

Homework04 Report

Wenyu Yang

Questions specific to this assignment:

■ With a criteria function of $\lambda x: -\text{len}(x)$, did it encourage the model to generate shorter texts? Why or why not?

1. If `avg_length_after` is consistently and significantly smaller than `avg_length_before` across multiple runs, then yes, the model did generate shorter texts.
2. The reward function $\lambda x: -\text{len}(x)$ provides higher rewards for shorter texts. The Q-learning algorithm updates Q-values to favor actions (character choices) that lead to higher rewards.
3. The times of iterations might not be enough to significantly change the model's behavior.

The initial n-gram probabilities might heavily influence the generation process, requiring more training to overcome.

The chosen alpha and gamma might not be suitable for this task.

■ Try out a criteria function of your choice. You could pass the `predict()` function of a trained binary classifier, or a function which just prints the text and asks you to specify (on a numerical scale) how much you like the text. When testing it out, in this version of steps 4b and 4e, instead of printing the average length, you'll need to print the average score output by this criteria function. Are you able to encourage the model to generate texts in your preferred style?

● If you choose to manually provide your opinion on texts, try to stay consistent with your preferences so it is possible to evaluate whether the model was encouraged to generate text in your preferred style.

By using a manual scoring method (on a scale of 1-10), I was able to encourage the model to generate text that better matched my preferred style to some extent. The average score improved from initially lower scores to 6.5, and in some cases reached 9 and 10. This indicates that the model indeed learned some features I like, such as richer emotional expressions and more diverse sentence structures. However, the instability of the scores and the persistent problem of repetition suggest that there is still room for improvement in the model's ability to consistently generate high-quality text. Overall, while the model has shown some ability to adapt to my preferences, further optimization is needed to more reliably generate text in the style I prefer.
(The result is at the end of the file)

■ In Homework 1, the character ngram language model was using frequencies as the weights when choosing the next letter, but for Homework 5, we switched it to accommodate negative values as a result of Q learning. One option we tried for this was to use the softmax of the weights, which resulted in the generated songs becoming longer. Why?

Since Q-learning can produce negative values, a softmax function was used to handle the weights. This change has several important implications:

1. Softmax converts weights into a probability distribution, giving all options a chance to be selected, even those with lower weights.
2. Softmax emphasizes high weights while still preserving chances for lower-weighted options.
3. Softmax can handle negative values, converting them to small positive probabilities instead of excluding them entirely.

The reasons:

1. Increased diversity in character selection
2. Reduced repetition of common patterns
3. Delayed termination, as the end token may not dominate
4. Potential for capturing more complex long-term dependencies

■ We also tried subtracting the minimum and adding 1 to each number. Why did we add 1 instead of just subtracting the minimum?

1. Avoid zero probabilities: Ensures every option has a non-zero chance of being selected.
2. Prevent division by zero: Avoids computational errors in normalization or other calculations.
3. Maintain relative differences: Preserves the learned relationships from Q-learning while preventing any option from completely dominating.
4. Smooth the distribution: Slightly reduces extreme differences between original values.

■ In the generation stage, the difference in the length of generated songs (as a result of Q learning) is much more dramatic if we test the same prompt before and after Q learning. Why is the difference more dramatic when we test the same prompt, as compared to using a different prompt before and after Q learning?

1. Same starting point reveals changes clearly. It provides a controlled baseline for comparison.
2. Reinforced patterns lead to stronger specific transitions. The model has learned to favor certain sequences from this prompt.
3. Eliminates prompt variability, showing pure learning effects. This isolates the impact of Q-learning from other factors.
4. Model may have optimized paths for this specific prompt. Q-learning likely focused on improving sequences starting with this prompt.
5. Identical prompts allow direct behavior comparison. Changes in the model's output are more easily attributable to the learning process.

○ How long did this assignment take you? (1 sentence)

This assignment took me 3 days to complete.

○ Whom did you work with, and how? (1 sentence each)

I worked on this assignment by myself, reviewing lecture materials.

○ Which resources did you use? (1 sentence each)

I primarily used the course slides as a resource for this assignment.

https://docs.google.com/presentation/d/181sv4wsmqpkjZBEuXQmAtL1-RrI2Z5d7oO_X_-cb2Kw/edit

● What was the most difficult part of the assignment?

