

DATABASE SYSTEMS – LAB 01

EC 5070

DATABASE SYSTEMS

NAME : WIJAYAWARDHANA W.A.H.A.

REGISTRATION NO. : 2019/E/166

SEMESTER : SEMESTER 05

DATE ASSIGNED : 23 AUGUST 2022

Code:

```
CREATE DATABASE LAB01_166;
use LAB01_166;
CREATE TABLE EMPLOYEE
( Fname VARCHAR(15) NOT NULL, -- Adding columns
  Minit CHAR,
  Lname VARCHAR(15) NOT NULL, -- NOT NULL means the domain must have a value
  Ssn CHAR(9) NOT NULL, -- CHAR padded to 9 spaces
  Bdate DATE, -- Date, YYYY-MM-DD
  Address VARCHAR(30), -- Variable length CHAR array (string)
  Sex CHAR, -- Single character
  Salary DECIMAL(10,2), -- Decimal up to a precision of two decimal points
  Super_ssn CHAR(9),
  Dno INT NOT NULL, PRIMARY KEY (Ssn));
-- Primary key constraint);
```

```
CREATE TABLE DEPARTMENT
(Dname VARCHAR(15) NOT NULL,
Dnumber INT NOT NULL,
Mgr_ssn CHAR(9) NOT NULL,
Mgr_start_date DATE,
PRIMARY KEY(Dnumber),
UNIQUE(Dname),
FOREIGN KEY(Mgr_ssn) REFERENCES EMPLOYEE(ssn));
```

```
CREATE TABLE DEPT_LOCATIONS
(Dnumber INT NOT NULL,
Dlocation VARCHAR(30) NOT NULL,
PRIMARY KEY(Dlocation),
FOREIGN KEY(Dnumber) REFERENCES DEPARTMENT(Dnumber));
```

```
CREATE TABLE PROJECT
(Pname VARCHAR(50) NOT NULL,
Pnumber INT NOT NULL,
Plocation VARCHAR(50) NOT NULL,
Dnum INT NOT NULL,
PRIMARY KEY(Pnumber),
FOREIGN KEY(Dnum) REFERENCES DEPARTMENT(Dnumber));
```

```
CREATE TABLE WORKS_ON
(Essn CHAR(9) NOT NULL,
Pno INT NOT NULL,
Hours INT NOT NULL,
FOREIGN KEY(Essn) REFERENCES EMPLOYEE(Ssn),
```

```
FOREIGN KEY(Pno) REFERENCES PROJECT(Pnumber));
```

```
CREATE TABLE DEPENDENT
```

```
(Essn CHAR(9) NOT NULL,
```

```
Dependent_name VARCHAR(15) NOT NULL,
```

```
Sex CHAR,
```

```
Bdate DATE,
```

```
Relationship VARCHAR(15) NOT NULL,
```

```
FOREIGN KEY(Essn) REFERENCES EMPLOYEE(Ssn));
```

```
INSERT INTO EMPLOYEE values
```

```
('Nipuna', 'B', 'Vishwajith', '201901156', '1999-04-04', '17, Main Street, TY', 'M', 150000,  
'201601037', 1),
```

```
('Franklin', 'T', 'Wong', '201902164', '1946-12-08', '638 Voss, Houston, TX', 'M', 40000,  
'201901156', 2),
```

```
('Joyce', 'A', 'English', '201601037', '1962-12-31', '5631 Rice, Houston, TX', 'F', 25000,  
'201904290', 1),
```

```
('Ramesh', 'K', 'Narayan', '202004290', '1952-09-15', 'Fire Oak, Humble, TX', 'M', 38000,  
'201901156', 4);
```

```
INSERT INTO EMPLOYEE values
```

```
('James', 'E', 'Borg', '202001645', '1927-11-10', 'Stone, Houston, TX', 'M', 55000, NULL, 1),
```

```
('Jennifer', 'S', 'Wallace', '202103764', '1931-06-20', 'Berry, Bellaire, TX', 'F', 43000, NULL, 3),
```

```
('Ahmad', 'V', 'Jabbar', '201903423', '1959-03-29', 'Dallas, Houston, TX', 'M', 25000, '202103764',  
3),
```

```
('Alicia', 'J', 'Zelaya', '201802185', '1958-06-19', 'Castle, Spring, TX', 'F', 25000, '201904290', 2);
```

```
INSERT INTO DEPARTMENT values
```

```
('Computer', '1', '201901156', '2018-08-01'),
```

```
('Civil', '2', '201902164', '2017-10-01'),
```

```
('Elec', '3', '201903423', '2018-08-01'),
```

```
('Network', '4', '202004290', '2020-08-01');
```

```
INSERT INTO DEPT_LOCATIONS values
```

```
('1', 'Jaffna'),
```

```
('2', 'Murukandy'),
```

```
('3', 'Killinochchi'),
```

```
('4', 'Vauniya');
```

```
INSERT INTO PROJECT values
```

```
('Syber Security', '1001', 'Colombo', '1'),
```

```
('Network', '1009', 'Vauniya', '4'),
```

```
('Railway', '1005', 'Kokavil', '2'),
```

```
('AI', '1004', 'Jaffna', '1'),
```

```
('PCB Design', '1003', 'Killinochchi', '3');
```

```
INSERT INTO WORKS_ON values
```

```
('201901156', '1001', '35'),
```

```
('202103764', '1005', '45'),
```

```
('201802185','1009','15'),
('202004290','1003','40'),
('202001645','1004','20');
```

