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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
```

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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

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

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

95

96 [HFH.P Buy 1 86.86 Filled

]

97

98 Step 5

99

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

101

102 [HFH.P Sell 1 86.89 Open

]

103

104 Step 6

105

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

107

108 [HFH.P Sell 1 86.89 Filled

]

109

110 Step 7

111

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

113

114 [HFH.P Buy 1 86.87 Open

]

115

116 Step 8

117

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

119

120 [HFH.P Buy 1 86.87 Filled

]

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