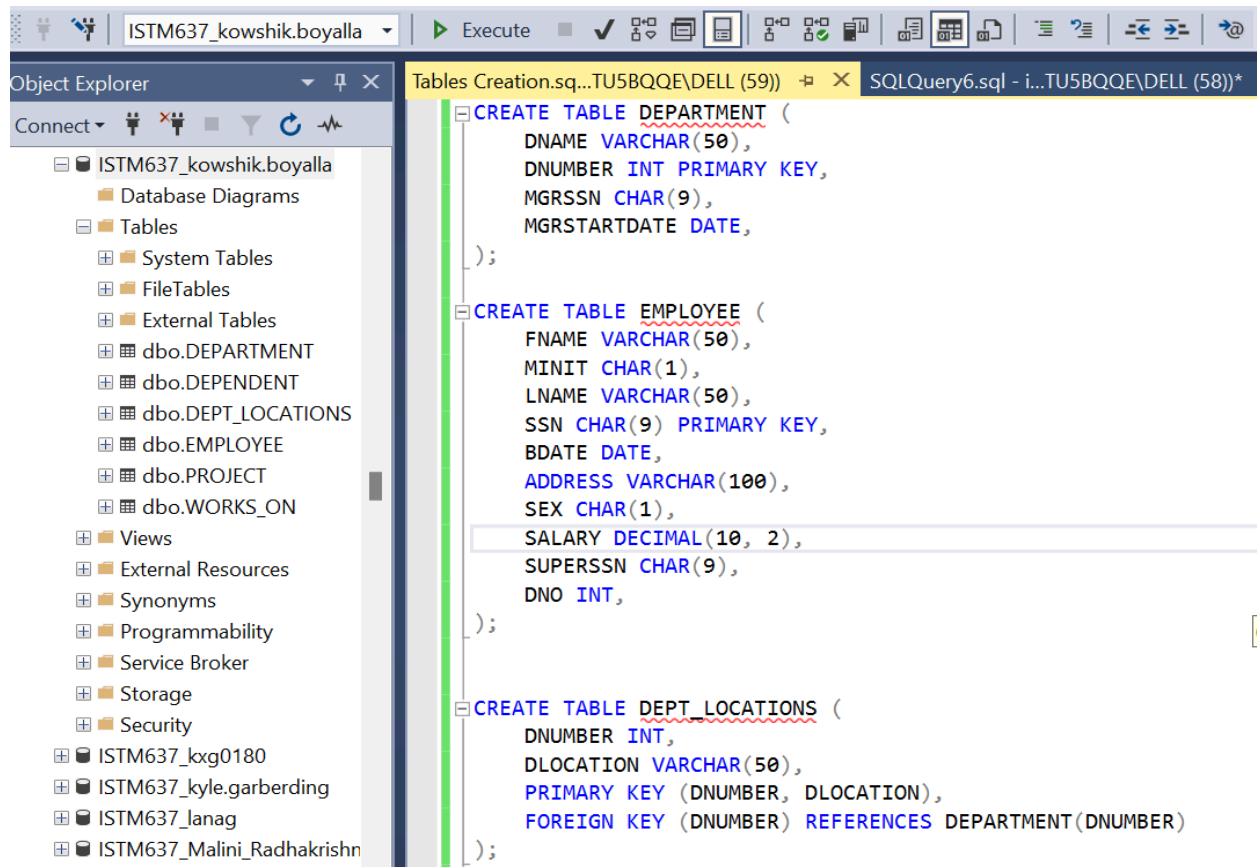


Name: Sri Sai Kowshik Reddy Boyalla
UIN:734003625
ISTM - 637
Cohort - 2

1) Table Creation

Code:



