SMART ATM SIMULATOR AND BANK MANAGEMENT

DBMS PROJECT REPORT:

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SQL TABLES:

USER_INFO:

user_id	first_name	middle_name	last_name	user_name	password	balance	date_of_birth	city	state	pincode	address	phone_number	access_type	user_status	email	account_id	atm_pin
6	h	l	s	hls	pbkdf2:sha256:1000000$QBo4gLAgwGLE2iJo$900f9a8b40d8b6fca69d6d950d8c5b3c1d0ca74db7d59bdc9cc1fb8204e77e4d	0.00	2003-11-12	blr	kar	560098	blr	9878987678	Customer	ACTIVE	harinib1803@gmail.com	N8SXBGMTO7RJ	NULL
7	j	l	s	jls	pbkdf2:sha256:1000000$WpligHbYlY4LmMwj$e74badc6eea3bf57c0dcde7c95a1904d113e5d20edbc3dbce5f02c6273f6b892	0.00	2003-11-08	blr	kar	560087	blr	9090878656	Admin	ACTIVE	jls@gmail.com	NULL	NULL
8	k	l	s	kls	pbkdf2:sha256:1000000$HQDpHoIaJHzUatJq$167b62c04d4e486193bd2342758bcd919c5c3d8f214484285febd1c6ca84a04d	0.00	2004-11-04	blr	kar	560098	blr	9856456786	Admin	ACTIVE	kls@gmail.com	NULL	NULL
9	j		e	joey	pbkdf2:sha256:1000000$qoou9JeDLelA59d2$2b0478c68d899f653726dee410890835e5c87062ba85f754075530c909f2d376	0.00	2007-11-13	blr	kar	679008	blr	9878676545	Admin	ACTIVE	joe@gmail.com	NULL	NULL
10	m	l	s	mls	pbkdf2:sha256:1000000$wgX8F4Op6v1B40ZD$6601725c5622a434346ad18eafd14e3409e81369b05ecb4729e89f5ca9c91633	0.00	2000-06-06	blr	kar	7890043	blr	9890764903	Customer	ACTIVE	mls@gmail.com	7OVPK7P0C57H	scrypt:3 68:8:1$tlCCGWNs245cns1s$48cfe68d2466f2c5f58aef39bc6a0f2a46e9643322058792e6c51787cc0c251f4d70b1f72dddfc9501944eb1328ec58b9e70c6a01a7e151b4cf0a16ac47ab45c
11	b	l	s	bls	pbkdf2:sha256:1000000$2B3wdSVGe3nz3x9e$9f43a968d152f67715ba30b5b8b87c9e360c9c42bc7df98f69082ffe20f9de0a	0.00	2013-11-05	blr	kar	560098	blr	8654090324	Customer	ACTIVE	varshajshere@gmail.com	5KPUQ6G87IKO	NULL
12	g	h	j	ghj	pbkdf2:sha256:1000000$yvRmq2IvwEzXTfkr$4c9fd61b2c8d70b36925cafb939da9ba26c55808502bb51ad0ed9033b712d306	0.00	2005-11-09	blr	kar	7899054	blr	8945378907	Customer	ACTIVE	ghj@gmail.com	7DAUKM028L1V	NULL
13	h	j	k	hjk	pbkdf2:sha256:1000000$sYs75seuldca2S0M$ff82dbfb41df0789562bc02c56818670c46f87a4df7fda22e7bd16a9457b8e80	0.00	2024-11-06	blr	kar	789905	blr	7890569089	Customer	ACTIVE	hjk@gmail.com	QT28O90IEQK1	scrypt:3 68:8:1$M90EOLeLol1gGtpk$3a6cc2c96b17db67a3e07cb112124d294004074a8ca4e7f7d9a54a37844cf39b771a5bd7f8b4acf75bd96cc842665a6703afa7ec48fe7f8f8b0a80c8e7674251
14	b	n	m	bnm	pbkdf2:sha256:1000000$FO6kCGMwbNINQuAq$f785d766a55b8ae6e4e30ed4b0a7162d34daea6ce8bcba08c73d7ee8f3eb0693	61500.00	2000-11-06	blr	kar	789908	blr	9342356765	Customer	ACTIVE	bnm@gmail.com	RQBHBMO5W8KT	scrypt:3 68:8:1$FrCZcWdMSK4TOg2a$6b9d5d9c98fa72137da4709cb06a544c2354686c10150ab827cf20c7b0d4bc6f81e9c2a8a9a4263d32f3cab5c2c5c60f4e54bd7187d3506ce29d1b2d1eaa82cf
15	k	l	o	klo	pbkdf2:sha256:1000000$RRMGtM3OUCMleNSC$d1de77e94e8cfc347699f76b18e9c18ad3e01edb1808ad61b50fc8d2b2d4c1e9	61500.00	2024-11-07	blr	kar	560098	blr	8756478908	Customer	ACTIVE	klo@gmail.com	KIPSSJ3RFL40	scrypt:3 68:8:1$myca1VjJwDzMVAsC$78c70a2904a92d3d11d8f7c625f947f912f99fc4ef34b27f92cfc78ce880be42e220885130f2958a2c7467035f54c79b0c3e920f75b3b620a0cb34add783eec8
16	w	e	r	wer	pbkdf2:sha256:1000000$9sgpEUrJ4fuP5nLA$8177e4240dfbcba2554c4ebd9ffa73ff0e3a726e202db2fd80e89c504e07e6c8	197301.60	2008-11-07	blr	kar	987767	blr	9876785678	Customer	ACTIVE	wer@gmail.com	Z3TFPP50WJNS	scrypt:3 68:8:1$mu8E2bPLIOzTTzvw$0b464049a45ae70c0d5e66ddab1da17114f414da3ed3754850d932c44c7ecf219f42cd83cf85b44bcc28f2a08812e1b641a0fe8159523a1073ce5134bab8443b
17	q	w	e	qwe	pbkdf2:sha256:1000000$ItErcMaRIGf6o2b5$0930c1c95021402e490c0c9ea4a230667b0dd78ef7e5846cead0b8349867a79c	61500.00	2024-11-07	blr	kar	560089	blr	9876543456	Customer	ACTIVE	qwe@gmail.com	5DNPRS0IU3QE	scrypt:3 68:8:1$0rAXHxARWLK0egaf$443c2b03b6d60a430e1364efe422f6f87cf7c35d84872ad40d4d128481467b2f9448ae45798601cba7855eb8474a1d96666b35cbafa6c28eb2a6a957e24e91c0
18	f	g	h	fgh	pbkdf2:sha256:1000000$Sc3YX79d5SAa9tqB$b26cb57b8ca270d196ef661509817628a5688452a515a5f5fcaa4893b2ca56b3	61500.00	2024-11-14	blr	kar	560098	blr	9845678345	Customer	ACTIVE	fgh@gmail.com	HWD3ZQSB0QF3	scrypt:3 68:8:1$4mSTdg8kcFcxbZWq$c1832e9458cfa81e5e9d47c9f3e8d49bb05f849c59a87abe6b3c1f471aae9e9d04f7ebee6c573c5d0a16aa336af6bd03ed659345e9d3583b2dbf7d84012f3ca4
19	s	d	f	sdf	pbkdf2:sha256:1000000$mRqfMltGnL9xxwWd$034456803955f751c478c93d0817de2c9241b004a4ccc5214756a2c96f332329	61500.00	2024-11-08	n	n	8900089	b	987657896	Customer	ACTIVE	sdf@gmail.com	AROGU0SNGW5Q	scrypt:3 68:8:1$XvQm53TV8bKhBtB2$b3f2c09271a9b3bb367aa0380a8342cdf00bf54a77f5396ef1c49f4e4d2c6adb39f48672a08485c086d1cce508408ad7aee78a474c257852c9cee6f208bad4ae

