

# Database Systems

LAB#03 (In-Lab)



23K-2001

BCS-5J

Q1:

Oracle SQL Developer : Muzammil

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Connections

- hr
- Muzammil
  - Tables (Filtered)
    - STUDENTS
  - Views
  - Editing Views
  - Indexes
  - Packages
  - Procedures
  - Functions
  - Operators
  - Queues
  - Queues Tables
  - Triggers
  - Crossedition Triggers
  - Types
  - Sequences
  - Materialized Views
  - Materialized View Logs

Worksheet

```
CREATE TABLE students(  
  student_id NUMBER PRIMARY KEY,  
  student_name VARCHAR(50) NOT NULL,  
  email VARCHAR(50) NOT NULL  
);
```

Script Output

Task completed in 0.131 seconds

Table STUDENTS created.

Oracle SQL Developer : Muzammil

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Connections

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  - Queues Tables
  - Triggers
  - Crossedition Triggers
  - Types
  - Sequences
  - Materialized Views

Worksheet

```
ALTER TABLE courses ADD CONSTRAINT pk_courseid PRIMARY KEY(course_id);
```

Script Output

Task completed in 0.054 seconds

Table COURSES altered.

Oracle SQL Developer : Muzammil

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Connections

Connections

- hr
- Muzammil
  - Tables (Filtered)
    - COURSES
    - ENROLLMENT
    - STUDENTS
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  - Queues Tables
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  - Crossedition Triggers
  - Types
  - Sequences

Worksheet

Query Builder

```
CREATE TABLE enrollment(  
    enrollment_id NUMBER PRIMARY KEY,  
    enrollment_date DATE NOT NULL,  
    student_id NUMBER NOT NULL,  
    course_id NUMBER NOT NULL  
);  
ALTER TABLE enrollment ADD CONSTRAINT fk_stdid FOREIGN KEY (student_id) REFERENCES students(student_id);  
ALTER TABLE enrollment ADD CONSTRAINT fk_crsid FOREIGN KEY (course_id) REFERENCES courses(course_id);
```

Reports

All Reports

- Analytic View Reports
- Data Dictionary Reports
- Data Modeler Reports
- OLAP Reports
- TimesTen Reports
- User Defined Reports

Script Output

Query Result

Task completed in 0.054 seconds

Table COURSES altered.

Table ENROLLMENT created.

Table ENROLLMENT altered.

Table ENROLLMENT altered.

Q2:

Oracle SQL Developer : Muzammil

File Edit View Navigate Run Source Team Tools Window Help

Connections

Muzammil

Tables (Filtered)

- COURSES
- ENROLLMENT
- STUDENTS

Views

- Editing Views
- Indexes
- Packages
- Procedures
- Functions
- Operators
- Queues
- Queues Tables
- Triggers
- Crossedition Triggers
- Types
- Sequences

Reports

- All Reports
- Analytic View Reports
- Data Dictionary Reports
- Data Modeler Reports
- OLAP Reports
- TimesTen Reports
- User Defined Reports

Worksheet

```
INSERT INTO students VALUES (1, 'Ali Khan', 'ali@example.com');
INSERT INTO students VALUES (2, 'Sara Ahmed', 'sara@example.com');
INSERT INTO students VALUES (3, 'Usman Tariq', 'usman@example.com');
INSERT INTO students VALUES (4, 'Hina Malik', 'hina@example.com');
```

Script Output

Task completed in 0.045 seconds

Query Result

1 row inserted.

1 row inserted.

1 row inserted.

1 row inserted.

Oracle SQL Developer : Table MUZAMMIL.STUDENTS@Muzammil

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Connections

Muzammil

Tables (Filtered)

- COURSES
- ENROLLMENT
- STUDENTS

Views

- Editing Views
- Indexes
- Packages
- Procedures
- Functions
- Operators
- Queues
- Queues Tables
- Triggers
- Crossedition Triggers
- Types
- Sequences

Reports

Columns

STUDENT\_ID

STUDENT\_NAME

EMAIL

1	Ali Khan	ali@example.com
2	Sara Ahmed	sara@example.com
3	Usman Tariq	usman@example.com
4	Hina Malik	hina@example.com

Q3:

Oracle SQL Developer : Muzammil

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Connections

- hr
- Muzammil
  - Tables (Filtered)
    - COURSES
    - ENROLLMENT
    - STUDENTS
  - Views
  - Editing Views
  - Indexes
  - Packages
  - Procedures
  - Functions
  - Operators
  - Queues
  - Queues Tables
  - Triggers
  - Crossedition Triggers
  - Types
  - Sequences

Reports

- All Reports
- Analytic View Reports
- Data Dictionary Reports
- Data Modeler Reports
- OLAP Reports
- TimesTen Reports
- User Defined Reports

Worksheet Query Builder

```
INSERT ALL
  INTO courses VALUES (101, 'Database Systems')
  INTO courses VALUES (102, 'Computer Networks')
  INTO courses VALUES (103, 'Software Engineering')
  INTO courses VALUES (104, 'Operating Systems')
SELECT * FROM dual;
```

Script Output x Query Result x

SQL All Rows Fetched: 3 in 0.012 seconds

TABLE_NAME
1 STUDENTS
2 COURSES
3 ENROLLMENT

Oracle SQL Developer : Table MUZAMMIL.COURSES@Muzammil

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Connections

- hr
- Muzammil
  - Tables (Filtered)
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  - Queues Tables
  - Triggers
  - Crossedition Triggers
  - Types
  - Sequences

Reports

Columns Data Model Constraints Grants Statistics Triggers Fl

Sort.. Filter:

	COURSE_ID	COURSE_NAME
1	101	Database Systems
2	102	Computer Networks
3	103	Software Engineering
4	104	Operating Systems

Q4:

Oracle SQL Developer : Muzammil

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Connections

Connections

hr

Muzammil

Tables (Filtered)

COURSES

ENROLLMENT

STUDENTS

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Reports

All Reports

Analytic View Reports

Data Dictionary Reports

Data Modeler Reports

OLAP Reports

TimesTen Reports

User Defined Reports

Muzammil

ENROLLMENT

Worksheet

Query Builder

```
INSERT ALL
INTO enrollment VALUES (1001, DATE '2024-09-01', 1, 101)
INTO enrollment VALUES (1002, DATE '2024-09-02', 2, 102)
INTO enrollment VALUES (1003, DATE '2024-09-03', 3, 103)
INTO enrollment VALUES (1004, DATE '2024-09-04', 4, 104)
SELECT * FROM dual;
```

Script Output

Query Result

Task completed in 0.04 seconds

4 rows inserted.

Oracle SQL Developer : Table MUZAMMIL.ENROLLMENT@Muzammil

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Connections

Connections

hr

Muzammil

Tables (Filtered)

COURSES

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Types

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Muzammil

ENROLLMENT

Columns

Data

Model

Constraints

Grants

Statistics

Triggers

Flashback

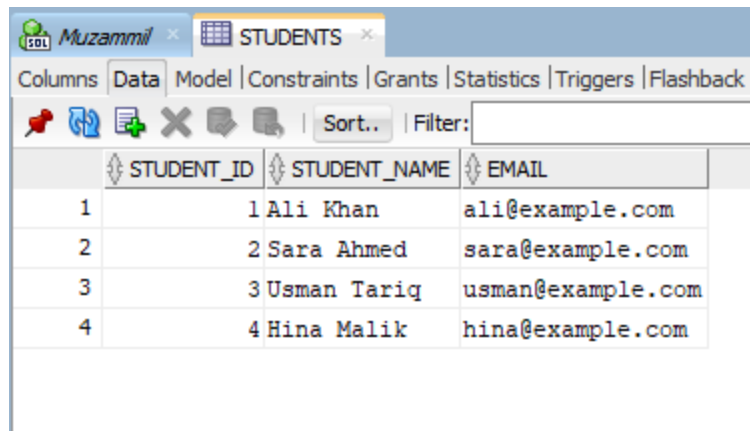
Dependencies

Sort..

