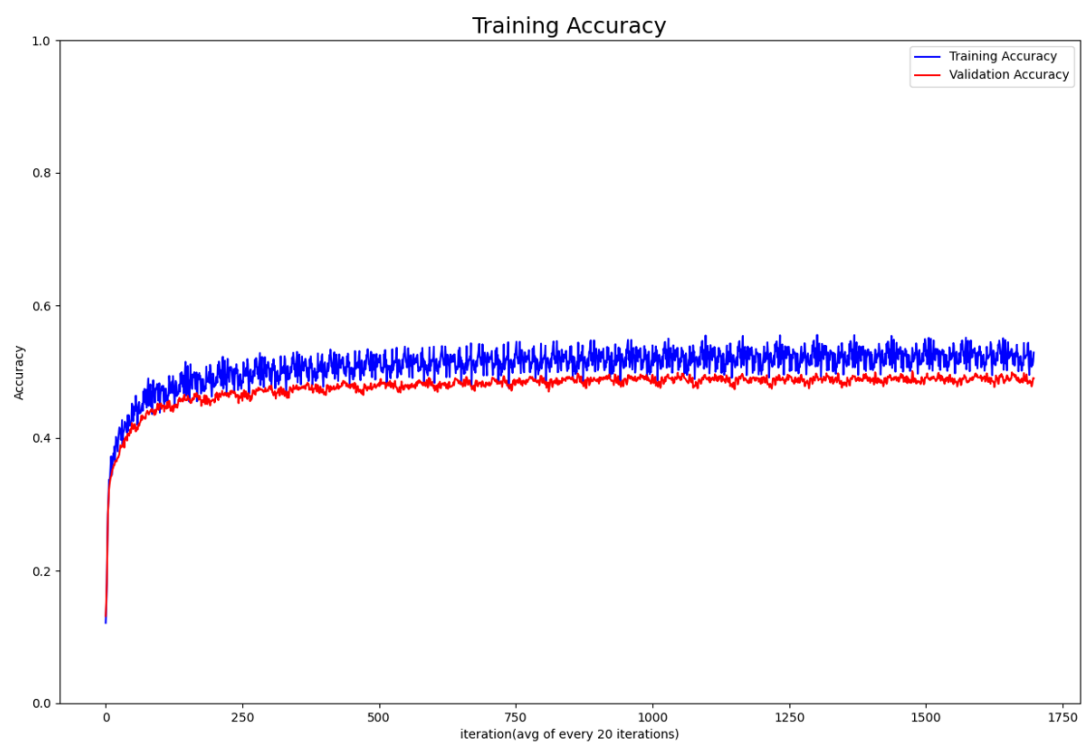
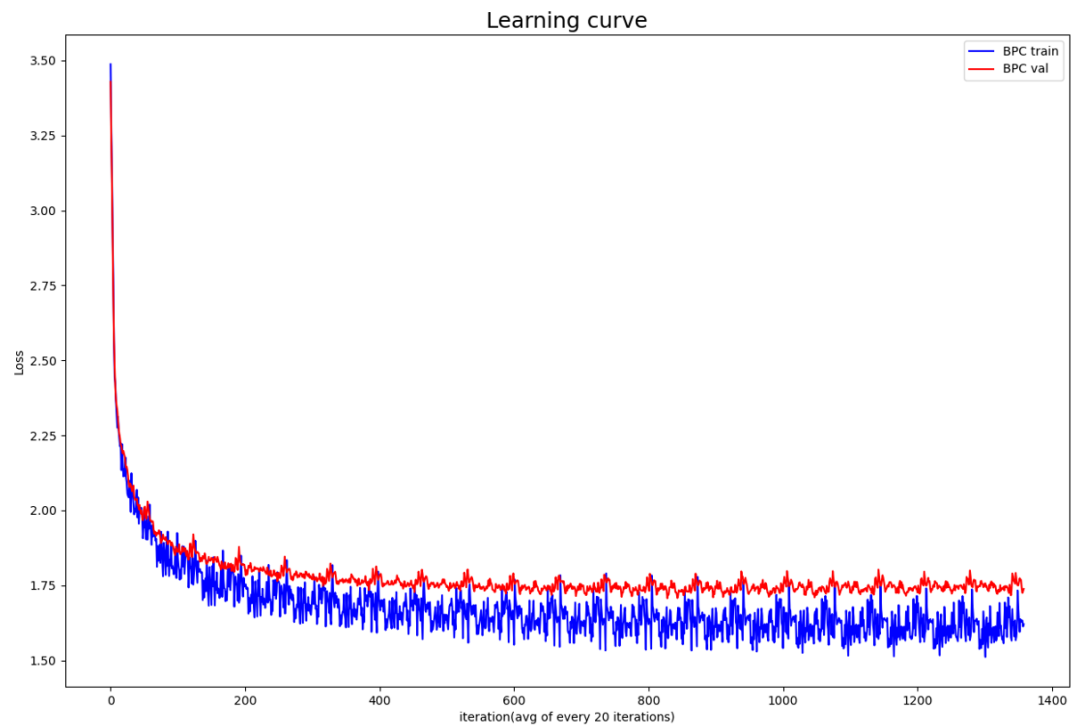


