1. **(1%)** 請說明你實作的 RNN model，其模型架構、訓練過程和準確率為何？
   (Collaborators:)

答：

```
_____
Layer (type)                 Output Shape              Param #
===============================================================
input_1 (InputLayer)         (None, 50)                0
_____
embedding_1 (Embedding)      (None, 50, 128)           2560000
_____
lstm_5 (LSTM)                (None, 512)               1312768
_____
dense_1 (Dense)              (None, 256)               131328
_____
dropout_1 (Dropout)          (None, 256)               0
_____
dense_2 (Dense)              (None, 1)                 257
===============================================================
Total params: 4,004,353
Trainable params: 4,004,353
Non-trainable params: 0
_____
```
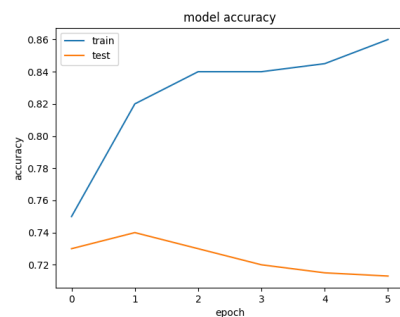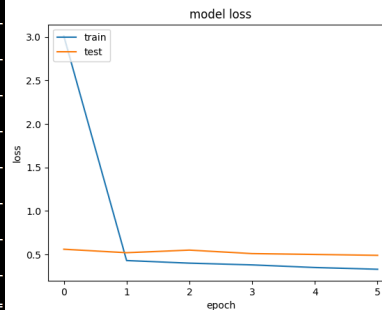
acc:80.63
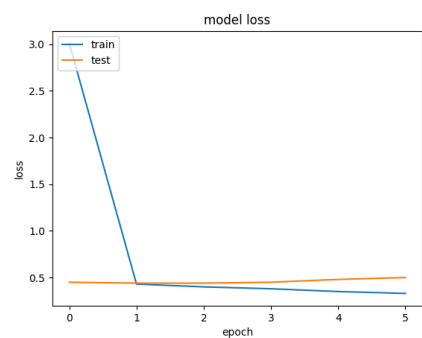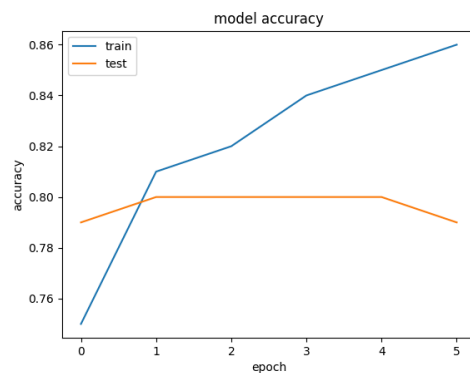
2. **(1%)** 請說明你實作的 BOW model，其模型架構、訓練過程和準確率為何？
   (Collaborators:)
   答：

```
dense_1 (Dense)                 (None, 1024)          525312
_____
batch_normalization_1 (Batch (None, 1024)            4096
_____
dense_2 (Dense)                 (None, 1024)          1049600
_____
batch_normalization_2 (Batch (None, 1024)            4096
_____
dense_3 (Dense)                 (None, 1024)          1049600
_____
batch_normalization_3 (Batch (None, 1024)            4096
_____
dense_4 (Dense)                 (None, 1024)          1049600
_____
batch_normalization_4 (Batch (None, 1024)            4096
_____
dense_5 (Dense)                 (None, 1024)          1049600
_____
batch_normalization_5 (Batch (None, 1024)            4096
_____
dense_6 (Dense)                 (None, 1024)          1049600
_____
batch_normalization_6 (Batch (None, 1024)            4096
_____
dense_7 (Dense)                 (None, 1024)          1049600
_____
batch_normalization_7 (Batch (None, 1024)            4096
_____
dense_8 (Dense)                 (None, 2)             2050
================================================================
```


model loss

model accuracy

acc:72.52

3. **(1%)** 請比較 bag of word 與 RNN 兩種不同 model 對於"today is a good day, but it is hot"與"today is hot, but it is a good day"這兩句的情緒分數，並討論造成差異的原因。
(Collaborators:)
答：RNN:[[0.6145306, 0.3854694],

[0.0058924, 0.9941076]]

BOW:[[0.7838192, 0.2161808],

[0.7838192, 0.9941076]]

RNN:正常，第一句偏向負面，第二句很正面。

BOW: 因為 bag of word 不看順序，所以出來的分數一樣。

4. **(1%)** 請比較"有無"包含標點符號兩種不同 **tokenize** 的方式，並討論兩者對準確率的影響。

(Collaborators:)

答：有分標點符號，acc:81.67

　　　沒有分：差不多，可能是因為人講話不會講出標點符號，所以有沒有
　　　分，機器也覺得沒差。

5. **(1%)** 請描述在你的 **semi-supervised** 方法是如何標記 **label，** 並比較有無
semi-surpervised training 對準確率的影響。
(Collaborators:)

答：我用助教的 code，threshold=0.5，acc:80.45，好像沒有比較好。