PRACTICAL 2

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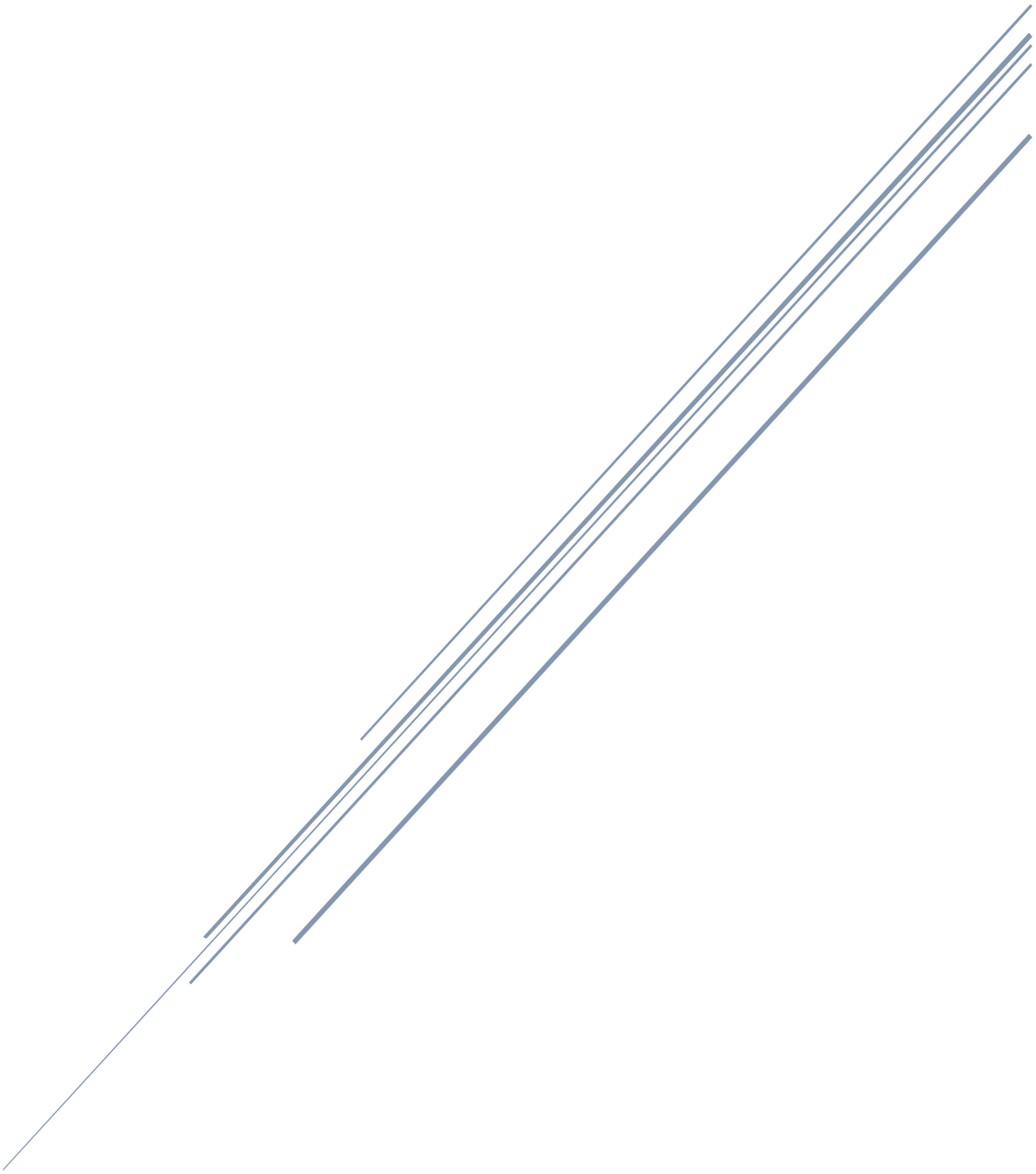


University Of Pretoria
COS 221

Task 1:

- User
- Client
- Branch
- Account
- ATM
- Contract
- CIT
- Transactions

Task 2:

- Client (client_id, fullname (name, surname), age, sex, location(address, postal_code), contact_details, total_money)
- Branch (branch_code, locations, open_hours, open_days, contact_details)
- Account (acc_number, client_id, acc_type, balance, branch_code)
- ATM (atm_id, location (address, postal_code), last_filled_date, cash_available, branch_code)
- Contract (contract_code, cit_code, start_date, end_date)
- CIT (cit_code, name, location(address, postal_code))
- Transaction (acc_number, transaction_type, date, amount, source)

Task 3:

- Branch Locations:
  - Branch_Locations (branch_code, location(address, postal_code))
- Contact Details:
  - Branch_Contact (branch_code, contact_details(cell_number, email_addr))
- Contact Details:
  - Client_Contact (client_id, contact_details (cell_number, email_addr))

Task 4:

- Client – total_money is derived from all the accounts that belong to the client.