TRANSACTIONS:

```
mysql> SELECT * from TRANSACTIONS;
+----+---------+------------------+----------+---------------------+
| id | user_id | transaction_type | amount   | timestamp           |
+----+---------+------------------+----------+---------------------+
|  1 |      10 | deposit          |  5000.00 | 2024-11-12 06:23:39 |
|  2 |      10 | withdraw         |   500.00 | 2024-11-12 06:25:18 |
|  3 |      10 | Pay EMI          |  4280.37 | 2024-11-13 07:10:37 |
|  4 |      10 | close_deposit    | 52500.00 | 2024-11-13 22:15:21 |
|  5 |      10 | withdraw         |  5000.00 | 2024-11-13 22:43:01 |
|  6 |      10 | withdraw         | 44444.00 | 2024-11-13 22:44:15 |
|  7 |      13 | deposit          | 50000.00 | 2024-11-13 22:58:31 |
|  8 |      14 | deposit          | 30000.00 | 2024-11-14 11:08:55 |
|  9 |      15 | deposit          | 30000.00 | 2024-11-14 11:52:22 |
| 10 |      16 | deposit          | 30000.00 | 2024-11-14 11:57:30 |
| 11 |      17 | deposit          | 30000.00 | 2024-11-14 13:27:17 |
| 12 |      18 | deposit          | 30000.00 | 2024-11-19 11:54:14 |
| 13 |      19 | deposit          | 30000.00 | 2024-11-19 11:57:45 |
+----+---------+------------------+----------+---------------------+
13 rows in set (0.00 sec)
```

ACCOUNTS:

```
mysql> SELECT * from ACCOUNTS;
+---------+-------------+-----------------+--------------+---------------------+---------------------+
| user_id | account_id  | type_of_account | final_amount | created_at          | modified            |
+---------+-------------+-----------------+--------------+---------------------+---------------------+
|       6 | N8SXBGMTO7RJ | savings         |         0.00 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      10 | 2QIBEB0GU4PK | deposit         |     52500.00 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      10 | 7OVPK7P0C57H | savings         |         0.00 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      10 | VUTIPUZJ68BG | deposit         |     52500.00 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      11 | 5KPUQ6G87IKO | savings         |         0.00 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      12 | 7DAUKM028L1V | savings         |         0.00 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      13 | HRHK1UASER06 | deposit         |     52500.00 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      13 | QT28O90IEQK1 | savings         |         0.00 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      14 | 31WE2D0JVVHZ | deposit         |     31500.00 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      14 | RQBHBMO5W8KT | savings         |     61500.00 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      15 | KIPSSJ3RFL40 | savings         |     61500.00 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      15 | RLBVA104QEKE | deposit         |     31500.00 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      16 | 39VEQXRNDB1U | deposit         |     31500.00 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      16 | FEO19JWVSHSI | deposit         |    135801.60 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      16 | Z3TFPP50WJNS | savings         |    197301.60 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      17 | 5DNPRS0IU3QE | savings         |     61500.00 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      17 | TSHPBEEH6GPH | deposit         |     31500.00 | 2024-11-14 14:13:18 | 2024-11-14 14:13:18 |
|      18 | HWD3ZQSB0QF3 | savings         |     61500.00 | 2024-11-19 11:53:22 | 2024-11-19 11:54:21 |
|      18 | OGN5KVUS4LVB | deposit         |     31500.00 | 2024-11-19 11:53:50 | 2024-11-19 11:53:50 |
|      19 | AROGU0SNGW5Q | savings         |     61500.00 | 2024-11-19 11:56:58 | 2024-11-19 11:58:21 |
|      19 | H0276K0R2YMW | deposit         |     31500.00 | 2024-11-19 11:57:15 | 2024-11-19 11:57:15 |
+---------+-------------+-----------------+--------------+---------------------+---------------------+
21 rows in set (0.00 sec)
```

DEPOSIT:

```
mysql> SELECT * from DEPOSIT;
+------------+-------------+--------------+---------------+------------------+--------+---------------------+---------------------+---------+--------+
| deposit_ID | account_id  | final_amount | interest_rate | principal_amount | tenure | created_at          | modified_at         | user_id | status |
+------------+-------------+--------------+---------------+------------------+--------+---------------------+---------------------+---------+--------+
|          1 | 2QIBEB0GU4PK |     52500.00 |          5.00 |         50000.00 |     12 | 2024-11-13 12:42:31 | 2024-11-13 22:15:22 |      10 | closed |
|          2 | VUTIPUZJ68BG |     52500.00 |          5.00 |         50000.00 |     12 | 2024-11-13 22:45:06 | 2024-11-13 22:45:45 |      10 | closed |
|          3 | HRHK1UASER06 |     52500.00 |          5.00 |         50000.00 |     12 | 2024-11-13 23:00:03 | 2024-11-13 23:02:10 |      13 | closed |
|          4 | 31WE2D0JVVHZ |     31500.00 |          5.00 |         30000.00 |     12 | 2024-11-14 11:08:18 | 2024-11-14 11:09:03 |      14 | closed |
|          5 | RLBVA104QEKE |     31500.00 |          5.00 |         30000.00 |     12 | 2024-11-14 11:51:36 | 2024-11-14 11:52:29 |      15 | closed |
|          6 | 39VEQXRNDB1U |     31500.00 |          5.00 |         30000.00 |     12 | 2024-11-14 11:58:22 | 2024-11-14 11:58:26 |      16 | closed |
|          7 | FEO19JWVSHSI |    135801.60 |         10.00 |        123456.00 |     12 | 2024-11-14 12:27:59 | 2024-11-14 12:28:10 |      16 | closed |
|          8 | TSHPBEEH6GPH |     31500.00 |          5.00 |         30000.00 |     12 | 2024-11-14 13:26:56 | 2024-11-14 13:27:23 |      17 | closed |
|          9 | OGN5KVUS4LVB |     31500.00 |          5.00 |         30000.00 |     12 | 2024-11-19 11:53:50 | 2024-11-19 11:54:22 |      18 | closed |
|         10 | H0276K0R2YMW |     31500.00 |          5.00 |         30000.00 |     12 | 2024-11-19 11:57:15 | 2024-11-19 11:58:22 |      19 | closed |
+------------+-------------+--------------+---------------+------------------+--------+---------------------+---------------------+---------+--------+
10 rows in set (0.01 sec)
```

