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Part I. Project Definition, Data Dictionary and Entity Relationship Diagram

Abstract:

Paymo is a new money transfer company that needs a database for their operations. The database will need to track clients, senders, receivers, benefits, cards and bank accounts used, and transactions.

Our clients are anyone who wants to send money to another person. They will have the ability to add a card number or bank account to send or receive their money to. Also, clients will have the ability to earn and use benefits earning cashback on their transactions.

Client. Our client data will consist of a unique identifier for each client, as-well-as, their last name, first name, current balance, phone number, address, and email.

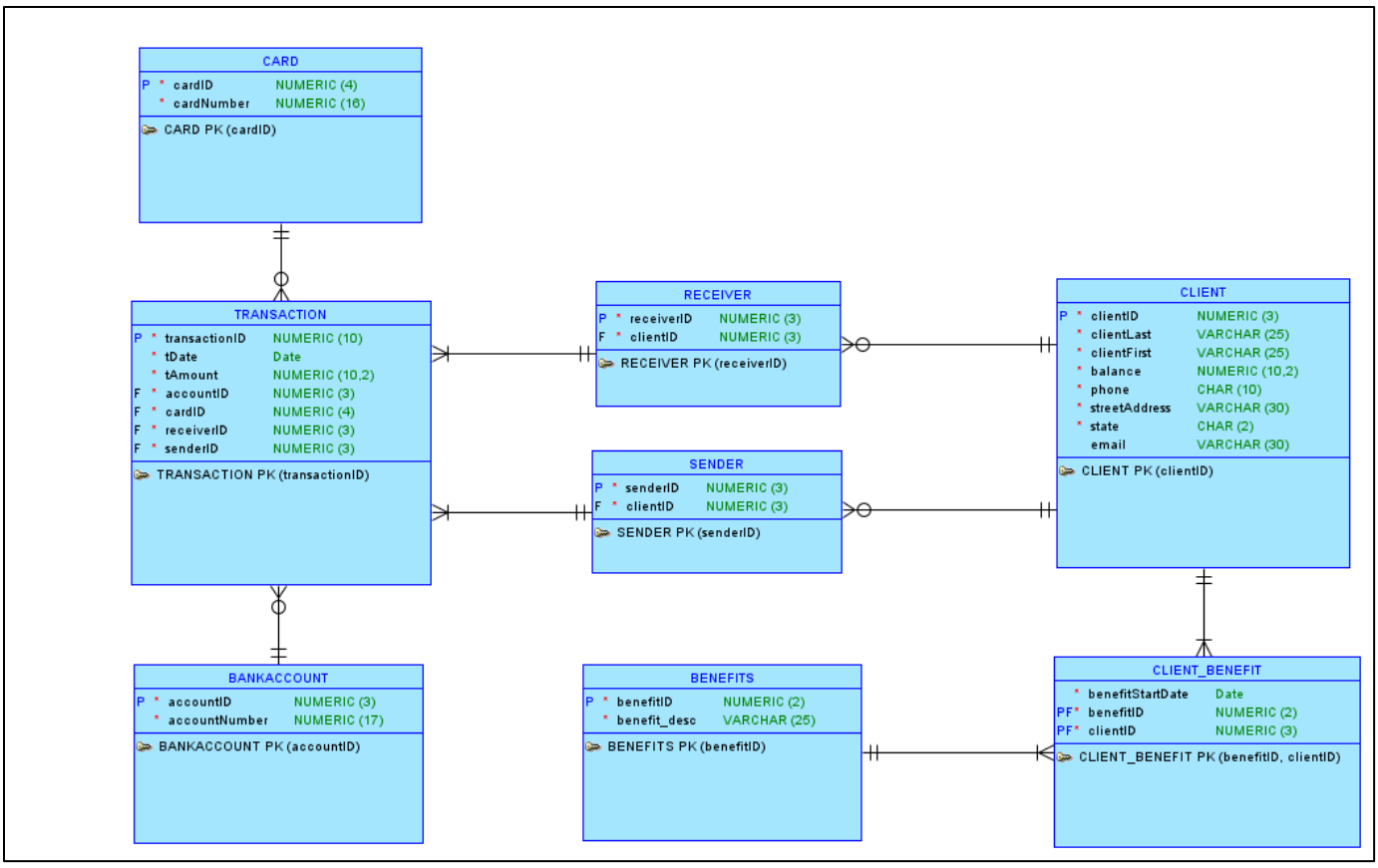
The card and bank account will be very similar. Both will have a unique identifier for the bank account or card and the account number.