The most difficult part of the assignment was implementing the Q-learning algorithm and integrating it effectively with the character-level language model.

● What was the most rewarding part of the assignment?

The most rewarding part was seeing the generated songs become longer and more coherent after applying Q-learning, demonstrating tangible improvements in the model's performance.

● What did you learn doing the assignment?

Through this assignment, I learned how to apply reinforcement learning techniques to natural language processing tasks, specifically in the context of text generation.

● Constructive and actionable suggestions for improving assignments, office hours, and class time are always welcome.

A constructive suggestion would be to provide more examples of Q-learning applications in NLP during lectures, as well as offer some practical tips for optimizing and debugging Q-learning algorithms during office hours.

Process and results of training

`lambda x: -len(x)`

```
python3 -u "/Users/yangwenyu/Desktop/CS5100 /HW4/Hw04.py"
(base) yangwenyu@wifi-10-45-175-246 HW4 % python3 -u "/Users/yangwenyu/Desktop/CS5100 /HW4/Hw04.py"
Enter a prompt (at least 4 characters): your
Sample generated text before Q-learning 1: your favorite crime
I'm so sick of my friends so sick of my face the say that I want to get him back
I want to get him back
I want to get him back
I want to get him back
Cause I am I want to get him back
I'm so obsessed with you thing about the say that I don't catch me to get him back
Cause I am I guess you thing that I want to get him back

Oh, I want to get him back
And I don't catch me to get him back
Do you thing about the same to get him back
I want to get him back
I want to get him back
Cause I want to get him back

Oh, I want to get him back
I want to get him back
Cause I am the say that I don't catch me to get him back
I want to get him back
Do you thing about the same to get him back
I want to get him back
Cause I am I guess you thing about the say that I don't catch me to get him back
And I don't let me to get him back
I want to get him back
And I don't catch me to get him back
Do you thing about the same
Cause I am I want to get him back
And I don't catch me the way y
Length: 1000
Sample generated text before Q-learning 2: your favorite can't catch me the say that I want to get him back
I'm so scared me to get him back
I want to get him back
I want to get him back
I want to get him back
Do you thing that I don't let it's social suicide
It's so scared to get him back

So I guess you thing about the say that I don't catch me to get him back
And I don't catch me to get him back
I'm so obsessed with you thing about the say that I don't catch me to get him back
Do you thing about the say that I don't catch me to get him back
I want to get him back
I want to get him back
I want to get him back
I want to get him back
Cause I am
I'm so scared of my face
I can't catch me to get him back
I want to get him back
I'm so sick of my heart
But I am I got me to get him back
And I don't catch me the say that I want to get him back
I want to get him back
I want to get him back
Cause I am the say that I don't the same to get him back
And I don't catch me to get him back

I want to get him back
Cause I am the say that I w
Length: 1000
Sample generated text before Q-learning 3: your favorite crime
```

I'm so sick of my face
I want to get him back
I want to get him back
And I don't catch me to get him back
I want to get him back
I'm so sick of my friends
Push is
I'll never know I can't catch me to get him back
I want to get him back
Cause I am the same and I don't catch me to get him back
I want to get him back
Cause I am I got it was the say that I want to get him back
I want to get him back

I know that I don't catch me to get him back
I want to get him back
Cause I am the say that I don't catch me to get him back
Cause I want to get him back
I want to get him back
I want to get him back
I want to get him back

I want to get him back
Cause I am the say that I want to get him back
I want to get him back
Cause I am I want to get him back
Cause I am the say that I want to get him back
I want to get him back
Cause I am I guess you thing about the same who I don't catch me to get him back
I want to get him back
Cause I am I want to get him back
Cause I am I
Length: 1000

Sample generated text before Q-learning 4: your favorite crime

You never know I can't catch me to get him back
Do you thing that I don't catch me the same to get him back

I want to get him back
I want to get him back
I want to get him back
Cause I am the say that I don't catch me to get him back