Task 5:

Yes - contact_details can be null if the client does not have contact details e.g. no phone or email.

Task 6:

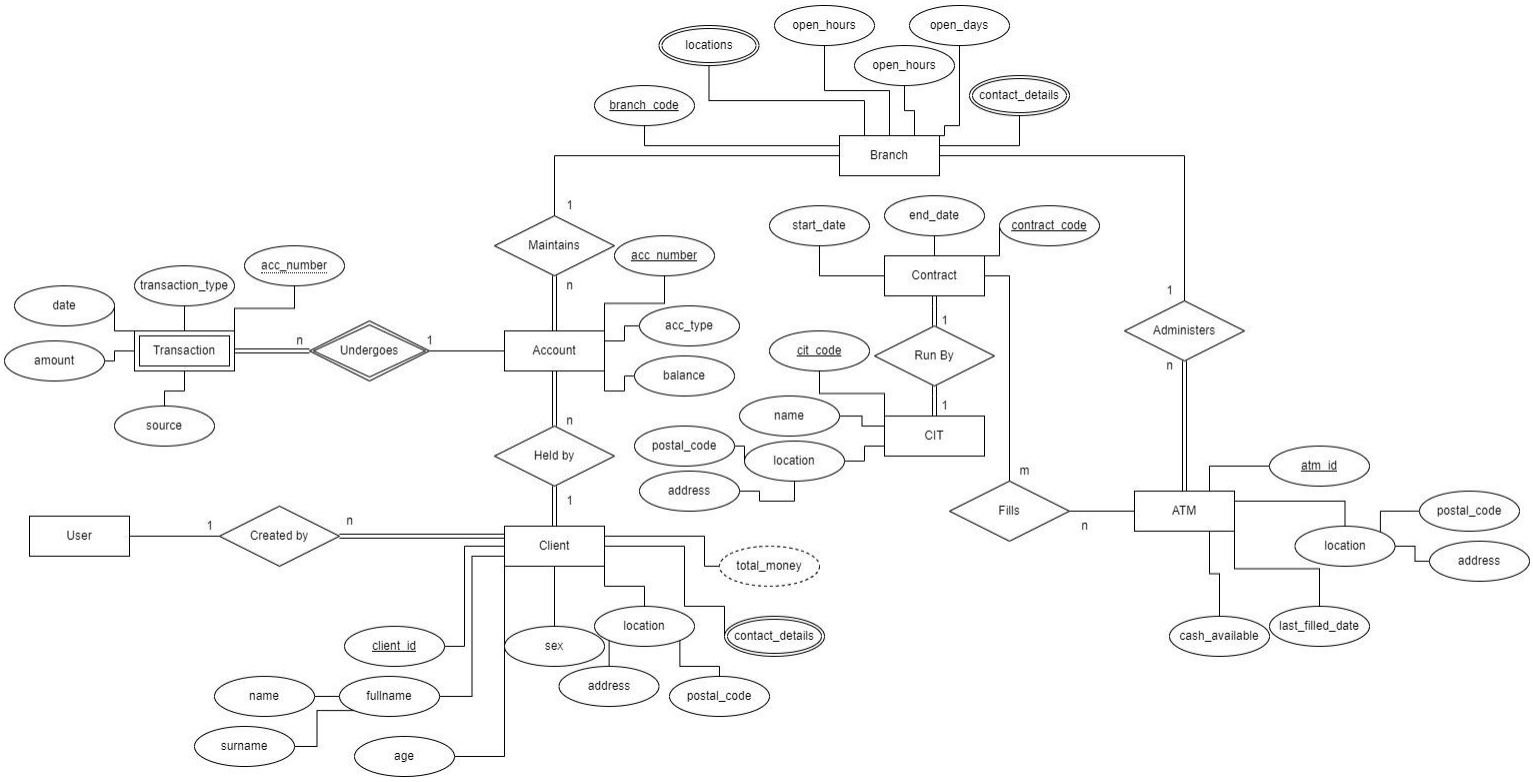
6.1. No, a time limit would need to be added to the account entity for this to be possible.

6.2. Yes, this model allows for any denominated account as it has no restrictions on denominations due to the use of the 'money' type.

6.3. No, the model would need to store the users details to achieve this.

6.4. Yes, this model stores the cell phone number and email address of a client. Additionally, the ID number of the client could be saved.