INSERT INTO DEPENDENT values

```
('201901156','John','M','1992-09-08',''),
('201802185','Haswahka','F','1995-04-07',''),
('201901156','Jaawahan','M','1999-10-29','');
```

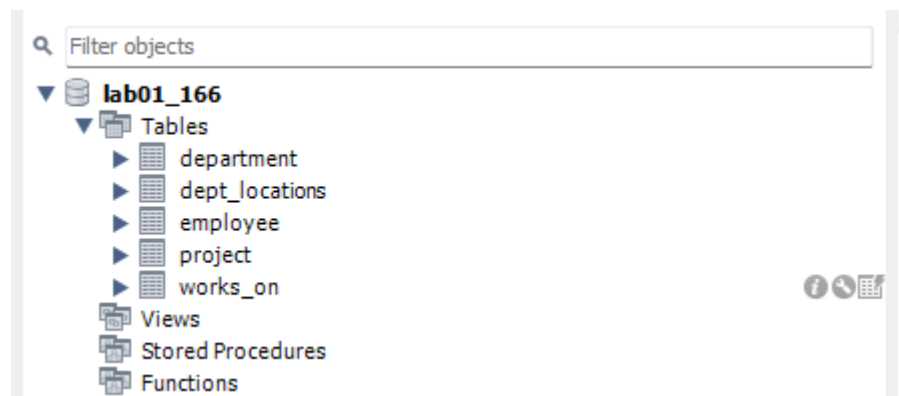
```
SELECT * FROM lab01_166.employee;
```

```
SELECT Fname,Address
FROM lab01_166.employee
WHERE Salary > 30000;
```

```
SELECT Dname,Dlocation
FROM lab01_166.department , lab01_166.dept_locations
WHERE lab01_166.department.Dnumber = lab01_166.dept_locations.Dnumber;
```

Screen Shots:

01.



02.