Benefits. The benefit data will have a unique identifier for each benefit and a description of each benefit. The benefits will consist of a free instant transfer and cashback amounts from 0.5, 1, 2, and 3 percent cash back.

Sender and Receiver. The sender and receiver tables will link the clients to a transaction allowing the transaction data to contain both a sender and a receiver.

Client Benefit. The client benefit table will link benefits to clients that have the benefits.

Transaction. The transaction table will contain all the data regarding when the transaction took place, who sent and who received the money, and how much money was sent. This table will consist of a unique identifier for each transaction, the transfer date, transaction amount, the sender, the receiver, and the card or account that was used to send the money.



	A	B	C	D	E
1	**Payroll management System List of Assumptions**				
2	- card & bank: one of payments will be used in transaction				
3					
4	**Attribute**	**Description**	**Table**	**Datatype**	**Constraint**
5	cardID	unique ID for card	CARD	NUMERIC(4)	PK
6	cardNumber	actual card number for each card		NUMERIC(16)	NOT NULL
7	accountID	unique ID for bank account	BANKACC	NUMBER(3)	PK
8	accountNumber	actual bank account number for each bank account		NUMBER(17)	NOT NULL
9	benefitID	all benefits (e.g. no additional fee, quick send, ...)	BENEFITS	NUMERIC(2)	PK
10	benefit_desc	all benefits (e.g. no additional fee, quick send, ...)	BENEFITS	VARCHAR(25)	PK
11	benefitID	A benefit that a user owns	CLIENT_BENEFIT	NUMERIC(2)	PK, FK
12	senderID	A userID who receives a benefit		NUMERIC(3)	PK, FK
13	benefitStartDate	Date when user started to receive benefit		Date	NOT NULL
14	senderID	unique ID for sender	SENDER	NUMERIC(3)	PK
15	clientID	unique ID for client		NUMERIC(3)	FK, NOT NULL
16	receiverID	unique ID for receiver	RECEIVER	NUMERIC(3)	PK
17	clientID	unique ID for client		NUMERIC(3)	FK, NOT NULL
18	clientID	unique ID for client	CLIENT	NUMERIC(3)	PK
19	clientLast	last name of client		VARCHAR(25)	NOT NULL
20	clientFirst	first name of client		VARCHAR(25)	NOT NULL
21	balance	amount of money a client has		NUMERIC(10,2)	NOT NULL
22	phone	phone number of client		CHAR(10)	NOT NULL
23	streetAddress	street address of client		VARCHAR(30)	NOT NULL
24	state	state address of client		CHAR(2)	NOT NULL
25	email	email of client		VARCHAR(30)	
26	transactionID	unique ID for transaction	TRANSACTION	NUMERIC(3)	PK
27	tDate	transaction date		DATE	NOT NULL
28	tAmount	amount of money in transaction		NUMERIC(10,2)	NOT NULL
29	cardID	card that will be used in transcation		NUMERIC(4)	FK, NOT NULL
30	accountID	bank account that will be used in transaction		NUMERIC(3)	FK, NOT NULL
31	senderID	sender in transaction		NUMERIC(3)	FK, NOT NULL
32	receiverID	receiver in transaction		NUMERIC(3)	FK, NOT NULL

Part II. Relational Schema

Level 1:

CARD (cardID, cardNumber)

BANKACCOUNT (accountID, accountNumber)

BENEFITS (benefitID, benefit_desc)

CLIENT (clientID, clientLast, clientFirst, balance, phone, streetAddress, state, email)

- ※ Sequence statements can be used to generate primary keys for "cardID" and "accountID".
- ※ "accountNumber" and "cardNumber" have UNIQUE constraints.

Level 2:

SENDER (senderID, *clientID*)

RECEIVER (receiverID, *clientID*)

CLIENT_BENEFIT (*benefitID, clientID*, benefitStartDate)

Level 3:

TRANSACTION (transactionID, tDate, tAmount, *senderID, receiverID, cardID, accountID*)

Part V.

-- 4. Create an index.

-- screenshots attached below

-- The index didn't improve the query response.