**InvestEd Conceptual Schema**

**Base Facts**

User

* User has ID (id)
* User (id) has Username (username)
* User (id) has Password (password)
* User (id) has First Name (firstName)
* User (id) has Last Name (lastName)
* User (id) has Birthday (birthday)
* User (id) has Email (email)
* User (id) has Phone Number (phoneNumber)
* User (id) has Buying Power (buyingPower)

Post

* Post has ID (id)
* Post (id) has Owner (userId)
* Post (id) has Post Date (postDate)
* Post (id) has Content (content)
* Post (id) has Likes (likes)

Stock

* Stock has Ticker (ticker)
* Stock (ticker) has Company Name (companyName)
* Stock (ticker) has Current Price (currentPrice)
* Stock (ticker) has Period Gain (periodGain)
* Stock (ticker) has Open (open)
* Stock (ticker) has High (high)
* Stock (ticker) has Low (low)
* Stock (ticker) has Volume (volume)
* Stock (ticker) has Market Cap (mktCap)
* Stock (ticker) has P/E Ratio (peRatio)
* Stock (ticker) has Dividend Yield (dividendYield)

Portfolio Stock

* Portfolio Stock has Ticker (stockTicker)
* Portfolio Stock (stockTicker) has Share Quantity (shareQuantity)
* Portfolio Stock (stockTicker) has Gain Since Purchase (gainSincePurchase)

Portfolio

* Portfolio has ID (id)
* Portfolio (id) has User (userId)
* Portfolio (id) has List<Portfolio Stock> (currentStocks)
* Portfolio (id) has Period Gain (periodGain)

Lesson Information

* Lesson Information has ID (id)
* Lesson Information (id) has Picture (picture)
* Lesson Information (id) has Info (info)

Quiz Question

* Quiz Question has ID (id)
* Quiz Question (id) has Question (question)
* Quiz Question (id) has Correct Answer (correctAnswer)
* Quiz Question (id) has List<Incorrect Answers> (incorrectAnswers)

Lesson Quiz

* Lesson Quiz has ID (id)
* Lesson Quiz (id) has List<Quiz Question> (quizQuestionId)
* Lesson Quiz (id) has Investment Reward (investmentReward)

Lesson

* Lesson has ID (id)
* Lesson (id) has Name (name)
* Lesson (id) has Description (description)
* Lesson (id) has List<Lesson Information > (lessonId)
* Lesson (id) has Quiz (quizId)

**Constraints**

1. User must have exactly one ID
2. User must have exactly one Username
3. User must have exactly one Password
4. User must have exactly one First Name
5. User must have exactly one Last Name
6. User may have up to one Birthday
7. User must have exactly one Email
8. User may have up to one Phone Number
9. User must have exactly one Buying Power
10. Users buying power cannot be smaller than zero
11. Post must have exactly one ID
12. Post must have exactly one Owner
13. Post must have exactly one Post Date
14. Post must have exactly one Content
15. Post Content cannot be greater than 150 characters
16. Post must have exactly one Likes
17. Post Likes cannot be less than zero
18. Post Likes cannot be greater than the number of users on InvestEd
19. Stock must have exactly one Ticker
20. Stock must have exactly one Company Name
21. Stock must have exactly one Current Price
22. Stock current price cannot be less than zero
23. Stock must have exactly one Period Gain
24. Stock must have exactly one Open
25. Stock Open cannot be less than zero
26. Stock must have exactly one High
27. Stock High cannot be less than zero
28. Stock must have exactly one close
29. Stock Close cannot be less than zero
30. Stock must have exactly one Market Cap
31. Stock Market Cap cannot be less than zer0
32. Stock must have exactly one P/E Ratio
33. Stock must have exactly one Dividend Yield
34. Stock Dividend Yield cannot be less than zero
35. Portfolio Stock has exactly one Ticker
36. Portfolio Stock has exactly one Share Quantity
37. Portfolio Stock Share Quantity cannot be less than zero
38. Portfolio Stock has exactly one Gain Since Purchase
39. Portfolio has exactly one ID
40. Portfolio has exactly one User
41. Portfolio has exactly one Period Gain
42. Lesson Information has exactly one ID
43. Lesson Information exactly one Picture
44. Lesson Information has exactly one Info
45. Lesson Information cannot be longer than 500 characters
46. Quiz Question has exactly one ID
47. Quiz Question has exactly one Question
48. Quiz Question has exactly one correct answer
49. Quiz Question’s Incorrect Answer cannot have more than 4 of them
50. Lesson Quiz has exactly one ID
51. Lesson Quiz can only have up to 5 Quiz Questions
52. Lesson Quiz has exactly one Investment reward
53. Lesson Quiz Investment Reward cannot be greater than 500
54. Lesson must have exactly one ID
55. Lesson must have exactly one Name
56. Lesson must have exactly one Description
57. Lesson can only have up to 5 Lesson Information
58. Lesson must have exactly one Lesson Quiz