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Class:Database Systems

Project: HW1

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Table of Contents

Section I: Project Description

"Invest" is an app that helps customer to invest their savings in a simple way. It provides all the list of stocks that are available. It tells the customers how to invest. It shows them which stock are making profit, which ones are going down and which of them are potentially going to valuable. It will also present the profit and lossses, how they are calculated and how the customer has invested over.

Section II: Use Cases

1.Ryan did a saving of five hundred dollars last month. He is planning on investing on 50% of the savings. He comes across an app called Invest. He sees all the stocks listed in the New York Stock Exchange. He tries to buy a stock but the doesn't allow it. The app tells Ryan to create an account to buy stock. He registers as a new user and then logins into the account. He is asked to choose a level at which he wants to start investing. It had three options: beginner, competent and pro. Beginner would invest low with low profit and low risks. Pro would invest high with higher profit and higher risk.

2. Sam is looking for stocks on the invest app. He is looking to invest on tech companies. He goes onto the technology category. He sees the list of all the tech stocks. He selects one of the stocks and wants to buy it. But he is confused how much is best for me to invest. He puts his monthly income and expense. After that he gets to know what amount is best for him to invest. He puts his payment information and completes the transactions.

3. Jamie is new to investing but she wants to learn and start investing. She registers as new user. She selects a stock and then goes to the expert category. She selects an expert. The expert starts discussing her choice of stocks. The expert tells her various aspects associated with her choice.

4. Marie wants to buy some stock from the app. She selected a stock and she wanted to keep lookin for other stocks as well. But the system would only let to proceed towards the payment methods. Once she was done with payment of one stock, she could start to search for other stocks.

5. James is looking at the stocks on the Invest app. He sees a stock up by 10%. He doesn't have any savings left. So, he wants his friend Jimmy to buy the stock. He shares the listing of the stock to Jimmy on social media. Jimmy texts me saying "Thankyou".

6. Matt scrolls through some stock in the Invest app. He wants to buy some stocks but they are above his budget. So, he keeps the stock in the wishlist category. After a week, Matt returns to the app. He sees the stock in the wishlist and then buys it.

Section III: Bussines Rules

1. A user can create only one account.
2. A user can browse only one stock category at a time.
3. A registered user can buy multiple stocks.
4. A user can start investing at only one level: beginner, competent and pro-level.
5. A registered user can make payment/transaction for only one stock at a time.
6. A registered user can make multiple payments through credit card.
7. A registered user can make multiple payments through debit card.
8. A registered user can make multiple payments through direct bank account.
9. A user can select only one expert to discuss about a stock.
10. A user can share multiple stocks at a time.
11. A user can share a stock to multiple friends at a time.
12. A user can add only one stock in a wish-list category at a time.
13. A user can keep multiple stocks in the wish-list category.

