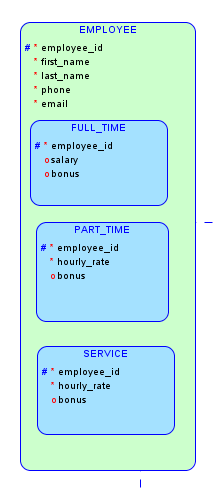
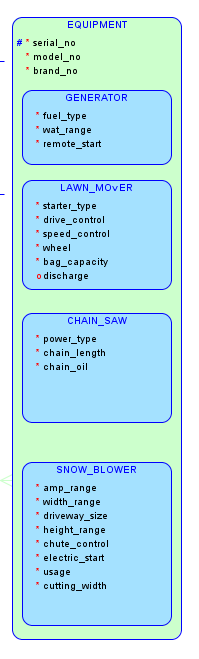
## SNOW\_BLOWER:



# ER Diagram

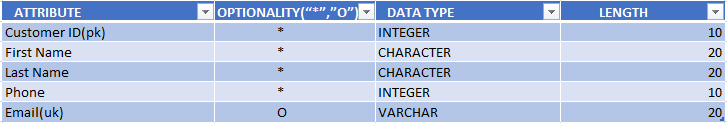


# SUPERTYPE/SUPTYPES:

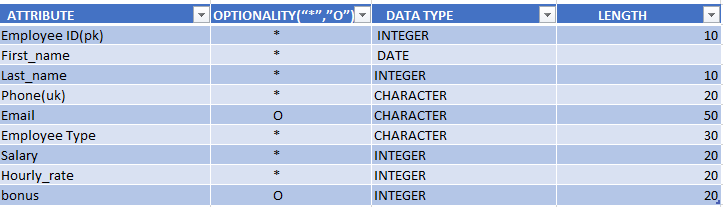
 

# RELATIONAL PHYSICAL MODEL

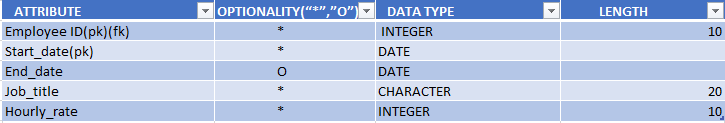
## CUSTOMER:



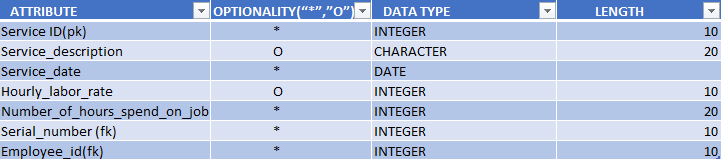
## EMPLOYEE:



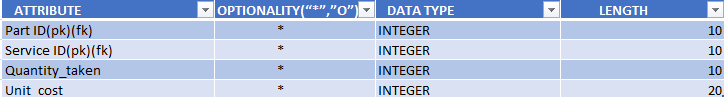
## JOB\_HISTORY:



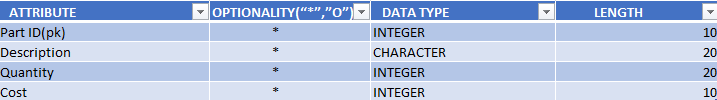
## SERVICE\_REQUEST:



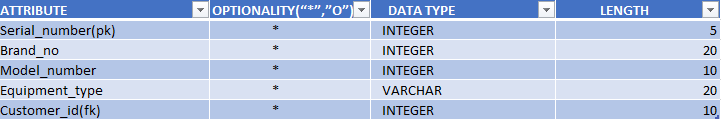
## SERVICE\_PART:



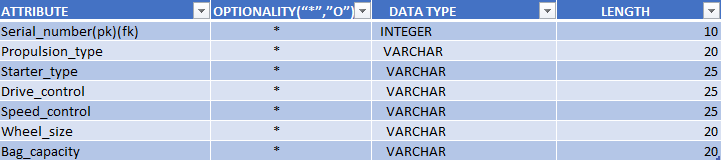
## PART:



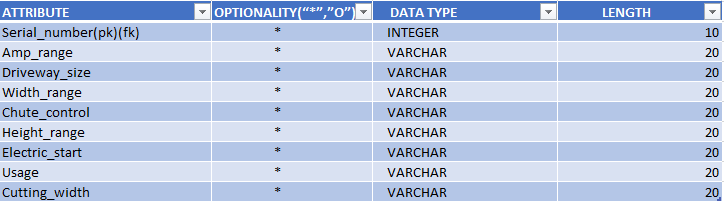
## EQUIPMENT:



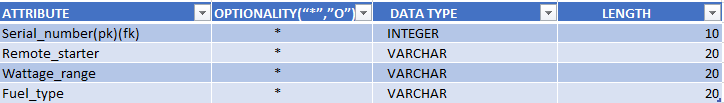
## LAWN\_MOWER:



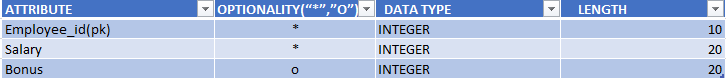
## SNOW\_BLOWER:



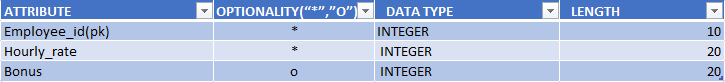
## GENERATOR:



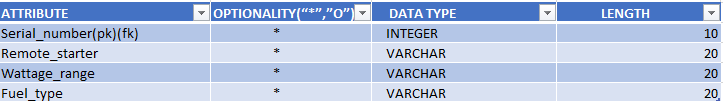
## FULL\_TIME:



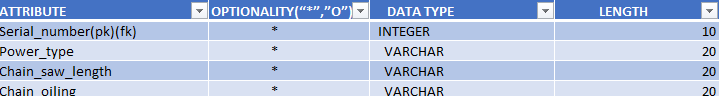
## SERVICE:



## COMPANY:



## CHAIN\_SAW:



# Relationships using ERD Language

## CUSTOMER\_CTR-EQUIPMENT\_EQP

* Each CUSTOMER\_CTR must buy one or more EQUIPMENT\_EQP
* Each EQUIPMENT\_EQP must belong to one and only one CUSTOMER\_CTR

## CUSTOMER\_CTR - SERVICE\_REQUEST\_SREQ

* Each CUSTOMER\_CTR may request for one or more SERVICE\_REQUEST\_SREQ
* Each SERVICE\_REQUEST\_SREQ must be requested by one and only one CUSTOMER\_CTR

## EQUIPMENT\_EQP - SERVICE\_REQUEST\_SREQ

* Each EQUIPMENT\_EQP may come one or more time for SERVICE\_REQUEST\_SREQ
* Each SERVICE\_REQUEST\_SREQ must done on one and only EQUIPMENT\_EQP

## SERVICE\_PART\_SP - SERVICE\_REQUEST\_SREQ

* Each SERVICE\_PART\_SP must done on one and only SERVICE\_REQUEST\_SREQ
* Each SERVICE\_REQUEST\_SREQ may require zero, one or more SERVICE\_PART\_SP