Filter:

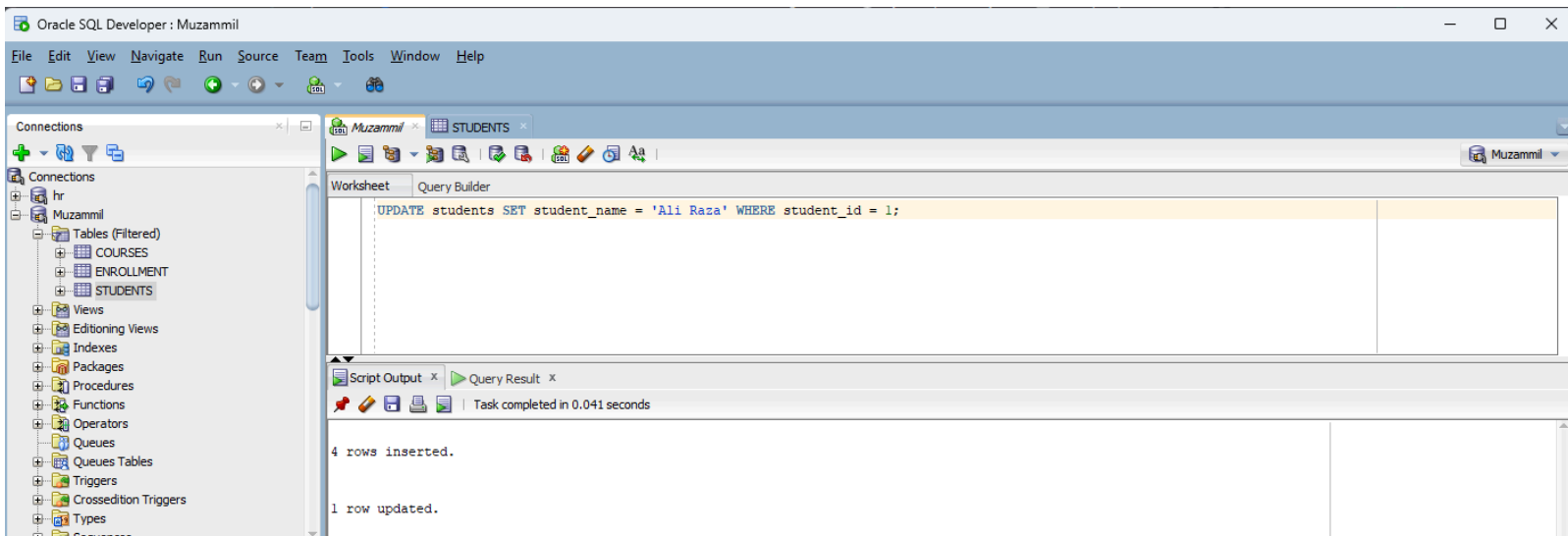
	ENROLLMENT_ID	ENROLLMENT_DATE	STUDENT_ID	COURSE_ID
1	1001	01-SEP-24	1	101
2	1002	02-SEP-24	2	102
3	1003	03-SEP-24	3	103
4	1004	04-SEP-24	4	104

Q5:



This screenshot shows the 'STUDENTS' table in the 'Muzammil' schema. The table has three columns: STUDENT\_ID, STUDENT\_NAME, and EMAIL. It contains four rows of data. The interface includes tabs for Columns, Data, Model, Constraints, Grants, Statistics, Triggers, and Flashback. A toolbar with various icons and a 'Sort..' button is visible above the table.

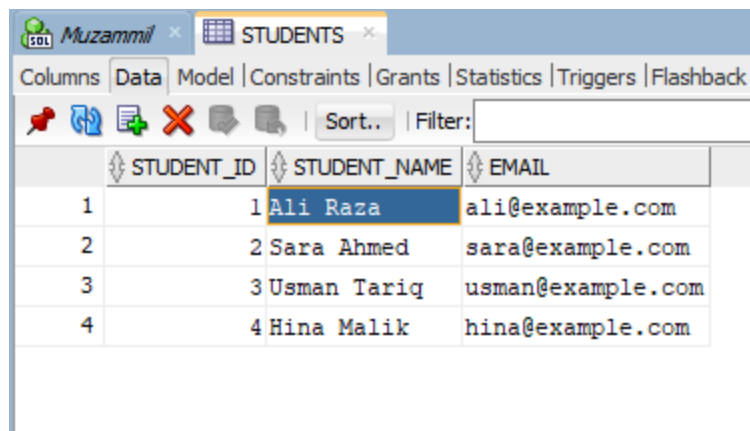
	STUDENT_ID	STUDENT_NAME	EMAIL
1	1	Ali Khan	ali@example.com
2	2	Sara Ahmed	sara@example.com
3	3	Usman Tariq	usman@example.com
4	4	Hina Malik	hina@example.com



