

1a)

['last', 'night', ',', 'he', 'said', ',', 'did', 'it', 'for', 'me', '.']

['on', 'what', 'can', 'i', 'do', '?']

['now', 'where', 'does', 'it', 'go', '?']

['what', 'did', 'the', 'court', 'do', '?']

['but', 'at', 'the', 'same', 'time', ',', 'we', 'have', 'a', 'long', 'way', 'to', 'go', '.']

['that', 'was', 'the', 'only', 'way', '.']

['this', 'team', 'will', 'be', 'back', '.']

['so', 'that', 'is', 'what', 'i', 'do', '.']

['we', 'have', 'a', 'right', 'to', 'know', '.']

['now', 'they', 'are', 'three', '.']

1b)

10 most common words in the vocabulary : [',', 'it', ',', 'i', 'do', 'to', 'nt', '?', 'the', "'s"]

total time each of these words appear in the training sentences : [64297, 23118, 19537, 17684, 16181, 15490, 13009, 12881, 12583, 12552]

Percentage of these words appear in the training sentences : [0.10695720015237538, 0.038456484021379134, 0.032499538382458865, 0.029417097648328946, 0.026916877236349845, 0.02576740797176065, 0.021640297631028683, 0.021427371341784955, 0.020931652324639397, 0.020880084238963183]

4b)

Iter 100. [Val Acc 17%] [Train Acc 17%, Loss 5.090020]

Iter 200. [Val Acc 17%] [Train Acc 17%, Loss 4.796250]

Iter 300. [Val Acc 17%] [Train Acc 17%, Loss 4.572593]

Iter 400. [Val Acc 17%] [Train Acc 17%, Loss 4.354664]

Iter 500. [Val Acc 17%] [Train Acc 17%, Loss 4.379154]

Iter 600. [Val Acc 17%] [Train Acc 17%, Loss 4.646561]

Iter 700. [Val Acc 17%] [Train Acc 17%, Loss 4.456584]

Iter 800. [Val Acc 17%] [Train Acc 17%, Loss 4.508409]

Iter 900. [Val Acc 17%] [Train Acc 17%, Loss 4.247037]

Iter 1000. [Val Acc 17%] [Train Acc 17%, Loss 4.555563]

Iter 1100. [Val Acc 17%] [Train Acc 17%, Loss 4.241536]

Iter 1200. [Val Acc 17%] [Train Acc 17%, Loss 4.439068]

Iter 1300. [Val Acc 17%] [Train Acc 17%, Loss 4.360120]

Iter 1400. [Val Acc 17%] [Train Acc 17%, Loss 4.341677]

Iter 1500. [Val Acc 17%] [Train Acc 17%, Loss 4.517631]

Iter 1600. [Val Acc 17%] [Train Acc 17%, Loss 4.507844]

Iter 1700. [Val Acc 17%] [Train Acc 17%, Loss 4.198820]

Iter 1800. [Val Acc 17%] [Train Acc 17%, Loss 4.433606]

Iter 1900. [Val Acc 18%] [Train Acc 18%, Loss 4.371648]

Iter 2000. [Val Acc 20%] [Train Acc 20%, Loss 4.145929]

