



- Entities:-

1) Customer:-

a) Relationships

- Order- get the data of orders
- Account- gets the data of accounts

b) Attributes:-

- SSN-identifier
- ID- to login the account
- Name- name of user
- Password- to login

-Entities:-

2) Account:-

a) Relationships:-

- Exchanges- if account has exchanges
- Bank- account connects to bank
- Customer- customer login to account

b) Attributes:-

- Routing number- gets account information
- Account number- identifier

-Entities:-

3) Bank:-

a) Relationships:-

- Account- connects to account
- Bank transactions- handles bank transactions

b) Attributes:-

- ID-identifier
- Deposit- gets deposit data
- Withdraw- gets withdraw data

-Entities:-

4) Bank Transactions:-

a) Relationships:-

- Bank- to get information

b) Attributes:-

- Transaction ID- identifier
- Canceled- Transaction that are canceled
- Pending- Transaction that are pending
- Approved- Transaction that are approved

-Entities:-

5) Exchanges:-

a) Relationships:-

- Account- Account that has exchanges
- Stock- Exchanges that holds stock

b) Attributes:-

- Exchange ID- identifier

-Entities:-

6) Stock:-

a) Relationships:-

- Exchanges- holds stock
- Order- gets order

b) Attributes:-

- Symbol-identifier
- Company name- describes more about company
- Price- price of company

-Entities:-

## 7) Order:-

### a) Relationships:-

- Stock- gets stock
- Market- buy or sells the order
- Limit order- buy or sell the order

### b) Attributes-

- Order ID- identifier
- Sell price- price that the stock is sold
- Buy price- bought price
- Status- if the order is pending or filled etc

## 8) Market order-

### a) Relationships-

- Order- buy or sell order

### b) Attributes-

- Price- identifier

## 9) Limit order

### a) Relationships-

- Order- buy or sell

### b) Attributes-

- Amount- identifier

## Assign 4

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21/12/2017

a Strong entities with non-subtypes :-

Customer (SSN, ID, Name, Password).

Account (Routing Number, Account No.)

Bank (ID, Deposit, withdraw)

Bank Transactions (Transaction ID, Cancelled, Pending, Approved)

Exchanges (Exchange ID)

Stock (Symbol, Company Name, Price)

a Strong entities with subtypes :-

- order (order ID, Buy Price, Status, Sell Prices, Price, Amount)

## \* Relationships

a/one-many Relationships :-

Account (Account No., Routing Number, SSN\*)

order (order ID, Buy Price, Status, sell price, SSN\*)

Exchanges (Exchange ID, Account No\*)



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## b) Many - Many Relationships

connects (Account ID<sup>\*</sup>, ID<sup>\*</sup>, Data)

Handles (ID<sup>\*</sup>, Transaction ID<sup>\*</sup>, Data)

Hold (Symbol<sup>\*</sup>, Exchange ID<sup>\*</sup>, Data)

Creates (Symbol<sup>\*</sup>, order ID<sup>\*</sup>, Data)

Buy/sell (order ID<sup>\*</sup>, Data)

## ★ Final Relations:-

Account (Account No., Routing No., SSN<sup>\*</sup>)

Order (Order ID, Buy Price, Status, Sell Price, SSN<sup>\*</sup>)

Exchange (Exchange ID, Account ID<sup>\*</sup>)

α Customer (SSN<sup>\*</sup>, ID, Name, Password)

α Bank (Deposit, ID, Withdraw)

α Bank Transaction (Transaction ID, Canceled, Approved, Pending)

Stock (Symbol, Company Name, Price)

connects (Account ID<sup>\*</sup>, ID<sup>\*</sup>, Data)

Handles (ID<sup>\*</sup>, Transaction ID<sup>\*</sup>, Data)

Hold (Symbol<sup>\*</sup>, Exchange ID<sup>\*</sup>, Data)

Creates (Symbol<sup>\*</sup>, order ID<sup>\*</sup>, Data)

Buy/sell (order ID<sup>\*</sup>, Data)