**Create a Table with a primary key column**

CREATE TABLE departments

( department\_id INTEGER PRIMARY KEY

, department\_name VARCHAR(30)

, location\_id INTEGER

) ;

**Create a Table with a Foreign Key**

CREATE TABLE employees

( employee\_id INTEGER

, first\_name VARCHAR(20)

, last\_name VARCHAR(25)

, email VARCHAR(25)

, phone\_number VARCHAR(20)

, hire\_date DATE

, job\_id VARCHAR(10)

, salary INTEGER

, commission\_pct INTEGER

, manager\_id INTEGER

, department\_id INTEGER

, constraint pk\_emp primary key (employee\_id)

, constraint fk\_deptno foreign key (department\_id) references departments(department\_id)

) ;

**Insert Records into Tables**

## Insert insto Departments table

INSERT INTO departments VALUES ( 20,'Marketing', 180);

INSERT INTO departments VALUES ( 30,'Purchasing', 1700);

INSERT INTO departments VALUES ( 40, 'Human Resources', 2400);

INSERT INTO departments VALUES ( 50, 'Shipping', 1500);

INSERT INTO departments VALUES ( 60 , 'IT', 1400);

INSERT INTO departments VALUES ( 70, 'Public Relations', 2700);

INSERT INTO departments VALUES ( 80 , 'Sales', 2500 );

INSERT INTO departments VALUES ( 90 , 'Executive', 1700);

INSERT INTO departments VALUES ( 100 , 'Finance', 1700);

INSERT INTO departments VALUES ( 110 , 'Accounting', 1700);

INSERT INTO departments VALUES ( 120 , 'Treasury' , 1700);

INSERT INTO departments VALUES ( 130 , 'Corporate Tax' , 1700 );

INSERT INTO departments VALUES ( 140, 'Control And Credit' , 1700);

INSERT INTO departments VALUES ( 150 , 'Shareholder Services', 1700);

INSERT INTO departments VALUES ( 160 , 'Benefits', 1700);

INSERT INTO departments VALUES ( 170 , 'Payroll' , 1700);

## Insert into Employees table

INSERT INTO employees VALUES (100, 'Steven', 'King', 'SKING', '515.123.4567', '1987-06-17' , 'AD\_PRES', 24000 , NULL, NULL, 20);

INSERT INTO employees VALUES (101, 'Neena' , 'Kochhar' , 'NKOCHHAR' , '515.123.4568' , '1989-11-21' , 'AD\_VP' , 17000 , NULL , 100 , 20);

INSERT INTO employees VALUES (102 , 'Lex' , 'De Haan' , 'LDEHAAN' , '515.123.4569' , '1993-09-12' , 'AD\_VP' , 17000 , NULL , 100 , 30);

INSERT INTO employees VALUES (103 , 'Alexander' , 'Hunold' , 'AHUNOLD' , '590.423.4567' , '1990-09-30', 'IT\_PROG' , 9000 , NULL , 102 , 60);

INSERT INTO employees VALUES (104 , 'Bruce' , 'Ernst' , 'BERNST' , '590.423.4568' , '1991-05-21', 'IT\_PROG' , 6000 , NULL , 103 , 60);

INSERT INTO employees VALUES (105 , 'David' , 'Austin' , 'DAUSTIN' , '590.423.4569' , '1997-06-25', 'IT\_PROG' , 4800 , NULL , 103 , 60);

INSERT INTO employees VALUES (106 , 'Valli' , 'Pataballa' , 'VPATABAL' , '590.423.4560' , '1998-02-05', 'IT\_PROG' , 4800 , NULL , 103 , 40);

INSERT INTO employees VALUES (107 , 'Diana' , 'Lorentz' , 'DLORENTZ' , '590.423.5567' , '1999-02-09', 'IT\_PROG' , 4200 , NULL , 103 , 40);

INSERT INTO employees VALUES (108 , 'Nancy' , 'Greenberg' , 'NGREENBE' , '515.124.4569' , '1994-08-17', 'FI\_MGR' , 12000 , NULL , 101 , 100);

INSERT INTO employees VALUES (109 , 'Daniel' , 'Faviet' , 'DFAVIET' , '515.124.4169' , '1994-08-12', 'FI\_ACCOUNT' , 9000 , NULL , 108 , 170);

INSERT INTO employees VALUES (110 , 'John' , 'Chen' , 'JCHEN' , '515.124.4269' , '1997-04-09', 'FI\_ACCOUNT' , 8200 , NULL , 108 , 170);

INSERT INTO employees VALUES (111 , 'Ismael' , 'Sciarra' , 'ISCIARRA' , '515.124.4369' , '1997-02-01', 'FI\_ACCOUNT' , 7700 , NULL , 108 , 160);

INSERT INTO employees VALUES (112 , 'Jose Manuel' , 'Urman' , 'JMURMAN' , '515.124.4469' , '1998-06-03', 'FI\_ACCOUNT' , 7800 , NULL , 108 , 150);

INSERT INTO employees VALUES (113 , 'Luis' , 'Popp' , 'LPOPP' , '515.124.4567' , '1999-12-07', 'FI\_ACCOUNT' , 6900 , NULL , 108 , 140);