The screenshot displays the SQL Server Enterprise Manager interface. On the left, the Object Explorer shows the database structure for 'ISTM637_kowshik.boyalla', including tables like DEPARTMENT, EMPLOYEE, and DEPT_LOCATIONS. The main pane shows the SQL script for creating these tables. The script includes three CREATE TABLE statements with their respective columns and constraints.

```
CREATE TABLE DEPARTMENT (  
    DNAME VARCHAR(50),  
    DNUMBER INT PRIMARY KEY,  
    MGRSSN CHAR(9),  
    MGRSTARTDATE DATE,  
);  
  
CREATE TABLE EMPLOYEE (  
    FNAME VARCHAR(50),  
    MINIT CHAR(1),  
    LNAME VARCHAR(50),  
    SSN CHAR(9) PRIMARY KEY,  
    BDATE DATE,  
    ADDRESS VARCHAR(100),  
    SEX CHAR(1),  
    SALARY DECIMAL(10, 2),  
    SUPERSN CHAR(9),  
    DNO INT,  
);  
  
CREATE TABLE DEPT_LOCATIONS (  
    DNUMBER INT,  
    DLOCATION VARCHAR(50),  
    PRIMARY KEY (DNUMBER, DLOCATION),  
    FOREIGN KEY (DNUMBER) REFERENCES DEPARTMENT(DNUMBER)  
);
```

ISTM637_kowshik.boyalla | Execute | SQLQuery6.sql - i...TU5BQQE\DELL (58))*

Object Explorer

- ISTM637_kowshik.boyalla
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - dbo.DEPARTMENT
 - dbo.DEPENDENT
 - dbo.DEPT_LOCATIONS
 - dbo.EMPLOYEE
 - dbo.PROJECT
 - dbo.WORKS_ON
 - Views
 - External Resources
 - Synonyms
 - Programmability
 - Service Broker
 - Storage
 - Security

Tables Creation.sql...TU5BQQE\DELL (59) | SQLQuery6.sql - i...TU5BQQE\DELL (58))*

```

CREATE TABLE PROJECT (
    PNAME VARCHAR(50),
    PNUMBER INT PRIMARY KEY,
    PLOCATION VARCHAR(50),
    DNUM INT,
    FOREIGN KEY (DNUM) REFERENCES DEPARTMENT(DNUMBER)
);

CREATE TABLE WORKS_ON (
    ESSN CHAR(9),
    PNO INT,
    HOURS DECIMAL(5, 2),
    PRIMARY KEY (ESSN, PNO),
    FOREIGN KEY (ESSN) REFERENCES EMPLOYEE(SSN),
    FOREIGN KEY (PNO) REFERENCES PROJECT(PNUMBER)
);

CREATE TABLE DEPENDENT (
    ESSN CHAR(9),
    DEPENDENT_NAME VARCHAR(50),
    SEX CHAR(1),
    BDATE DATE,
    RELATIONSHIP VARCHAR(50),
    PRIMARY KEY (ESSN, DEPENDENT_NAME),
    FOREIGN KEY (ESSN) REFERENCES EMPLOYEE(SSN)
);

```

Object Explorer | SQLQuery6.sql - i...TU5BQQE\DELL (58))*

- ISTM637_kowshik.boyalla
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - dbo.DEPARTMENT
 - dbo.DEPENDENT
 - dbo.DEPT_LOCATIONS
 - dbo.EMPLOYEE
 - dbo.PROJECT
 - dbo.WORKS_ON
 - Views
 - External Resources
 - Synonyms
 - Programmability
 - Service Broker
 - Storage
 - Security

SELECT *
FROM INFORMATION_SCHEMA.TABLES;

100 % | Results | Messages

	TABLE_CATALOG	TABLE_SCHEMA	TABLE_NAME	TABLE_TYPE
1	ISTM637_kowshik.boyalla	dbo	DEPARTMENT	BASE TABLE
2	ISTM637_kowshik.boyalla	dbo	DEPT_LOCATIONS	BASE TABLE
3	ISTM637_kowshik.boyalla	dbo	PROJECT	BASE TABLE
4	ISTM637_kowshik.boyalla	dbo	EMPLOYEE	BASE TABLE
5	ISTM637_kowshik.boyalla	dbo	WORKS_ON	BASE TABLE
6	ISTM637_kowshik.boyalla	dbo	DEPENDENT	BASE TABLE

2) Data Insertion

Code:

