|  |  |
| --- | --- |
| NAME | Chirag |
| UID | 23BCS14318 |
| CLASS | 622-B |

* ADBMS PRACTISE 4.1
* CODE (Part-A):- **Insert Multiple Fee Payments in a Transaction**

CREATE TABLE FeePayments (

payment\_id INT PRIMARY KEY,

student\_name VARCHAR(100),

amount DECIMAL(10,2),

payment\_date DATE

);

START TRANSACTION;

INSERT INTO FeePayments (payment\_id, student\_name, amount, payment\_date)

VALUES (1, 'Ashish', 5000.00, '2024-06-01'),

(2, 'Smaran', 4500.00, '2024-06-02'),

(3, 'Vaibhav', 5500.00, '2024-06-03');

COMMIT;

SELECT \* FROM FeePayments;

* OUTPUT

A screenshot of a number

AI-generated content may be incorrect.

* CODE (Part-B):- **Demonstrate ROLLBACK for Failed Payment Insertion**

START TRANSACTION;

INSERT INTO FeePayments (payment\_id, student\_name, amount, payment\_date)

VALUES

(4, 'Kiran', 6000.00, '2024-06-04'),

(1, 'Ashish', -3000.00, '2024-06-05');

ROLLBACK;

SELECT \* FROM FeePayments;

* A screenshot of a number

  AI-generated content may be incorrect.OUTPUT
* CODE (Part-C):- **Simulate Partial Failure and Ensure Consistent State**

START TRANSACTION;

INSERT INTO FeePayments (payment\_id, student\_name, amount, payment\_date)

VALUES (4, 'Kiran', 6000.00, '2024-06-04'),

(5, NULL, 4000.00, '2024-06-05');

ROLLBACK;

SELECT \* FROM FeePayments;

OUTPUT: No rows are inserted due to null value.

* CODE (Part-D):- **Verify ACID Compliance with Transaction Flow**

-- Atomicity + Consistency

START TRANSACTION;

INSERT INTO FeePayments (payment\_id, student\_name, amount, payment\_date)

VALUES (9, 'Rohit', 5200.00, '2024-06-10'),

(1, 'DuplicateID', 4000.00, '2024-06-11'); -- fails (duplicate PK)

ROLLBACK;

-- no partial data inserted

SELECT \* FROM FeePayments;

-- Durability

START TRANSACTION;

INSERT INTO FeePayments (payment\_id, student\_name, amount, payment\_date)

VALUES (10, 'Priya', 5300.00, '2024-06-12');

COMMIT;

-- record is permanently saved

SELECT \* FROM FeePayments;

-- Isolation (run in another session for demo)

START TRANSACTION;

INSERT INTO FeePayments (payment\_id, student\_name, amount, payment\_date)

VALUES (11, 'Temporary', 5400.00, '2024-06-13');

-- In Session 1 (uncommitted), run:

SELECT \* FROM FeePayments;

-- In Session 2 (parallel), run:

SELECT \* FROM FeePayments; -- won't show payment\_id = 11 until commit

COMMIT;

-- Final check after commit

SELECT \* FROM FeePayments;

OUTPUT:

A screenshot of a computer

AI-generated content may be incorrect.