Stored Procedures (SQL Task)

Database HomePro

1. Create and test the Stored procedure to get list of all customers.
   Name: **HomePro.GetAllCustomers_<YourName>**.

2. Create and test the procedure to get list of customers without schedules.
   Name: **HomePro.GetCustomersNoSchedule_<YourName>**
   List of columns: **CustomerId,FirstName,LastName,Email,Phone,ZipCode,Age**

3. Create procedure to get list of customers who is older than given age.
   Name: **HomePro.GetCustomersBy Age_<YourName>**
   Parameter: @Age int
   List of columns: **CustomerId,FirstName,LastName,Email,Phone,ZipCode, Age**

4. Add validation to stored procedure **HomePro.GetCustomersByAge_<YourName>** that parameter @Age contains Proper value. Call the SP with 3 different parameters:
   a. EXEC HomePro.GetCustomersByAge_<Name> @Age = 0
   b. EXEC HomePro.GetCustomersByAge_<Name> @Age = 20
   c. EXEC HomePro.GetCustomersByAge_<Name> @Age = 200

5. Create procedure to get list of customers without schedules after the given date:
   Parameter: @DateNedeed datetime.
   List of columns: **CustomerId,FirstName,LastName,Email,Phone,ZipCode,Age**

   The procedure must verify that parameter is in allowed range. Say between '2010-01-01' and '2020-01-10'.
   Call the SP with 3 different parameters on order the test data validation and compare the result
   - @DateNedeed = '2000-12-31'
   - @DateNedeed = '2012-10-21'
   - @DateNedeed = '2015-10-01'

6. Create procedure to get list of customers with quotes. In addition, calculate the percentage which the current purchase takes in the total sales throughout the whole company.
   Name: **HomePro.GetEstimationsWithPercentage_<YourName>**
   Expected result.

CustomerId	FirstName	LastName	Email	Description	Estimation	PercentOfTotal	TotalEstimation
1	John	Smith	John@gmail.com	Kitchen remodel needed	210.55	1.8992251558200	11086.10
3	Mark	Long	MarkLong@Yahoo.com	Kitchen remodel needed	875.55	7.8977277852400	11086.10
3	Mark	Long	MarkLong@Yahoo.com	Garade rebuild	10000.00	90.2030470589200	11086.10

7. Create procedure to get list of customers with quotes and discount applied to an eligible age.
   Parameters:
   `@Discount numeric(10,2)` - value of discount which may be applied. Value range 0 – 1.
   `@EligibleAge int` - The minimal age of client who is eligible for discount.

Expected result.
EXEC **HomePro.GetEstimationsWithDiscountByAge _<YourName>**

```
@Discount = 0.10,
@EligibleAge = 30
```

CustomerId	FirstName	LastName	Age	Estimation	Discount	FinalEstimation
1	John	Smith	18	210.55	0.00	210.5500
3	Mark	Long	64	875.55	0.10	787.9950
3	Mark	Long	64	10000.00	0.10	9000.0000

Run the SP with following parameters:

- @Discount = -0.5, @EligibleAge = 30
- @Discount = 2, @EligibleAge = 10

8. Create the procedure to get list of customers with quotes with discount applied to purchase amount.
   Parameters:
   `@Discount numeric(10,2)` - value of discount which may be applied. Vales range 0 – 1.
   `@EligibleAmount numeric(10,2)` - The amount of purchase is eligible for discount.

   Expected result.
   EXEC **HomePro.GetEstimationsWithDiscountByAmount _<YourName>**

```
@Discount = 0.15,
@EligibleAmount = 50
```

CustomerId	FirstName	LastName	Estimation	Discount	FinalEstimation
1	John	Smith	210.55	0.00	210.5500
3	Mark	Long	875.55	0.15	744.2175
3	Mark	Long	10000.00	0.15	8500.0000

9. Create procedure to get list of customers with quotes and Tax applied According to state rate.

```
Virginia 6%
California 10%
The rest of States 5%
```

   Expected result.

CustomerId	FirstName	LastName	State	Estimation	StateTax	TaxAmount	TaxedEstimation
1	John	Smith	VA	210.55	6%	12.6330	223.1830
3	Mark	Long	CA	875.55	10%	87.5550	963.1050
3	Mark	Long	CA	10000.00	10%	1000.0000	11000.0000

Assume that your teammate is developer and you are tester. Choose a couple of procedures are whiten by “Developer” and execute them with different set of parameters to validate their behavior.