INSERT INTO employees VALUES (114 , 'Den' , 'Raphaely' , 'DRAPHEAL' , '515.127.4561' , '1994-11-08', 'PU\_MAN' , 11000 , NULL , 100 , 30);

INSERT INTO employees VALUES (115 , 'Alexander' , 'Khoo' , 'AKHOO' , '515.127.4562' , '1995-05-12', 'PU\_CLERK' , 3100 , NULL , 114 , 80);

INSERT INTO employees VALUES (116 , 'Shelli' , 'Baida' , 'SBAIDA' , '515.127.4563' ,'1997-12-13', 'PU\_CLERK' , 2900 , NULL , 114 , 70);

INSERT INTO employees VALUES (117 , 'Sigal' , 'Tobias' , 'STOBIAS' , '515.127.4564' , '1997-09-10', 'PU\_CLERK' , 2800 , NULL , 114 , 30);

INSERT INTO employees VALUES (118 , 'Guy' , 'Himuro' , 'GHIMURO' , '515.127.4565' , '1998-01-02', 'PU\_CLERK' , 2600 , NULL , 114 , 60);

INSERT INTO employees VALUES (119 , 'Karen' , 'Colmenares' , 'KCOLMENA' , '515.127.4566' , '1999-04-08', 'PU\_CLERK' , 2500 , NULL , 114 , 130);

INSERT INTO employees VALUES (120 , 'Matthew' , 'Weiss' , 'MWEISS' , '650.123.1234' ,'1996-07-18', 'ST\_MAN' , 8000 , NULL , 100 , 50);

INSERT INTO employees VALUES (121 , 'Adam' , 'Fripp' , 'AFRIPP' , '650.123.2234' , '1997-08-09', 'ST\_MAN' , 8200 , NULL , 100 , 50);

INSERT INTO employees VALUES (122 , 'Payam' , 'Kaufling' , 'PKAUFLIN' , '650.123.3234' ,'1995-05-01', 'ST\_MAN' , 7900 , NULL , 100 , 40);

INSERT INTO employees VALUES (123 , 'Shanta' , 'Vollman' , 'SVOLLMAN' , '650.123.4234' , '1997-10-12', 'ST\_MAN' , 6500 , NULL , 100 , 50);

INSERT INTO employees VALUES (124, 'Kevin' , 'Mourgos' , 'KMOURGOS' , '650.123.5234' , '1999-11-12', 'ST\_MAN' , 5800 , NULL , 100 , 80);

INSERT INTO employees VALUES (125, 'Julia' , 'Nayer' , 'JNAYER' , '650.124.1214' , '1997-07-02', 'ST\_CLERK' , 3200 , NULL , 120 , 50);

INSERT INTO employees VALUES (126, 'Irene' , 'Mikkilineni' , 'IMIKKILI' , '650.124.1224' , '1998-11-12', 'ST\_CLERK' , 2700 , NULL , 120 , 50);

INSERT INTO employees VALUES (127, 'James' , 'Landry' , 'JLANDRY' , '650.124.1334' , '1999-01-02' , 'ST\_CLERK' , 2400 , NULL , 120 , 90);

INSERT INTO employees VALUES (128, 'Steven' , 'Markle' , 'SMARKLE' , '650.124.1434' , '2000-03-04' , 'ST\_CLERK' , 2200 , NULL , 120 , 50);

INSERT INTO employees VALUES (129, 'Laura' , 'Bissot' , 'LBISSOT' , '650.124.5234' ,'1997-09-10' , 'ST\_CLERK' , 3300 , NULL , 121 , 50);

INSERT INTO employees VALUES (130, 'Mozhe' , 'Atkinson' , 'MATKINSO' , '650.124.6234' , '1997-10-12' , 'ST\_CLERK' , 2800 , NULL , 121 , 110);

So, now we have 2 tables and some data ready to run our sql. It’s time for some exercises.

**Solve SQL Exercises**

**1. Select employees first name, last name, job\_id and salary whose first name starts with alphabet S**

**2. Write a query to select employee with the highest salary**

**3. Select employee with the second highest salary**

**4. Fetch employees with 2nd or 3rd highest salary**

**5. Write a query to select employees and their corresponding managers and their salaries**

**6. Write a query to show count of employees under each manager in descending order**

**7. Find the count of employees in each department**

**8. Get the count of employees hired year wise**

**9. Find the salary range of employees**

**10. Write a query to divide people into three groups based on their salaries**

**11. Select the employees whose first\_name contains “an”**

**12. Select employee first name and the corresponding phone number in the format (\_ \_ \_)-(\_ \_ \_)-(\_ \_ \_ \_)**

**13. Find the employees who joined in August, 1994.**

**14. Write an SQL query to display employees who earn more than the average salary in that company**

**15. Find the maximum salary from each department.**

**16. Write a SQL query to display the 5 least earning employees**

**17. Find the employees hired in the 80s**

**18. Display the employees first name and the name in reverse order**

**19. Find the employees who joined the company after 15th of the month**

**20. Display the managers and the reporting employees who work in different departments**