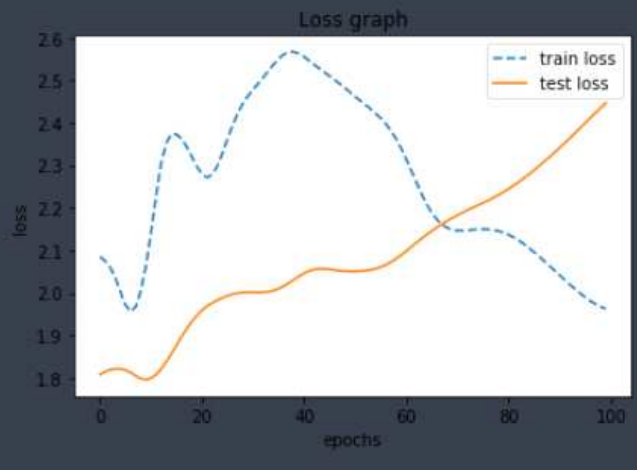
PA2 report

201911012 공영재

(a) RNN + SGD + 50d
epoch : 100, batch_size = 6

See you at the restaurant 😄
I like to laugh 😞
I will run ⚾
I like your jacket 😄
i miss her ❤️
what is your favorite baseball game 🍴
Good job 😄
I love you to the stars and back 😞
What you did was awesome 😄
ha ha ha lol ⚾
I do not want to joke 😞
go away 😄
yesterday we lost again 🍴
family is all I have 🍴
you are failing this exercise ❤️
Good joke ❤️
You deserve this nice prize 🍴
I did not have breakfast 😞

Final Test Accuracy : 35.7143

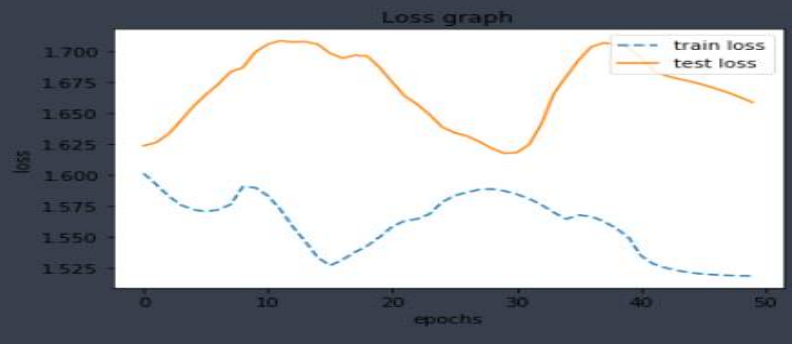


(b) LSTM+SGD+50d , epoch = 50, batch_size = 6

< LSTM+SGD+50d >

I want to eat ❤
he did not answer 😄
he got a very nice raise 😄
she got me a nice present ❤
ha ha ha it was so funny 😄
he is a good friend 😄
I am upset ❤
We had such a lovely dinner tonight 😄
where is the food 🍴
Stop making this joke ha ha ha 😄
where is the ball 😄
work is hard ❤
This girl is messing with me 🍴
are you serious 😔
Let us go play baseball 😔
This stupid grader is not working ❤
work is horrible ❤
Congratulation for having a baby 😄
stop pissing me off 😔
any suggestions for dinner 🍴
I love taking breaks ❤
you brighten my day ⚾
I boiled rice ⚾
she is a bully 😄
Why are you feeling bad 😔
I am upset ❤
give me the ball 😄
My grandmother is the love of my life 🍴
enjoy your game 😔
valentine day is near 😄
I miss you so much ❤
throw the ball 😄
My life is so boring 🍴
she said yes 😄
will you be my valentine 😔
he can pitch really well 😄
dance with me ⚾
I am hungry ❤
See you at the restaurant 😄
I like to laugh ❤
I will run ❤
I like your jacket ❤
i miss her 🍴
what is your favorite baseball game 😔
Good job ⚾
I love you to the stars and back ❤
What you did was awesome 😔
ha ha ha lol ⚾
I do not want to joke 🍴
go away ⚾
yesterday we lost again 😔
family is all I have 🍴
you are failing this exercise 😔
Good joke 😔
You deserve this nice prize 😔
I did not have breakfast ❤