## SERVICE\_SER - SERVICE\_REQUEST\_SREQ

* Each SERVICE\_SER may work on zero, one or more SERVICE\_REQUEST\_SREQ
* Each SERVICE\_REQUEST\_SREQ must be performed by one and only one SERVICE\_SER

## PART\_PR - SERVICE\_PART\_SP

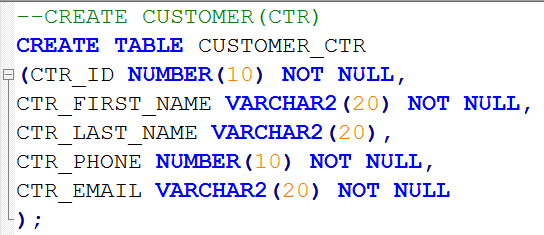
* Each PART\_PR may require by one or more SERVICE\_PART\_SP
* Each SERVICE\_PART\_SP must belong to one and only one PART\_PR

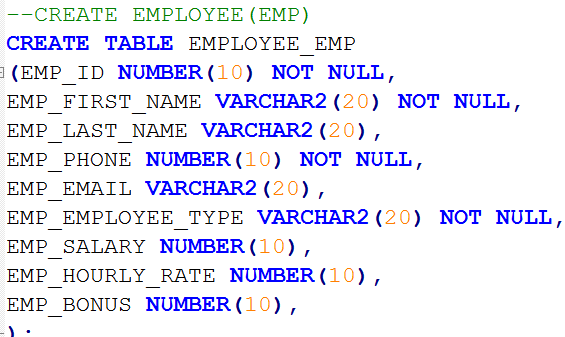
## PART\_TIME\_PT - JOB\_HISTORY\_HSY

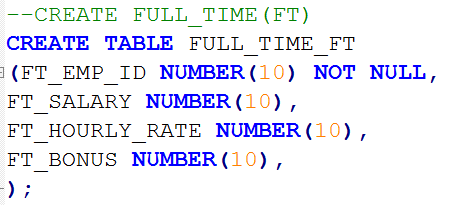
* Each PART\_TIME\_PT must have one or more JOB\_HISTORY\_HSY
* Each JOB\_HISTORY\_HSY must belong to one and only one PART\_TIME\_PT

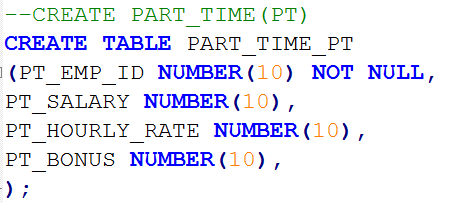
# Create Physical Tables (DDL)