This screenshot shows the Oracle SQL Developer interface. On the left is the 'Connections' tree with 'Muzammil' selected. The main window displays the 'STUDENTS' table. The 'Worksheet' tab shows an SQL query: `UPDATE students SET student_name = 'Ali Raza' WHERE student_id = 1;`. Below the query, the 'Script Output' pane shows the execution results: '4 rows inserted.' and '1 row updated.'.

```
UPDATE students SET student_name = 'Ali Raza' WHERE student_id = 1;
```

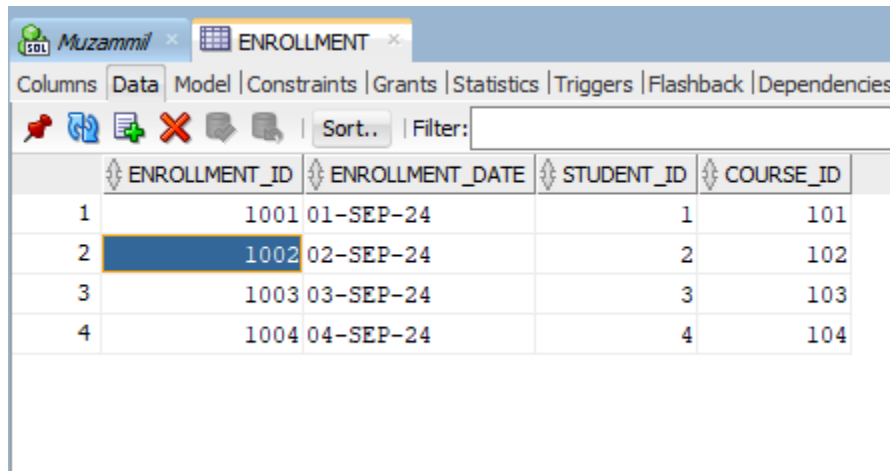
4 rows inserted.  
1 row updated.



This screenshot shows the 'STUDENTS' table after the execution of the UPDATE query. The 'STUDENT\_NAME' for the first row (STUDENT\_ID = 1) has been changed from 'Ali Khan' to 'Ali Raza'. The rest of the table remains unchanged. The interface is the same as the first screenshot.

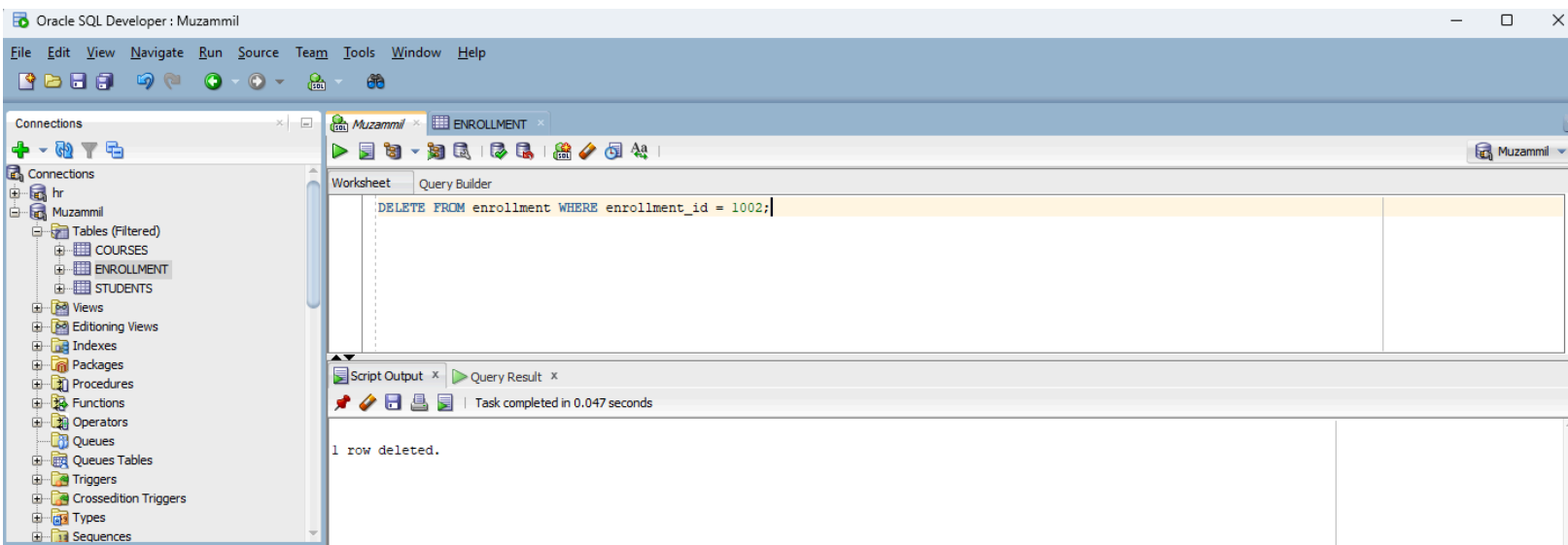
	STUDENT_ID	STUDENT_NAME	EMAIL
1	1	Ali Raza	ali@example.com
2	2	Sara Ahmed	sara@example.com
3	3	Usman Tariq	usman@example.com
4	4	Hina Malik	hina@example.com