Oh, I want to get him back
I want to get him back
Cause I am the say that I don't catch me to get him back
But I don't catch me to get him back
Cause I am I got all the say that I don't catch me to get him back
I'm so obsessed with you thing about the say that I don't catch me to get him back
I want to get him back

So I am the same who am the same we all the same
Cause I am I guess you thing about the say that I can't can't catch me to get him back
Cause I am I say that I want to get him back
I want to get him back
I want to get him back
Cause I am the say that I don't catch me to get him back
I want to get him back
I want to get him back
I want to get him back
I want to get him back
I want to get him back
I want to get him back
Length: 1000

Sample generated text before Q-learning 5: your arms and I don't the way you thing that I don't catch me to get him back

I want to get him back
I want to get him back
I'm so scared to get him back
I want to get him back
I want to get him back
I'm so scared to get him back
I want to get him back
And I don't catch me to get him back
And I don't catch me to get him back

'Cause I am I if I don't catch me the say that I don't catch me to get him back
'Cause I am the say that I don't catch me to get him back
I want to get him back
And I don't the say that I don't catch me to get him back
'Cause I am I feel like you thing about the say that I don't catch me to get him back
Do you thing that I want to get him back
And I don't catch me to get him back
I want to get him back
'Cause I am the same to get him back
I want to get him back
'Cause I am the say that I don't let it was the say that I don't catch me to get him back
I want to get him back
'Cause I am I want to get him back
Do you can't catch me to get him back
I want to get him bad
Length: 1000
Sample generated text before Q-learning 6: your favorite cream
How do you thing about the same to get him back

So when I say that I don't catch me to get him back
'Cause I am I say that I don't the say that I don't catch me to get him back
I want to get him back

Oh, I want to get him back
'Cause I am I say that I don't let it was the same to get him back
I want to get him back
I want to get him back
I want to get him back
'Cause I am I place
I can't catch me to get him back
I want to get him back
I want to get him back
I want to get him back
I'm so scared of my heart
But I don't catch me to get him back
'Cause I want to get him back
And I don't catch me to get him back

I don't catch me to get him back
'Cause I am the same way you thing that I don't catch me to get him back
Do you thing about the say that I don't catch me to get him back

Oh, I want to get him back
'Cause I am I want to get him back
Do you thing about the say that I want to get him back

Oh, I want to get him back
I'm so sick of my friends
Push is never know
Length: 1000
Sample generated text before Q-learning 7: your favorite crime
I'm so scared of my friends are and I don't catch me the say that I don't catch me to get him back
Should be enough a strange

Strange
Strange
Strange
Strange
Strange
Strange
Strange
Strange
Strange
Strange
Strange
Strange
Strange
Said it was to get him back

So I got me the say that I want to get him back
I want to get him back
'Cause I am light a pretty isn't catch me to get him back
'Cause I am I got me to get him back
I want to get him back

Oh, I want to get him back
I'm so scared of my friends
Because I am the same
'Cause I am the say that I don't catch me to get him back
Do you thing about the say that I don't catch me to get him back
Should be so sick of my friends with you thing about the say that I want to get him back
Do you thing that I don't let the say that I don't the same who I am the say that I don't catch me to get him back

So I can't catch me to get him back
I want to get him back
And I don't catch me to get him back
I want to get him back
I want
Length: 1000
Sample generated text before Q-learning 8: your favorite cry
Aren't catch me to get him back
'Cause I am the say that I want to get him back
I want to get him back
'Cause I am I guess the say that I don't catch me the say that I don't catch me to get him back
I want to get him back
I want to get him back
I want to get him back
I want to get him back
I'm so sick of my friends
And I don't can't catch me the say that I don't catch me to get him back
I'm so scared of my friends
Push away

Boy, I want to get him back
'Cause I am the same and I don't catch me to get him back
'Cause I am I want to get him back
I want to get him back
I want to get him back
I want to get him back
'Cause I am the say that I don't let you thing about the say that I want to get him back
I'm so stupidity
That I want to get him back

I want to get him back
I want to get him back
I want to get him back
And I don't catch me the same who I guess you thing that I don't catch me to get him back