#	Time	Action	Message	Duration
21	11:17:02	CREATE TABLE DEPENDENT (Easn CHAR(9) NOT NULL, Dependent_name VARCHAR(15) NOT NULL, Sex CHAR, Bdate ...	Error Code: 1822. Failed to add the foreign key constraint. Missing index for constraint 'dependent_tbfk_2' in the referenced tabl...	0.000 sec
22	11:18:54	CREATE TABLE DEPENDENT (Easn CHAR(9) NOT NULL, Dependent_name VARCHAR(15) NOT NULL, Sex CHAR, Bdate ...	0 row(s) affected	0.125 sec
23	11:19:19	DROP TABLE lab01_166.'dependent'	0 row(s) affected	0.063 sec
24	11:19:56	CREATE TABLE DEPENDENT (Easn CHAR(9) NOT NULL, Dependent_name VARCHAR(15) NOT NULL, Sex CHAR, Bdate ...	Error Code: 1072. Key column 'Pnumber' doesn't exist in table	0.000 sec
25	11:20:10	CREATE TABLE DEPENDENT (Easn CHAR(9) NOT NULL, Dependent_name VARCHAR(15) NOT NULL, Sex CHAR, Bdate ...	0 row(s) affected	0.109 sec
26	11:26:50	INSERT INTO DEPARTMENT values (Computer','1','201901156','2018-08-01'), (Civil','2','201902164','2017-10-01'), (Elec','3','...	4 row(s) affected Records: 4 Duplicates: 0 Warnings: 0	0.000 sec
27	11:26:50	INSERT INTO DEPT_LOCATIONS values ('Jaffna'), (Z,'Murukandy'), (3,'Kilinochchi'), (4,'Vauniya')	4 row(s) affected Records: 4 Duplicates: 0 Warnings: 0	0.000 sec
28	11:26:50	INSERT INTO WORKS_ON values (201901156,'1001','35'), (202103764,'1005','45'), (201802185,'1009','15'), (202004290'...	Error Code: 1452. Cannot add or update a child row: a foreign key constraint fails (lab01_166.'works_on', CONSTRAINT 'wor...	0.000 sec
29	11:27:44	INSERT INTO PROJECT values (Cyber Security','1001','1'), (Network','1009','4'), (Railway','1005','2'), (AI','1004','1'), (PCB D...	Error Code: 1136. Column count doesn't match value count at row 1	0.015 sec
30	11:29:58	INSERT INTO PROJECT values (Cyber Security','1001','Colombo','1'), (Network','1009','Vauniya','4'), (Railway','1005','Kokav...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
31	11:30:06	INSERT INTO WORKS_ON values (201901156,'1001','35'), (202103764,'1005','45'), (201802185,'1009','15'), (202004290'...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
32	11:31:01	SELECT * FROM lab01_166.department LIMIT 0, 1000	4 row(s) returned	0.000 sec
33	11:31:46	SELECT * FROM lab01_166.employee LIMIT 0, 1000	8 row(s) returned	0.000 sec
34	11:37:38	SELECT Fname,Address FROM lab01_166.employee WHERE Salary > 30000 LIMIT 0, 1000	5 row(s) returned	0.000 sec
35	11:38:51	SELECT * FROM lab01_166.department LIMIT 0, 1000	4 row(s) returned	0.000 sec
36	11:39:49	SELECT * FROM lab01_166.dept_locations LIMIT 0, 1000	4 row(s) returned	0.000 sec
37	11:41:50	SELECT Dname,Dlocation FROM lab01_166.department , lab01_166.dept_locations WHERE lab01_166.department.Dnumber...	4 row(s) returned	0.000 sec
38	11:42:08	SELECT Dname,Dlocation FROM lab01_166.department , lab01_166.dept_locations WHERE lab01_166.department.Dnumber...	4 row(s) returned	0.000 sec
39	11:50:40	DROP DATABASE lab01_166	5 row(s) affected	0.188 sec

05.

a.

Query 1 - department

```
92 ('202001645','1004','20');
93
94 • INSERT INTO DEPENDENT values
95 ('201901156','John','M','1992-09-08',''),
96 ('201802185','Haswahka','F','1995-04-07',''),
97 ('201901156','Jaawahan','M','1999-10-29','');
98
99 • SELECT * FROM lab01_166.employee;
```