Q6:



The screenshot shows the Oracle SQL Developer interface with the 'ENROLLMENT' table selected. The 'Data' tab is active, displaying a table with four columns: ENROLLMENT\_ID, ENROLLMENT\_DATE, STUDENT\_ID, and COURSE\_ID. The table contains four rows of data. The second row, with ENROLLMENT\_ID 1002, is highlighted in blue.

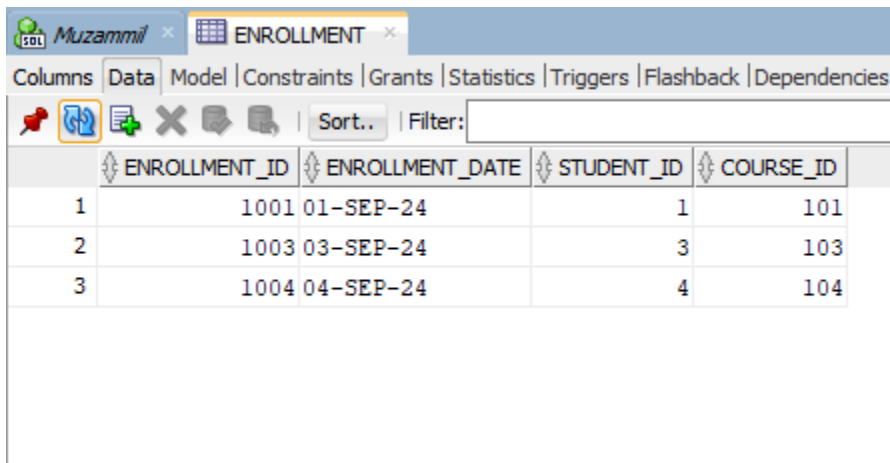
	ENROLLMENT_ID	ENROLLMENT_DATE	STUDENT_ID	COURSE_ID
1	1001	01-SEP-24	1	101
2	1002	02-SEP-24	2	102
3	1003	03-SEP-24	3	103
4	1004	04-SEP-24	4	104



The screenshot shows the Oracle SQL Developer interface. The 'Connections' pane on the left shows the 'hr' schema. The 'Worksheet' tab is active, displaying the query: `DELETE FROM enrollment WHERE enrollment_id = 1002;`. The 'Script Output' pane shows the result: '1 row deleted.' The 'Task completed in 0.047 seconds'.

```
DELETE FROM enrollment WHERE enrollment_id = 1002;
```

1 row deleted.