The screenshot displays the SQL Developer interface with the Object Explorer on the left and the SQL Editor on the right. The Object Explorer shows the database structure for ISTM637_kowshik.boyalla, including tables like EMPLOYEE, DEPENDENT, DEPARTMENT, DEPT_LOCATIONS, and PROJECT. The SQL Editor contains the following SQL code:

```
INSERT INTO EMPLOYEE (FNAME, MINIT, LNAME, SSN)
VALUES
('John', 'B', 'Smith', '123456789'),
('Franklin', 'T', 'Wong', '333445555'),
('Alicia', 'J', 'Zelaya', '999887777'),
('Jennifer', 'S', 'Wallace', '987654321'),
('Ramesh', 'K', 'Narayan', '666884444'),
('Joyce', 'A', 'English', '453453453'),
('Ahmad', 'V', 'Jabbar', '987987987'),
('James', 'E', 'Borg', '888665555');

INSERT INTO DEPENDENT (ESSN, DEPENDENT_NAME, SEX, BDATE)
VALUES
('333445555', 'Alice', 'F', '1986-04-05'),
('333445555', 'Theodore', 'M', '1983-10-25'),
('333445555', 'Joy', 'F', '1958-05-03'),
('987654321', 'Abner', 'M', '1942-02-28'),
('123456789', 'Michael', 'M', '1988-01-04'),
('123456789', 'Alice', 'F', '1988-12-30'),
('123456789', 'Elizabeth', 'F', '1967-05-05');

INSERT INTO DEPARTMENT (DNAME, DNUMBER, MGRSSN, MGRSTARTDATE)
VALUES
('Research', 5, '333445555', '1968-05-22'),
('Administration', 4, '987654321', '1995-01-01'),
('Headquarters', 1, '888665555', '1981-06-19');

INSERT INTO DEPT_LOCATIONS (DNUMBER, DLOCATION)
VALUES
(1, 'Houston'),
(4, 'Stafford'),
(5, 'Bellaire'),
(5, 'Sugarland'),
(5, 'Houston');

INSERT INTO PROJECT (PNAME, PNUMBER, PLOCATION, DNUM)
VALUES
('ProductX', 1, 'Bellaire', 5),
('ProductY', 2, 'Sugarland', 5),
('ProductZ', 3, 'Houston', 5),
('Computerization', 10, 'Stafford', 4),
('Reorganization', 20, 'Houston', 1),
('Newbenefits', 30, 'Stafford', 4);
```

ISTM637_kowshik.boyalla

Execute

Object Explorer

Connect

ISTM637_kowshik.boyalla

- Database Diagrams
- Tables
 - System Tables
 - FileTables
 - External Tables
 - dbo.DEPARTMENT
 - dbo.DEPENDENT
 - dbo.DEPT_LOCATIONS
 - dbo.EMPLOYEE
 - dbo.PROJECT
 - dbo.WORKS_ON
- Views
- External Resources
- Synonyms
- Programmability
- Service Broker
- Storage

Data Insertion.sql...-TU5BQQE\DELL (69)

```

('Newbenefits', 30, 'Stafford', 4);

INSERT INTO WORKS_ON (ESSN, PNO, HOURS)
VALUES
('123456789', 1, 32.5),
('123456789', 2, 7.5),
('666884444', 3, 40.0),
('453453453', 1, 20.0),
('453453453', 2, 20.0),
('333445555', 2, 10.0),
('333445555', 3, 10.0),
('333445555', 10, 10.0),
('333445555', 20, 10.0),
('999887777', 30, 30.0),
('999887777', 10, 10.0),
('987987987', 10, 35.0),
('987987987', 30, 5.0),
('987654321', 30, 20.0),
('987654321', 20, 15.0),
('888665555', 20, NULL);
  
```

Tables Creation.sc

EMPLOYEE Table - Data Insertion:

ISTM637_kowshik.boyalla

Execute

Object Explorer

Connect

ISTM637_kowshik.boyalla

- Database Diagrams
- Tables
 - System Tables
 - FileTables
 - External Tables
 - dbo.DEPARTMENT
 - dbo.DEPENDENT
 - dbo.DEPT_LOCATIONS
 - dbo.EMPLOYEE
 - dbo.PROJECT
 - dbo.WORKS_ON
- Views
- External Resources
- Synonyms
- Programmability
- Service Broker
- Storage
- Security
- ISTM637_kxg0180
- ISTM637_kyle.garberding
- ISTM637_lanag
- ISTM637_Malini_Radhakrishnan