Task 7:


locations
open_hours
open_days
open_hours
branch_code
contact_details
Branch
1
Maintains
n
acc_number
start_date
end_date
contract_code
Contract
1
Administers
n
transaction_type
acc_number
date
amount
Transaction
n
Undergoes
1
Account
acc_type
balance
source
cit_code
Run By
1
CIT
name
postal_code
location
address
n
Held by
1
m
Fills
n
ATM
atm_id
postal_code
location
address
User
1
Created by
n
Client
total_money
client_id
sex
location
contact_details
address
postal_code
name
fullname
surname
age
cash_available
last_filled_date

Task 8:

Step 1+2: Mapping of regular and weak entity types. – Regular and weak entity types were added, and primary keys and foreign keys were added. Composite attributes were broken down into simple attributes.

Client

client_id	name	surname	age	sex	total_money
integer	varchar	varchar	int	char(1)	money

Branch

branch_code	open_hours	open_days
varchar	varchar	varchar

Account

acc_number	client_id	acc_type	balance	branch_code
char(10)	integer	varchar	money	varchar

ATM

atm_id	address	postal_code	last_filled_date	cash_available	branch_code
integer	varchar	char(4)	date	money	varchar

Contract

contract_code	cit_code	start_date	end_date
varchar	varchar	date	date

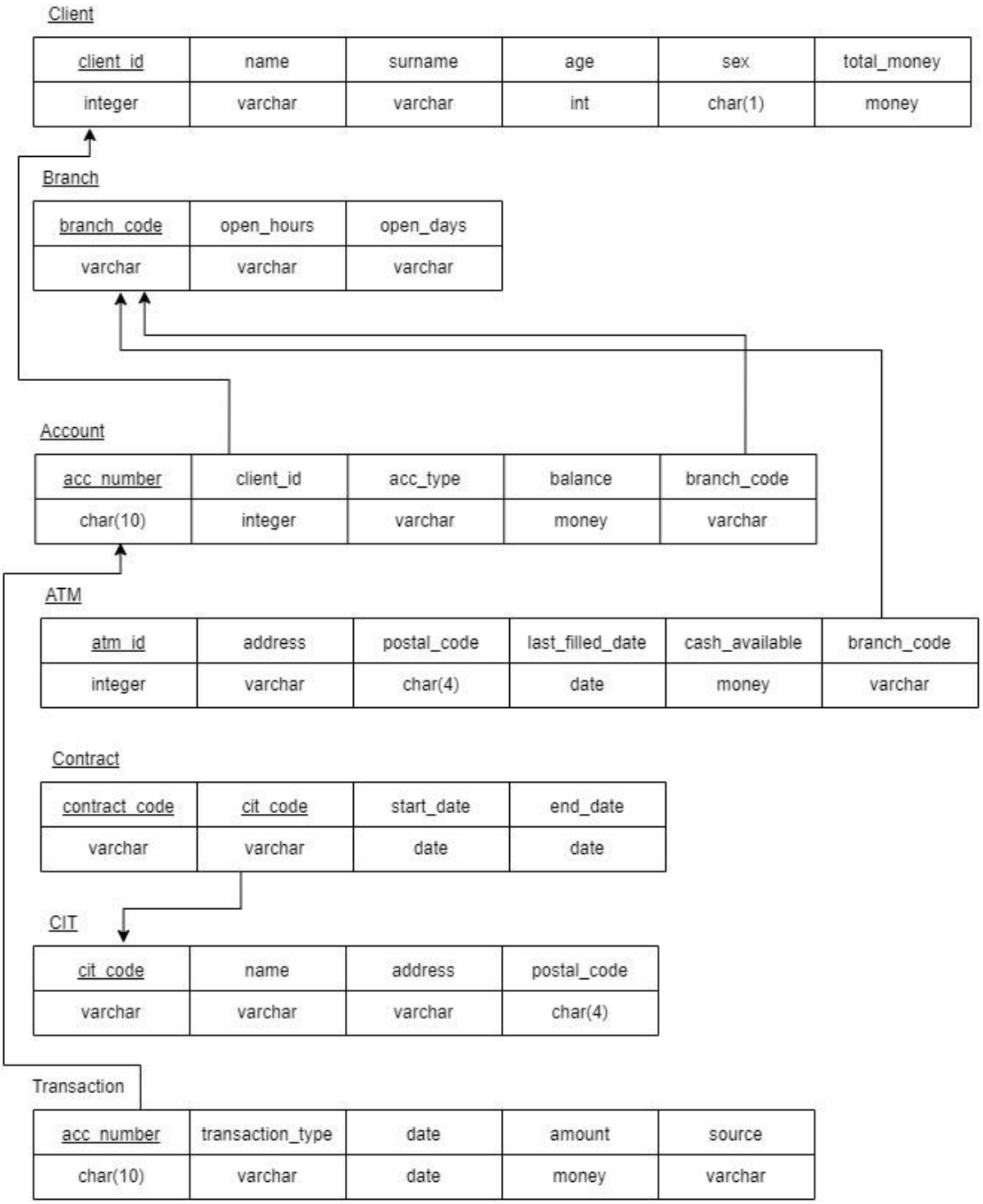
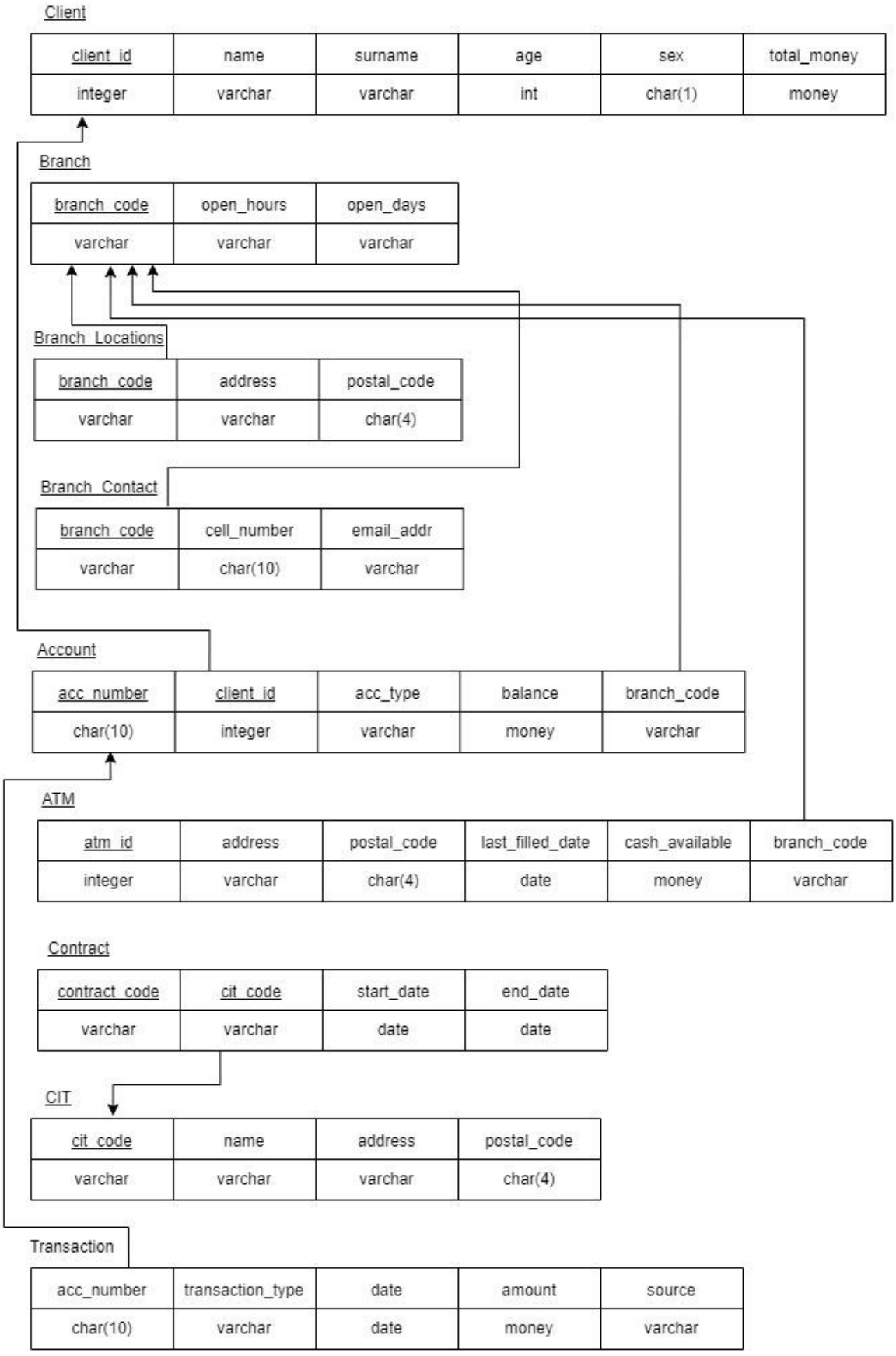
CIT

cit_code	name	address	postal_code
varchar	varchar	varchar	char(4)

Transaction

acc_number	transaction_type	date	amount	source
char(10)	varchar	date	money	varchar

Step 3-5: Mapping of relationship types – 1:1, 1:n, m:n relationships were mapped.



Step 6-7: Mapping of multivalued attribute – All attributes that are multivalued were broken down into new relations.