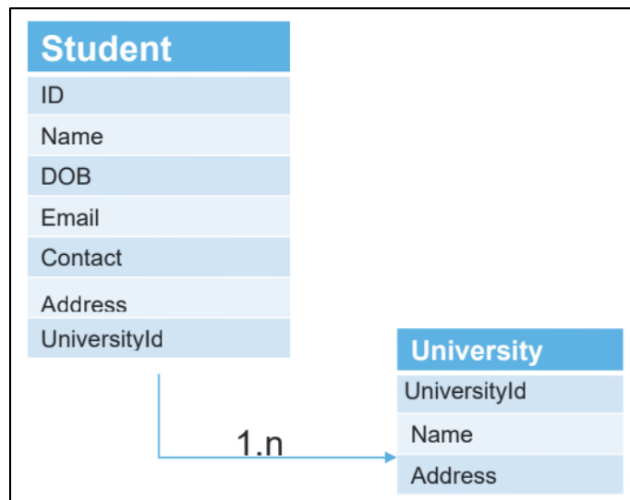


# Wk10 Assignment: RDBMS and SQL

## Problem Statement

- Create one to many and many to one Bidirectional mapping for student and university
- Insert the records using stored procedure
- Write a user defined function to find out total number of students
- Using subqueries list out all the students who are studying in specific university
- List out all the students who is studying in specific university using joins.



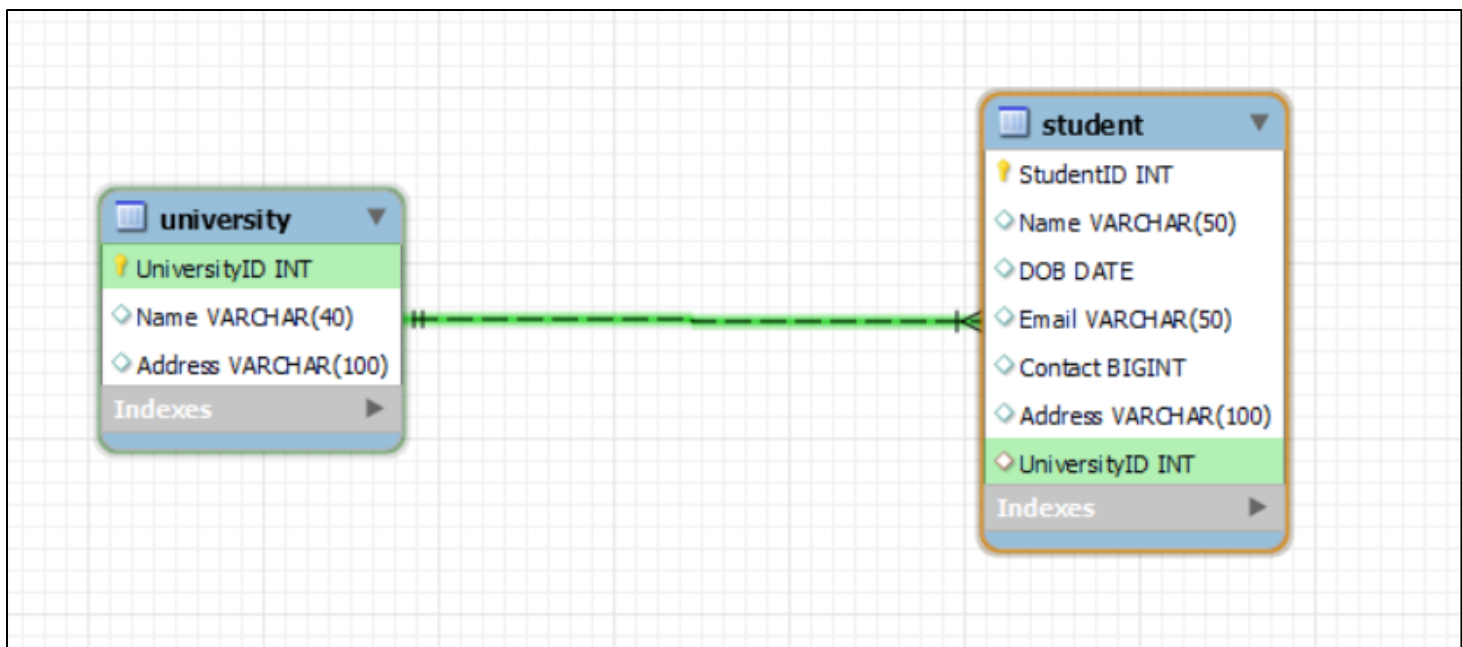
## Solution

### 1. Create one to many and many to one Bidirectional mapping for student and university

```
CREATE TABLE University (  
    UniversityID INT PRIMARY KEY,  
    Name VARCHAR(40),  
    Address VARCHAR(100)  
);
```

---

```
CREATE TABLE Student (  
    StudentID INT PRIMARY KEY,  
    Name VARCHAR(50),  
    DOB DATE,  
    Email VARCHAR(50),  
    Contact BIGINT(10),  
    Address VARCHAR(100),  
    UniversityID INT,  
    FOREIGN KEY (UniversityID) REFERENCES University(UniversityID)  
);
```