SQLQuery6.sql - i...TU5BQQE\DELL (58)*

```

SELECT *
FROM EMPLOYEE;
  
```

100 %

Results Messages

	FNAME	MINIT	LNAME	SSN	BDATE	ADDRESS	SEX	SALARY	SUPERSSN	DNO
1	John	B	Smith	123456789	1965-01-09	731 Fondren, Houston TX	M	30000.00	333445555	5
2	Franklin	T	Wong	333445555	1955-12-08	638 Voss, Houston TX	M	40000.00	888665555	5
3	Joyce	A	English	453453453	1972-07-31	5631 Rice, Houston TX	F	25000.00	333445555	5
4	Ramesh	K	Narayan	666884444	1962-09-15	975 Fire Oak, Humble TX	M	38000.00	333445555	5
5	James	E	Borg	888665555	1937-11-10	450 Stone, Houston TX	M	55000.00	NULL	1
6	Jennifer	S	Wallace	987654321	1941-06-20	291 Berry, Bellaire, TX	F	43000.00	888665555	4
7	Ahmad	V	Jabbar	987987987	1969-03-29	980 Dallas, Houston TX	M	25000.00	987654321	4
8	Alicia	J	Zelaya	999887777	1968-07-19	3321 Castle, Spring TX	F	25000.00	987654321	4

DEPT_LOCATIONS Table - Data Insertion

The screenshot shows the SQL Server Enterprise Manager interface. The Object Explorer on the left displays the database structure for 'ISTM637_kowshik.boyalla', including tables like DEPARTMENT, DEPENDENT, DEPT_LOCATIONS, EMPLOYEE, PROJECT, and WORKS_ON. The SQL Query window on the right contains the query: `SELECT * FROM DEPT_LOCATIONS;`. The Results pane shows the data for the DEPT_LOCATIONS table.

	DNUMBER	DLOCATION
1	1	Houston
2	4	Stafford
3	5	Belaire
4	5	Houston
5	5	Sugarland

DEPARTMENT Table - Data Insertion

The screenshot shows the SQL Server Enterprise Manager interface. The Object Explorer on the left displays the database structure for 'ISTM637_kowshik.boyalla', including tables like DEPARTMENT, DEPENDENT, DEPT_LOCATIONS, EMPLOYEE, PROJECT, and WORKS_ON. The SQL Query window on the right contains the query: `SELECT * FROM DEPARTMENT;`. The Results pane shows the data for the DEPARTMENT table.

	DNAME	DNUMBER	MGRSSN	MGRSTARTDATE
1	Headquarters	1	888665555	1981-06-19
2	Administration	4	987654321	1995-01-01
3	Research	5	333445555	1968-05-22

PROJECT Table - Data Insertion

The screenshot displays the SQL Server Enterprise Manager interface. The top toolbar includes icons for connecting, executing, and saving. The 'Object Explorer' on the left shows the database structure for 'ISTM637_kowshik.boyalla', with the 'PROJECT' table expanded. The main query window shows a SQL query: `SELECT * FROM PROJECT;`. Below the query window, the 'Results' tab is active, displaying a table with 6 rows and 5 columns: PNAME, PNUMBER, PLOCATION, and DNUM. The data is as follows:

	PNAME	PNUMBER	PLOCATION	DNUM
1	ProductX	1	Bellaire	5
2	ProductY	2	Sugarland	5
3	ProductZ	3	Houston	5
4	Computerization	10	Stafford	4
5	Reorganization	20	Houston	1
6	Newbenefits	30	Stafford	4

WORKS_ON Table - Data Insertion

The screenshot shows the SQL Server Enterprise Manager interface. The Object Explorer on the left displays the database structure for ISTM637_kowshik.boyalla, including tables like DEPARTMENT, DEPENDENT, DEPT_LOCATIONS, EMPLOYEE, PROJECT, and WORKS_ON. The SQL Query window on the right shows the query: `SELECT * FROM WORKS_ON;`. The Results pane displays the data from the WORKS_ON table.

