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Subject: DBSL

Assignment 04 Screenshots

Table Creation Code:

```
CREATE TABLE Borrower
(
    roll_no INT NOT NULL PRIMARY KEY,
    date_of_issue DATE NOT NULL,
    name_of_book VARCHAR(500),
    status VARCHAR(2)
);

CREATE TABLE FineTable
(
    roll_no INT NOT NULL,
    date_of_fine TIMESTAMP DEFAULT NOW(),
    amt INT
);
```

Data Insertion Code:

```
INSERT INTO Borrower(roll_no, date_of_issue, name_of_book, status)
VALUES
(1, '2021-08-19', 'Optical Illutions', 'I'),
(2, '2021-08-10', 'Optical Dimensions', 'I'),
(3, '2021-08-02', 'Optical Threads', 'I'),
(4, '2021-07-26', 'Optical Views', 'I'),
(5, '2021-08-25', 'Optical Phenomenons', 'I'),
(6, '2021-08-28', 'Optical Magic', 'I');
```

Procedure Code:

```
CREATE PROCEDURE calculateFine (
    IN cur_roll_no INT
)
BEGIN

    DECLARE days_passed INT DEFAULT 0;
    DECLARE fine INT DEFAULT 0;
```

```

DECLARE EXIT HANDLER FOR 1062

BEGIN
    SELECT 'This roll number has multiple entries in database.' AS
'EXCEPTION';
END;

DECLARE EXIT HANDLER FOR NOT FOUND
BEGIN
    SELECT 'This user is not present in database.' AS 'EXCEPTION';
END;

SELECT DATEDIFF(NOW(), date_of_issue)
INTO days_passed
FROM Borrower
WHERE roll_no=cur_roll_no;

IF days_passed>30 THEN
    SET fine = (days_passed-30)*50 + 15*5;
ELSEIF days_passed>=15 THEN
    SET fine = (days_passed-14)*5;
ELSE
    SET fine = 0;
END IF;

UPDATE Borrower SET status = 'R'
WHERE roll_no = cur_roll_no;

IF fine > 0 THEN
    INSERT INTO FineTable(roll_no, amt)
    VALUES(cur_roll_no, fine);
END IF;

END //

```

Output:

Tables:

```

Database changed
mysql> show tables;
+-----+
| Tables_in_a04_database |
+-----+
| borrower                |
| finetable                |
+-----+
2 rows in set (0.01 sec)

```

Schema:

```

mysql> desc borrower
-> ;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| roll_no        | int           | NO   | PRI | NULL    |       |
| date_of_issue  | date          | NO   |     | NULL    |       |
| name_of_book   | varchar(500)  | YES  |     | NULL    |       |
| status         | varchar(2)    | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.03 sec)

```

```

mysql> desc finetable;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default          | Extra          |
+-----+-----+-----+-----+-----+-----+
| roll_no        | int           | NO   |     | NULL             |               |
| date_of_fine   | timestamp     | YES  |     | CURRENT_TIMESTAMP | DEFAULT_GENERATED |
| amt           | int           | YES  |     | NULL             |               |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

```

Stored Procedure in Database:

```

mysql> delimiter ;
mysql> show procedure status;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| Db      | Name          | Type   | Definer      | Modified      | Created      | Security_type | Comment | character_set_client | collation_connection |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| a04_database | calculateFine | PROCEDURE | root@localhost | 2021-09-02 09:12:00 | 2021-09-02 09:12:00 | DEFINER      |         | cp850                | cp850_general_ci     |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

```

Initial Data:

```
mysql> select * from borrower;
```

roll_no	date_of_issue	name_of_book	status
1	2021-08-19	Optical Illutions	I
2	2021-08-10	Optical Dimensions	I
3	2021-08-02	Optical Threads	I
4	2021-07-26	Optical Views	I
5	2021-08-25	Optical Phenomenons	I
6	2021-08-28	Optical Magic	I

```
6 rows in set (0.00 sec)
```

```
mysql> select * from finetable;
Empty set (0.00 sec)
```

Calling procedure for roll number-1:

It has been 14 days from date of borrow for roll number 1.

Since days\_passed are less than 15 no fine should be there for roll number-1.

```
mysql> call calculatefine(1);
Query OK, 1 row affected (0.01 sec)

mysql> select * from borrowers;
ERROR 1146 (42S02): Table 'a04_database.borrowers' doesn't exist
mysql> select * from borrower;
```

roll_no	date_of_issue	name_of_book	status
1	2021-08-19	Optical Illutions	R
2	2021-08-10	Optical Dimensions	I
3	2021-08-02	Optical Threads	I
4	2021-07-26	Optical Views	I
5	2021-08-25	Optical Phenomenons	I
6	2021-08-28	Optical Magic	I

```
6 rows in set (0.00 sec)

mysql> select * from finetable;
Empty set (0.00 sec)
```

Calling procedure for roll number-2:

It has been 23 days from date of borrow for roll number 2.

Since days\_passeed are greater than equal to 15 fine should be calculated for 23-14=9 days at 5 rs per day.

```
mysql> call calculatefine(2);
Query OK, 1 row affected (0.01 sec)
```

```
mysql> select * from borrower;
```

roll_no	date_of_issue	name_of_book	status
1	2021-08-19	Optical Illutions	R
2	2021-08-10	Optical Dimensions	R
3	2021-08-02	Optical Threads	I
4	2021-07-26	Optical Views	I
5	2021-08-25	Optical Phenomenons	I
6	2021-08-28	Optical Magic	I

```
6 rows in set (0.00 sec)
```

```
mysql> select * from finetable;
```

roll_no	date_of_fine	amt
2	2021-09-02 09:14:45	45

```
1 row in set (0.00 sec)
```

Calling procedure for roll number-3:

It has been 37 days from date of borrow for roll number 3.

Since days\_passeed are greater than equal to 15 fine should be calculated for 15 days at 5 rs per day are for 7 days at 50 rs per day.

```
mysql> call calculatefine(4);
Query OK, 1 row affected (0.01 sec)

mysql> select * from borrower;
+-----+-----+-----+-----+
| roll_no | date_of_issue | name_of_book | status |
+-----+-----+-----+-----+
| 1 | 2021-08-19 | Optical Illutions | R |
| 2 | 2021-08-10 | Optical Dimensions | R |
| 3 | 2021-08-02 | Optical Threads | I |
| 4 | 2021-07-26 | Optical Views | R |
| 5 | 2021-08-25 | Optical Phenomenons | I |
| 6 | 2021-08-28 | Optical Magic | I |
+-----+-----+-----+-----+
6 rows in set (0.01 sec)

mysql> select * from finetable;
+-----+-----+-----+
| roll_no | date_of_fine | amt |
+-----+-----+-----+
| 2 | 2021-09-02 09:14:45 | 45 |
| 4 | 2021-09-02 09:18:39 | 475 |
+-----+-----+-----+
2 rows in set (0.01 sec)
```

Exception Handling: Calling procedure for roll number which is not present in database

```
mysql> call calculatefine(7);
+-----+
| EXCEPTION |
+-----+
| This user is not present in database. |
+-----+
1 row in set (0.01 sec)

Query OK, 0 rows affected (0.02 sec)
```