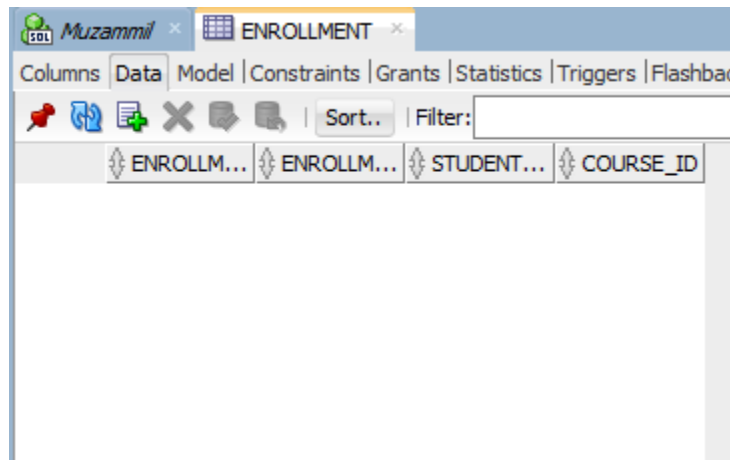
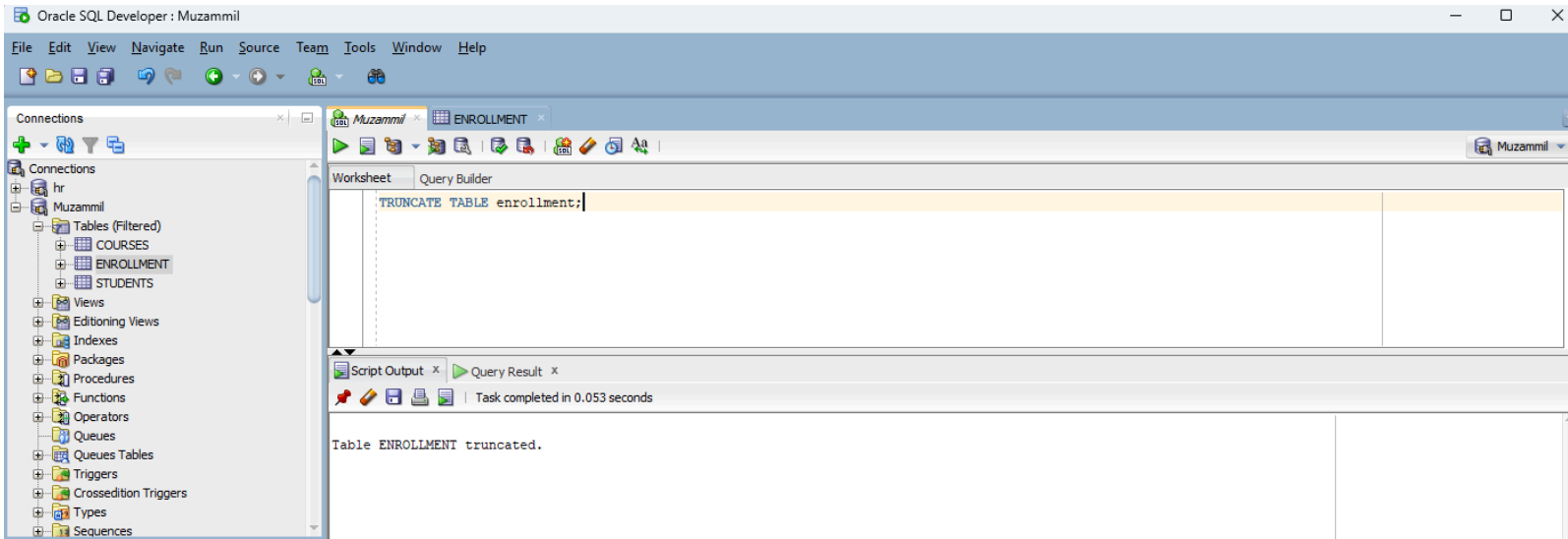


The screenshot shows the Oracle SQL Developer interface with the 'ENROLLMENT' table selected. The 'Data' tab is active, displaying a table with four columns: ENROLLMENT\_ID, ENROLLMENT\_DATE, STUDENT\_ID, and COURSE\_ID. The table now contains three rows of data, as the row with ENROLLMENT\_ID 1002 has been deleted.