LOANS:

loan_ID	description	interest_rate	created_at	modified_at	loan_amount	user_id	tenure	status	tracking_id	documents	oni	amount_due
1	NULL	2.00	2024-11-02 14:53:30	2024-11-03 13:40:43	5000.00	560037	5	REJECTED	NULL	NULL	NULL	NULL
2	NULL	3.00	2024-11-02 14:55:14	2024-11-03 13:40:44	5000.00	320007	10	REJECTED	NULL	NULL	NULL	NULL
3	NULL	2.00	2024-11-03 08:07:02	2024-11-03 13:40:40	5000.00	45009	3	REJECTED	LQ823299	NULL	NULL	NULL
4	NULL	2.00	2024-11-03 10:35:43	2024-11-03 10:35:43	5000.00	4500034	5	PENDING	NB756890	uploads/~$HMM-3.pptx	NULL	NULL
5	NULL	4.00	2024-11-03 10:59:00	2024-11-03 10:59:00	50000.00	6700032	5	PENDING	OO082819	uploads/1_Basics of Probability.pdf	NULL	NULL
6	NULL	5.00	2024-11-03 11:37:31	2024-11-03 11:37:31	400000.00	450003	10	PENDING	TM189483	uploads/1_Hierarchical vs. nonhierarchical clustering, Agglomerative and divisive clustering.pdf	NULL	NULL
7	NULL	5.00	2024-11-03 11:40:18	2024-11-03 11:40:18	500000.00	3490005	5	PENDING	MW922560	uploads/3_Bayes Optimal Classifier and Gibbs Algorithm.pdf	NULL	NULL
8	NULL	10.00	2024-11-03 11:45:09	2024-11-03 11:45:09	300000.00	4500098	4	PENDING	ZD688823	uploads/2_K-means clustering_Bisecting K-means, K-Means as special case of Expectation Maximization.pdf	NULL	NULL
9	NULL	5.00	2024-11-03 11:59:05	2024-11-03 11:59:05	400000.00	5600095	10	PENDING	BH196767	uploads/2_MAP and ML Hypothesis.pdf	NULL	NULL
10	NULL	6.00	2024-11-03 12:16:43	2024-11-03 12:16:43	50000.00	7890	12	PENDING	DC143127	uploads/4_Naive Bayes Classifier.pdf	NULL	NULL
11	NULL	5.00	2024-11-03 15:10:27	2024-11-03 15:10:27	50000.00	3	5	PENDING	c12a6238-o	uploads/3_PCA with example.pdf	NULL	NULL
12	NULL	5.00	2024-11-03 16:13:36	2024-11-03 16:13:36	50000.00	3	5	PENDING	2549a2ef-2	uploads/3_PCA with example.pdf	NULL	NULL
13	NULL	5.00	2024-11-03 16:20:17	2024-11-03 16:20:17	40000.00	3	5	PENDING	1a425a8d-c	uploads/4_Naive Bayes Classifier.pdf	NULL	NULL
14	NULL	5.00	2024-11-03 16:26:06	2024-11-03 16:26:06	40000.00	3	5	PENDING	7d4e21e2-2	uploads/4_Naive Bayes Classifier.pdf	NULL	NULL
15	NULL	5.00	2024-11-03 16:32:16	2024-11-03 16:32:16	500000.00	3	4	PENDING	b062dd00-1	uploads/1_Basics of Probability.pdf	NULL	NULL
16	NULL	4.00	2024-11-03 16:36:03	2024-11-03 16:36:03	50000.00	3	5	PENDING	fddb0bbf-2	uploads/1_Basics of Probability.pdf	NULL	NULL
17	NULL	5.00	2024-11-04 02:36:09	2024-11-10 18:08:10	50000.00	3	5	APPROVED	f1e88458-d	uploads/2_K-means clustering_Bisecting K-means, K-Means as special case of Expectation Maximization.pdf	NULL	NULL
18	NULL	5.00	2024-11-13 12:37:09	2024-11-13 12:40:37	50000.00	10	12	APPROVED	3a232a9b-a	C:\DBMS\DBMSProject\uploads\56fd7578-b_1_Basics of Probability.pdf	4280.37	41439.26

JOIN:

SQL Query:

```
-- Insert account data if it does not already exist in the accounts table
INSERT INTO accounts (user_id, account_id, type_of_account, final_amount)
SELECT
    ui.user_id,
    ui.account_id,
    'savings' AS type_of_account,
    ui.balance AS final_amount
FROM user_info ui
LEFT JOIN accounts a ON a.user_id = ui.user_id AND a.account_id = ui.account_id
WHERE a.account_id IS NULL  -- Only insert if account does not exist
  AND ui.account_id IS NOT NULL  -- Ensure account_id is not NULL

UNION ALL

SELECT
    d.user_id,
    d.account_id,
    'deposit' AS type_of_account,
    d.final_amount AS final_amount
FROM deposit d
LEFT JOIN accounts a ON a.user_id = d.user_id AND a.account_id = d.account_id
WHERE a.account_id IS NULL  -- Only insert if account does not exist
  AND d.account_id IS NOT NULL;  -- Ensure account_id is not NULL
```