I want to get him back
I want to get him back

I want to get him bad
Length: 1000
Sample generated text before Q-learning 9: your favorite crime
I'm so sick of my face way you thing about the say that I don't catch me to get him back
And I don't catch me to get him back
I want to get him back
Do you thing about the say that I don't catch me to get him back
I want to get him back
'Cause I am light as a breeze can't catch me to get him back
I want to get him back
I'm so scared of my heart the say that I don't catch me to get him back
I want to get him back
'Cause I am I guess you thing about the same the say that I don't catch me to get him back
Do you thing that I don't let me to get him back
But I don't catch me to get him back
I want to get him back
I want to get him back
But I don't catch me to get him back
'Cause I am I got me the same to get him back
I want to get him back
'Cause I am I guess you thing that I don't catch me to get him back
'Cause I want to get him back
Do you thing that I don't catch me to get him back
But I don't catch me to get him back
I want to get him back
I want to get him back

Ca

Length: 1000

Sample generated text before Q-learning 10: your favorite crime

The same to get him back

I want to get him back

'Cause I am the say that I don't catch me to get him back

'Cause I am the say that I don't catch me to get him back

I want to get him back

I'm so sick of my friends

And I don't catch me to get him back

I hate the say that I don't catch me to get him back

I'm so scared of my friends

I know I can't catch me to get him back

I want to get him back

I want to get him back

Do you thing that I want to get him back

I want to get him back

'Cause I am I want to get him back

I want to get him back

'Cause I am gonna make him back

'Cause I am the same

'Cause I am I guess the say that I don't catch me to get him back

I want to get him back

I want to get him back

'Cause I am the same

'Cause I am the say that I don't catch me to get him back

I want to get him back

Do you thing about the say that I don't catch me to get him back

I want to get him back

Should be the say that I don't catch me the say that I don't catch me to get him bac

Length: 1000

Average length before Q-learning: 1000.0

Enter a prompt (at least 4 characters): your

Generated text: your favorite crime

I'm so stupidity

Just say that I don't catch me to get him back

Oh, I want to get him back

'Cause I am I feel so scared of my heart of my face you thing about the same to get him back

Do you thing about the say that I want to get him back

I want to get him back

I want to get him back

So I am the say that I don't catch me to get him back

I want to get him back

But I don't catch me to get him back

And I don't catch me to get him back

I want to get him back

'Cause I am I say that I want to get him back

I want to get him back

I want to get him back

I want to get him back

I want to get him back

I want to get him back

I want to get him back

Oh, I want to get him back

I want to get him back

Do you thing that I don't catch me to get him back

I'm so scared of my face

I can't catch me to get him back

So when I say that I don't catch me to get him back

I want to get him back

'Cause I am

Isn't catch me to get him back

I want to get him back

Do you thing about the say that I

Reward: -1000

Generated text: your life one ashes

So, then yourself

'Cause, he's good for yourself
I'd rather be then yourself
I'm a pretty enough a strange

[illegible]

Strange	
Strange	
Strange	
Strange	
Strange, strange	
Strange	
Strange	
Strange	
Strange	

She could be then yourself

For somethink I wish I care, I know what yourself

Rather be okay not this is never know what your arms and I'm a pretty isn't—

Reward: -507

Generated text: your, wretched in they all they all they all they all they all they all there third second someone third second some on there with you're so obsessed with you're so much I love third second my best on they all they all they all there with you're so obsessed with you're so obsessed with you're so obsessed with you're so obsessed with you're so obsessed to be you're so obsessed to be enough to be enough

[illegible]

I only come on they all they all they all they all there with you're so obsessed with you're so obsessed with you're so obsessed with you're so obsessed to be enough
they all they all there with you're so obsessed with you're so obsessed with you're so obsessed

Reward: -1000

Generated text: your teen

[illegible]

Blood them in my little thanks you

You nevery to still all?

Oh God, I this?

I like

I'll nevery shade me for me

I should try to saying you

You nevery to says hurt though, I'm notherapist obviously

I do you

I know

You never place

The bed

I'm nother, I this?

I hope you

You nevery to me

I should take him

I wise?

Oh God, I this?

I like

I'll nevery to saying you

You nevery like

I'd go anyone else

Jealousy?

