Frequently Asked Questions (FAQ)

1. **When does the challenge start and end?**
   The kick off start date will be on 9 Feb 2023 kick off and it will end off on 29 Apr 2023 with the final presentation award.

2. **How do I sign up to join the competition?**
   You can sign up at sg-innovationchallenge.org
   First click on "Register now" and fill up the form.

3. **Where can I see your Terms and Conditions?**
   Please refer to sg-innovationchallenge.org for the Terms and Conditions

4. **What is the registration's process?**
   Students are to form teams with a minimum of four participants and up to a maximum of six participants. Each student is permitted to join only one team.
   Each team must provide the
   - Team Name
   - Names of members in the team
   - School's email addresses of the team's members
   - Contact numbers of the team's members
   - School, faculties and programme of the team's members

   Registration opens now and closes on 27-Feb-2023 at 23.59hr Registration submission at: https://www.sg-innovationchallenge.org
   Each team will receive an email confirmation upon successful registration
   Details and announcements will be shared in https://www.sg-innovationchallenge.org/

5. **How can I get the latest updates about the Competition?**
   Please refer https://www.sg-innovationchallenge.org/ for any updates. You will also receive an email from us at your provided email address. Please make sure to check your junk mailbox!

6. **Can I change my details after registering for the competition?**
   If there is a need to change details after registering, please send your request via email to msba@nus.edu.sg

7. **When will I receive confirmation if my team is selected or not for the Final Event?**
   The results announcement for the Top 8 finalists will be made on 12 Apr 2023.

8. **How do I prepare for the final pitch at the Final Event?**
   Further information will be provided during the coaching period. Stay tuned!

9. **When will the Final Event take place?**
   The Final Event will take place on 29 Apr 2023. Please check the website
   https://www.sg-innovationchallenge.org/ for more details.

10. **What is the difference between a judge and a mentor?**
    Judges and Mentors are two sets of professional
    - o Judges' key responsibilities are to grade and rank the proposal/submission
    - o Mentors key responsibilities are to advise and guide participating teams to a successful submission/solution

    Mentors will be allocated only to the top 8 teams.

11. **How are submissions judged?**
    Kindly refer to the "Rules" on https://www.sg-innovationchallenge.org/rules

12. **What are the eligibility criteria?**
    To be eligible for this competition, you are an individual who are:
    - Any current students who are studying in one of the universities or polytechnics in Singapore.
    - Able to attend in person the activities and events relating to the Challenge that are physically held in Singapore

    Each eligible individual can only participate in the Challenge as part of one (1) team submitting one (1) entry only.

13. **Can the team members be from different Universities or Polytechnics?**
    Yes. However, all the members have to be from the universities or polytechnics based in Singapore.

14. **Is it possible to submit more than one entry?**
    No. One submission per participating team is allowed.

15. **For the submission, what do I need to submit?**
    Your team must submit the following:
    - Source Code
    - Presentation Deck on the solution

16. **Do we need to follow a submission template?**
    There is no template but please do ensure your deliverables are in English and contain what is mentioned in the question above.

17. **How do I get access to data?**
    Dataset will be given to qualifying team to work on.

18. **What if my data contains sensitive data? Will my data be private?**
    Please refer to the "Rules" regarding data privacy.

19. Can I reach out to the Challenge Mentors to ask a question or get help?
Yes, you can reach out to your respective Mentors via email.

20. What is the deadline to submit the solution?
You can start submitting the solution from 1 Mar 2023 onwards. The deadline for submitting your completed solution is 9 Apr 2023 at 11:59pm (GMT+8)

21. How can I get help? What are the available resources?
For other enquires please reach out to:
    NUS's contact: msba@nus.edu.sg

22. When will the winners be announced?
Final presentation and award ceremony will be held on 29 Apr 2023

Frequently Asked Questions (FAQ) – Problem Statement

Q1. Are the pre-ranking phase daily results counted as part of the selection criteria?
No, the daily results in the pre-ranking phase (both in Round One and Final Round) will not be counted as part of the selection criteria. They are only used for reference, which may help you to figure out how well your solution model performs. Only the results in the closed-door phase will be counted for selection.

Q2: What are the released dates for the trading data and are they real-time data?
In pre-ranking phase, the latest trading data will be collected every day, which we will then run against the models of all teams. The ranking is given based on the latest data every day. In closed-door phase, the ranking is given based on the average score of five (5) trading days, and it will be used as the evaluation criterion for the Final Round.

Q3: How can I find out more about the problem statement and the data provided?
You can visit our competition website (https://www.sg-innovationchallenge.org/) and read the problem description. If you have any questions pertaining to the participation of the Innovation Challenge, please email to msba@nus.edu.sg with the subject title, "NUS-Huawei Analytics Innovation Challenge 2023".