	ESSN	PNO	HOURS
1	123456789	1	32.50
2	123456789	2	7.50
3	333445555	2	10.00
4	333445555	3	10.00
5	333445555	10	10.00
6	333445555	20	10.00
7	453453453	1	20.00
8	453453453	2	20.00
9	666884444	3	40.00
10	888665555	20	NULL
11	987654321	20	15.00
12	987654321	30	20.00
13	987987987	10	35.00
14	987987987	30	5.00
15	999887777	10	10.00
16	999887777	30	30.00

DEPENDENT Table - Data Insertion

The screenshot shows the SQL Server Enterprise Manager interface. The Object Explorer on the left displays the database structure for ISTM637_kowshik.boyalla, including tables like DEPARTMENT, DEPENDENT, DEPT_LOCATIONS, EMPLOYEE, PROJECT, and WORKS_ON. The SQL Query window on the right shows the query: `SELECT * FROM DEPENDENT;`. The Results pane displays the data from the DEPENDENT table.

	ESSN	DEPENDENT_NAME	SEX	BDATE	RELATIONSHIP
1	123456789	Alice	F	1988-12-30	DAUGHTER
2	123456789	Elizabeth	F	1967-05-05	SPOUSE
3	123456789	Michael	M	1988-01-04	SON
4	333445555	Alice	F	1986-04-05	DAUGHTER
5	333445555	Joy	F	1958-05-03	SPOUSE
6	333445555	Theodore	M	1983-10-25	SON
7	987654321	Abner	M	1942-02-28	SPOUSE

3) Query Design and Execution

Query 1 and Result:

Object Explorer: ISTM637_kowshik.boyalla

- Database Diagrams
- Tables
 - System Tables
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 - dbo.DEPARTMENT
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- Synonyms
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- Service Broker
- Storage

SQLQuery4.sql - i...TU5BQQE\DELL (59))

```
SELECT DISTINCT P.PNUMBER
FROM PROJECT P
JOIN DEPARTMENT D ON P.DNUM = D.DNUMBER
LEFT JOIN EMPLOYEE E1 ON D.MGRSSN = E1.SSN
LEFT JOIN WORKS_ON W ON P.PNUMBER = W.PNO
LEFT JOIN EMPLOYEE E2 ON W.ESSN = E2.SSN
WHERE E1.LNAME = 'Smith' OR E2.LNAME = 'Smith';
```

Results

	PNUMBER
1	1
2	2

Query 2 and Result:

Object Explorer: ISTM637_kowshik.boyalla

- Database Diagrams
- Tables
 - System Tables
 - FileTables
 - External Tables
 - dbo.DEPARTMENT
 - dbo.DEPENDENT
 - dbo.DEPT_LOCATIONS
 - dbo.EMPLOYEE
 - dbo.PROJECT
 - dbo.WORKS_ON
- Views
- External Resources
- Synonyms
- Programmability
- Service Broker
- Storage

SQLQuery4.sql - i...TU5BQQE\DELL (59))

```
SELECT DISTINCT E.FNAME, E.MINIT, E.LNAME
FROM EMPLOYEE E
JOIN DEPARTMENT D ON E.SSN = D.MGRSSN
JOIN DEPENDENT DEP ON E.SSN = DEP.ESSN;
```

Results

	FNAME	MINIT	LNAME
1	Franklin	T	Wong
2	Jennifer	S	Wallace

Query 3 and Result:

The screenshot displays the SQL Server Enterprise Manager interface. The top toolbar includes the 'Execute' button. The 'Object Explorer' on the left shows the database structure for 'ISTM637_kowshik.boyalla', with 'Tables' expanded to show 'dbo.EMPLOYEE' and 'dbo.PROJECT'. The main query window, titled 'SQLQuery4.sql', contains the following SQL code:

```
SELECT E.FNAME, E.LNAME
FROM EMPLOYEE E
WHERE NOT EXISTS (
    SELECT P.PNUMBER
    FROM PROJECT P
    WHERE P.DNUM = 5
    AND NOT EXISTS (
        SELECT W.ESSN
        FROM WORKS_ON W
        WHERE W.ESSN = E.SSN
        AND W.PNO = P.PNUMBER
    )
);
```

Below the query editor, the 'Results' tab is active, showing a table with two columns: 'FNAME' and 'LNAME'. The zoom level is set to 100%.

FNAME	LNAME
-------	-------