Section IV: Detailed List of Main Entities, Attributes and Keys

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1.User

* Userid: PK

*name:composite

*dob: multivalue

*age:derived

2.Account

*Accountid: PK

*Userid :key

*Email:alphanumeric

*Password:alphanumeric

3.Stock

*Bid:Key

*Stockid:key

*Userid: Key

*Stockname:alphanumeric

*Stockvalue:multivalue

*Paymethodid:PK

4.Buy

*Bid:PK

*Stockid:Key

*Userid:Key

*Buydate:multivalue

5.Category

*Cid:PK

*Userid:key

*Categoryname:alphanumeric

6. Level

*Lid:key

*Userid:PK

*Levelname:alphanume

7. Paymethod

*Userid:key

*Paymethodid: key

*CreditC: multivalue

*DebitC:multivalue

*BankA/C:multivalue

8.Expert

*Eid:Pk

*Stockid:key

*Userid:key

9. Share

*Shareid:key

*Userid:key

*Stockid:PK/FK

*Friendid:key

10. Friends

*Friendid:PK

*Userid:key

*Stockid:key

*Shareid:key

11. Wishlist

*Wishlistid:PK

*Stockid:Key

*Uid:key

12.Keep

*keepID:PK

*wishID:Key

*userID:Key

*acID:Key

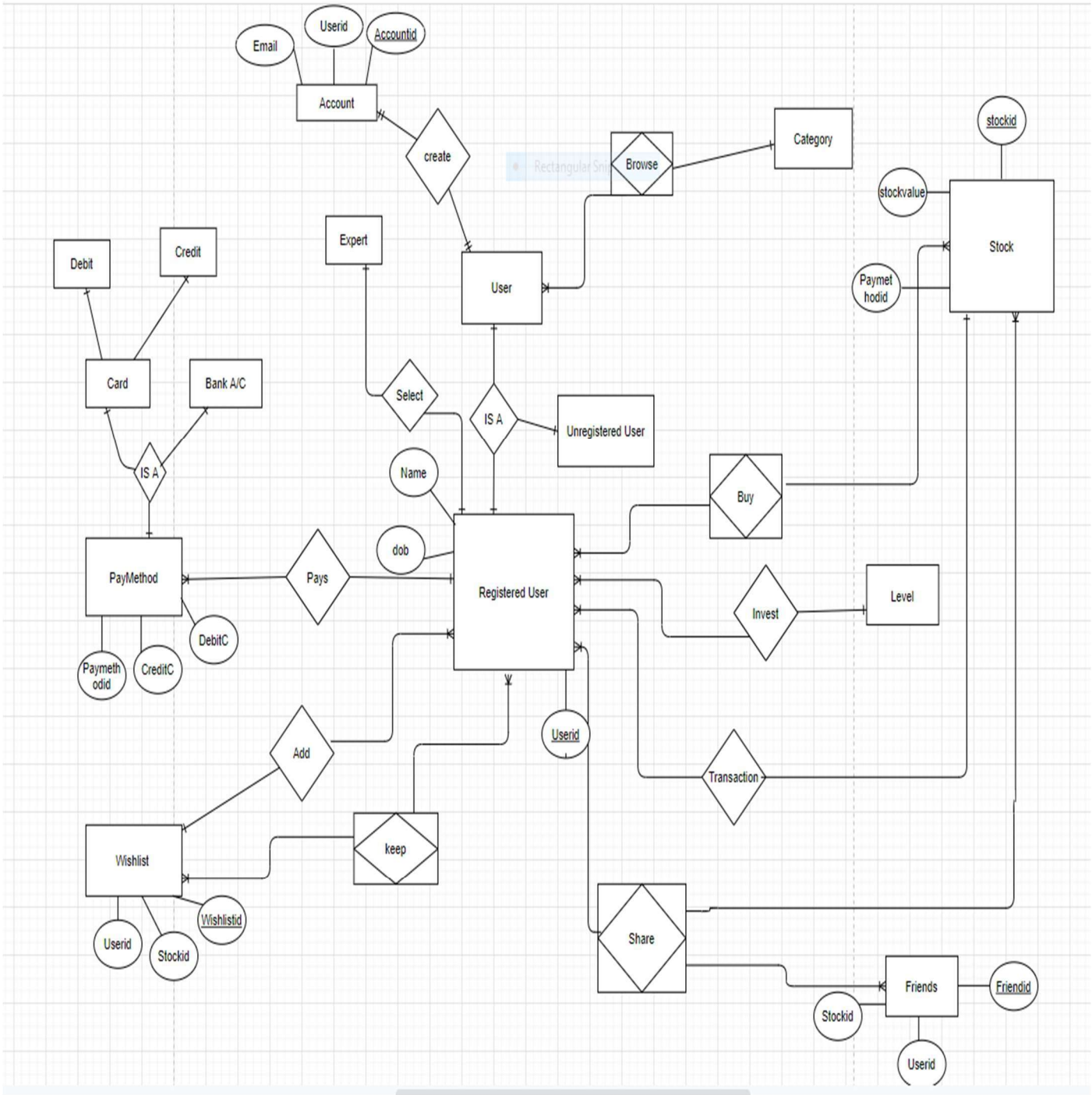
13. CreditCard

14.DebitCard

15. BankAccount

16.RegisteredUser

Section V: Entity Relationship Diagram (ERD)



Section VI: Testing Table

Rule	Entity A	Relation	Entity B	Cardinality	Pass/Fail	Error Description
1.	User	Create	Account	1 to 1	Pass	
2.	User	Browse	Category	M to N	Pass	
3.	Registered User	Select	Expert	1 to 1	Pass	
4.	Registered User	Invest	Level	M to N	Pass	
5.	Registered User	Transaction	Stock	M to N	Pass	
6.	Registered User	Pays	Payment Medium	N to M	Pass	
7.	Registered User	Share	Stock	M to M	Pass	
8.	Registered User	Share	Friends	M to M	Pass	
9.	Registered User	Add	Wishlist	M to N	Pass	
10.	Registered User	Keep	Wishlist	M to M	Pass	
11.	User	IS A	Registered User	1 to 1	Pass	