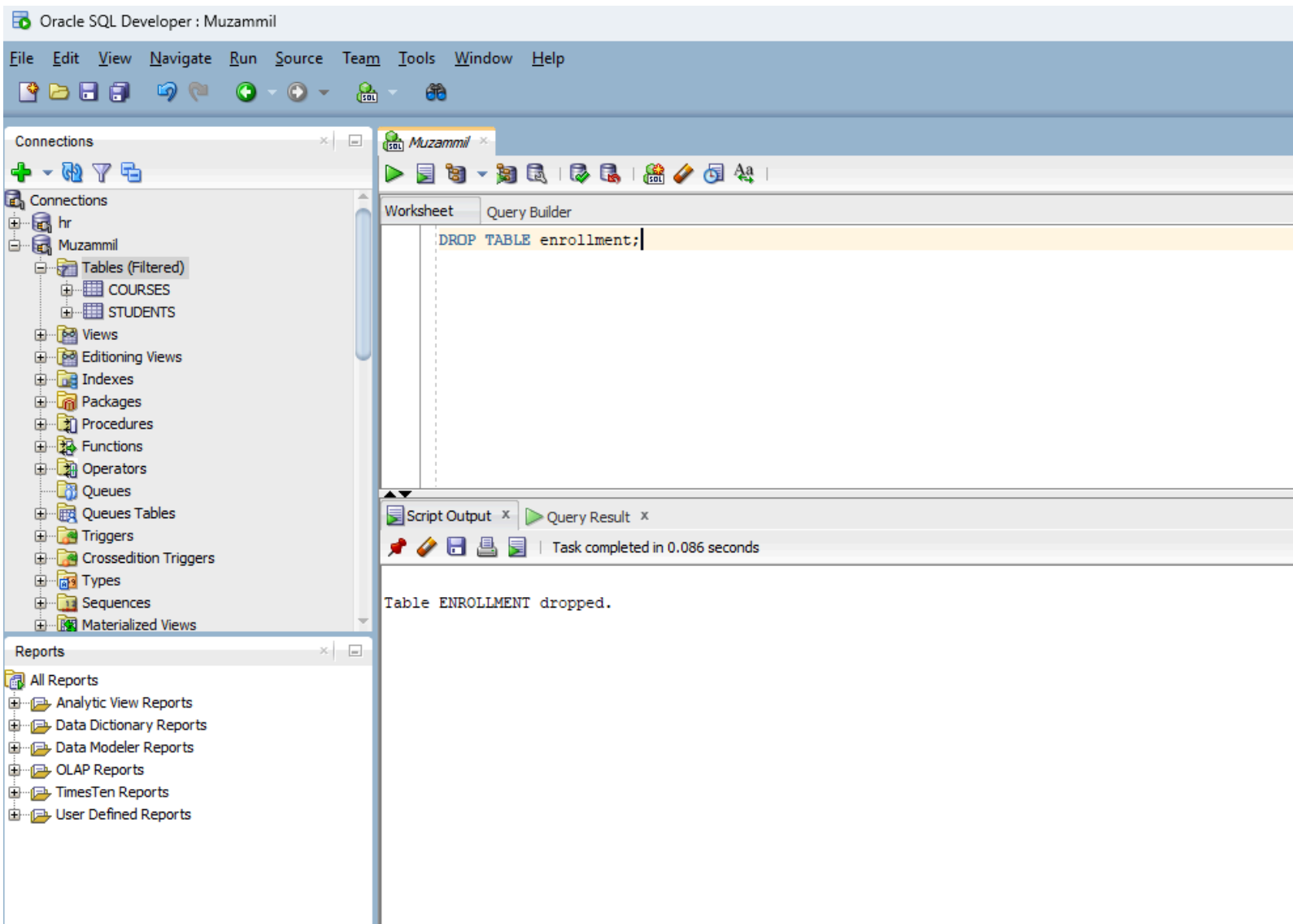
	ENROLLMENT_ID	ENROLLMENT_DATE	STUDENT_ID	COURSE_ID
1	1001	01-SEP-24	1	101
2	1003	03-SEP-24	3	103
3	1004	04-SEP-24	4	104



Q7:



Q8:



Q9:

Oracle SQL Developer : Muzammil

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Connections

Muzammil

- Tables (Filtered)
  - COURSES
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- Materialized Views

Worksheet

Query Builder

```
ALTER TABLE students ADD phone VARCHAR2(15);
ALTER TABLE courses MODIFY course_name VARCHAR2(150);
ALTER TABLE students DROP COLUMN phone;
ALTER TABLE students RENAME COLUMN student_name TO full_name;
```

Script Output x Query Result x

Task completed in 0.044 seconds

Table STUDENTS altered.

Muzammil

COURSES

Columns | Data | Model | Constraints | Grants | Statistics | Triggers | Flashback | Dependencies | Details | Partitions | Indexes | SQL

Actions...

	COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
1	COURSE_ID	NUMBER	No	(null)	1	(null)
2	COURSE_NAME	VARCHAR2(50 BYTE)	No	(null)	2	(null)

Muzammil

STUDENTS

Columns | Data | Model | Constraints | Grants | Statistics | Triggers | Flashback | Dependencies | Details | Partitions | Indexes | SQL

Actions...

	COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
1	STUDENT_ID	NUMBER	No	(null)	1	(null)
2	FULL_NAME	VARCHAR2(50 BYTE)	No	(null)	2	(null)
3	EMAIL	VARCHAR2(50 BYTE)	No	(null)	3	(null)