**Report Template for ITP4514 Group Assignment**

Points to note:

* Please delete all unnecessary words in the template.
* Project Cover Page, Table of Contents, References & Appendix pages do not count for words
* You must start a new page for each section.
* Font-family: Times New Roman
* Font Size: 12px for body; 9px for image caption, 10px for reference list
* Spacing: 1.5

*Template starts at Page 2*

ITP4514 Artificial Intelligence and Machine Learning

Group Assignment

**Stock Prediction**

|  |  |  |
| --- | --- | --- |
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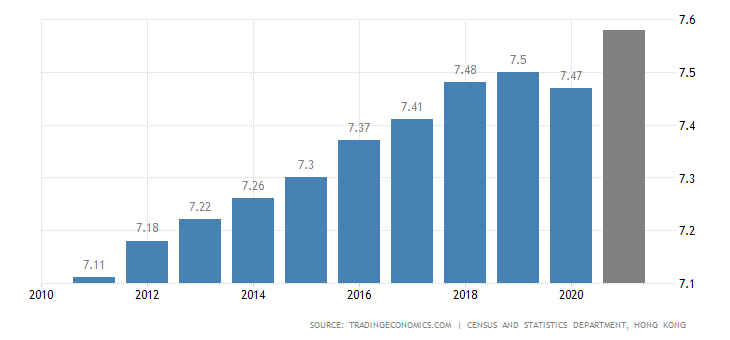
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# Introduction / Background

Now we are studying the module of AI and Machine Learning, and we have a assignment of design an AI that can predict the trend of the Tencent Holdings LTD. **Below is an example of displaying a graph.**



*Figure X. Hong Kong Population between 2010 and 202X*

We will use the Hang Seng Index to predict the Tencent Holdings LTD. It is because the Hang Seng Index is a freefloat-adjusted market-capitalization-weighted stock-market index in Hong Kong. The Tencent Holdings LTD is the second highest proportion among Hang Seng Index constituent stocks. Now, Tencent Holdings LTD’s proportion among Hang Seng Index around 8%. So the data of Hang Seng Index is the way for show the trend of Tencent Holdings LTD and the best data for predicting the future trend of Tencent Holdings LTD. **The Problem Statement would be displayed on the Problem Formulation. By then, we would discuss the methodology on Methodology. In Section 4, we would discuss the findings and results and a summary would be provided in the last section.**

(172 words)

# Problem Formulation

1. Data Missing

We have some data is missing when we are training the AI. Some day is same. And

1. Data mismatching

We are using the informer for building our AI model. And the Informer is an AI model too, but Informer is Beyond Efficient Transformer for Long Sequence Time-Series Forecasting. These tools aren’t a tool for stock prediction. Our solution is adding some many parameters for using to be an AI model that we can use. The default parameters have a hyper link in the Reference part.(Refer Link 4)

1. Low knowledge of Stock

The focus on technical skills and the lack of emphasis on financial education within their curriculum. Software engineering programs primarily concentrate on developing coding skills, algorithms, data structures, and other technical aspects of computer science.

# Methodology

1. **Online Serach**

We go to search on the internet, and we know that the Hang Seng Index will stop trading on the general holidays and the extreme weather. The detail of the Hang Seng Index stops trading in Reference part link 3.

1. **Add Parameter of Informer**

So we add some parameters . Below is the parameters that we had added.

* Length: High - Low, is a numeric value.
* BarLength: Close - Open, is a numeric value.
* RodLength: High - max(Open, Close), is a value.
* PinLength: Low - min(Open, Close), is a value.
* OpenRatio: Today's Open ÷ Yesterday's Close, which is a ratio.
* HighRatio: High ÷ Open, is a ratio.
* LowRatio: Low ÷ Open, which is a ratio.
* CloseRatio: Close ÷ Open, belongs to the ratio.
* RiseFall: (Close - Open) ÷ Open, belongs to the ratio.
* BarRatio: BarLength ÷ Length if Length ! = 0 else 0, it is a ratio.
* RodRatio: RodLength ÷ Length if Length ! If Length != 0 else 0, it is a ratio.
* PinRatio: PinLength ÷ Length if Length ! If Length != 0 else 0, it is a ratio.
* RSI\_5: 5-day relative strength indicator.
* RSI\_10: 10-day relative strength indicator.

With the addition of these columns, the original data will be expanded from 5 columns (Date, Open, High, Low, Close) to 19 columns. And by combining Taiwan County's own data with the broader market data, the input data will be up to 37 columns (19 × 2 - repeated Date)

1. **Do Research of the stock**

**We go to Wiki to get the information that we want to know.**

# Findings & Results

**Percentages, figures, and numerical findings are significant in this section.** Maecenas tortor tortor, pulvinar eu luctus ut, accumsan in urna. Etiam nec ullamcorper ligula, in volutpat odio. Curabitur aliquet purus at nisl tempor pretium. In laoreet finibus lobortis. Suspendisse quis tempus enim. Nullam viverra tincidunt ex, ac elementum ex molestie in. Fusce luctus velit est, in laoreet diam ullamcorper in. Nunc in dui interdum, ullamcorper justo eu, egestas libero. Integer nec turpis urna. Sed consectetur a justo vitae tempor. Proin id ex id risus molestie lacinia. Curabitur ullamcorper ut mi eu dignissim. Cras ut odio velit.

# Summary

**Based on your findings, you come up with some conclusions.** Maecenas tortor tortor, pulvinar eu luctus ut, accumsan in urna. Etiam nec ullamcorper ligula, in volutpat odio. Curabitur aliquet purus at nisl tempor pretium. In laoreet finibus lobortis. Suspendisse quis tempus enim. Nullam viverra tincidunt ex, ac elementum ex molestie in. Fusce luctus velit est, in laoreet diam ullamcorper in. Nunc in dui interdum,

Aliquam quis nisl commodo, laoreet nisl non, posuere mi. Nulla imperdiet ex dapibus ligula viverra tempor. Cras finibus ligula eget massa commodo varius ut eu libero. Donec malesuada ipsum eget urna semper egestas. Ut scelerisque hendrerit euismod. Suspendisse consequat diam in diam laoreet, sit amet dignissim sapien auctor. Nam ac volutpat eros, eget malesuada velit.

***(XXX words)***

# References

1. [https://github.com/zhouhaoyi/Informer2020](http://www.aastocks.com/tc/stocks/quote/quick-quote.aspx?symbol=02382)
2. <http://www.aastocks.com/tc/stocks/quote/quick-quote.aspx?symbol=02382>
3. <https://www.wstock.net/wstock/big5/hholiday.htm>
4. <https://github.com/zhouhaoyi/Informer2020>

**ITP4514 Group Assignment Submission Checklist**

**Before the submission of my work, I (the signed party) admit that:**

*(Please tick the corresponding box.)*

Yes No

1. I do not ***DIRECTLY COPY*** from any internet resources. ⬜ ⬜
2. I do not copy from **other students’** work. ⬜ ⬜
3. I have **summarized/paraphrased** my work from different ⬜ ⬜

kinds of materials.

1. I have fulfilled the word limitations (i.e. exceeded the ⬜ ⬜

***minimum required words***).

1. My work contains ***more than one paragraphs***. ⬜ ⬜
2. With all my works that I have referred from different ⬜ ⬜

sources, I have performed ***sufficient referencing.***

1. **If any violations on the above rules are found,** ⬜ ⬜

**I acknowledge that my marks might / would be**

**deducted in certain proportion.**

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**(Date) (Signature)**