

# Conceptual design

*The top-down approach that collects users requirements by the Fact-finding technique, the definitions of mission statement, objectives and the conceptual data model by Entity-Relationship schema.*

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## 1. Entity type identify

The entity types definitions as follow:

Entity	Description	Alias	Occurence
Client	General term describing all users	User	Each member of Client can have many stocks
Stock	general term describing all stocks	StockProduct	Each member of Stock can have one owner, a value in WorldStockMarket
Staff	General term describing all staffs	Trader	Each member can have many Stocks and many Clients
WorldStockMarket	General term describing all Stock in the world	StockExchange	Each member might have different value in different Stock Exchange Center
Account	General term describing the accounts	Record	Each account only has one owner, Client or Staff

**Table 1: Entity types**

## 2. Relationship identify

A table has built to identify the relationship between entity types.

Entity name	Multiplicity	Relationship	Entity name	Multiplicity
Client	1 .. *	Ownership	Stock	1 .. 1
Stock	1 .. *	operated by	Staff	1 .. *
Staff	* .. *	Trades with	Client	* .. *
Client	1 .. *	Owns	Account	1 .. 1
Staff	1 .. *	Manages	Account	1 .. 1
WorldStockMarket	* .. *	is comprise of	Stock	* .. *

**Table 1: Relationship definitions**

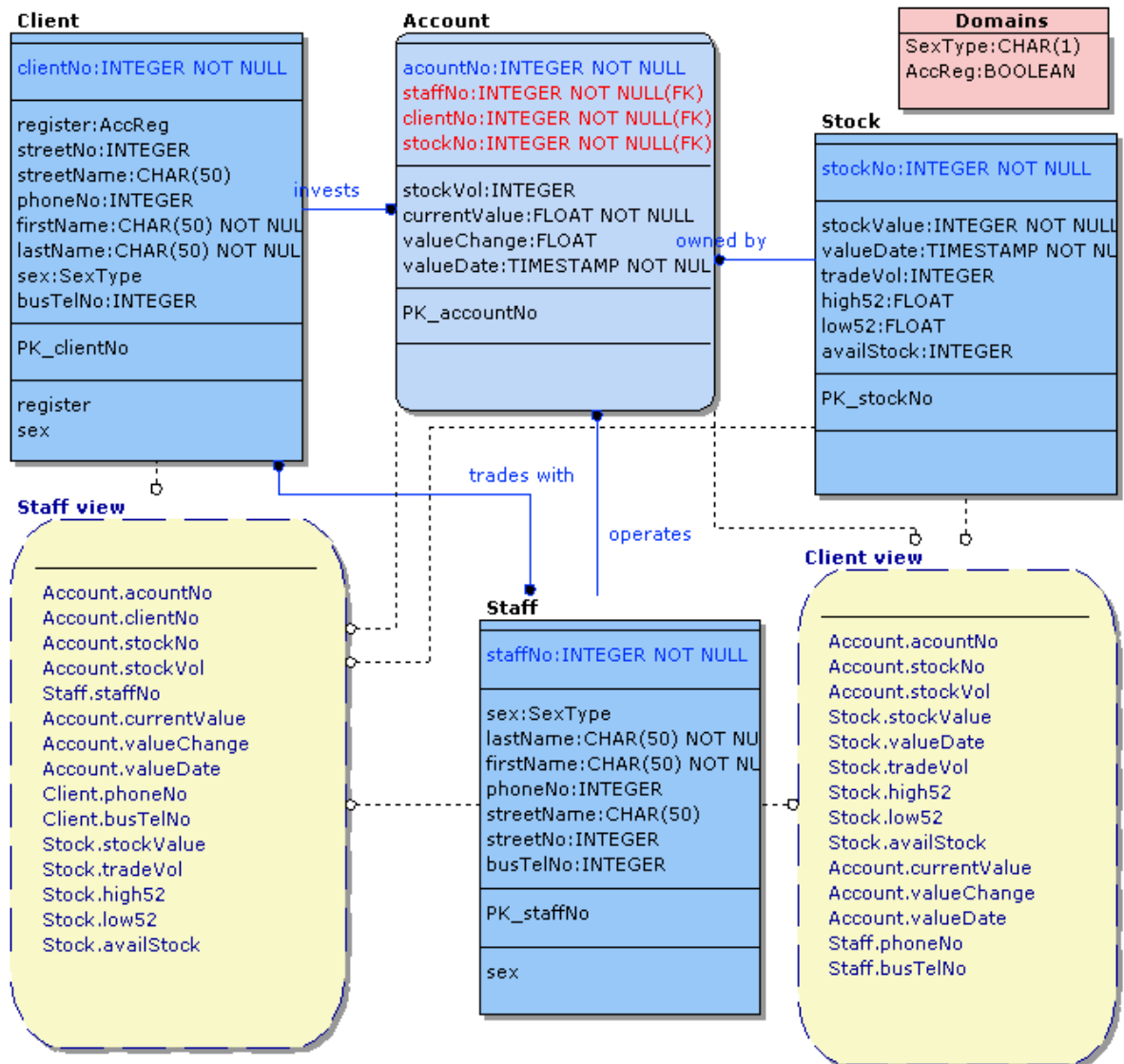
### 3. Attributes identify

Entity name	Attribute	Description	Data type and length	Null	Multi-valued
Client					
Client					
Client					
Client					
Client					
Stock					
Stock					
Stock					
Stock					

Table 1: Attribute descriptions

### 4. Entity-Relationship Model

With primary keys added



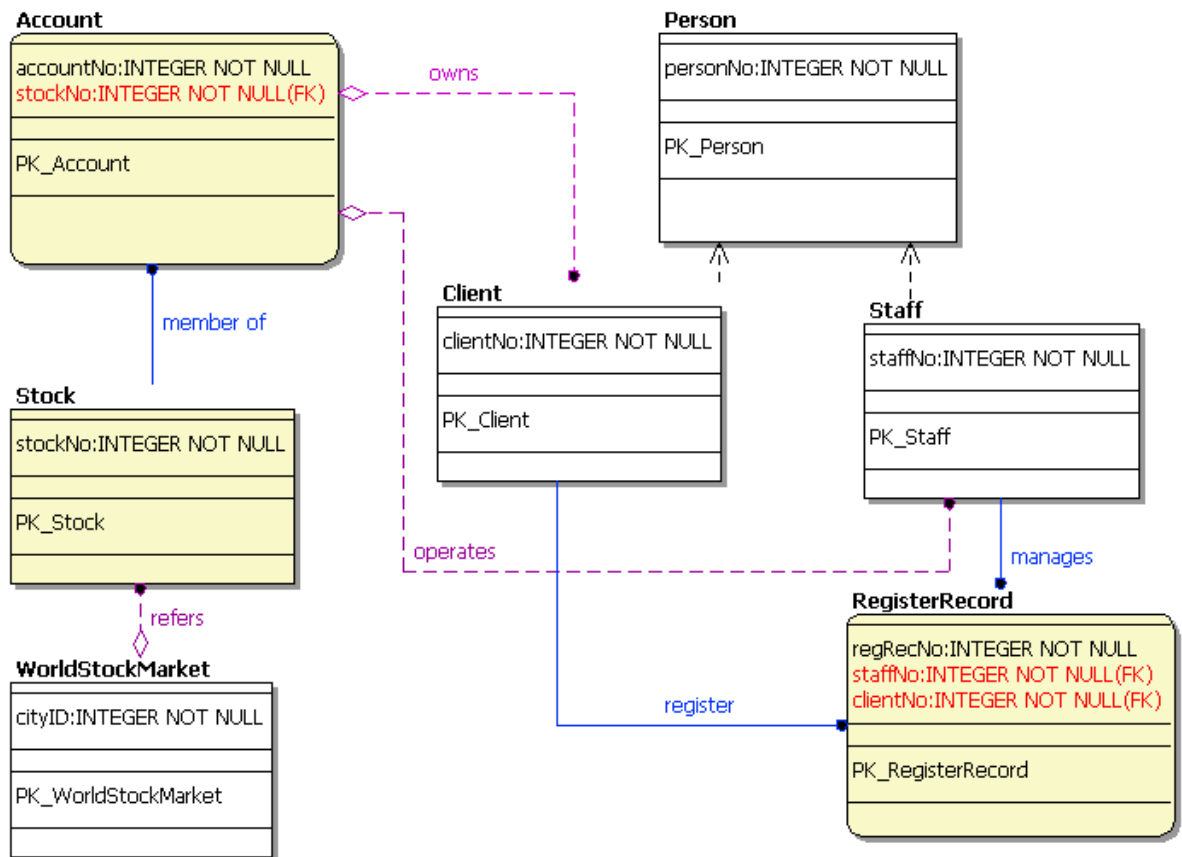
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ER Model

## 5. Enhanced Entity-relationship model

The EER model with Specialization/Generalization

## Conceptual design



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EER Diagram