STANDARD RNN

1. Plots of learning curve, error rate(accuracy)

Architecture:

{hidden states=128,hidden layers=1,
seq len=100-1, Batch size=32,lr=0.003}



2. Breakpoints

```
sample at epoch= 1
First Citizen:
Before we proceed any further, hear me speak.

All:
Speak, speak.

First Citizen:
Yo
prediction:
rst tonhne
Tutore ti troue t tnd tolther ai rttty tooak

CLdo
Ioeak tooak

CArst tonhne
Tou
```

```
sample at epoch= 5
First Citizen:
Before we proceed any further, hear me speak.

All:
Speak, speak.

First Citizen:
Yo
prediction:
Fest tatinent
Tu ore ti sroveed t d tolth r te vtte teeak

CDl
Ioeak toeak

CArst Gatizent
Tou
```

```
sample at epoch= 9
First Citizen:
Before we proceed any further, hear me speak.

All:
Speak, speak.

First Citizen:
Yo
prediction:
Frst totizen:
Tu ore ti hroveed tnd tolther te vtte teeak

CLl
Toeak toeak

CArst Satizen:
Tou
```

```
sample at epoch= 13
First Citizen:
Before we proceed any further, hear me speak.

All:
Speak, speak.

First Citizen:
Yo
prediction:
Oret Catizen:
Tu ore ti hroveed t d tolther te v te tueak

CDd
Toeak toeak

Cirst Catizen:
Tou
```

```

sample at epoch= 17
First Citizen:
Before we proceed any further, hear me speak.

All:
Speak, speak.

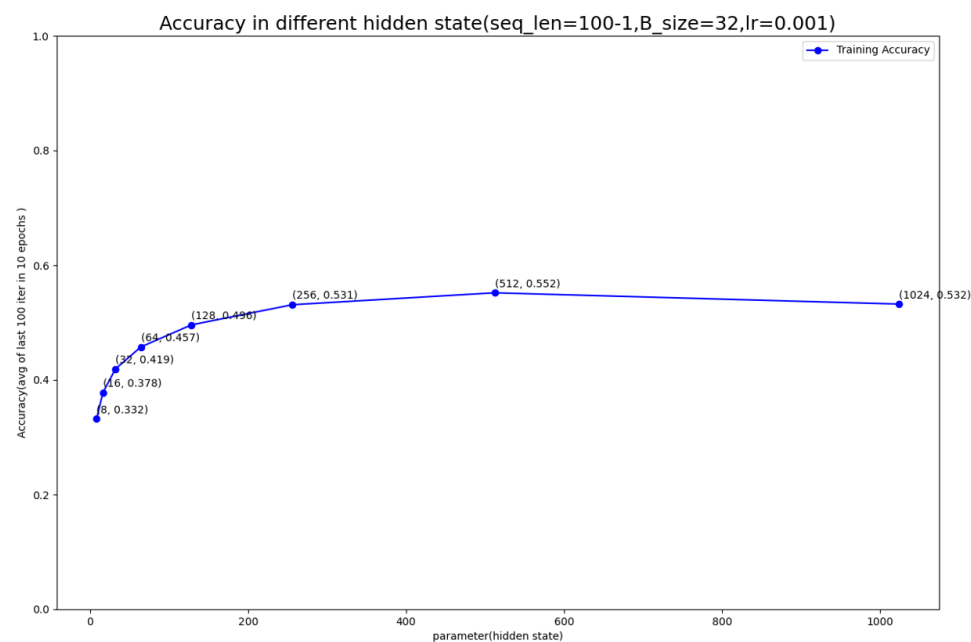
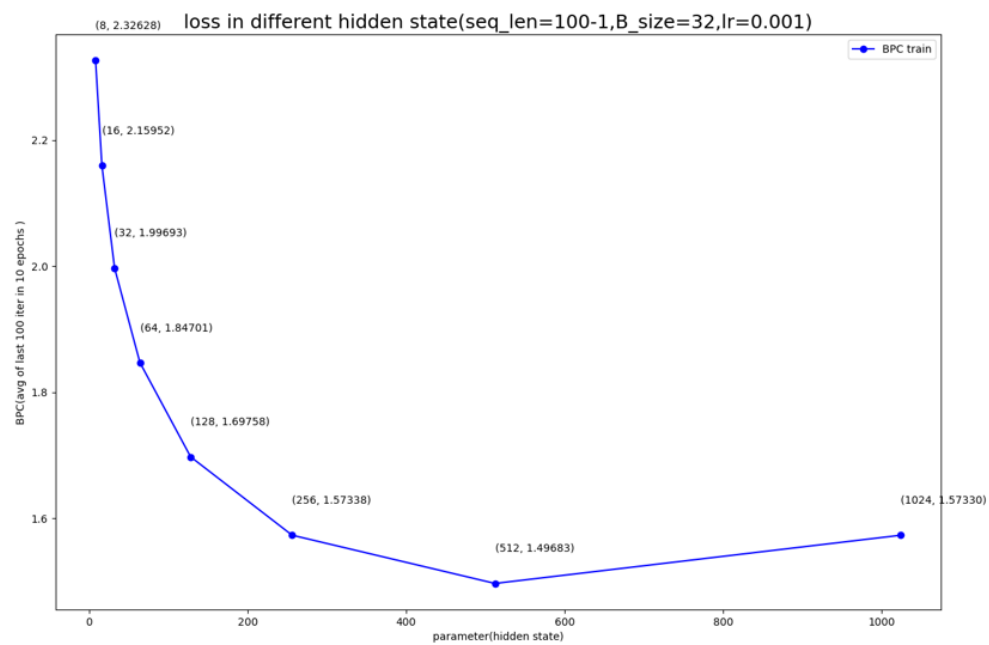
First Citizen:
Yo
prediction:
Orst tatizen:
Tu ore ti hroveen tnd tolther ae v te tteak

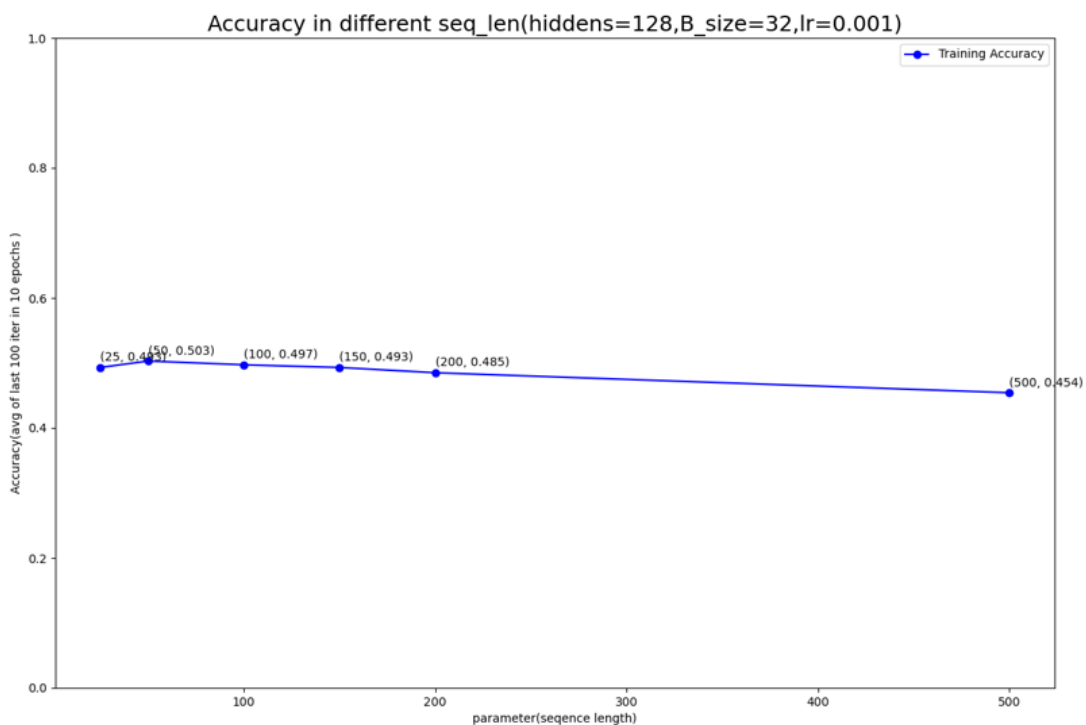
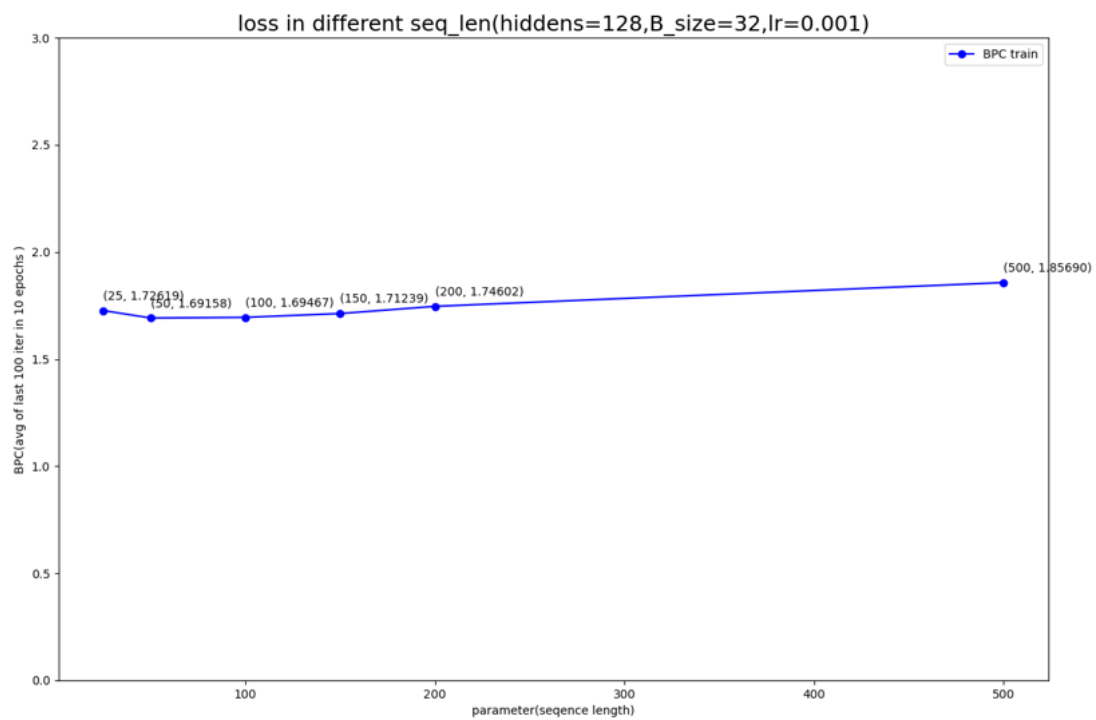
CDd
Toeak aoeak

Cirst Catizen:
Tou

