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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                               setAvarageTrueRange
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
75             [Quantity].
76
77             Subsequent orders will be automatically generated and submitted
78             contingent
79             upon the fulfillment of the previous order, with buy limits and
80             sell limits
81             based on the Average True Range, Bollinger Band Width, and Average
82             Directional
83             Index entered on the initializing ticket.
84
85             Sell orders will be generated with a limit of [Calculated
86             Amount] above the previously filled ticket
87             Buy orders will be generated with a limit of [Calculated
88             Amount] below the previously filled ticket
89
90             [ User Input Element [Accept and Submit] [Override and
91             Submit] [Start Over] ]
92
93             Step 3
94
95             [Ticker Symbol] [Buy/Sell] [Order
96             Quantity] [Limit Price] [Ticket Status]
97
98             [ HFH.P Buy 1
99             86.86 Open ]
100
101             Step 4
102
103             [Ticker Symbol] [Buy/Sell] [Order
104             Quantity] [Limit Price] [Ticket Status]
105
106             [ HFH.P Buy 1
107             86.86 Filled ]
108
109             Step 5
110
111             [Ticker Symbol] [Buy/Sell] [Order
112             Quantity] [Limit Price] [Ticket Status]
113
114             [ HFH.P Sell 1
115             86.89 Open ]

```

102

103

Step 6

104

105

Quantity]	[Limit Price]	[Ticker Symbol]	[Buy/Sell]	[Order Ticket Status]
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106

107

86.89	Filled	HFH.P	Sell	1
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108

109

Step 7

110

111

Quantity]	[Limit Price]	[Ticker Symbol]	[Buy/Sell]	[Order Ticket Status]
-----------	---------------	-----------------	------------	--------------------------

112

113

86.87	Open	HFH.P	Buy	1
-------	------	-------	-----	---

114

115

Step 8

116

117

Quantity]	[Limit Price]	[Ticker Symbol]	[Buy/Sell]	[Order Ticket Status]
-----------	---------------	-----------------	------------	--------------------------

118

119

86.87	Filled	HFH.P	Buy	1
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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

[AutoTicket] instantiates based on fulfillment of previous ticket.

133

b.

134

c.

135

d.

136

e.

137

f.

138

g.

139

140