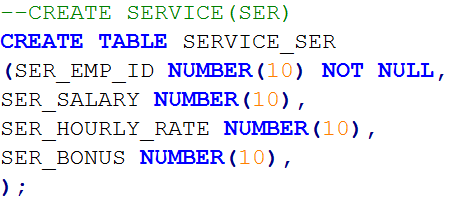
## SQL Create Statements

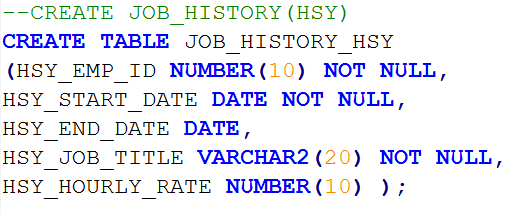


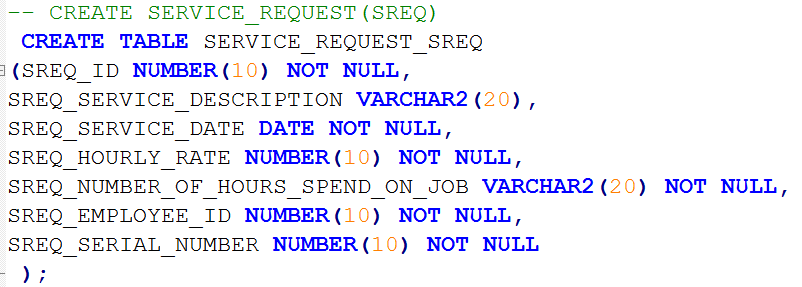


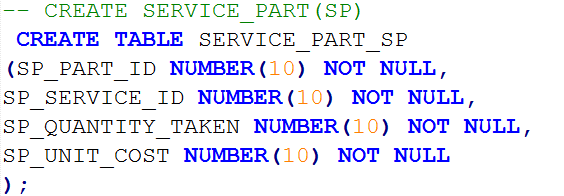


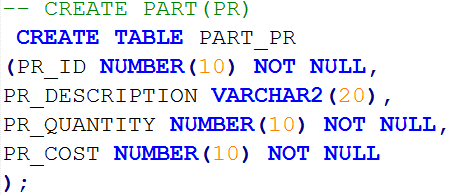


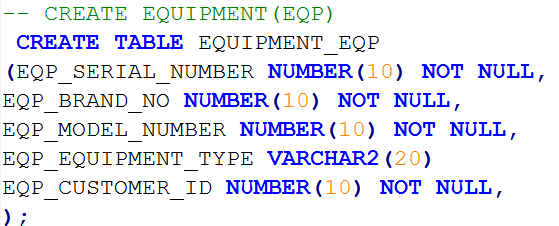


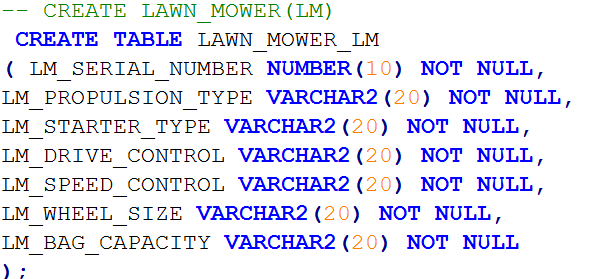


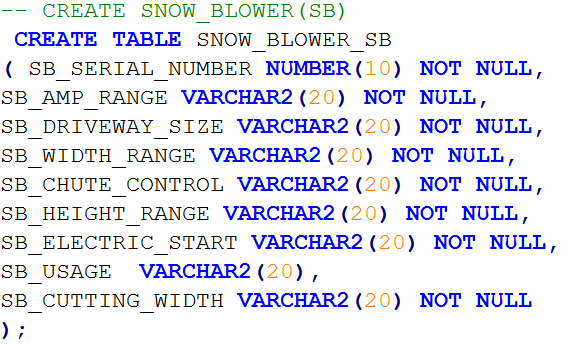


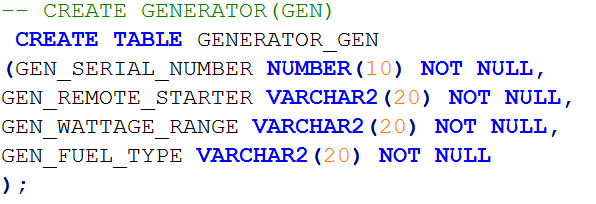


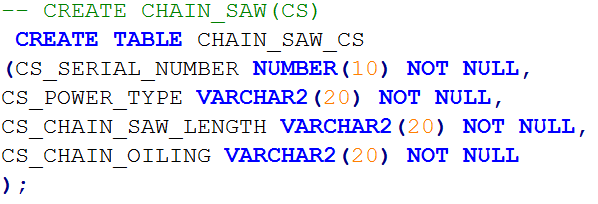




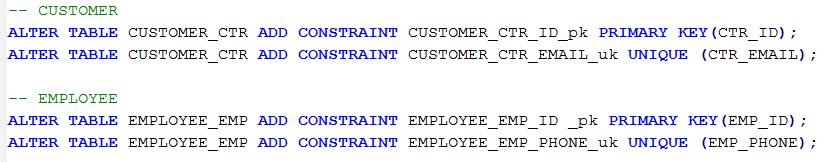


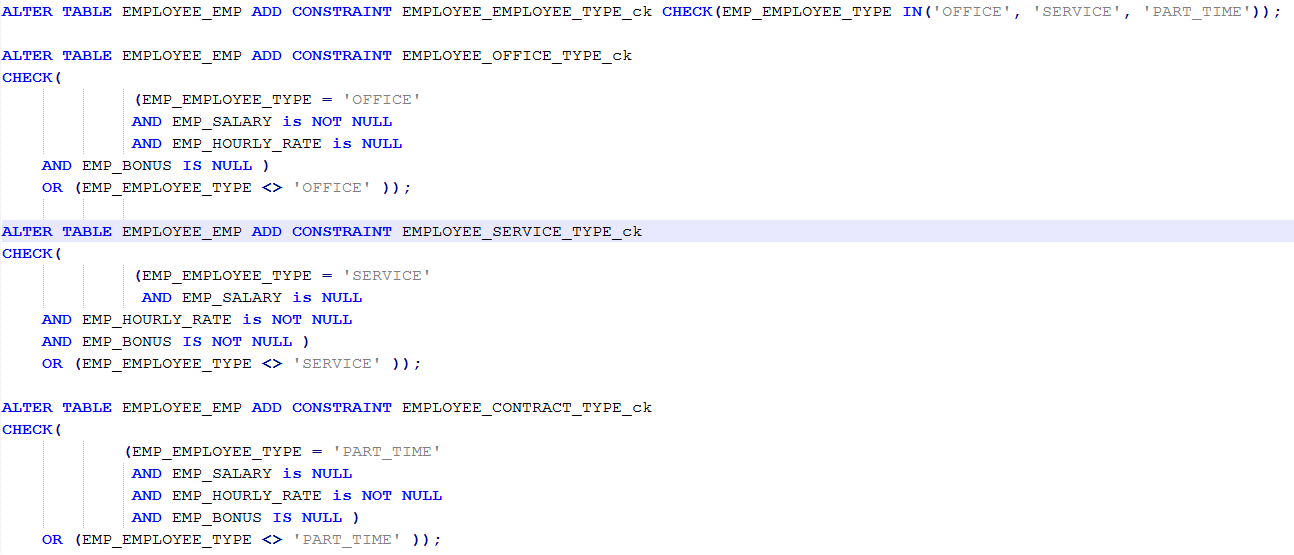


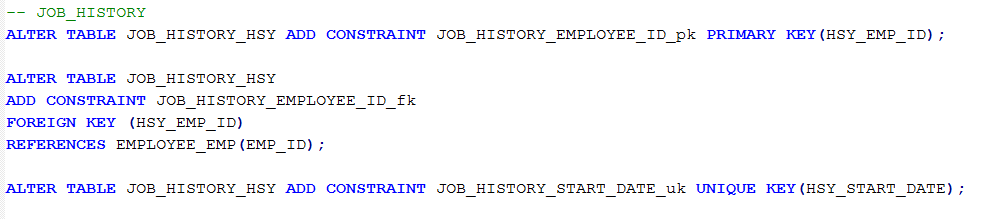


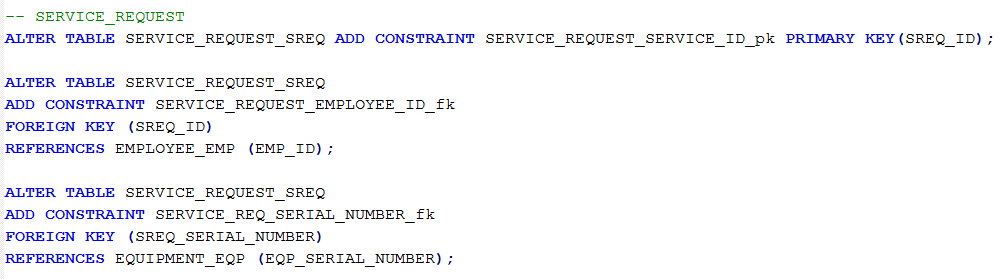


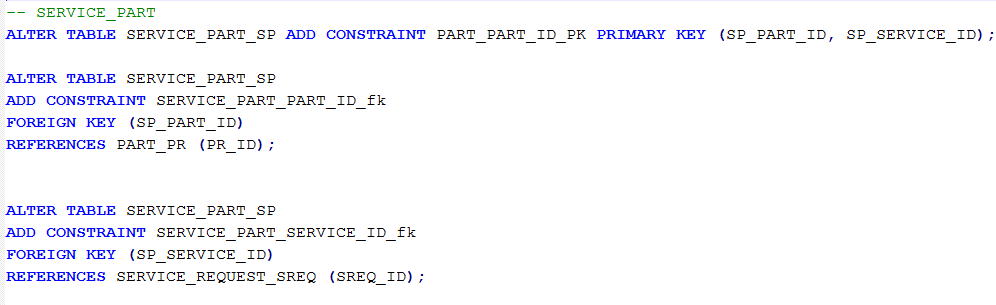
# SQL Constraint Statements

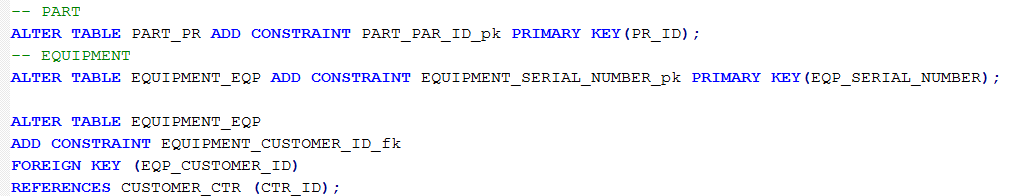


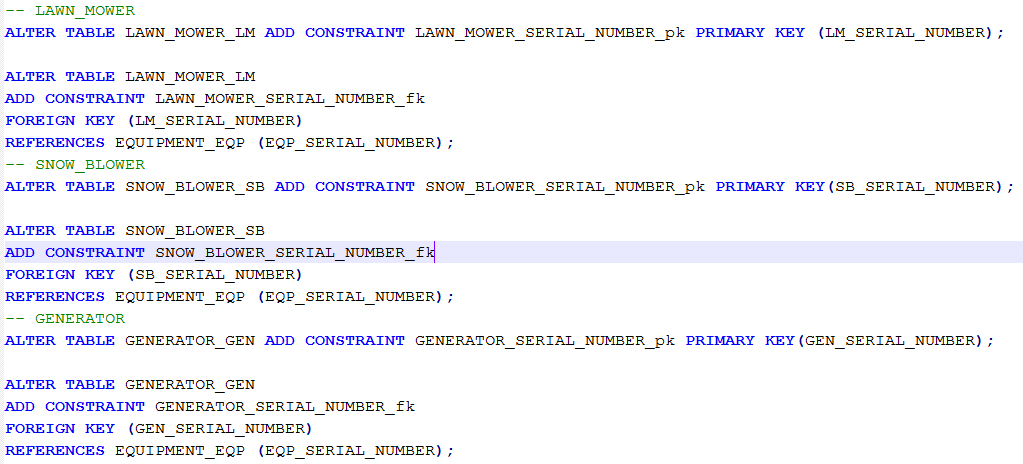


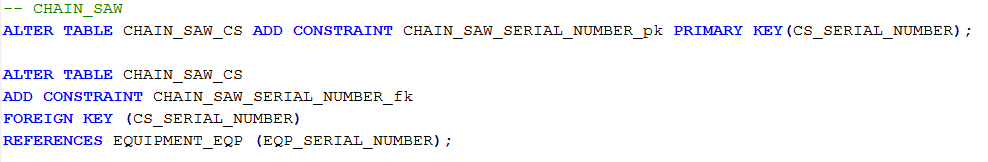












# SQL Insert Statements

## -- CUSTOMER\_CTR

INSERT INTO CUSTOMER\_CTR(CTR\_ID, CTR\_FIRST\_NAME, CTR\_LAST\_NAME, CTR\_PHONE, CTR\_EMAIL)

VALUES(1,'RAMASUBBAIYA','ADAIKKALAM',123245,'A34FG@GMAIL.COM');

INSERT INTO CUSTOMER\_CTR(CTR\_ID, CTR\_FIRST\_NAME, CTR\_LAST\_NAME, CTR\_PHONE, CTR\_EMAIL)

VALUES(2,'SAM','SONY',234567,'SJF34G@GMAIL.COM');

INSERT INTO CUSTOMER\_CTR(CTR\_ID, CTR\_FIRST\_NAME, CTR\_LAST\_NAME, CTR\_PHONE, CTR\_EMAIL)

VALUES(3,'ARUN','ADAIKKALAM',345678,'JH343KFG@GMAIL.COM');

INSERT INTO CUSTOMER\_CTR(CTR\_ID, CTR\_FIRST\_NAME, CTR\_LAST\_NAME, CTR\_ PHONE, CTR\_EMAIL)

VALUES(4,'ANTONY','DEVA',456789,'CVN343HM@GMAIL.COM');

INSERT INTO CUSTOMER\_CTR(CTR\_ID, CTR\_FIRST\_NAME, CTR\_LAST\_NAME, CTR\_PHONE, CTR\_EMAIL)

VALUES(5,'MUTHU','AAIYA',567890,'343QWGFDH@GMAIL.COM');

## -- EMPLOYEE

INSERT INTO EMPLOYEE\_EMP(EMP\_ID, EMP\_FIRST\_NAME, EMP\_LAST\_NAME, EMP\_PHONE, EMP\_EMAIL, EMP\_EMPLOYEE\_TYPE, EMP\_SALARY, EMP\_HOURLY\_RATE, EMP\_BONUS) VALUES(01,'RAMASUBBAIYA','ADAIKKALAM',123245,'ASDFG@GMAIL.COM','OFFICE',13,NULL,NULL);