Final Test Accuracy : 35.7143

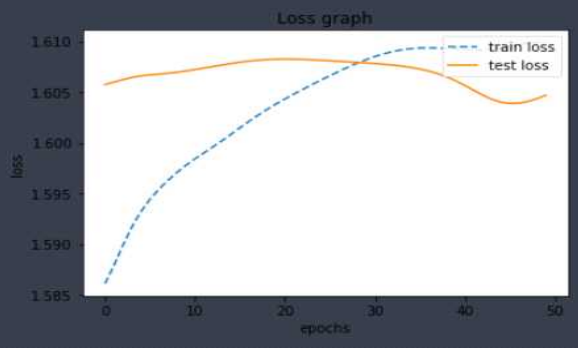


(c) LSTM+ADAM+50d, epoch = 50, batch_size = 6

< LSTM+ADAM+50d >

I want to eat 😄
he did not answer ⚾
he got a very nice raise 😄
she got me a nice present 😄
ha ha ha it was so funny 😄
he is a good friend 🍴
I am upset 😞
We had such a lovely dinner tonight 🍴
where is the food 😞
Stop making this joke ha ha ha 😄
where is the ball 😞
work is hard 😞
This girl is messing with me ⚾
are you serious 😞
Let us go play baseball ⚾
This stupid grader is not working 🍴
work is horrible 😞
Congratulation for having a baby 😞
stop pissing me off 😞
any suggestions for dinner 😞
I love taking breaks 😄
you brighten my day 😄
I boiled rice 😄
she is a bully 🍴
Why are you feeling bad 😄
I am upset 😄
give me the ball 😄
My grandmother is the love of my life ❤
enjoy your game 😄
valentine day is near 😞
I miss you so much 😄
throw the ball 😄
My life is so boring 😄
she said yes 😄
will you be my valentine 🍴
he can pitch really well 😄
dance with me 😄
I am hungry 🍴
See you at the restaurant 🍴
I like to laugh 😄
I will run 😞
I like your jacket 😞
i miss her 😄
what is your favorite baseball game ⚾
Good job 😄
I love you to the stars and back ❤
What you did was awesome 😄
ha ha ha lol 😄
I do not want to joke 😄
go away 😞
yesterday we lost again 🍴
family is all I have 🍴
you are failing this exercise 🍴
Good joke 😄
You deserve this nice prize 🍴
I did not have breakfast 🍴

Final Test Accuracy : 37.5

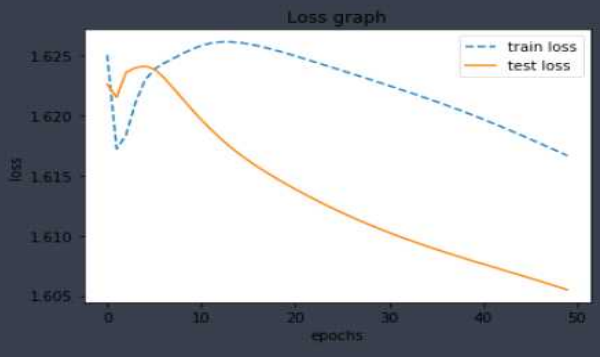


(d) LSTM+SGD+100d, epoch = 50, batch_size = 6

< LSTM+SGD+100d >

I want to eat 😔
he did not answer 😔
he got a very nice raise ❤️
she got me a nice present ❤️
ha ha ha it was so funny 😄
he is a good friend 😄
I am upset 😔
We had such a lovely dinner tonight 🍴
where is the food ❤️
Stop making this joke ha ha ha ❤️
where is the ball 😄
work is hard 😔
This girl is messing with me ❤️
are you serious 😄
Let us go play baseball 😔
This stupid grader is not working ❤️
work is horrible 🍴
Congratulation for having a baby 🍴
stop pissing me off ❤️
any suggestions for dinner 🍴
I love taking breaks 😔
you brighten my day ⚾
I boiled rice 😔
she is a bully 🍴
Why are you feeling bad 😔
I am upset 😔
give me the ball 😔
My grandmother is the love of my life 😄
enjoy your game 😔
valentine day is near 🍴
I miss you so much 😄
throw the ball 🍴
My life is so boring 🍴
she said yes ⚾
will you be my valentine 😄
he can pitch really well 😔
dance with me ⚾
I am hungry 😔
See you at the restaurant ❤️
I like to laugh 😄
I will run 😔
I like your jacket 🍴
i miss her 🍴
what is your favorite baseball game 😔
Good job 😔
I love you to the stars and back 😄
What you did was awesome ⚾
ha ha ha lol ⚾
I do not want to joke 😄
go away 🍴
yesterday we lost again ⚾
family is all I have ❤️
you are failing this exercise 😔
Good joke ⚾
You deserve this nice prize 😄
I did not have breakfast 🍴