TRIGGERS

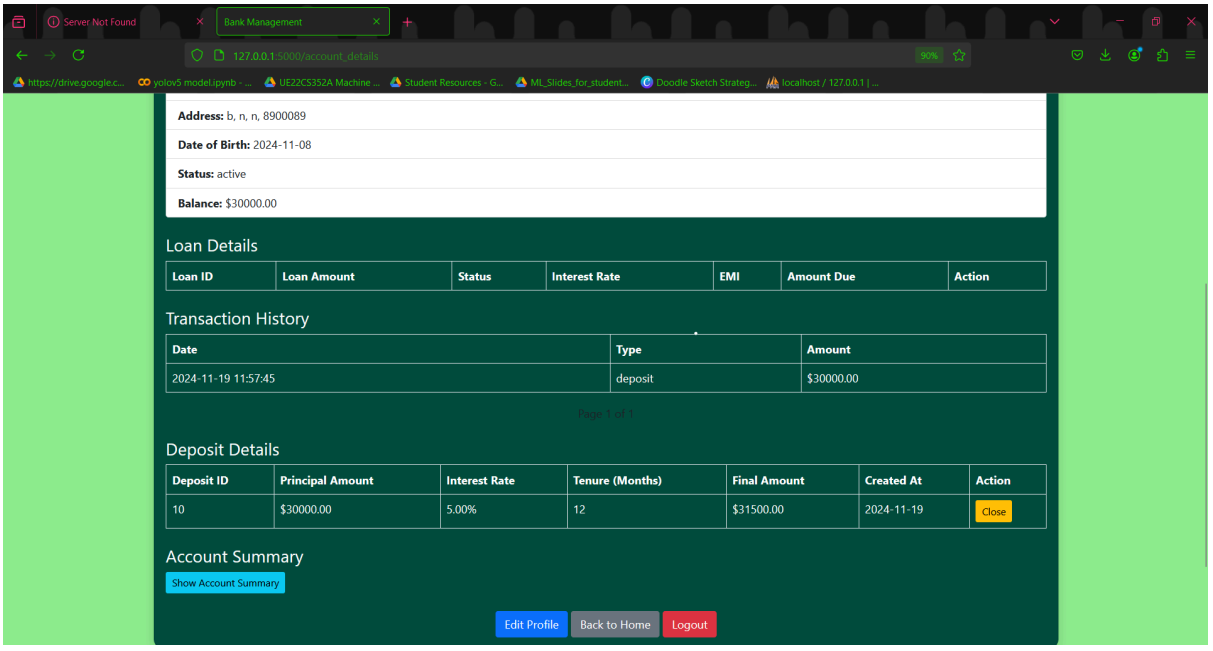
```
CREATE TRIGGER after_deposit_close
AFTER UPDATE ON deposit
FOR EACH ROW
BEGIN
```

```
    IF NEW.status = 'closed' AND OLD.status != 'closed' THEN
        -- Insert a new transaction for moving the amount to savings
        INSERT INTO transactions (user_id, transaction_type, amount)
        VALUES (NEW.user_id, 'close_deposit', NEW.final_amount);

        -- Update the user's balance
        UPDATE user_info
        SET balance = balance + NEW.final_amount
        WHERE user_id = NEW.user_id;
    END IF;
END;
//


DELIMITER ;
```

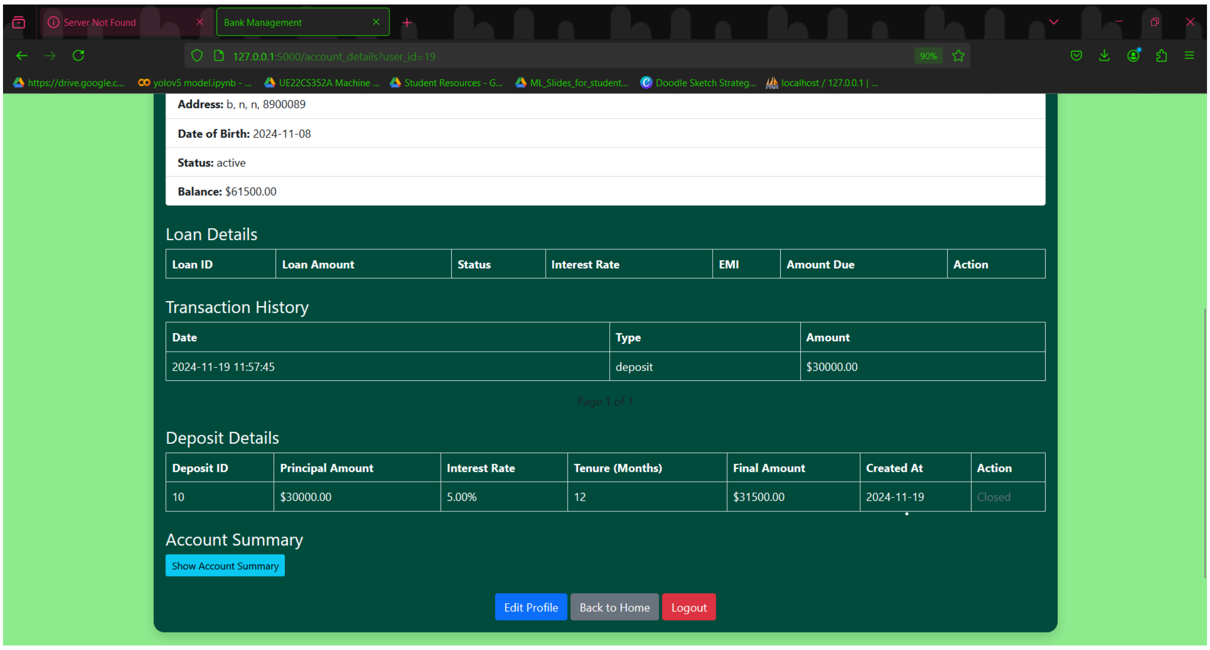
PURPOSE:

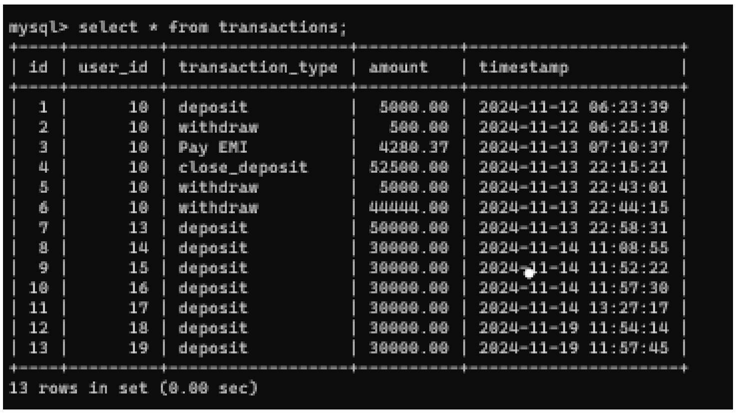
The `after_deposit_close` trigger automates actions when a deposit account is updated to "closed." It records a transaction in the `transactions` table to document the closure and adds the deposit amount to the user's balance in the `user_info` table. This ensures accurate financial records and reflects the user's updated balance without manual intervention. The trigger only activates when the status changes to "closed" from a different state, preventing duplicate actions. Overall, it enhances efficiency and user experience in managing deposit accounts.