```

3.Changing parameter



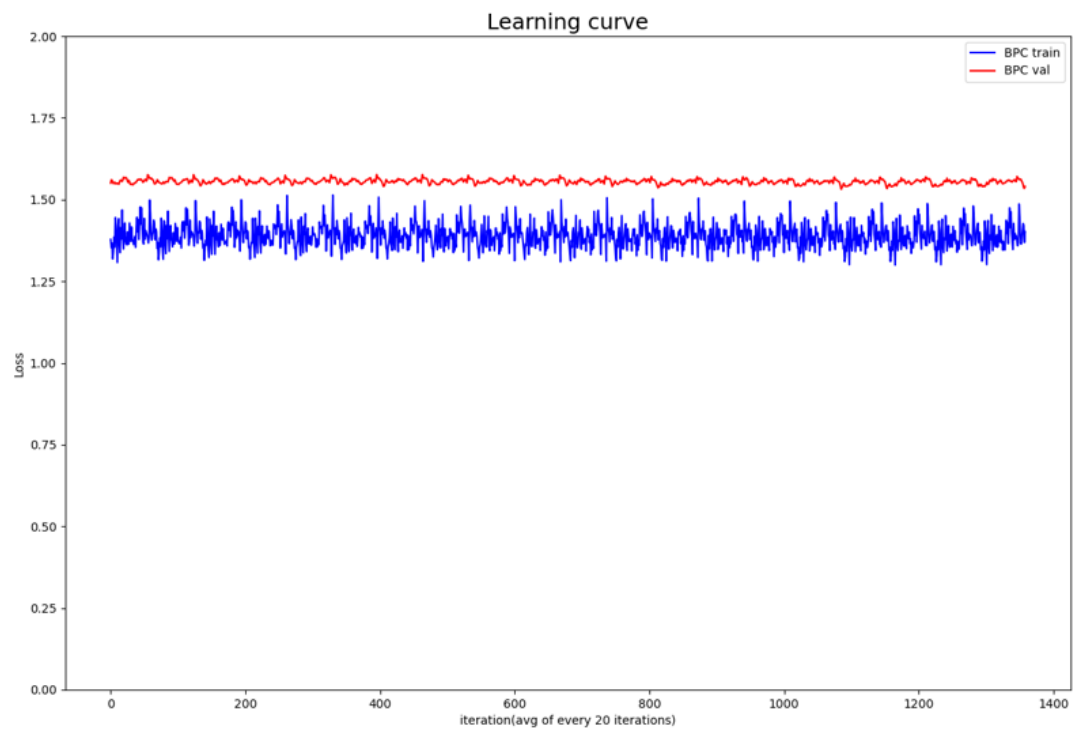


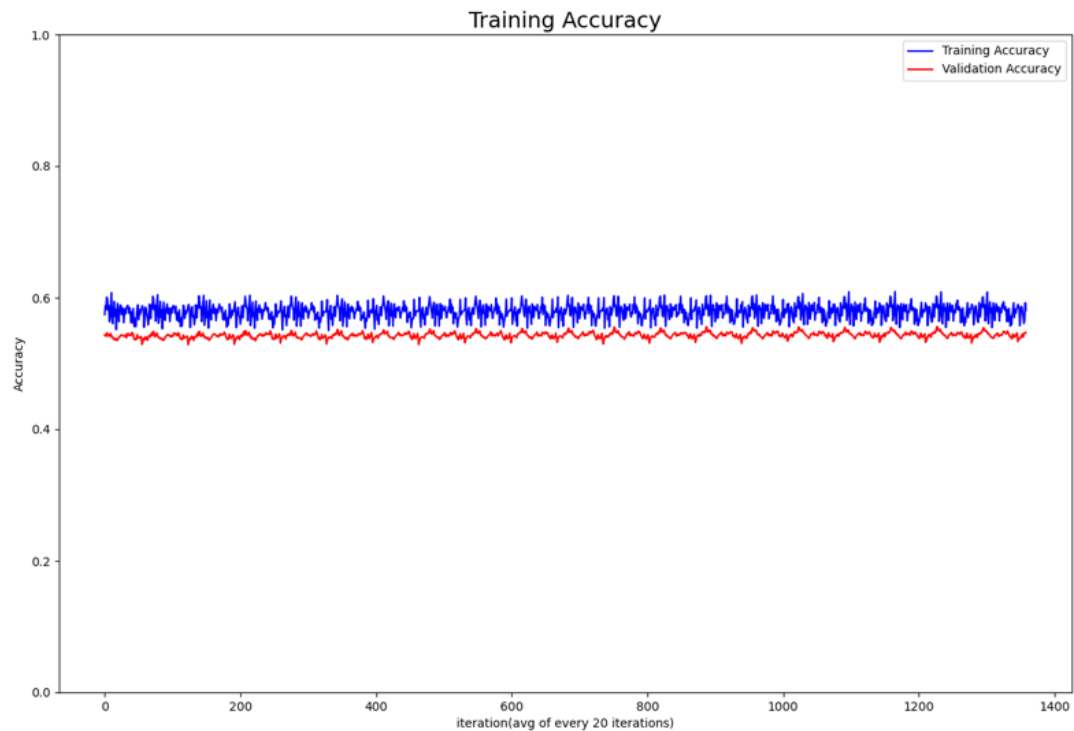
LSTM

1. Plots of learning curve, error rate(accuracy)

Architecture:

{hidden states=128, hidden layers=1,
seq len=100-1, Batch size=32, lr=0.001}





2. Breakpoints

```
sample at epoch= 1
First Citizen:
Before we proceed any further, hear me speak.

All:
Speak, speak.

First Citizen:
Yo
prediction:
FEst Citizen:
Au ore ti hroveed tnd tarther ae r te toeak

SNl:
Aoeak tieak,

Sirst Sltizen:
Wou
```

```
sample at epoch= 5
First Citizen:
Before we proceed any further, hear me speak.

All:
Speak, speak.

First Citizen:
Yo
prediction:
FEst Citizen:
Au ore ti hroveed tnd tarther ae r te toeak

SNl:
Aoeak tieak,

Sirst Sltizen:
Wou
```

```
sample at epoch= 9
First Citizen:
Before we proceed any further, hear me speak.

All:
Speak, speak.

First Citizen:
Yo
prediction:
FEst Litizen:
Au ore ti sroved tnd tarther ae r te toeak

SN1:
Aoeak tieak,

Sirst Slitizen:
Aou
```

```
sample at epoch= 13
First Citizen:
Before we proceed any further, hear me speak.

All:
Speak, speak.

First Citizen:
Yo
prediction:
FEst Gitizen:
Au ore th sroved tnd tarther ae r te toeak

SN1:
Aoeak tieak,

Sirst Gitizen:
Aou
```

```
sample at epoch= 17
First Citizen:
Before we proceed any further, hear me speak.

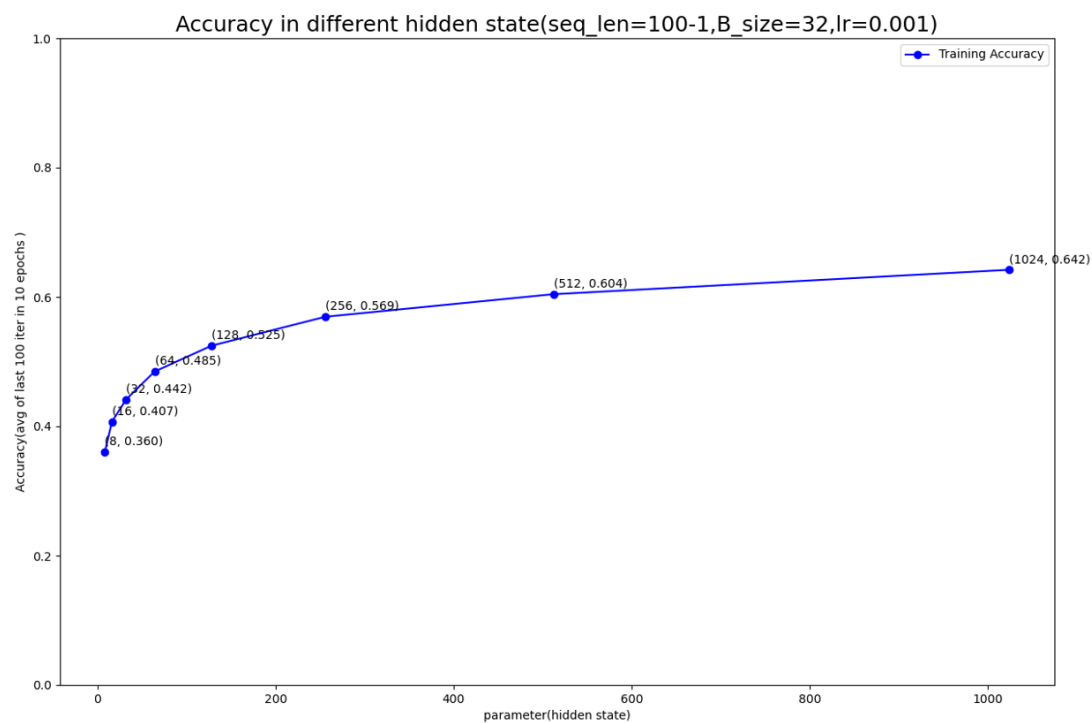
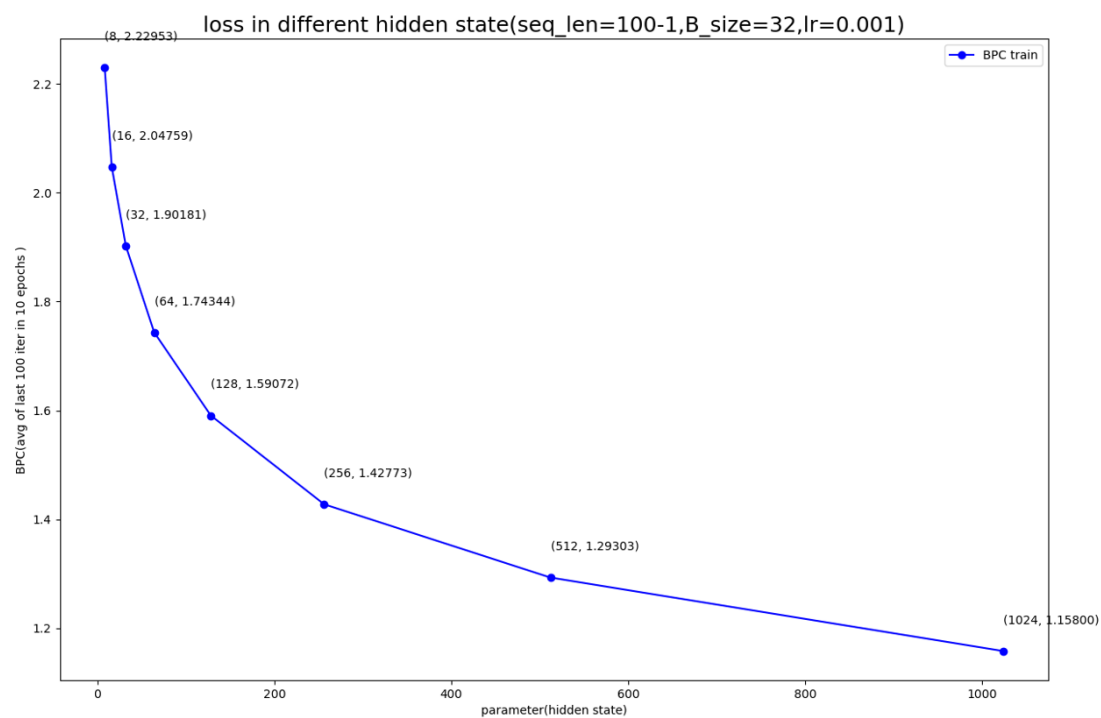
All:
Speak, speak.

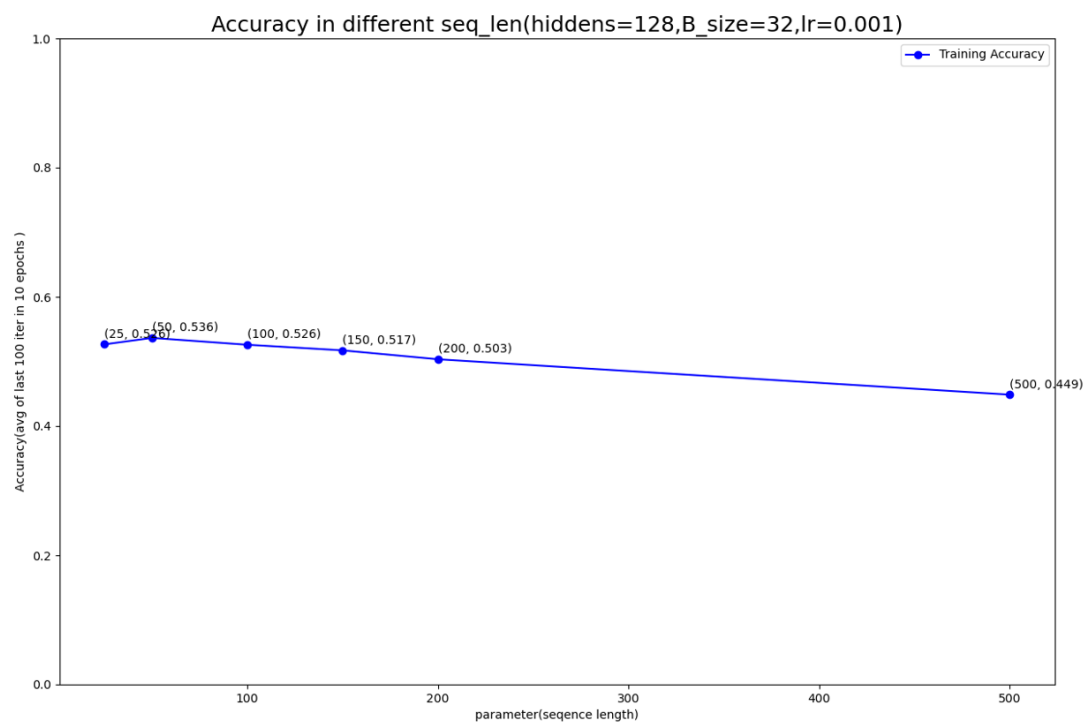
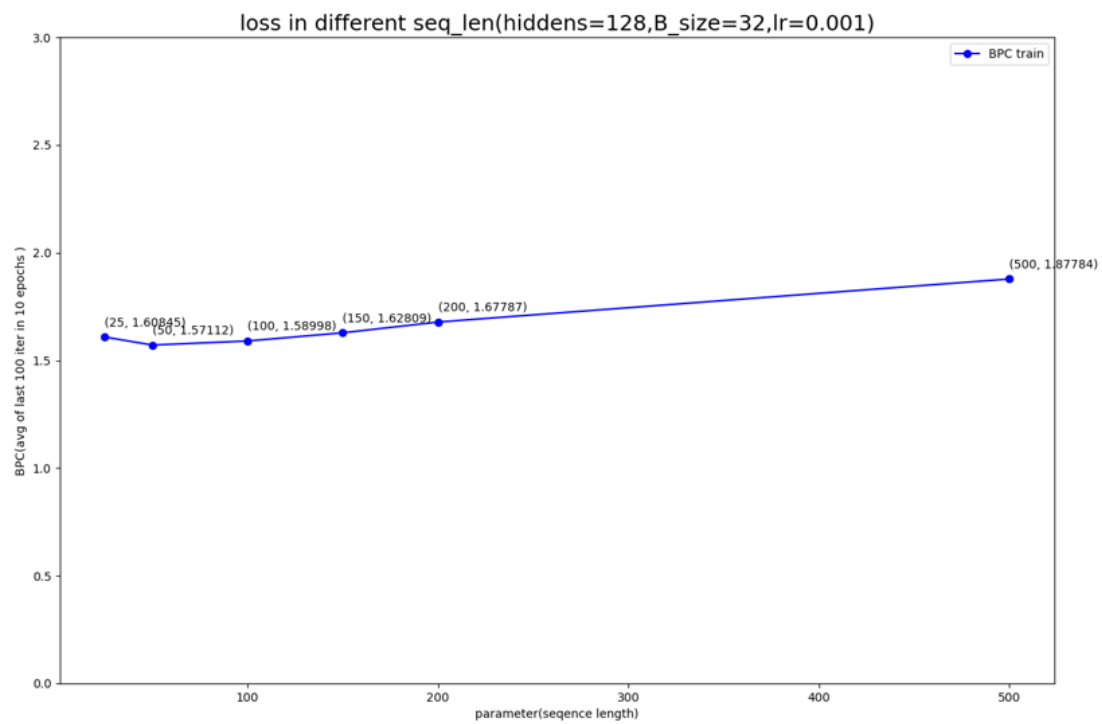
First Citizen:
Yo
prediction:
FEst Sitizen:
Au ore th sroved tnd tarther ae r te toeak

SN1:
Aoeak tieak,

Sirst Gitizen:
Wou
```