INSERT INTO EMPLOYEE\_EMP(EMP\_ID, EMP\_FIRST\_NAME, EMP\_LAST\_NAME, EMP\_PHONE, EMP\_EMAIL, EMP\_EMPLOYEE\_TYPE, EMP\_SALARY, EMP\_HOURLY\_RATE, EMP\_BONUS) VALUES(02,'SAM','SONY',234567,'SJFG@GMAIL.COM','SERVICE',NULL,12,10);

INSERT INTO EMPLOYEE\_EMP(EMP\_ID, EMP\_FIRST\_NAME, EMP\_LAST\_NAME, EMP\_PHONE, EMP\_EMAIL, EMP\_EMPLOYEE\_TYPE, EMP\_SALARY, EMP\_HOURLY\_RATE, EMP\_BONUS) VALUES(03,'RAM','ADAIKKALAM',345678,'JHKFG@GMAIL.COM','PART\_TIME',13,12,10);

INSERT INTO EMPLOYEE\_EMP(EMP\_ID, EMP\_FIRST\_NAME, EMP\_LAST\_NAME, EMP\_PHONE, EMP\_EMAIL, EMP\_EMPLOYEE\_TYPE, EMP\_SALARY, EMP\_HOURLY\_RATE, EMP\_BONUS) VALUES(04,’RAM’,'DEVA',456789,'CVNHM@GMAIL.COM','SERVICE',NULL,12,NULL);

INSERT INTO EMPLOYEE\_EMP(EMP\_ID, EMP\_FIRST\_NAME, EMP\_LAST\_NAME, EMP\_PHONE, EMP\_EMAIL, EMP\_EMPLOYEE\_TYPE, EMP\_SALARY, EMP\_HOURLY\_RATE, EMP\_BONUS) VALUES(05,’RAM’,'AAIYA',567890,'QWGFDH@GMAIL.COM','OFFICE',13,NULL,NULL);

## -- JOB\_HISTORY

INSERT INTO JOB\_HISTORY\_HSY (HSY\_EMP\_ID, HSY\_START\_DATE, HSY\_END\_DATE, HSY\_JOB\_TITLE, HSY\_HOURLY\_RATE)

VALUES('01-JUN-2015','05-MAR-2015','MA',12);

INSERT INTO JOB\_HISTORY\_HSY (HSY\_EMP\_ID, HSY\_START\_DATE, HSY\_END\_DATE, HSY\_JOB\_TITLE, HSY\_HOURLY\_RATE)

VALUES('01-JUN-2015','05-AUG-2015','MA',12);

INSERT INTO JOB\_HISTORY\_HSY (HSY\_EMP\_ID, HSY\_START\_DATE, HSY\_END\_DATE, HSY\_JOB\_TITLE, HSY\_HOURLY\_RATE)

VALUES('01-JUL-2015','05-DEC-2015','CA',11);

INSERT INTO JOB\_HISTORY\_HSY (HSY\_EMP\_ID, HSY\_START\_DATE, HSY\_END\_DATE, HSY\_JOB\_TITLE, HSY\_HOURLY\_RATE)

VALUES('01-AUG-2015','05-JAN-2015','CA',11);

INSERT INTO JOB\_HISTORY\_HSY (HSY\_EMP\_ID, HSY\_START\_DATE, HSY\_END\_DATE, HSY\_JOB\_TITLE, HSY\_HOURLY\_RATE)

VALUES('01-SEP-2015','05-DEC-2015','MA',12);