Q4: How is the 100-days trading data relevant to the solution model?
The given dataset contains real original trading data of 500 stocks in 100 days with rich trading details. You can build your solution model by applying statistical or machine learning techniques based on the dataset. The competition does not limit how to use the dataset. It is also not necessary to use all fields in the dataset as some fields may not be meaningful to the model development. Ultimately, it all depends on your idea. The given two demos may give you some inspiration.

Q5: Can participants use external data sources to improve their solution model?

Yes. We encourage participants to use external data sources, as long as the data is useful for the solution.

Q6: Can participants get pre-trading data to improve their solution?

Yes, you can use pre-trading data from external data source to improve your model. However, please note that the data should be a closed dataset. That means the data cannot be updated (e.g., through Internet) once the solution is submitted.

Q7: Please clarify the "10 selling price" and "10 buying price" per tick.

The selling price and buying price are also known as "ask price" and "bid price" respectively. In each tick, there is a latest transaction price (COLUMN07), which is the most recent price that a stock is traded. At the same time, there are other investors specifying higher or lower prices to trade this stock. The selling prices are the lowest prices that sellers are willing to accept. Similarly, the buying prices are the highest prices that buyers are willing to pay for the stock. For example, assume that the latest price is $10.00 now. Then the ask price 1 to 10 can be: $10.01, $10.02, ... , $10.10. The bid price 1 to 10 can be: $9.99, $9.98, ... , $9.90.

Q8: Is there any guidelines on accessing the competition platform?

The competition server is a Linux server. Contestants can access the competition platform using SSH or SFTP with specific clients. We recommend using Termius, which has both SSH and SFTP capabilities. Besides, you can also use Xshell for SSH and FileZilla for SFTP.

Q9: Are the participants supposed to analyze the 100-days data and daily historical data to decide when to buy and sell the shares?

It is not mandatory to use the 100-days data. You can also choose to use external data. However, the purpose of this competition is to discover how to make full use of historical data. Thus, if the 100-days data is used, the innovation score (Innovation of Solution – 30%) in the final round will be higher.

Q10: What do columns 8-27 represent? (Selling prices 1-10, selling volumes 1-10...)?

The selling price and buying price are known as ask price and bid price. In each tick, there is a latest transaction price (COLUMN07), which is the most recent price that a stock was traded. At the same time, there are other investors specifying higher or lower prices to trade this stock. The selling prices are the lowest prices that sellers are willing to accept, and the selling volumes are the total commissioned amount at these prices. Similarly, the buying prices and volumes are the highest prices and corresponding amounts that buyers are willing to pay for the stock.

Using the tick on 2022/8/5 9:30:09:000 of 600166.SH as an example. The selling prices and volumes, as well as buying prices and volumes are shown as Table.1.

Table 1 An example of selling (buying) prices and volumes

Selling Price10	2.77	Selling Volume10	509100
Selling Price9	2.76	Selling Volume9	369900
Selling Price8	2.75	Selling Volume8	437700
Selling Price7	2.74	Selling Volume7	189200
Selling Price6	2.73	Selling Volume6	280800
Selling Price5	2.72	Selling Volume5	320600
Selling Price4	2.71	Selling Volume4	689200
Selling Price3	2.7	Selling Volume3	300600
Selling Price2	2.69	Selling Volume2	280700
Selling Price1	2.68	Selling Volume1	23804
Latest Price	2.67		
Buying Price1	2.67	Buying Volume1	55873
Buying Price2	2.66	Buying Volume2	205400
Buying Price3	2.65	Buying Volume3	611500
Buying Price4	2.64	Buying Volume4	401000
Buying Price5	2.63	Buying Volume5	367600
Buying Price6	2.62	Buying Volume6	358300
Buying Price7	2.61	Buying Volume7	499200
Buying Price8	2.6	Buying Volume8	355000
Buying Price9	2.59	Buying Volume9	27400
Buying Price10	2.58	Buying Volume10	160200

The stock is trading at ￥2.67 now. At the same time, there are other investors who want to trade this stock with higher price. For example, 23804 shares are being sold at ￥2.68. Once the stock hits ￥2.68, they may be filled. We list and sort the lowest 10 selling prices, as well as the corresponding volumes. Selling Price2 is always higher than Selling Price1, Selling Price3 is always higher than Selling Price2, and so on. In fact, there are more commissions asking higher than ￥2.77, but are just not recorded in the data. Similarly, we list and sort the highest 10 buying prices and volumes at this tick.

Q11: During what period could we adjust our model? Could we adjust it during pre-ranking and close-up phase, or only pre-ranking phase?