## 2. Insert the records using stored procedure

### Create procedures

```
DELIMITER //
CREATE PROCEDURE InsertStudentData(
    IN p_StudentID INT,
    IN p_Name VARCHAR(50),
    IN p_DOB DATE,
    IN p_Email VARCHAR(50),
    IN p_Contact BIGINT,
    IN p_Address VARCHAR(100),
    IN p_UniversityID INT
)
BEGIN
    INSERT INTO Student (StudentID, Name, DOB, Email, Contact, Address, UniversityID)
    VALUES (p_StudentID, p_Name, p_DOB, p_Email, p_Contact, p_Address, p_UniversityID);
END //
DELIMITER ;
```

---

```
DELIMITER //
CREATE PROCEDURE InsertUniversityData(
    IN p_UniversityID INT,
    IN p_Name VARCHAR(40),
    IN p_Address VARCHAR(100)
)
BEGIN
    INSERT INTO University (UniversityID, Name, Address)
    VALUES (p_UniversityID, p_Name, p_Address);
END //
DELIMITER ;
```

## Insert University data

CALL InsertUniversityData(1, 'ABC University', 'Agra');

CALL InsertUniversityData(2, 'Technical University', 'Delhi');

CALL InsertUniversityData(3, 'Anand Science University', 'Kolkata');

CALL InsertUniversityData(4, 'National University', 'Banglore');

CALL InsertUniversityData(5, 'Rastriya Science University', 'Chennai');

✓	23	18:42:20	CALL InsertUniversityData(1, 'ABC University', 'Agra')	1 row(s) affected	0.016 sec
✓	24	18:42:20	CALL InsertUniversityData(2, 'Technical University', 'Delhi')	1 row(s) affected	0.000 sec
✓	25	18:42:20	CALL InsertUniversityData(3, 'Anand Science University', 'Kolkata')	1 row(s) affected	0.000 sec
✓	26	18:42:20	CALL InsertUniversityData(4, 'National University', 'Banglore')	1 row(s) affected	0.015 sec
✓	27	18:42:20	CALL InsertUniversityData(5, 'Rastriya Science University', 'Chennai')	1 row(s) affected	0.000 sec

select \* from rdbms\_sql\_demo.university;

Result Grid

Filter Rows:

Edit:

Export/Import:

Wrap Cell Content:

	UniversityID	Name	Address
▶	1	ABC University	Agra
	2	Technical University	Delhi
	3	Anand Science University	Kolkata
	4	National University	Banglore
	5	Rastriya Science University	Chennai
•	NULL	NULL	NULL

## Insert Student data

CALL InsertStudentData(1, 'Arjun Sharma', '1998-07-15', 'arjun.sharma@gmail.com', 9876543210, '123 Rajpath, New Delhi', 1);

CALL InsertStudentData(2, 'Priya Gupta', '2001-02-28', 'priya.gupta@yahoo.com', 9987654321, '456 MG Road, Mumbai', 2);

CALL InsertStudentData(3, 'Aditya Kapoor', '1997-11-05', 'aditya.kapoor@outlook.com', 9012345678, '789 Chandni Chowk, Kolkata', 3);

CALL InsertStudentData(4, 'Neha Sharma', '2000-04-22', 'neha.sharma@gmail.com', 8765432109, '321 Civil Lines, Chennai', 4);

CALL InsertStudentData(5, 'Raj Malhotra', '1999-09-08', 'raj.malhotra@outlook.com', 8901234567, '654 Connaught Place, New Delhi', 5);

CALL InsertStudentData(6, 'Simran Kaur', '2002-06-01', 'simran.kaur@yahoo.com', 7654321098, '987 Brigade Road, Bangalore', 2);

CALL InsertStudentData(7, 'Karan Chopra', '1998-12-31', 'karan.chopra@gmail.com', 6543210987, '159 Park Street, Kolkata', 2);

CALL InsertStudentData(8, 'Pooja Verma', '2001-05-18', 'pooja.verma@gmail.com', 5432109876, '753 MG Road, Chennai', 4);

CALL InsertStudentData(9, 'Nikhil Mehta', '2000-03-27', 'nikhil.mehta@outlook.com', 4321098765, '951 Janpath, New Delhi', 5);

CALL InsertStudentData(10, 'Riya Khanna', '1999-08-11', 'riya.khanna@gmail.com', 3210987654, '357 Linking Road, Mumbai', 3);