Database Bank

1. Create and test the procedure to get list of all clients.
   Name: **Bank.GetAllClients_<YourName>**
   List of columns: **`ClientId,FirstName,LastName,Phone,Email,State,Age,Type`**

2. Create procedure to get list of customers without Account.
   Name: **Bank.GetClientsNoAccount_<YourName>**
   List of columns: **`ClientId,FirstName,LastName,Phone,Email,State,Age,Type`**

3. Create the procedure to get list of customers who is in given range of age.
   Name: **Bank.GetClientsBy Age_<YourName>.**
   Parameters: @AgeBegin int, @AgeEnd int. The SP must verify that values of parameters "Age" are in the allowed range, which is between 18 and 100 and that @AgeBegin > @AgeEnd
   Call the SP with 3 different parameters:
   a. EXEC HomePro.GetCustomersByAge_<Name> @AgeBegin = 0, @AgeEnd = 50
   b. EXEC HomePro.GetCustomersByAge_<Name> @AgeBegin = 20, @AgeEnd = 50
   c. EXEC HomePro.GetCustomersByAge_<Name> @AgeBegin = 50, @AgeEnd = 40

4. Create procedure to get list of clients without given account type:
   Parameter: `@AccountType CHAR(10)`. Account Type must be one of: "CHECKING", "CREDIT", "SAVING". The procedure must verify the parameter value.
   List of columns: **`ClientId,FirstName,LastName,Phone,Email,State,Age,Type`**

5. Create the procedure to get list of Clients with Account's Balances and calculate the percentage which each balance takes in the total balance throughout the bank.
   Name: **Bank.GetAccountsWithBalances_<YourName>**
   Expected result.

ClientId	FirstName	LastName	Age	Email	AccountNum	Type	Balance	PercentOfTotal	TotalBalance
1	Smith	John	33	John@gmail.com	1	CHECKING	10200.00	5.9289916064000	172036.00
1	Smith	John	33	John@gmail.com	2	CREDIT	3550.00	2.0635215885000	172036.00
2	Smith	Jeremy	19	Jeremy@gmail.com	3	CHECKING	1001.00	0.5818549605800	172036.00
2	Smith	Jeremy	19	Jeremy@gmail.com	4	CREDIT	150.00	0.0871910530300	172036.00
3	Mark	Long	41	MarkLong@Yahoo.com	5	CHECKING	1303.00	0.7573996140300	172036.00
3	Mark	Long	41	MarkLong@Yahoo.com	6	SAVING	25000.00	14.5318421725600	172036.00
4	Bob	James	28	bob@microsoft.com	7	CHECKING	15731.00	9.1440163686600	172036.00
4	Bob	James	28	bob@microsoft.com	8	SAVING	31014.00	18.0276221256000	172036.00
5	Marcos	Adam	38	adam@Marcos.com	9	CHECKING	1724.00	1.0021158362200	172036.00
5	Marcos	Adam	38	adam@Marcos.com	10	CREDIT	3043.00	1.7688158292400	172036.00
5	Marcos	Adam	38	adam@Marcos.com	11	SAVING	79320.00	46.1066288451200	172036.00

6. Create the procedure to get list of Clients with Account's Balances and calculate the percentage of the account's balance in the total Balance throughout the bank for the given AccountType as a parameter
   Name: **Bank.GetAccountsWithBalancesByType_<YourName>**
   Expected result.
   EXEC Bank.GetAccountsWithBalancesByType_<YourName> `@AccountType = 'CHECKING';`

ClientId	FirstName	LastName	Age	Email	AccountNum	Type	Balance	PercentOfTotal	TotalBalance
1	Smith	John	33	John@gmail.com	1	CHECKING	10200.00	34.0465302580100	29959.00
2	Smith	Jeremy	19	Jeremy@gmail.com	3	CHECKING	1001.00	3.3412330184500	29959.00
3	Mark	Long	41	MarkLong@Yahoo.com	5	CHECKING	1303.00	4.3492773457000	29959.00
4	Bob	James	28	bob@microsoft.com	7	CHECKING	15731.00	52.5084281851800	29959.00
5	Marcos	Adam	38	adam@Marcos.com	9	CHECKING	1724.00	5.7545311926200	29959.00