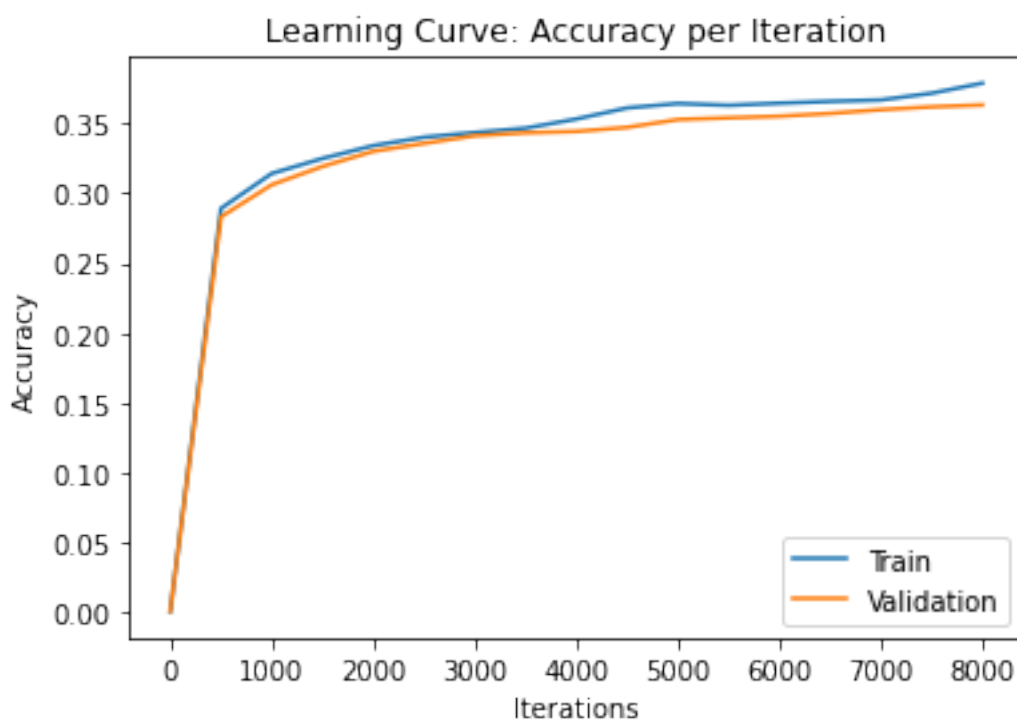
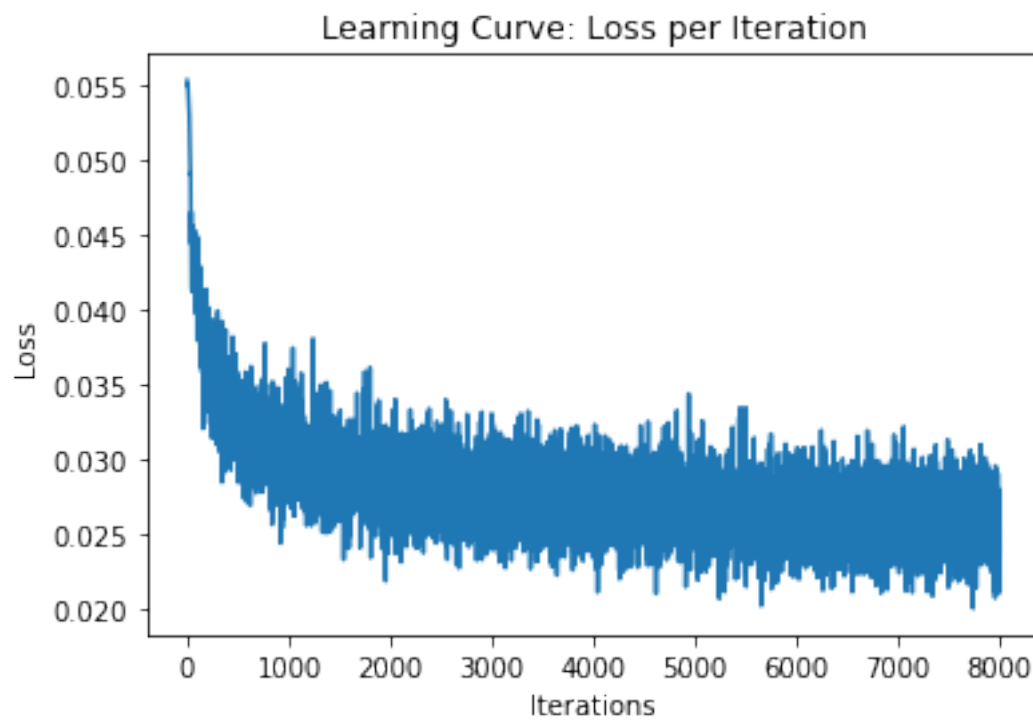
Iter 2100. [Val Acc 21%] [Train Acc 21%, Loss 3.921186]

Iter 2200. [Val Acc 20%] [Train Acc 21%, Loss 3.862583]