Before:



After:





mysql> select * from transactions;

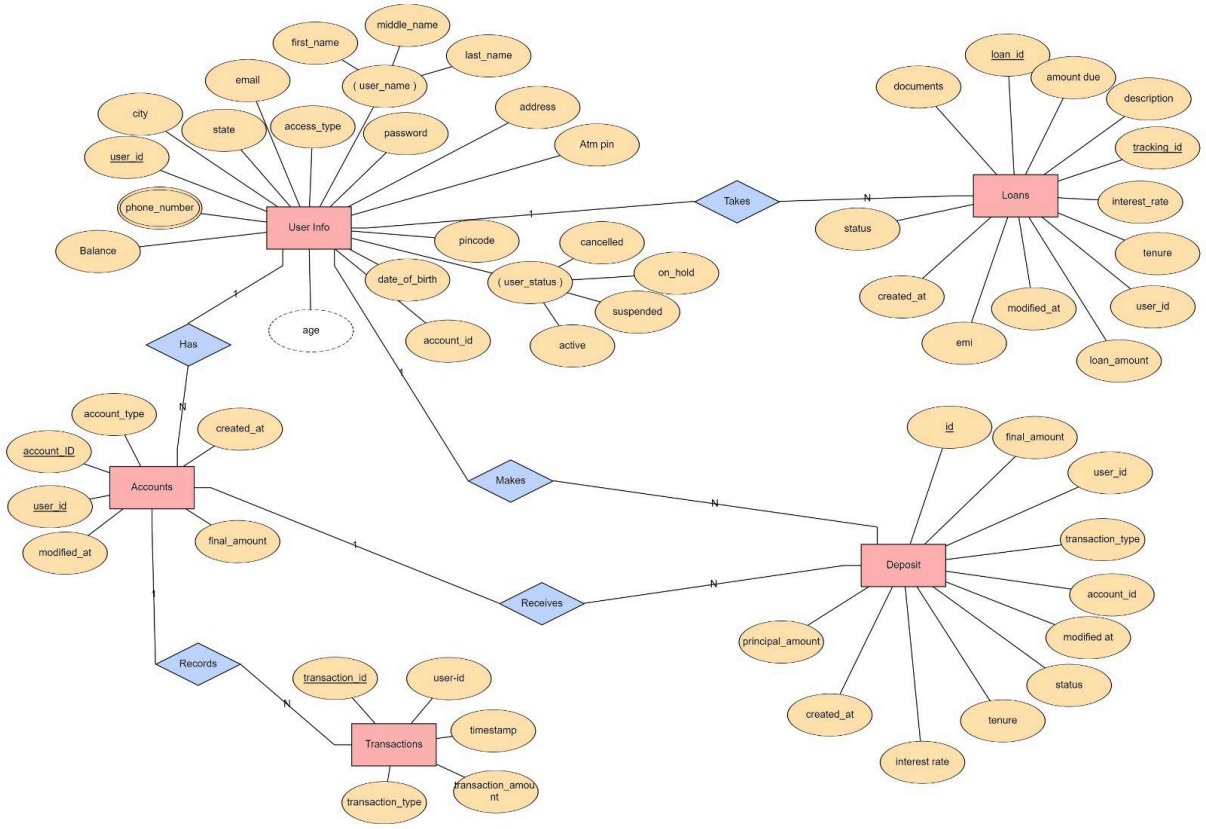
id	user_id	transaction_type	amount	timestamp
1	10	deposit	5000.00	2024-11-12 06:23:39
2	10	withdraw	500.00	2024-11-12 06:25:18
3	10	Pay EMI	4280.37	2024-11-13 07:10:37
4	10	close_deposit	52500.00	2024-11-13 22:15:21
5	10	withdraw	5000.00	2024-11-13 22:43:01
6	10	withdraw	44444.00	2024-11-13 22:44:15
7	13	deposit	50000.00	2024-11-13 22:58:31
8	14	deposit	30000.00	2024-11-14 11:08:55
9	15	deposit	30000.00	2024-11-14 11:52:22
10	16	deposit	30000.00	2024-11-14 11:57:30
11	17	deposit	30000.00	2024-11-14 13:27:17
12	18	deposit	30000.00	2024-11-19 11:54:14
13	19	deposit	30000.00	2024-11-19 11:57:45

13 rows in set (0.00 sec)

