



Relations

User	UserID (PK), Name, Email, Password (hashed), CreateDate
Portfolio	PortfolioID (PK), UserID (FK), Name, description
PortfolioHolder	PortfolioHoldingId(PK), PortfolioID(FK), SecurityID (FK), Quantity, AveragePurchasePrice, CurrentValue, LastUpdated
Security	SecurityID (PK), Symbol, Name, Type, Sector, CurrentPrice
Transaction	TransactionID (PK), PortfolioID (FK), SecurityID (FK), Type (Buy/Sell), Quantity, Price, Date, Fees
WatchlistItem	WatchlistID (PK), UserID (FK), SecurityID (FK), AlertPrice, DateAdded

FDS

UserID → Name, Email, Password, CreateDate

PortfolioID → UserID, Name, RiskProfile

Holding_id → portfolio_id, security_id, quantity, average_purchase_price, current_value, last_updated

SecurityID → Symbol, Name, Type, Sector, CurrentPrice

TransactionID → PortfolioID, SecurityID, Type, Quantity, Price, Date, Fees

WatchlistID → UserID, SecurityID, AlertPrice, DateAdded

Normalize

UserID → Name, Email, Password, CreateDate

BCNF not violated

R1(UserID, Name, Email, Password, CreateDate)

PortfolioID → UserID, Name, RiskProfile

BCNF not violated

R2(PortfolioID, UserID, Name, RiskProfile)

Holding_id → portfolio_id, security_id, quantity, average_purchase_price, current_value, last_updated

BCNF not violated

R3(Holding_id, PortfolioID, SecurityID, Quantity, Average_Purchase_Price, Current_Value, Last_Updated)

SecurityID → Symbol, Name, Type, Sector, CurrentPrice

BCNF not violated

R4(SecurityID, Symbol, Name, Type, Sector, CurrentPrice)

TransactionID → PortfolioID, SecurityID, Type, Quantity, Price, Date, Fees

BCNF not violated

R5(TransactionID PortfolioID, SecurityID, Type, Quantity, Price, Date, Fees)

WatchlistID → UserID, SecurityID, AlertPrice, DateAdded

BCNF not violated

R6(WatchlistID, UserID, SecurityID, AlertPrice, DateAdded)