Final Test Accuracy : 25.0

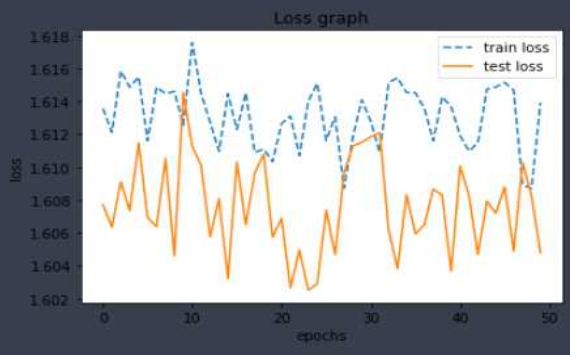


(e)LSTM+SGD+50d+dropout, epoch = 50, batch_size = 6

< LSTM+SGD+50d+drouout >

I want to eat 🍴
he did not answer 😔
he got a very nice raise 🍴
she got me a nice present 😍
ha ha ha it was so funny 😞
he is a good friend 😍
I am upset ⚾
We had such a lovely dinner tonight 😍
where is the food 🍴
Stop making this joke ha ha ha 😞
where is the ball ❤️
work is hard ❤️
This girl is messing with me ❤️
are you serious ⚾
Let us go play baseball ❤️
This stupid grader is not working 🍴
work is horrible ⚾
Congratulation for having a baby 😍
stop pissing me off ⚾
any suggestions for dinner ⚾
I love taking breaks ❤️
you brighten my day ❤️
I boiled rice ⚾
she is a bully 😔
Why are you feeling bad 🍴
I am upset ⚾
give me the ball ❤️
My grandmother is the love of my life ❤️
enjoy your game ❤️
valentine day is near 😔
I miss you so much 🍴
throw the ball 😍
My life is so boring 😞
she said yes 😔
will you be my valentine 😍
he can pitch really well 🍴
dance with me ⚾
I am hungry ⚾
See you at the restaurant 😍
I like to laugh ⚾
I will run ⚾
I like your jacket ❤️
i miss her ⚾
what is your favorite baseball game ❤️
Good job ⚾
I love you to the stars and back 🍴
What you did was awesome ⚾
ha ha ha lol 😔
I do not want to joke 🍴
go away ❤️
yesterday we lost again ❤️
family is all I have 🍴
you are failing this exercise 🍴
Good joke 😔
You deserve this nice prize ⚾
I did not have breakfast ⚾

Final Test Accuracy : 30.3571



- Describe the results comparison of Optimizers SGD & ADAM

: LSTM+SGD+50d의 경우 accuracy가 35.7%, LSTM+ADAM+50d의 경우 accuracy가 37.5%로 나왔다. ADAM의 경우 Momentum을 고려하기에 조금 더 높은 accuracy를 보여준다.

- Describe the results comparison of RNN & LSTM

: RNN+SGD+50d와 LSTM+SGD+50d의 경우 accuracy가 35.7%로 동일하게 나왔다. long-term dependencies를 해결한 LSTM이 accuracy가 더 높을 것이라 예상했지만, 데이터셋의 문장 길이가 짧은 탓인지 동일한 accuracy를 얻었다.

- Describe the results comparison of the length of glove vectors 50d & 100d

: LSTM+SGD+50d와 LSTM+SGD+100d의 경우 accuracy가 각각 35.7%, 25%로 나왔다. 학습량의 문제인지, complex한 100d glove vectors의 경우 예상과 달리 accuracy가 더 낮았다.

- Describe the difference between Wordd2Vec and Glove in terms of vector generation

: Word2Vec은 co-occurance within local context을 기반으로 vector generation, Glove는 global word to word co-occurance를 기반으로 vector generation한다.