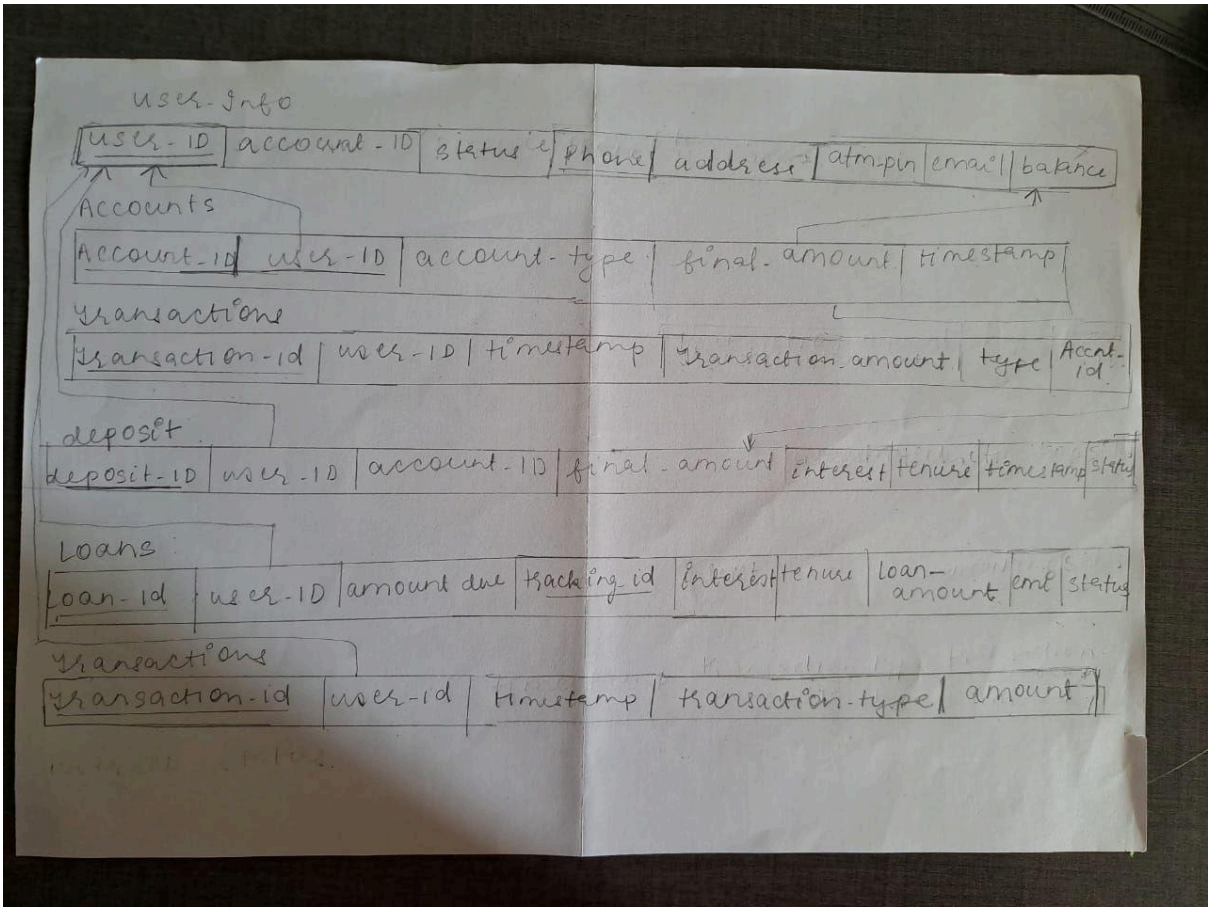
mysql> select * from user_info;

user_id	first_name	middle_name	last_name	user_name	password	date_of_birth	city	state	pincode	account_id	atm_pin	balance
6	h	l	s	hls	pbkdf2:sha256:1000000$QBo4gLAgwGLE2iJo$900f9a8b40d8b6fca69d6d950d8c5b3c1d0ca74db7d59bdc9cc1fb8204e77e4d	2003-11-12	blr	kar	560098	N8SXBGMTO7RJ	NULL	0.00
7	j	l	s	jls	pbkdf2:sha256:1000000$Wp1igHbYlY4LmMwj$e74badc6eea3bf57c0dcde7c95a1904d113e5d20edbc3dbce5f02c6273f6b892	2003-11-08	blr	kar	560087	NULL	NULL	0.00
8	k	l	s	kls	pbkdf2:sha256:1000000$HQDpHoIaJHzUatJq$167b62c04d4e486193bd2342758bcd919c5c3d8f214484285febd1c6ca84a04d	2004-11-04	blr	kar	560098	NULL	NULL	0.00
9	j		e	joey	pbkdf2:sha256:1000000$qoou9JeDLelA59d2$2b0478c68d899f653726dee410890835e5c87062ba85f754075530c909f2d376	2007-11-13	blr	kar	679008	NULL	NULL	0.00
10	m	l	s	mls	pbkdf2:sha256:1000000$wgX8F4Op6v1B40ZD$6601725c5622a434346ad18eafd14e3409e81369b05ecb4729e89f5ca9c91633	2000-06-06	blr	kar	7890043	7OVPK7P0C57H	scrypt:32768:8:1$tlCCGWNs245cns1s$48cfe68d2466f2c5f58aef39bc6a0f2a46e9643322058792e6c51787cc0c251f4d70b1f72dddfc9501944eb1328ec58b9e70c6a01a7e151b4cf0a16ac47ab45c	0.00
11	b	l	s	bls	pbkdf2:sha256:1000000$2B3wdSVGe3nz3x9e$9f43a968d152f67715ba30b5b8b87c9e360c9c42bc7df98f69082ffe20f9de0a	2013-11-05	blr	kar	560098	5KPUQ6G87IKO	NULL	0.00
12	g	h	j	ghj	pbkdf2:sha256:1000000$yvRmq2IvwEzXTfkr$4c9fd61b2c8d70b36925cafb939da9ba26c55808502bb51ad0ed9033b712d306	2005-11-09	blr	kar	7899054	7DAUKM028L1V	NULL	0.00
13	h	j	k	hjk	pbkdf2:sha256:1000000$sYs75seu1dca2S0M$ff82dbfb41df0789562bc02c56818670c46f87a4df7fda22e7bd16a9457b8e80	2024-11-06	blr	kar	789905	QT28O90IEQK1	scrypt:32768:8:1$M90EOLeLol1gGtpk$3a6cc2c96b17db67a3e07cb112124d294004074a8ca4e7f7d9a54a37844cf39b771a5bd7f8b4acf75bd96cc842665a6703afa7ec48fe7f8f8b0a80c8e7674251	0.00
14	b	n	m	bnm	pbkdf2:sha256:1000000$FO6kCGMwbNINQuAq$f785d766a55b8ae6e4e30ed4b0a7162d34daea6ce8bcba08c73d7ee8f3eb0693	2000-11-06	blr	kar	789908	RQBHBMO5W8KT	scrypt:32768:8:1$FrCZcWdMSK4TOg2a$6b9d5d9c98fa72137da4709cb06a544c2354686c10150ab827cf20c7b0d4bc6f81e9c2a8a9a4263d32f3cab5c2c5c60f4e54bd7187d3506ce29d1b2d1eaa82cf	61500.00
15	k	l	o	klo	pbkdf2:sha256:1000000$RRMGtM3OUCMleNSC$d1de77e94e8cfc347699f76b18e9c18ad3e01edb1808ad61b50fc8d2b2d4c1e9	2024-11-07	blr	kar	560098	KIPSSJ3RFL40	scrypt:32768:8:1$myca1VjJwDzMVAsC$78c70a2904a92d3d11d8f7c625f947f912f99fc4ef34b27f92cfc78ce880be42e220885130f2958a2c7467035f54c79b0c3e920f75b3b620a0cb34add783eec8	61500.00
16	w	e	r	wer	pbkdf2:sha256:1000000$9sgpEUrJ4fuP5nLA$8177e4240dfbcba2554c4ebd9ffa73ff0e3a726e202db2fd80e89c504e07e6c8	2008-11-07	blr	kar	987767	Z3TFPP50WJNS	scrypt:32768:8:1$mu8E2bPLIOzTTzvw$0b464049a45ae70c0d5e66ddab1da17114f414da3ed3754850d932c44c7ecf219f42cd83cf85b44bcc28f2a08812e1b641a0fe8159523a1073ce5134bab8443b	197301.60
17	q	w	e	qwe	pbkdf2:sha256:1000000$ItErcMaRIGf6o2b5$0930c1c95021402e490c0c9ea4a230667b0dd78ef7e5846cead0b8349867a79c	2024-11-07	blr	kar	560089	5DNPRS0IU3QE	scrypt:32768:8:1$0rAXHxARWLK0egaf$443c2b03b6d60a430e1364efe422f6f87cf7c35d84872ad40d4d128481467b2f9448ae45798601cba7855eb8474a1d96666b35cbafa6c28eb2a6a957e24e91c0	61500.00
18	f	g	h	fgh	pbkdf2:sha256:1000000$Sc3YX79d5SAa9tqB$b26cb57b8ca270d196ef661509817628a5688452a515a5f5fcaa4893b2ca56b3	2024-11-14	blr	kar	560098	HWD3ZQSB0QF3	scrypt:32768:8:1$4mSTdg8kcFcxbZWq$c1832e9458cfa81e5e9d47c9f3e8d49bb05f849c59a87abe6b3c1f471aae9e9d04f7ebee6c573c5d0a16aa336af6bd03ed659345e9d3583b2dbf7d84012f3ca4	61500.00
19	s	d	f	sdf	pbkdf2:sha256:1000000$mRqfMltGnL9xxwWd$034456803955f751c478c93d0817de2c9241b004a4ccc5214756a2c96f332329	2024-11-08	n	n	8900089	AROGU0SNGW5Q	scrypt:32768:8:1$XvQm53TV8bKhBtB2$b3f2c09271a9b3bb367aa0380a8342cdf00bf54a77f5396ef1c49f4e4d2c6adb39f48672a08485c086d1cce508408ad7aee78a474c257852c9cee6f208bad4ae	61500.00