## -- SERVICE\_REQUEST

INSERT INTO SERVICE\_REQUEST\_SREQ(SREQ\_ID, SREQ\_SERVICE\_DESCRIPTION, SREQ\_SERVICE\_DATE, SREQ\_HOURLY\_RATE, SREQ\_ HOURS\_SPEND\_ON\_JOB, SREQ\_EMPLOYEE\_ID, SREQ\_SERIAL\_NUMBER)

VALUES(01,'LM','05-DEC-2015',12,'6', 01, 01);

INSERT INTO SERVICE\_REQUEST\_SREQ(SREQ\_ID, SREQ\_SERVICE\_DESCRIPTION, SREQ\_SERVICE\_DATE, SREQ\_HOURLY\_RATE, SREQ\_ HOURS\_SPEND\_ON\_JOB, SREQ\_EMPLOYEE\_ID, SREQ\_SERIAL\_NUMBER)

VALUES(02,'SB','05-JAN-2015',12,'6', 02, 02);

INSERT INTO SERVICE\_REQUEST\_SREQ(SREQ\_ID, SREQ\_SERVICE\_DESCRIPTION, SREQ\_SERVICE\_DATE, SREQ\_HOURLY\_RATE, SREQ\_ HOURS\_SPEND\_ON\_JOB, SREQ\_EMPLOYEE\_ID, SREQ\_SERIAL\_NUMBER)

VALUES(03,'GEN','05-AUG-2015',12,'6', 03, 03);

INSERT INTO SERVICE\_REQUEST\_SREQ(SREQ\_ID, SREQ\_SERVICE\_DESCRIPTION, SREQ\_SERVICE\_DATE, SREQ\_HOURLY\_RATE, SREQ\_ HOURS\_SPEND\_ON\_JOB, SREQ\_EMPLOYEE\_ID, SREQ\_SERIAL\_NUMBER)

VALUES(04,'LM','05-MAR-2015',12,'6', 04, 04);

INSERT INTO SERVICE\_REQUEST\_SREQ(SREQ\_ID, SREQ\_SERVICE\_DESCRIPTION, SREQ\_SERVICE\_DATE, SREQ\_HOURLY\_RATE, SREQ\_ HOURS\_SPEND\_ON\_JOB, SREQ\_EMPLOYEE\_ID, SREQ\_SERIAL\_NUMBER)

VALUES(05,'SB','05-DEC-2015',12,'6', 05, 05);

## -- SERVICE\_PART

INSERT INTO SERVICE\_PART\_SP(SP\_PART\_ID, SP\_SERVICE\_ID, SP\_QUANTITY\_TAKEN, SP\_UNIT\_COST)

VALUES(1, 4, 92, 6);

INSERT INTO SERVICE\_PART\_SP(SP\_PART\_ID, SP\_SERVICE\_ID, SP\_QUANTITY\_TAKEN, SP\_UNIT\_COST)

VALUES(2, 1, 90, 14);

INSERT INTO SERVICE\_PART\_SP(SP\_PART\_ID, SP\_SERVICE\_ID, SP\_QUANTITY\_TAKEN, SP\_UNIT\_COST)

VALUES(3, 2, 91, 15);

INSERT INTO SERVICE\_PART\_SP(SP\_PART\_ID, SP\_SERVICE\_ID, SP\_QUANTITY\_TAKEN, SP\_UNIT\_COST)

VALUES(4, 3, 93, 8);

INSERT INTO SERVICE\_PART\_SP(SP\_PART\_ID, SP\_SERVICE\_ID, SP\_QUANTITY\_TAKEN, SP\_UNIT\_COST)

VALUES(5, 5, 99, 10);

## -- PART

INSERT INTO PART\_PR(PR\_ID, PR\_DESCRIPTION, PR\_QUANTITY, PR\_COST)

VALUES(01, 'AD', 10, 5);

INSERT INTO PART\_PR(PR\_ID, PR\_DESCRIPTION, PR\_QUANTITY, PR\_COST)

VALUES(02, 'TMD', 7, 10);

INSERT INTO PART\_PR(PR\_ID, PR\_DESCRIPTION, PR\_QUANTITY, PR\_COST)

VALUES(03, 'TBD', 8, 24);

INSERT INTO PART\_PR(PR\_ID, PR\_DESCRIPTION, PR\_QUANTITY, PR\_COST)

VALUES(04, 'TCD', 11, 56);

INSERT INTO PART\_PR(PR\_ID, PR\_DESCRIPTION, PR\_QUANTITY, PR\_COST)

VALUES(05, 'TTD', 12, 23);

## -- EQUIPMENT

INSERT INTO EQUIPMENT\_EQP(EQP\_SERIAL\_NUMBER, EQP\_BRAND\_NO, EQP\_MODEL\_NUMBER, EQP\_EQUIPMENT\_TYPE, EQP\_CUSTOMER\_ID)

VALUES(01, '44', 55, 'LAWN\_MOWER\_LM', 01);

INSERT INTO EQUIPMENT\_EQP(EQP\_SERIAL\_NUMBER, EQP\_BRAND\_NO, EQP\_MODEL\_NUMBER, EQP\_EQUIPMENT\_TYPE, EQP\_CUSTOMER\_ID)

VALUES(02, '45', 56, 'SNOW\_BLOWER\_SB', 02);

INSERT INTO EQUIPMENT\_EQP(EQP\_SERIAL\_NUMBER, EQP\_BRAND\_NO, EQP\_MODEL\_NUMBER, EQP\_EQUIPMENT\_TYPE, EQP\_CUSTOMER\_ID)

VALUES(03, '46', 57, 'GENERATOR\_GEN', 03);

INSERT INTO EQUIPMENT\_EQP(EQP\_SERIAL\_NUMBER, EQP\_BRAND\_NO, EQP\_MODEL\_NUMBER, EQP\_EQUIPMENT\_TYPE, EQP\_CUSTOMER\_ID)

VALUES(04, '48', 59, 'LAWN\_MOWER\_LM', 04);

INSERT INTO EQUIPMENT\_EQP(EQP\_SERIAL\_NUMBER, EQP\_BRAND\_NO, EQP\_MODEL\_NUMBER, EQP\_EQUIPMENT\_TYPE, EQP\_CUSTOMER\_ID)

VALUES(05, '47', 58, 'CHAIN\_SAW\_CS', 05);

## -- LAWN\_MOWER

INSERT INTO LAWN\_MOWER\_LM(LM\_SERIAL\_NUMBER, LM\_PROPULSION\_TYPE, LM\_STARTER\_TYPE, LM\_DRIVE\_CONTROL, LM\_SPEED\_CONTROL, LM\_WHEEL\_SIZE, LM\_BAG\_CAPACITY)

VALUES(01, '34', '585', '45', '80', '45', '4');

INSERT INTO LAWN\_MOWER\_LM(LM\_SERIAL\_NUMBER, LM\_PROPULSION\_TYPE, LM\_STARTER\_TYPE, LM\_DRIVE\_CONTROL, LM\_SPEED\_CONTROL, LM\_WHEEL\_SIZE, LM\_BAG\_CAPACITY)

VALUES(02, '544', '685', '55', '81', '46', '5');