Iter 2300. [Val Acc 21%] [Train Acc 21%, Loss 4.318796]
Iter 2400. [Val Acc 21%] [Train Acc 21%, Loss 3.898409]
Iter 2500. [Val Acc 21%] [Train Acc 21%, Loss 4.090193]
Iter 2600. [Val Acc 21%] [Train Acc 21%, Loss 4.117402]
Iter 2700. [Val Acc 21%] [Train Acc 21%, Loss 3.855835]
Iter 2800. [Val Acc 21%] [Train Acc 21%, Loss 3.803785]
Iter 2900. [Val Acc 21%] [Train Acc 21%, Loss 4.147912]
Iter 3000. [Val Acc 21%] [Train Acc 21%, Loss 3.660326]
Iter 3100. [Val Acc 21%] [Train Acc 21%, Loss 3.592342]
Iter 3200. [Val Acc 21%] [Train Acc 21%, Loss 3.954508]
Iter 3300. [Val Acc 21%] [Train Acc 21%, Loss 3.698666]
Iter 3400. [Val Acc 21%] [Train Acc 21%, Loss 3.844331]
Iter 3500. [Val Acc 21%] [Train Acc 21%, Loss 3.779545]
Iter 3600. [Val Acc 22%] [Train Acc 22%, Loss 3.729373]
Iter 3700. [Val Acc 21%] [Train Acc 22%, Loss 3.371281]
Iter 3800. [Val Acc 22%] [Train Acc 23%, Loss 3.893297]
Iter 3900. [Val Acc 22%] [Train Acc 23%, Loss 3.749753]
Iter 4000. [Val Acc 23%] [Train Acc 23%, Loss 3.609764]
Iter 4100. [Val Acc 23%] [Train Acc 24%, Loss 3.663236]
Iter 4200. [Val Acc 24%] [Train Acc 24%, Loss 3.491152]
Iter 4300. [Val Acc 24%] [Train Acc 24%, Loss 3.622248]
Iter 4400. [Val Acc 24%] [Train Acc 25%, Loss 3.669833]
Iter 4500. [Val Acc 25%] [Train Acc 25%, Loss 3.602762]
Iter 4600. [Val Acc 24%] [Train Acc 25%, Loss 3.615757]
Iter 4700. [Val Acc 25%] [Train Acc 25%, Loss 3.437219]

5b)

Iter 0. [Val Acc 0%] [Train Acc 0%, Loss 5.526132]
Iter 500. [Val Acc 28%] [Train Acc 29%, Loss 3.235706]
Iter 1000. [Val Acc 31%] [Train Acc 31%, Loss 2.894737]
Iter 1500. [Val Acc 32%] [Train Acc 32%, Loss 2.734710]
Iter 2000. [Val Acc 33%] [Train Acc 33%, Loss 2.784793]
Iter 2500. [Val Acc 34%] [Train Acc 34%, Loss 2.709608]
Iter 3000. [Val Acc 34%] [Train Acc 34%, Loss 2.727716]
Iter 3500. [Val Acc 34%] [Train Acc 35%, Loss 2.520512]
Iter 4000. [Val Acc 34%] [Train Acc 35%, Loss 2.556910]
Iter 4500. [Val Acc 35%] [Train Acc 36%, Loss 2.807450]
Iter 5000. [Val Acc 35%] [Train Acc 36%, Loss 2.643617]
Iter 5500. [Val Acc 35%] [Train Acc 36%, Loss 2.578403]
Iter 6000. [Val Acc 36%] [Train Acc 36%, Loss 2.730465]
Iter 6500. [Val Acc 36%] [Train Acc 37%, Loss 2.677843]
Iter 7000. [Val Acc 36%] [Train Acc 37%, Loss 2.825259]
Iter 7500. [Val Acc 36%] [Train Acc 37%, Loss 2.686172]
Iter 8000. [Val Acc 36%] [Train Acc 38%, Loss 2.393985]



5d)
good
.
other
nt
been
government

5 part3)

The test accuracy is 0.36428347771631353

6b)

5 closest words for four :

four

three

two

five

million

5 closest words for go :

go

back

come

going

get

5 closest words for what :

what

how

who

when

where

5 closest words for should :

should

could

would

might

may

5 closest words for school :

school

states

music

)

department

5 closest words for your :

your

their

our

my

his

5 closest words for yesterday :

yesterday

though

year