ER-DIAGRAM



Relational Schema:



STORED PROCEDURE:

```
account_summary = []
if request.method == 'POST':
    try:
        # Call the stored procedure to get the account summary
        result = db.session.execute(
            text("CALL get_account_summary(:user_id)"),
            {'user_id': user_id}
        )
        account_summary = result.fetchall()  # Fetch all rows returned by the stored procedure

        # Format account summary for email
        summary_html = "<h3>Account Summary</h3><table border='1'><tr><th>Account ID</th><th>Type of Account</th><th>Final
        Amount</th></tr>"
        for account in account_summary:
            summary_html += f"<tr><td>{account[1]}</td><td>{account[2]}</td><td>${float(account[3]):.2f}</td></tr>"
        summary_html += "</table>"
```

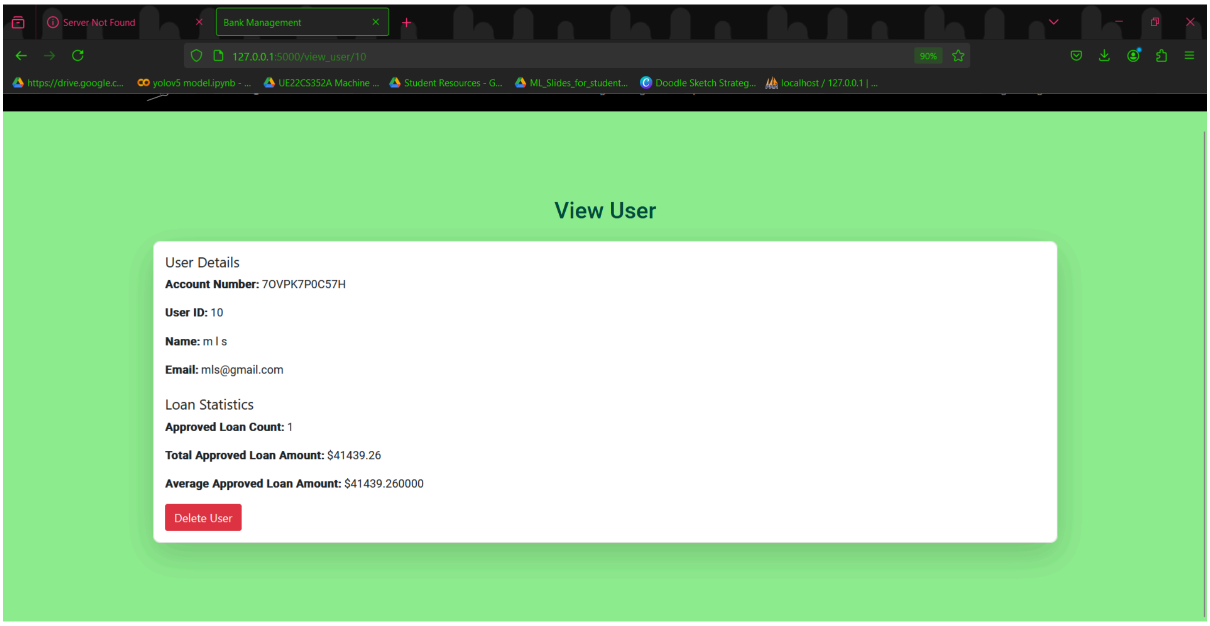
DELIMITER $$

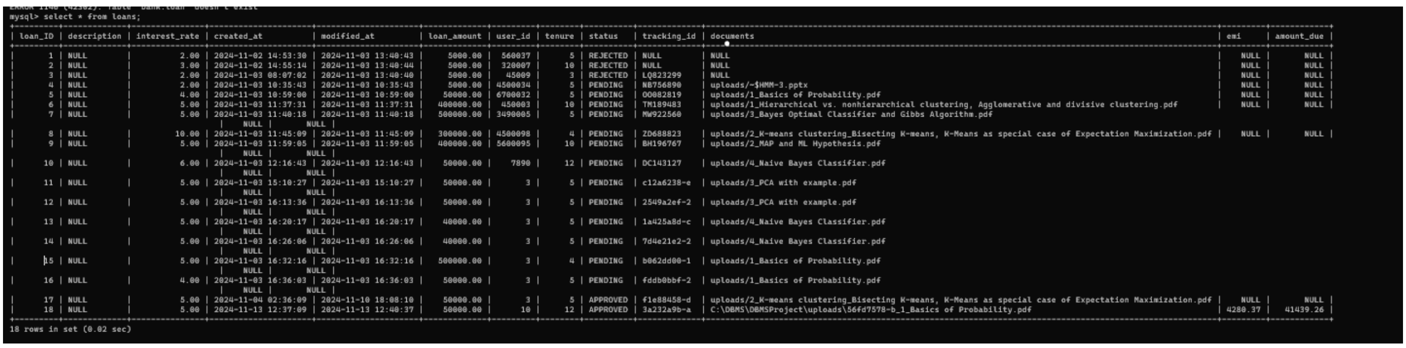
```
CREATE PROCEDURE get_account_summary(IN user_id_param INT)
BEGIN
   SELECT * FROM accounts WHERE user_id = user_id_param;
END $$

DELIMITER ;
```