Bank.GetAccountsWithBalancesByType_<YourName> `@AccountType = 'SAVING';`
Bank.GetAccountsWithBalancesByType_<YourName> `@AccountType = 'CREDIT';`
Bank.GetAccountsWithBalancesByType_<YourName> `@AccountType = 'BLABLABLA';`

7. Create the procedure to get list of Clients with transactions they paid and calculate the bank's commission on each transaction. The commissions rules are. If client moved money to his own account then commission 0% otherwise 5%
   Name: **Bank.GetTransactionsWithCommision_<YourName>**
   Expected result.

FirstName	LastName	Email	Type	Balance	ClientIdFrom	ClientIdTo	Amount	Commition	CommitionAmount	FinalAmount
John	Smith	John@gmail.com	CHECKING	10200.00	1	1	150.00	0%	0.0000	150.0000
John	Smith	John@gmail.com	CHECKING	10200.00	1	2	1000.00	5%	50.0000	1050.0000
John	Smith	John@gmail.com	CHECKING	10200.00	1	4	100.00	5%	5.0000	105.0000
John	Smith	John@gmail.com	CHECKING	10200.00	1	5	343.55	5%	17.1775	360.7275
John	Smith	John@gmail.com	CREDIT	3550.00	1	5	36.70	5%	1.8350	38.5350
Jereny	Smith	Jeremy@gmail.com	CHECKING	1001.00	2	5	100.00	5%	5.0000	105.0000
Long	Mark	MarkLong@Yahoo.com	CHECKING	1303.00	3	5	1500.00	5%	75.0000	1575.0000
Long	Mark	MarkLong@Yahoo.com	CHECKING	1303.00	3	5	1500.00	5%	75.0000	1575.0000
Adam	Marcos	adam@Marcos.com	CHECKING	1724.00	5	5	2300.00	0%	0.0000	2300.0000
Adam	Marcos	adam@Marcos.com	CHECKING	1724.00	5	5	15000.00	0%	0.0000	15000.0000

8. Create the procedure to get list of Clients with transactions they paid and calculate the bank's commission on each transaction. The commission's rules are. The SP has 2 parameters:
   `@AccountType char(10)` – type of account which is eligible for bank commission `@ Commission numeric(10,2)` – Commission size. Value in range from 0 to 1.

   Expected result.
   EXEC Bank.GetAccountsWithCommitionByAccoutnType_<YourName>
   `@AccountType = 'CHECKING', @Commission = 0.06`

FirstName	LastName	Email	State	Type	Balance	Amount	Commition	CommitionAmount	FinalAmount
John	Smith	John@gmail.com	VA	CHECKING	10200.00	150.00	0.06	9.0000	159.0000
John	Smith	John@gmail.com	VA	CHECKING	10200.00	1000.00	0.06	60.0000	1060.0000
John	Smith	John@gmail.com	VA	CHECKING	10200.00	100.00	0.06	6.0000	106.0000
John	Smith	John@gmail.com	VA	CHECKING	10200.00	343.55	0.06	20.6130	364.1630
John	Smith	John@gmail.com	VA	CREDIT	3550.00	36.70	0.00	0.0000	36.7000
Jereny	Smith	Jeremy@gmail.com	WA	CHECKING	1001.00	100.00	0.06	6.0000	106.0000
Long	Mark	MarkLong@Yahoo.com	TN	CHECKING	1303.00	1500.00	0.06	90.0000	1590.0000
Long	Mark	MarkLong@Yahoo.com	TN	CHECKING	1303.00	1500.00	0.06	90.0000	1590.0000
Adam	Marcos	adam@Marcos.com	CA	CHECKING	1724.00	2300.00	0.06	138.0000	2438.0000
Adam	Marcos	adam@Marcos.com	CA	CHECKING	1724.00	15000.00	0.06	900.0000	15900.0000

   Run the SP with different parameters:
   EXEC Bank.GetAccountsWithCommitionByAccoutnType_<YourName>
   `@AccountType = 'CREDIT', @Commission = 0.09`

Send your homework to my email Andrew.a4100@gmail.com for validation