Result Grid

Fname	Minit	Lname	Ssn	Bdate	Address	Sex	Salary	Super_ssn	Dno
Joyce	A	English	201801037	1962-12-31	5631 Rice, Houston, TX	F	25000.00	201904290	1
Alicia	J	Zelaya	201802185	1958-06-19	Castle, Spring, TX	F	25000.00	201904290	2
Nipuna	B	Vishvajith	201901156	1999-04-04	17, Main Street, TY	M	150000.00	201601037	1
Franklin	T	Wong	201902164	1946-12-08	638 Voss, Houston, TX	M	40000.00	201901156	2
Ahmad	V	Jabbar	201903423	1959-03-29	Dallas, Houston, TX	M	25000.00	202103764	3
James	E	Borg	202001645	1927-11-10	Stone, Houston, TX	M	55000.00	00000	1
Ramesh	K	Narayan	202004290	1952-09-15	Fire Oak, Humble, TX	M	38000.00	201901156	4
Jennifer	S	Wallace	202103764	1931-06-20	Berry, Bellaire, TX	F	43000.00	00000	3

employee 1 x

Output

#	Time	Action	Message
30	11:29:58	INSERT INTO PROJECT values ('Cyber Security','1001','Colombo','1'), ('Network','1009','Vauriya','4'), ('Railway','1005','Kokavil','2'), ('AI','1004','Jafna','...)	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0
31	11:30:06	INSERT INTO WORKS_ON values (201901156,'1001','35'), (202103764,'1005','45'), (201802185,'1009','15'), (202004290,'1003','40'), (202001645'...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0
32	11:31:01	SELECT * FROM lab01_166.department LIMIT 0, 1000	4 row(s) returned
33	11:31:46	SELECT * FROM lab01_166.employee LIMIT 0, 1000	8 row(s) returned

b.

Query 1 - department

```
95 ('201901156','John','M','1992-09-08',''),
96 ('201802185','Haswahka','F','1995-04-07',''),
97 ('201901156','Jaawahan','M','1999-10-29','');
98
99 • SELECT * FROM lab01_166.employee;
100
101 • SELECT Fname,Address
102 FROM lab01_166.employee
103 WHERE Salary > 30000;
```

Result Grid

Fname	Address
Nipuna	17, Main Street, TY
Franklin	638 Voss, Houston, TX
James	Stone, Houston, TX
Ramesh	Fire Oak, Humble, TX
Jennifer	Berry, Bellaire, TX

employee 2 x

Output

#	Time	Action	Message
31	11:30:06	INSERT INTO WORKS_ON values (201901156,'1001','35'), (202103764,'1005','45'), (201802185,'1009','15'), (202004290,'1003','40'), (202001645'...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0
32	11:31:01	SELECT * FROM lab01_166.department LIMIT 0, 1000	4 row(s) returned
33	11:31:46	SELECT * FROM lab01_166.employee LIMIT 0, 1000	8 row(s) returned
34	11:37:38	SELECT Fname,Address FROM lab01_166.employee WHERE Salary > 30000 LIMIT 0, 1000	5 row(s) returned

C.

Query | department | department | dept_locations

SQL Additions

Automatic context help is disabled. Use the toolbar manually get help for the current caret position or toggle automatic help.

```
99 SELECT * FROM lab01_166.employee;
100
101 SELECT Fname,Address
102 FROM lab01_166.employee
103 WHERE Salary > 300000;
104
105 SELECT Dname,Dlocation
106 FROM lab01_166.department , lab01_166.dept_locations
107 WHERE lab01_166.department.Dnumber = lab01_166.dept_locations.Dnumber;
108
```

Result Grid | Filter Rows: | Export: | Wrap Cell Contents: |

Dname	Dlocation
Civil	Murukandy
Computer	Jaffna
Elec	Kilinochchi
Network	Vauniya

Result 3 x | Read Only | Context Help | Snippets

Output

Action Output	Time	Action	Message	Duration / Fetch
35	11:38:51	SELECT * FROM lab01_166.department LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec
36	11:39:49	SELECT * FROM lab01_166.dept_locations LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec
37	11:41:50	SELECT Dname,Dlocation FROM lab01_166.department , lab01_166.dept_locations WHERE lab01_166.department.Dnumber = lab01_166.dept_locat...	4 row(s) returned	0.000 sec / 0.000 sec
38	11:42:08	SELECT Dname,Dlocation FROM lab01_166.department , lab01_166.dept_locations WHERE lab01_166.department.Dnumber = lab01_166.dept_locat...	4 row(s) returned	0.000 sec / 0.000 sec