INSERT INTO LAWN\_MOWER\_LM(LM\_SERIAL\_NUMBER, LM\_PROPULSION\_TYPE, LM\_STARTER\_TYPE, LM\_DRIVE\_CONTROL, LM\_SPEED\_CONTROL, LM\_WHEEL\_SIZE, LM\_BAG\_CAPACITY)

VALUES(03, '64', '785', '65', '82', '47', '6');

INSERT INTO LAWN\_MOWER\_LM(LM\_SERIAL\_NUMBER, LM\_PROPULSION\_TYPE, LM\_STARTER\_TYPE, LM\_DRIVE\_CONTROL, LM\_SPEED\_CONTROL, LM\_WHEEL\_SIZE, LM\_BAG\_CAPACITY)

VALUES(04, '723', '885', '75', '83', '48', '7');

INSERT INTO LAWN\_MOWER\_LM(LM\_SERIAL\_NUMBER, LM\_PROPULSION\_TYPE, LM\_STARTER\_TYPE, LM\_DRIVE\_CONTROL, LM\_SPEED\_CONTROL, LM\_WHEEL\_SIZE, LM\_BAG\_CAPACITY)

VALUES(05, '233', '985', '85', '84', '49', '8');

## -- SNOW\_BLOWER

INSERT INTO SNOW\_BLOWER\_SB(SB\_SERIAL\_NUMBER, SB\_AMP\_RANGE, SB\_DRIVEWAY\_SIZE, SB\_WIDTH\_RANGE, SB\_CHUTE\_CONTROL, SB\_HEIGHT\_RANGE, SB\_ELECTRIC\_START, SB\_USAGE, SB\_CUTTING\_WIDTH)

VALUES(01, '832', '98', '85', '84', '49', '8', '45', '76');

INSERT INTO SNOW\_BLOWER\_SB(SB\_SERIAL\_NUMBER, SB\_AMP\_RANGE, SB\_DRIVEWAY\_SIZE, SB\_WIDTH\_RANGE, SB\_CHUTE\_CONTROL, SB\_HEIGHT\_RANGE, SB\_ELECTRIC\_START, SB\_USAGE, SB\_CUTTING\_WIDTH)

VALUES(02, '235', '385', '95', '94', '79', '9', '456', '766');

INSERT INTO SNOW\_BLOWER\_SB(SB\_SERIAL\_NUMBER, SB\_AMP\_RANGE, SB\_DRIVEWAY\_SIZE, SB\_WIDTH\_RANGE, SB\_CHUTE\_CONTROL, SB\_HEIGHT\_RANGE, SB\_ELECTRIC\_START, SB\_USAGE, SB\_CUTTING\_WIDTH)

VALUES(03, '345', '485', '35', '74', '89', '10', '457', '767');

INSERT INTO SNOW\_BLOWER\_SB(SB\_SERIAL\_NUMBER, SB\_AMP\_RANGE, SB\_DRIVEWAY\_SIZE, SB\_WIDTH\_RANGE, SB\_CHUTE\_CONTROL, SB\_HEIGHT\_RANGE, SB\_ELECTRIC\_START, SB\_USAGE, SB\_CUTTING\_WIDTH)

VALUES(04, '455', '585', '55', '64', '99', '11', '458', '768');

INSERT INTO SNOW\_BLOWER\_SB(SB\_SERIAL\_NUMBER, SB\_AMP\_RANGE, SB\_DRIVEWAY\_SIZE, SB\_WIDTH\_RANGE, SB\_CHUTE\_CONTROL, SB\_HEIGHT\_RANGE, SB\_ELECTRIC\_START, SB\_USAGE, SB\_CUTTING\_WIDTH)

VALUES(05, '975', '685', '65', '54', '100', '12', '459', '769');

## -- GENERATOR

INSERT INTO GENERATOR\_GEN(GEN\_SERIAL\_NUMBER, GEN\_REMOTE\_STARTER, GEN\_WATTAGE\_RANGE, GEN\_FUEL\_TYPE)

VALUES(01, '675', '685', '65');

INSERT INTO GENERATOR(SERIAL\_NUMBER, REMOTE\_STARTER, WATTAGE\_RANGE, FUEL\_TYPE)

VALUES(02, '645', '785', '75');

INSERT INTO GENERATOR(SERIAL\_NUMBER, REMOTE\_STARTER, WATTAGE\_RANGE, FUEL\_TYPE)

VALUES(03, '725', '885', '85');

INSERT INTO GENERATOR(SERIAL\_NUMBER, REMOTE\_STARTER, WATTAGE\_RANGE, FUEL\_TYPE)

VALUES(04, '345', '985', '95');

INSERT INTO GENERATOR(SERIAL\_NUMBER, REMOTE\_STARTER, WATTAGE\_RANGE, FUEL\_TYPE)

VALUES(05, '345', '585', '45');

## -- CHAIN\_SAW

INSERT INTO CHAIN\_SAW\_CS(CS\_SERIAL\_NUMBER, CS\_POWER\_TYPE, CS\_CHAIN\_SAW\_LENGTH, CS\_CHAIN\_OILING)

VALUES(04, '237', '885', '85');

INSERT INTO CHAIN\_SAW(SERIAL\_NUMBER, POWER\_TYPE, CHAIN\_SAW\_LENGTH, CHAIN\_OILING)

VALUES(05, ‘347', '985', '75');

INSERT INTO CHAIN\_SAW(SERIAL\_NUMBER, POWER\_TYPE, CHAIN\_SAW\_LENGTH, CHAIN\_OILING)

VALUES(03, '237', '385', '65');

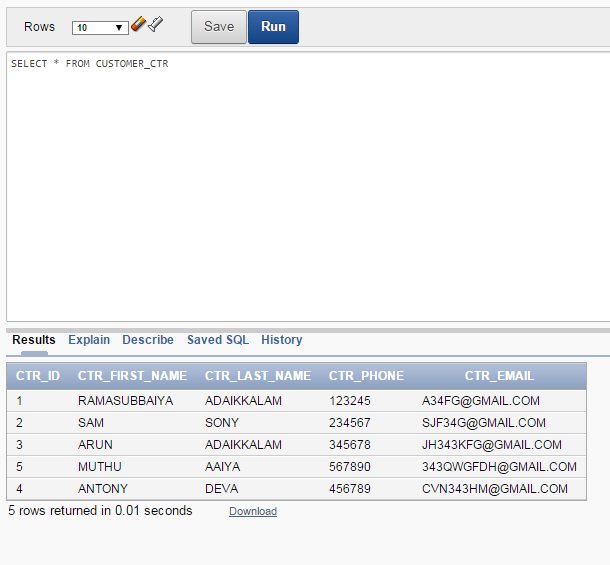
INSERT INTO CHAIN\_SAW(SERIAL\_NUMBER, POWER\_TYPE, CHAIN\_SAW\_LENGTH, CHAIN\_OILING)