✓	42	19:01:11	CALL InsertStudentData(1, 'Arjun Sharma', '1998-07-15', 'arjun.sharma@gmail.com', 9876...	1 row(s) affected	0.000 sec
✓	43	19:01:11	CALL InsertStudentData(2, 'Priya Gupta', '2001-02-28', 'priya.gupta@yahoo.com', 99876...	1 row(s) affected	0.000 sec
✓	44	19:01:11	CALL InsertStudentData(3, 'Aditya Kapoor', '1997-11-05', 'aditya.kapoor@outlook.com', 9...	1 row(s) affected	0.015 sec
✓	45	19:01:11	CALL InsertStudentData(4, 'Neha Sharma', '2000-04-22', 'neha.sharma@gmail.com', 876...	1 row(s) affected	0.000 sec
✓	46	19:01:11	CALL InsertStudentData(5, 'Raj Malhotra', '1999-09-08', 'raj.malhotra@outlook.com', 890...	1 row(s) affected	0.000 sec
✓	47	19:01:11	CALL InsertStudentData(6, 'Simran Kaur', '2002-06-01', 'simran.kaur@yahoo.com', 76543...	1 row(s) affected	0.000 sec
✓	48	19:01:11	CALL InsertStudentData(7, 'Karan Chopra', '1998-12-31', 'karan.chopra@gmail.com', 654...	1 row(s) affected	0.000 sec
✓	49	19:01:11	CALL InsertStudentData(8, 'Pooja Verma', '2001-05-18', 'pooja.verma@gmail.com', 5432...	1 row(s) affected	0.000 sec
✓	50	19:01:11	CALL InsertStudentData(9, 'Nikhil Mehta', '2000-03-27', 'nikhil.mehta@outlook.com', 432...	1 row(s) affected	0.000 sec
✓	51	19:01:11	CALL InsertStudentData(10, 'Riya Khanna', '1999-08-11', 'riya.khanna@gmail.com', 3210...	1 row(s) affected	0.000 sec

SELECT \* FROM rdbms\_sql\_demo.student;

Result Grid   Filter Rows:   Edit:   Export/Import:   Wrap Cell Content:							
	StudentID	Name	DOB	Email	Contact	Address	UniversityID
▶	1	Arjun Sharma	1998-07-15	arjun.sharma@gmail.com	9876543210	123 Rajpath, New Delhi	1
	2	Priya Gupta	2001-02-28	priya.gupta@yahoo.com	9987654321	456 MG Road, Mumbai	2
	3	Aditya Kapoor	1997-11-05	aditya.kapoor@outlook.com	9012345678	789 Chandni Chowk, Kolkata	3
	4	Neha Sharma	2000-04-22	neha.sharma@gmail.com	8765432109	321 Civil Lines, Chennai	4
	5	Raj Malhotra	1999-09-08	raj.malhotra@outlook.com	8901234567	654 Connaught Place, New Delhi	5
	6	Simran Kaur	2002-06-01	simran.kaur@yahoo.com	7654321098	987 Brigade Road, Bangalore	2
	7	Karan Chopra	1998-12-31	karan.chopra@gmail.com	6543210987	159 Park Street, Kolkata	2
	8	Pooja Verma	2001-05-18	pooja.verma@gmail.com	5432109876	753 MG Road, Chennai	4
	9	Nikhil Mehta	2000-03-27	nikhil.mehta@outlook.com	4321098765	951 Janpath, New Delhi	5
	10	Riya Khanna	1999-08-11	riya.khanna@gmail.com	3210987654	357 Linking Road, Mumbai	3
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

### 3. Write a user defined function to find out total number of students

#### Create function

DELIMITER //

CREATE FUNCTION GetTotalStudents()

RETURNS INT

BEGIN

DECLARE total\_students INT;

SELECT COUNT(\*) INTO total\_students FROM Student;

RETURN total\_students;

END //

DELIMITER ;

✓	60	19:09:55	CREATE FUNCTION GetTotalStudents() RETURNS INT BEGIN DECLARE total_stu...	0 row(s) affected	0.000 sec
---	----	----------	---	-------------------	-----------

## Use function

```
SELECT GetTotalStudents();
```

Result Grid			Filter Rows: <input type="text"/>	Export:	Wrap Cell Content:
GetTotalStudents()					
10					

### 4. Using subqueries list out all the students who are studying in specific university

```
SELECT * FROM Student
WHERE UniversityID = (
    SELECT UniversityID
    FROM University
    WHERE Name = 'Technical University'
);
```

	StudentID	Name	DOB	Email	Contact	Address	UniversityID
▶	2	Priya Gupta	2001-02-28	priya.gupta@yahoo.com	9987654321	456 MG Road, Mumbai	2
	6	Simran Kaur	2002-06-01	simran.kaur@yahoo.com	7654321098	987 Brigade Road, Bangalore	2
	7	Karan Chopra	1998-12-31	karan.chopra@gmail.com	6543210987	159 Park Street, Kolkata	2
•	NULL	NULL	NULL	NULL	NULL	NULL	NULL

### 5. List out all the students who is studying in specific university using joins.

```
SELECT s.*, u.Name AS UniversityName, u.Address AS UniversityAddress
FROM Student s
JOIN University u ON s.UniversityID = u.UniversityID
WHERE u.Name = 'National University';
```

	StudentID	Name	DOB	Email	Contact	Address	UniversityID	UniversityName	UniversityAddress
▶	4	Neha Sharma	2000-04-22	neha.sharma@gmail.com	8765432109	321 Civil Lines, Chennai	4	National University	Banglore
	8	Pooja Verma	2001-05-18	pooja.verma@gmail.com	5432109876	753 MG Road, Chennai	4	National University	Banglore