Only test run phase and pre-ranking phase, you could adjust model at any time you can access to competition server. To be clearer, Table.1 summarizes the periods that contestants can adjust their models:

Table.1 The periods that contestants can adjust their models

	Phase	Date	Time
Round One	Test run	Before Mar.5	All day
	Pre-ranking	Mar.6 – Mar.24	0:00 – 8:00, 18:00 – 24:00
	break	Mar.25 – Mar.26	All day
	Closed-door run	Mar.27 – Mar.31	Cannot adjust
Final Round	break	Apr.1 – Apr.9	All day
	Pre-ranking	Apr.10 – Apr.21	0:00 – 8:00, 18:00 – 24:00
	break	Apr.22 – Apr.23	All day
	Closed-door run	Apr.24 – Apr.28	Cannot adjust

Q12: During each phase (training & pre-ranking & close-up phase), what kind of data could we have access to respectively? (e.g. tickdata, scores)

This competition provides 3 kinds of data for contestants:

(1) 100day historical tickdata files;

(2) Two demos and an evaluation function;

(3) A new tickdata files that used for testing your proram in the pre-ranking phases and closed-door phases. The format of new tickdata file is same as the history tickdata file, but only 100 stocks, and the 100 stocks name will always be the same.

Data (1) and (2) have been provided on the OBS link and the competition server, you can download at any time.

Data (3), the daily new tickdata file will be upload to the OBS link(the competition server path is /opt/newtickdata) every day at the time after we release the scores and ranking on the website during the pre-ranking phases. During closed-door phase it will be upload when ranking finished.

Q13: Is the required program focused on real-time transaction (meaning we have to make immediate decision with the market during transaction time) or prediction-based strategy (meaning we have to make decision before the market start transaction using only historical data)?

The former is correct. Contestants can refer to these two given demos, which may show you how to read the input data and how to make the decision. Generally, you should first divide the data into N parts according to the stock code, where N is the number of stocks in the input file. Then you should read the data line by line, you model needs to make decision on the current line immediately, cannot make decision on the line that has already been read over.

Q14: Could you share more information on the application context of our program? For instance, during the evaluation phase, when and how many times would you run the program (one-time or daily), do you input anything for the model (besides the 100days tickdata beforehand), and for different days, are we expected to export different strategies every day, etc.

To be precise, contestant programs will be run only one time daily during the pre-ranking phases and the closed-door phases. Don't expect to get the best score by memorizing the whole tickdata file before making decision. In addition, we will check the source code to see if you get a good score by memorizing the whole tickdata first.

We use a unified command: sh run.sh $INPUT $OUTPUT to run contestant programs. The $INPUT is a path of new single tickdata file. We will not input anything else. Contestants are not necessarily to export different strategies every day. You can use the same program for rankings, of course you could use different strategies, based on your decision. But only one strategy used during the close-door phase for we only execute run.sh one time.

Q15: Will we be informed of the 100 stocks that will be used at the various stage, and will these 100 stocks be the same for the various stages?

Yes. The contestants will be informed of the 100 stocks. And the 100stock tickdata files used for rankings will also be provided to contestants. In pre-ranking phase, they will be released daily. In the closed-door phase, they will be released when the ranking work finishes. These new tickdata files will be upload to the website, these files are stored in the same location as the current tickdata files.

The 100 stocks will be the same for the various stages.

Q16: Is there a run time limit set for model evaluation? Will the data format feed to model in evaluation stage be same as the provided 100 days' csv.?

While there is no official time limit, we suggest that you aim to decide on each tick line within one minute. This will ensure that our system can handle any potential exceptions. Additionally, it's worth noting that the format of the new tickdata file used to test your program is identical to the 100-day CSV file.

Q17: Are transaction volumes excluded from commissioned volumes?

Yes, transaction volumes are excluded from commissioned volumes.

Q18: Is it mandatory to buy and sell exactly 100 shares for all 500 stocks each day, without deviation?

Yes, it is necessary for participants to buy and sell precisely 100 shares for each stock included in the tickdata file. However, the number of stocks listed in the tickdata file

may differ, so the total number of stocks may not always be 500. In some instances, the tickdata file may contain only 100 stocks. In such cases, contestants should adjust their models accordingly and trade exactly 100 shares for those 100 stocks.

Q19: Is it possible to engage in short selling, and is evaluation.py configured to support this type of trading?

Yes, short selling is a permitted trading strategy. Specifically, the buying and selling tasks are treated as separate activities. It is helpful to think of them as occurring in distinct accounts, even if they involve the same stock. When evaluating the models, evaluation.py will process the buying and selling tasks as distinct entities.