

Advanced Database Topics (COMP-8157)



University
of Windsor

Lab-3

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Section: 3

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Build a Bank accounts table, and then add a couple of rows of data.

Run Cancel Disconnect Change Database: WideWorldImporters Estimated Plan Enable Act

```
1 DROP TABLE IF EXISTS dbo.KaranBankAccounts;
2 CREATE TABLE dbo.BankAccounts (
3 AccountID INT PRIMARY KEY,
4 Balance decimal(10,2)
5 );
6 GO
7 INSERT INTO dbo.BankAccounts
8 VALUES (1, 100.00), (2, 200.00), (3, 300.00);
9 GO
10
```

Messages

5:05:41 PM Started executing query at Line 1
Commands completed successfully.
5:05:41 PM Started executing query at Line 7
(3 rows affected)
Total execution time: 00:00:00.017

```
10
11 SELECT * FROM BankAccounts;
```

Results Messages

	AccountID	Balance
1	1	100.00
2	2	200.00
3	3	300.00

Create a stored procedure named, <yourfirstname>TransferFunds, that contains a transaction for transferring funds.

```
> Run  Cancel  Disconnect  Change  Database: wideworldimporters  Estimated Plan  Enable Actual Plan  Parse  Disable SQLCMD  TO N
1  CREATE OR ALTER PROCEDURE KaranTransferFunds
2  @FromAccount INT,
3  @ToAccount INT,
4  @Amount DECIMAL(10, 2)
5  AS
6  BEGIN
7  BEGIN TRANSACTION;
8  BEGIN TRY
9  IF (SELECT Balance FROM dbo.BankAccounts WHERE AccountID = @FromAccount) < @Amount
10 BEGIN
11 ROLLBACK TRANSACTION;
12 THROW 50000, 'Insufficient funds in the Account', 1;
13 END
14
15
16 UPDATE BankAccounts
17 SET Balance = Balance - @Amount
18 WHERE AccountID = @FromAccount;
19
20
21 UPDATE dbo.BankAccounts
22 SET Balance = Balance + @Amount
23 WHERE AccountID = @ToAccount;
24
25
26 COMMIT TRANSACTION;
27 END TRY
28 BEGIN CATCH
29 ROLLBACK TRANSACTION;
30 THROW;
31 END CATCH;
```

Messages

5:49:55 PM Started executing query at Line 1
Commands completed successfully.
Total execution time: 00:00:00.028

Test out your solution by transferring \$50 from account number one to account number three.

Run

Cancel

Disconnect

Change

Database: WideWorldImporters

Estimated Plan

Enable /

34

EXEC KaranTransferFunds @FromAccount = 1, @ToAccount = 3, @Amount = 50.00;

35

36

SELECT * from BankAccounts;

Results

Messages

	AccountID	Balance
1	1	50.00
2	2	200.00
3	3	350.00

- Add error handling to the above (ii) store procedure to make sure the following;
- a. Ensure the “FromAccount” has enough funds for the transfer
 - b. Ensure the “FromAccount” actually exists in the table
 - c. Ensure the “ToAccount” actually exists in the table

Your transaction should be successfully completed only after all three conditions are met

Run Cancel Disconnect Change Database: WideWorldImporters Estimated Plan Enable Actual Plan Parse Di:

```
1 CREATE OR ALTER PROCEDURE KaranTransferFunds
2 @FromAccount INT,
3 @ToAccount INT,
4 @Amount DECIMAL(10, 2)
5 AS
6 BEGIN
7 BEGIN TRANSACTION;
8 BEGIN TRY
9 DECLARE @FromAccountBalance DECIMAL(10, 2);
10 SELECT @FromAccountBalance = Balance FROM dbo.BankAccounts WHERE AccountID = @FromAccount;
11 IF @FromAccountBalance < @Amount
12 BEGIN
13
14 ROLLBACK TRANSACTION;
15 THROW 50000, 'Insufficient funds in the Account.', 1;
16 END
17
18 IF NOT EXISTS (SELECT 1 FROM dbo.BankAccounts WHERE AccountID = @FromAccount)
19 BEGIN
20
21 ROLLBACK TRANSACTION;
22 THROW 50001, 'FromAccount does not exist.', 1;
23 END
24
```

Messages






5:53:33 PM Started executing query at Line 1
Commands completed successfully.
Total execution time: 00:00:00.011

Run Cancel Disconnect Change Database: WideWorldImporters Estimated Plan Enable Actual

```
1 EXEC KaranTransferFunds @FromAccount = 4, @ToAccount = 3, @Amount = 50.00;
```



Messages

5:55:19 PM Started executing query at Line 1
Msg 3903, Level 16, State 1, Procedure KaranTransferFunds, Line 44
The ROLLBACK TRANSACTION request has no corresponding BEGIN TRANSACTION.
Msg 50001, Level 16, State 1, Procedure KaranTransferFunds, Line 22
FromAccount does not exist.
Total execution time: 00:00:00.026

Run ☐ Cancel  Disconnect  Change | Database: WideWorldImporters  |  Estimated Plan  Enable
1 EXEC KaranTransferFunds @FromAccount = 1, @ToAccount = 4, @Amount = 50.00;

Messages

5:55:43 PM Started executing query at Line 1
Msg 3903, Level 16, State 1, Procedure KaranTransferFunds, Line 44
The ROLLBACK TRANSACTION request has no corresponding BEGIN TRANSACTION.
Msg 50002, Level 16, State 1, Procedure KaranTransferFunds, Line 29
ToAccount does not exist.
Total execution time: 00:00:00.004

 Run ☐ Cancel  Disconnect  Change | Database: WideWorldImporters  |  Estimated Plan  Enable Actual Plan
1 EXEC KaranTransferFunds @FromAccount = 1, @ToAccount = 3, @Amount = 150.00;

Messages

5:56:09 PM Started executing query at Line 1
Msg 3903, Level 16, State 1, Procedure KaranTransferFunds, Line 44
The ROLLBACK TRANSACTION request has no corresponding BEGIN TRANSACTION.
Msg 50000, Level 16, State 1, Procedure KaranTransferFunds, Line 15
Insufficient funds in the Account.
Total execution time: 00:00:00.003