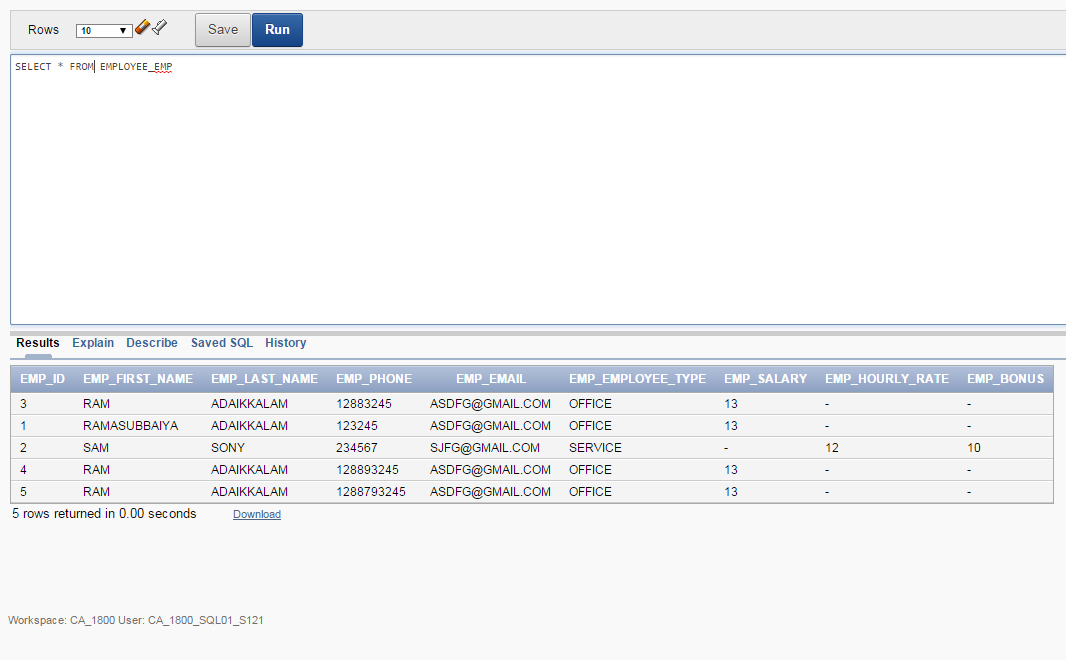
VALUES(02, '327', '485', '55');

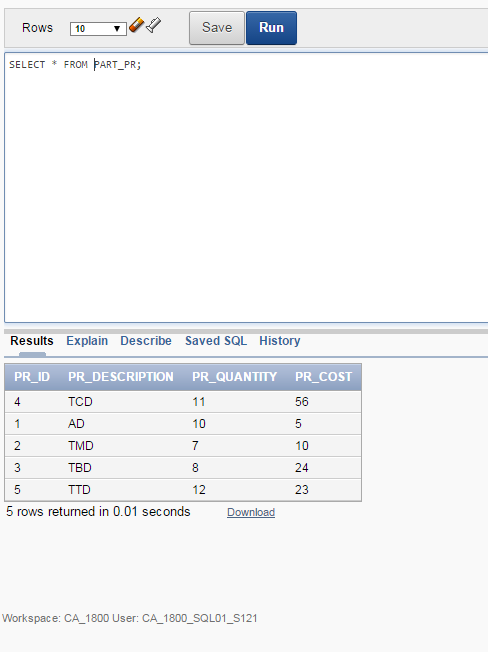
INSERT INTO CHAIN\_SAW(SERIAL\_NUMBER, POWER\_TYPE, CHAIN\_SAW\_LENGTH, CHAIN\_OILING)

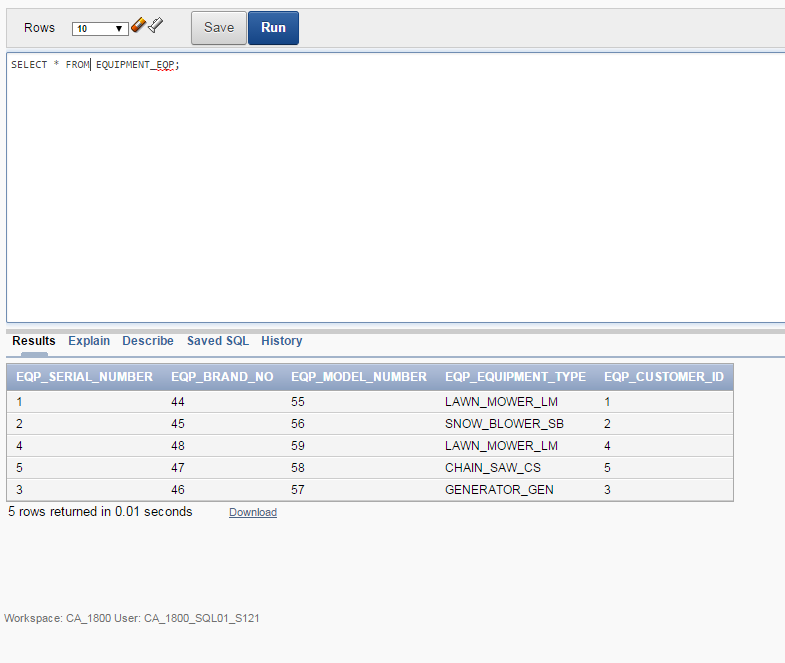
VALUES(01, '237', '585', '45');

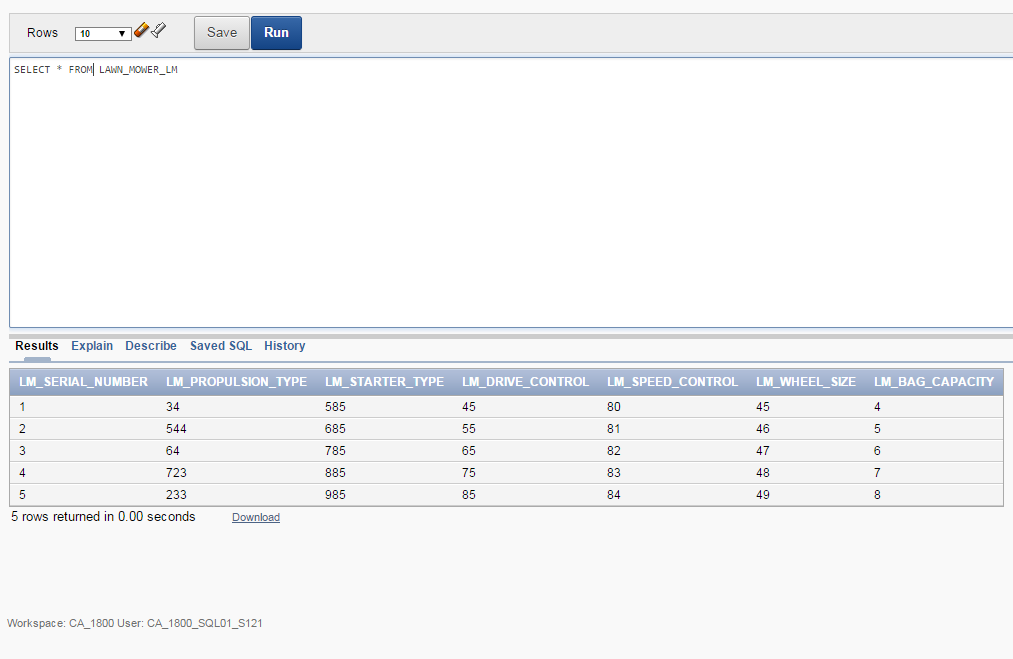
# Output of Tables:

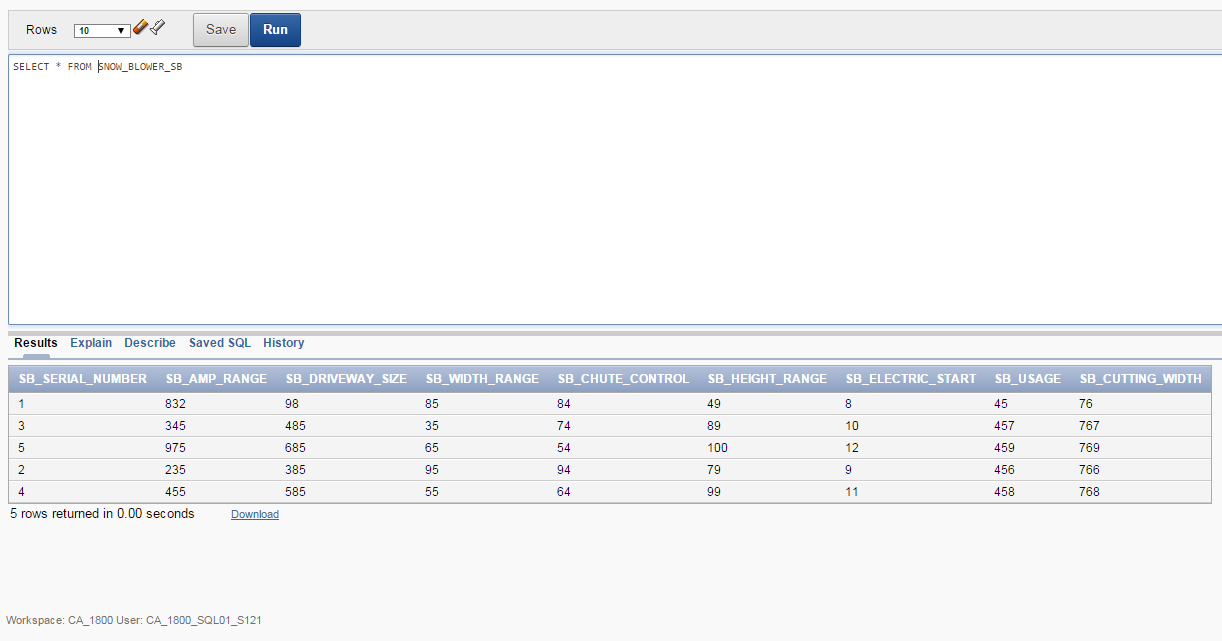


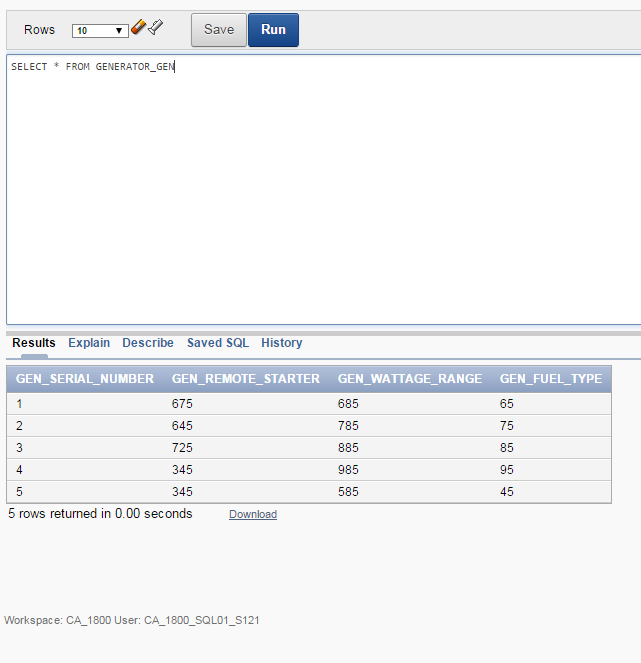


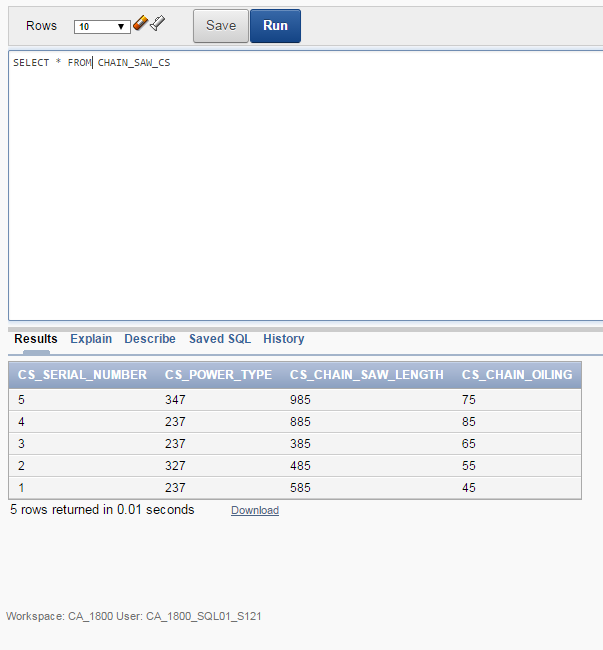












# Business Rules & Constraints

## CUSTOMER\_ctr

* Each customer is identified by a unique customer ID.
* Each customer has a customer Name
* Each customer has a Phone Number
* Each customer has  an email which is unique

## EMPLOYEE\_emp

* Each employee is identified by a unique EmployeeID
* Each employee has a Employee Name
* Each employee has a unique Phone Number

## JOB HISTORY hsy

* Each employee history has a job title
* Each employee history has a start date
* Each employee history has an end date
* Each employee history has an hourly rate
* Each employee history is identified by start\_date and a unique employee ID that references a single part time employee which is identified by a part time employee’s employee ID

## SERVICE\_REQUEST\_sreq

* Each service is identified by a unique service ID
* Each service has a service description
* Each service has a service date
* Each service has a hourly labour rate
* Each service has number of hours associated with it
* Each service has an employee’s ID that references a single employee which is identified by a service employee’s employee ID
* Each service has a serial number that references a each equipment which is identified by an equipment’s serial number

## SERVICE\_PART\_sp

* Each service part has an service’s ID that references a single service which is identified by a service’s service ID
* Each service part has part’s ID that references a single part which is identified by a part’s part ID
* Each service part has a quantity taken
* Each service part  has a unit cost

## PART\_pr

* Each part is identified by a unique part ID
* Each part has a description
* Each part has a part and quantity
* Cost must be greater than 0
* Each part has a service’s ID that references a single service which is identified by a service’s service ID

## EQUIPMENT\_eqp

* Each equipment is identified by a unique serial number
* Each equipment has a brand and a model
* Each equipment has a customer’s ID that references a single customer identified by customer’s customer ID

# --TESTING CONSTRAINT