3.Changing parameter





Difference:

After observing the plot above. Maybe because the more parameter introduced by LSTM which provide it more capacity than RNN, LSTM perform better than RNN and LSTM converge faster than RNN (RNN loss are high in first 10 iterations but LSTM almost converge).

From this point, maybe we can conclude that RNN is hard to learn with large hidden size (Ex: perform bad when hidden size > 512 and n_layers > 1). But LSTM get better result when increasing the hidden size

Priming the model:

Model(RNN): hidden size=128, seq_len=500, lr=0.003, batch_size=32,
Training epoch=20

```
JULIET:
The meet on how all wo: simploied wilp as by come the foe, be a sebulled easonicies
And, my our so bright? Do fays as a flatured buding God,
Nay, the lord, my larsh her thy dest not prepulsh undoces, for this
Besing,
And make a general of dided this offfrelven?

SYMACKIUS:
I know his sweat eyes leedgenly did dogeth your bege,
Ever Lecates I sm this a hast so, thee thee to comes cracted, and suchbieflemant and madness of
mine-edine,
Tall this heng thy sown where so me quadst but, thou do
```

Model(LSTM): hidden size=128, seq_len=500, lr=0.001, batch_size=32,
Training epoch=10

```
JULIET:
Yes, though I shall to mine honest princess,
That he did serve these lordship throw with thee,
Thou hadst not there are composition and again.

ALLIANA:
I thank you to the gods of love and frame
That thou hast thou art in the rage of heaven,
And there is purpose sense that can deserves the
court shall be confement to the soldier to her.

First Senator:
What man was a common music to me?

SIMINCE:
Thou dost know you are the strender than a trumpetion of his
what with her speak of the say.
```