NESTED, AGGREGATE QUERIES

```
SELECT

   COALESCE((

      -- Nested subquery to count the number of approved loans for the user

      SELECT COUNT(l.loan_id)

      FROM Loan l

      WHERE l.user_id = u.user_id AND l.status = 'APPROVED'

   ), 0) AS approved_loan_count,  -- Aggregate function: COUNT


   COALESCE((

      -- Nested subquery to sum the amount due for approved loans for the user

      SELECT SUM(l.amount_due)

      FROM Loan l

      WHERE l.user_id = u.user_id AND l.status = 'APPROVED'

   ), 0) AS total_approved_loan_amount,  -- Aggregate function: SUM


   COALESCE((

      -- Nested subquery to calculate the average amount due for approved loans for
the user

      SELECT AVG(l.amount_due)
```

```sql
        FROM Loan l
        WHERE l.user_id = u.user_id AND l.status = 'APPROVED'
    ), 0) AS average_loan_amount  -- Aggregate function: AVG
FROM
    UserInfo u
WHERE
    u.user_id = :user_id;  -- Filtering for a specific user
```





mysql> select * from loans;

loan_ID	description	interest_rate	created_at	modified_at	loan_amount	user_id	tenure	status	tracking_id	documents	emi	amount_due
1	NULL	2.00	2024-11-02 14:53:30	2024-11-03 13:40:43	5000.00	560037	5	REJECTED	NULL	NULL	NULL	NULL
2	NULL	3.00	2024-11-02 14:55:14	2024-11-03 13:40:44	5000.00	320007	10	REJECTED	NULL	NULL	NULL	NULL
3	NULL	2.00	2024-11-03 08:07:02	2024-11-03 13:40:40	5000.00	45009	3	REJECTED	LQ823299	NULL	NULL	NULL
4	NULL	2.00	2024-11-03 10:35:43	2024-11-03 10:35:43	5000.00	4500034	5	PENDING	NB756890	uploads/~$HMM-3.pptx	NULL	NULL
5	NULL	4.00	2024-11-03 10:59:00	2024-11-03 10:59:00	50000.00	6700032	5	PENDING	OO082819	uploads/1_Basics of Probability.pdf	NULL	NULL
6	NULL	5.00	2024-11-03 11:37:31	2024-11-03 11:37:31	400000.00	450003	10	PENDING	TM189483	uploads/1_Hierarchical vs. nonhierarchical clustering, Agglomerative and divisive clustering.pdf	NULL	NULL
7	NULL	5.00	2024-11-03 11:40:18	2024-11-03 11:40:18	500000.00	3490005	5	PENDING	MW922560	uploads/3_Bayes Optimal Classifier and Gibbs Algorithm.pdf	NULL	NULL
8	NULL	10.00	2024-11-03 11:45:09	2024-11-03 11:45:09	300000.00	4500098	4	PENDING	ZD688823	uploads/2_K-means clustering_Bisecting K-means, K-Means as special case of Expectation Maximization.pdf	NULL	NULL
9	NULL	5.00	2024-11-03 11:59:05	2024-11-03 11:59:05	400000.00	5600095	10	PENDING	BH196767	uploads/2_MAP and ML Hypothesis.pdf	NULL	NULL
10	NULL	6.00	2024-11-03 12:16:43	2024-11-03 12:16:43	50000.00	7890	12	PENDING	DC143127	uploads/4_Naive Bayes Classifier.pdf	NULL	NULL
11	NULL	5.00	2024-11-03 15:10:27	2024-11-03 15:10:27	50000.00	3	5	PENDING	c12a6238-e	uploads/3_PCA with example.pdf	NULL	NULL
12	NULL	5.00	2024-11-03 16:13:36	2024-11-03 16:13:36	50000.00	3	5	PENDING	2549a2ef-2	uploads/3_PCA with example.pdf	NULL	NULL
13	NULL	5.00	2024-11-03 16:20:17	2024-11-03 16:20:17	40000.00	3	5	PENDING	1a425a8d-c	uploads/4_Naive Bayes Classifier.pdf	NULL	NULL
14	NULL	5.00	2024-11-03 16:26:06	2024-11-03 16:26:06	40000.00	3	5	PENDING	7d4e21e2-2	uploads/4_Naive Bayes Classifier.pdf	NULL	NULL
15	NULL	5.00	2024-11-03 16:32:16	2024-11-03 16:32:16	500000.00	3	4	PENDING	b062dd00-1	uploads/1_Basics of Probability.pdf	NULL	NULL
16	NULL	4.00	2024-11-03 16:36:03	2024-11-03 16:36:03	50000.00	3	5	PENDING	fddb0bbf-2	uploads/1_Basics of Probability.pdf	NULL	NULL
17	NULL	5.00	2024-11-04 02:36:09	2024-11-10 18:08:10	50000.00	3	5	APPROVED	f1e88458-d	uploads/2_K-means clustering_Bisecting K-means, K-Means as special case of Expectation Maximization.pdf	NULL	NULL
18	NULL	5.00	2024-11-13 12:37:09	2024-11-13 12:40:37	50000.00	10	12	APPROVED	3a232a9b-a	C:\DBMS\DBMSProject\uploads\56fd7578-b_1_Basics of Probability.pdf	4280.37	41439.26

18 rows in set (0.02 sec)

<u>PURPOSE:</u>

The purpose of this SQL query is to retrieve and summarize specific financial information related to a user's approved loans from a database. The query is designed to provide insights into the user's loan status by calculating three key metrics:

Approved Loan Count: The number of loans that have been approved for a specific user. This is useful for understanding how many loans the user has successfully obtained.
Total Approved Loan Amount: The total amount due from all approved loans for the user. This metric helps to assess the overall financial obligation the user has in terms of approved loans.
Average Loan Amount: The average amount due from the approved loans for the user. This provides insight into the typical size of the loans that the user has been granted.