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|  | | Nasdaq Stock exchangeSQL DDL Project | | | | |  | |
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|  | | | | Aviv Gelfand |  | | | |
|  | | | | 28-04-2021—SQL Basics—Data Analyst Course |  | | | |
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|  | | About this project | | | | | | | | |  | | |
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|  | |  |  | In this project I will demonstrate a basic Data Base of a stock market, in particular the Nasdaq exchange market (biggest exchange market for high-tech companies).  Every stock market has registered **Brokers** that mediate buy/sell orders from between their clients, **Account Holders**, and the market, the stock exchange. Once there are two matching active 'buy' and 'sell' orders that match, a **Transaction** is committed and the money in one account is exchanged for the stock in another.  The data base is created with SQL syntax using DDL and will contain five primary tables as follows:  Brokers, Account Holders, Stocks, Orders and Transactions. | | | | |  |  |  | | |
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|  | Entity Relationship Diagram | | | | | | | | | | |  |
|  | Tables Description | | | | | | | | | | |  |
|  | Brokers table | | | |  | Contains all the details of enlisted Brokers who have the permission to mediate buy/sell orders from customers to the stock exchange program. | | | | | |  |

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| **Brokers** | | | |
| Column Name | Column Type | Constraint | Comments |
| BrokerID | int | PK | Identity (1,1) |
| BrokerName | varchar(30) | not null, |  |
| DateOfJoining | DATE |  |  |
| IsActive | Bit | not null |  |
| LastRegulatoryAuditDate | DATE | not null |  |
| Country | VARCHAR(30) |  |  |
| City | VARCHAR(18) |  |  |
| Adress | nvarchar (60) |  |  |
| BrokerRate | smallint |  |  |
| isGlobal | bit |  |  |

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| Account-Holders |  | Contains a detailed list of all those who holds an investment account including the identity of their broker. |

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| **Account-Holders** | | | |
| Column Name | Column Type | Constraint | Comments |
| InvestorID | int | PK | Identity (1,1) |
| NationalId | int | not null, |  |
| Broker | int | FK from Brokers(BrokerID) |  |
| First Name | VARCHAR(30) | not null |  |
| Last Name | VARCHAR(30) | not null |  |
| Adress | VARCHAR(30) | Default null |  |
| Phone | NVARCHAR(11) | not null unique, |  |
| Email | VARCHAR(35) | not null check((email like '%@%.%' )) |  |
| Total Assets | money |  |  |
| Nationality | VARCHAR(10) | not null, check (NumberOfStocks >0) |  |

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| Stocks | A detailed table of all Marketable securities that can be bought, sold, or traded on the stock exchange. |

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| **Stocks** | | | |
| Column Name | Column Type | Constraint | Comments |
| ISIN | int | PK | Identity (1,1) |
| Name | varchar(30) | not null, |  |
| TypeOfAsset | varchar(18) | not null, check(TypeOfAsset in (Stock, Bond,ETF, MTF)) |  |
| MarketPrice | Money | not null |  |
| ExpenseRatio | real | Default 0 |  |
| DividenedDistribution | VARCHAR(18) | check(DividenedDistribution in(Yearly, Quaterly, Monthly)), Default null |  |
| Index | VARCHAR(18) | Default null |  |
| MarketSizeCap | VARCHAR(10) | check(MarketSizeCap in (Large,Medium, Small, Blended)) |  |
| Sector | VARCHAR(18) | Default null |  |
| NumberOfStocks | INT | not null, check (NumberOfStocks >0) |  |

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| Orders |  | Contains all the details of 'Buy' and 'Sell' orders that account holders transmit to the stock market such as what stock to buy or sell, at what price, |

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| **Orders** | | | |
| Column Name | Column Type | Constraint | Comments |
| OrderID | int | PK | Identity (1,1) |
| StockISIN | int | FK from Stocks(ISIN) |  |
| BuyOrSell | Varchar(4) | not null |  |
| OrderType | VARCHAR(20) | check(OrderType in(Limit, StopLimit, Market, Short)), not null |  |
| TimeOfSubbmition | datetime |  |  |
| IsActive | Varchar(2) | not null, check(isActive in ('Y', 'N')) |  |
| OrderStatus | VARCHAR(18) | check(OrderStatus in (Pending, Done, Cancelled, Updated)) |  |
| InvestorID | int | FK from Account-Holders(InvestorId) |  |
| Price | money | not null |  |
| Quantity | int | not null |  |

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| Transactions | A table that contains the details about every time a 'buy' order matched a 'Sell' order leading to the execution ot the transaction. |

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| **Transactions** | | | |
| Column Name | Column Type | Constraint | Comments |
| TransactionID | int | PK | Identity (1,1) |
| FirstOrderID | int | FK from orders(OrderID) |  |
| SecondOrderID | int | FK from orders(OrderID) |  |
| Quantity | int | not null |  |
| Price | money | not null |  |
| InvestorID1 | int | FK from Account-Holders(InvestorId) |  |
| InvestorID2 | int | FK from Account-Holders(InvestorId) |  |
| TransactionDate | VARCHAR(1) | Default null |  |
| Status | VARCHAR(18) | check(Status in (Preforming, Done, Cancelled)) |  |
| IsSecured | VARCHAR(1) | check(IsSecured in ('Y', 'N')) |  |