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1 /*
2     Author's Name:           Kenneth Larot Yamat
3
4     Purpose of Program:      To create a program that automatically creates
5                               trading tickets for a security, for example, buy
6                               and sell orders for shares of an exchange traded fund.
7
8     Date Due:                11:59 PM on March 4th, 2024
9 */
10
11 Project Proposal:           To create a program that automatically creates
12                               trading tickets for a security, for example, buy
13                               and sell orders for shares of an exchange traded fund.
14
15                               A user would only manually enter the first order, either to
16                               buy or sell a security, the program would populate and submit
17                               a new ticket based on the fulfillment of the previous ticket,
18                               the chain of tickets would continue until the user decided to
19                               cancel the chain.
20
21 A) Background and the needs:
22
23                               This program is needed because there are many securities
24                               that are difficult to trade because they are illiquid as
25                               a result of large bid and ask spreads, or because they lack
26                               volume.
27
28                               The goal is to reduce spreads while increasing volume.
29
30                               Another need is due to the fact that manually performing this task
31                               is laborious and prone to error.
32
33
34 B) Function list:
35
36                               getSecurityPrice
37                               setSecurityPrice
38
39                               setPurchasePrice
40                               getPurchasePrice
41
42                               setLiquidationPrice
43                               getLiquidationPrice
44
45                               setAverageTrueRange
46                               getAverageTrueRange
47
48                               setBollingerBandWidth
49                               getBollingerBandWidth
50
51                               setAverageDirectionalIndex
52                               getAverageDirectionalIndex
53
54 C) User interface (UI) design:
55
56     Step 1
57
```

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58
59     Trade Ticket
60     =====
61
62     Security:      [User Input Element]
63     Buy or Sell:   [User Input Element]
64     Limit:         [User Input Element]
65     Quantity:     [User Input Element]
66     ATR:           [User Input Element]
67     BBW:           [User Input Element]
68     ADX:           [User Input Element]
69
70 Step 2
71
72
73     Your initial [Buy/Sell] Trade ticket for [Security] has been
74     submitted at the following price [Limit Price] and quantity [Quantity].
75
76     Subsequent orders will be automatically generated and submitted contingent
77     upon the fulfillment of the previous order, with buy limits and sell limits
78     based on the Average True Range, Bollinger Band Width, and Average Directional
79     Index entered on the initializing ticket.
80
81     Sell orders will be generated with a limit of [Calculated Amount] above the previously filled ticket
82     Buy orders will be generated with a limit of [Calculated Amount] below the previously filled ticket
83
84     [ User Input Element [Accept and Submit] [Override and Submit] [Start Over] ]
85
86 Step 3
87
88     [Ticker Symbol] [Buy/Sell] [Order Quantity] [Limit Price] [Ticket Status]
89
90     [ HFH.P Buy 1 86.86 Open ]
91
92 Step 4
93     [Ticker Symbol] [Buy/Sell] [Order Quantity] [Limit Price] [Ticket Status]
94
95     [ HFH.P Buy 1 86.86 Filled ]
96
97 Step 5
98
99     [Ticker Symbol] [Buy/Sell] [Order Quantity] [Limit Price] [Ticket Status]
100
101     [ HFH.P Sell 1 86.89 Open ]
102
103 Step 6
104
105     [Ticker Symbol] [Buy/Sell] [Order Quantity] [Limit Price] [Ticket Status]
106
107     [ HFH.P Sell 1 86.89 Filled ]
108
109 Step 7
110
111     [Ticker Symbol] [Buy/Sell] [Order Quantity] [Limit Price] [Ticket Status]
112
113     [ HFH.P Buy 1 86.87 Open ]
114
```

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115 Step 8
116
117 [Ticker Symbol] [Buy/Sell] [Order Quantity] [Limit Price] [Ticket Status]
118
119 [ HFH.P Buy 1 86.87 Filled ]
120
121 Notes: this sequence is based on + 00.03 to Sell orders and - 00.02 to Buy orders for first issue preferred shares for the security HFH
122
123 D) Class diagram
124
125
126
127 E) File and database design:
128
129 F) Expectations of project fulfillment:
130
131 a. [Ticket] instantiates based on user input.
132
133 [AutoTicket] instantiates based on fulfillment of previous ticket.
134
135 b.
136
137 c.
138
139 d. [Arraylist] Arraylist will be used to log the sequence of trades
140
141 e. [Exception handling] a user may enter alphabetical values in a field that requires an int or
142 double, and vice versa, an invalid data message will prompt the user.
143
144 f. [Database]
145
146 g.
147 [Documentation] very detailed and elaborate notes will be included in every program,
148 class, method, and attribute regarding the purpose, design, development,
149 and miscellaneous other notes as well.
150
151
```