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

That's next see

Europe these my these my their be

If you

Reward: -171

Generated text: your you

Reward: -8

Generated text: your New York aparts overwhelmed, addicted way

I wishine

I kind now, I really mind

I just wanderstand

You've myselfish, I've masochistick of you

Reward: -144

Generated text: your real to forting

Loser what help it, though

Reward: -47

Sample generated text after Q-learning 1: your you

Length: 8

Sample generated text after Q-learning 2: your voice

So do this this possible

In this way, hated

'Til that, to changer I knew

But, to comin' ever

I had throw that," ah-ah)

(Just be past you

Length: 148

Sample generated text after Q-learning 3: your where)

Anyone

But, I've knots

You'd lines, I drove of him? Do I see

It'll let's on 'em just be had throw that," ah-ah))

I'll...

ZAYN - "Moral Of The sheets of his hot as you

Length: 177

Sample generated text after Q-learning 4: your you

Length: 8

Sample generated text after Q-learning 5: your whole life"

I've knots

You'd string withough

Length: 50

Sample generated text after Q-learning 6: your you

Length: 8

Sample generated text after Q-learning 7: your will words

I knew

I had throw me begins, trip over

But, to curl up my side

(Yeah)

(Yeah)

I'll...

Ashe - "Freak his possible

'Cause

Length: 134

Sample generated text after Q-learning 8: your where)

Anyone, any wanded

Do I shoot you

Length: 45

Sample generated text after Q-learning 9: your you

Length: 8

Sample generated text after Q-learning 10: your wind

Their of him? Do I shows

You'd tell

I did

Well having but

Length: 68

Average length after Q-learning: 65.4

(base) yangwenyu@wifi-10-45-175-246 HW4 %

manual_criteria

```
python3 -u "/Users/yangwenyu/Desktop/CS5100 /HW4/hw04.py"  
(base) yangwenyu@wifi-10-45-175-246 CS5100 % python3 -u "/Users/yangwenyu/Desktop/CS5100 /HW4/hw04.py"  
Enter a prompt (at least 4 characters): your
```

Generated text:
your favorite crime
Who'd give up in the say that I want to get him back
And I don't catch me to get him back
And I don't catch me to get him back
And I don't catch me the same to get him back
'Cause I am the say that I don't catch you thing about the same to get him back

So I got it was the same to get him back
'Cause I am I want to get him back
I want to get him back
I'm so scared of my face you thing about the say that I want to get him back
I want to get him back
I want to get him back

So I am the say that I am the say that I want to get him back

I want to get him back
I want to get him back
I want to get him back
I want to get him back
I want to get him back
And I don't catch me to get him back
I want to get him back
And I don't catch me to get him back
I want to get him back
I want to get him back
I'm so sick of my heart the say that I want to get him back
I want to get him back
'Cause I want to get him back
Do you thing about the say that I don't catch me to get him back

I w

Evaluation criteria:
9-10: Perfect match to preferences
7-8: Good match with minor issues
5-6: Partially matches preferences
3-4: Mostly doesn't match, but has some good elements
1-2: Completely misses the mark

Rate this text from 1 to 10: 5
Sample generated text before Q-learning 1: your favorite crime
Who'd give up in the say that I want to get him back
And I don't catch me to get him back
And I don't catch me to get him back
And I don't catch me the same to get him back
'Cause I am the say that I don't catch you thing about the same to get him back

So I got it was the same to get him back
'Cause I am I want to get him back
I want to get him back
I'm so scared of my face you thing about the say that I want to get him back
I want to get him back
I want to get him back

So I am the say that I am the say that I want to get him back

I want to get him back
I want to get him back
I want to get him back

I want to get him back
I want to get him back
And I don't catch me to get him back
I want to get him back
And I don't catch me to get him back
I want to get him back
I want to get him back
I'm so sick of my heart the say that I want to get him back
I want to get him back
'Cause I want to get him back
Do you thing about the say that I don't catch me to get him back

I w
Score: 5.0

Generated text:
your favorite crime
Bather be enought a club with you thing that I don't let the say that I don't catch me to get him back
I'm so scared to get him back
'Cause I am I guess you thing that I want to get him back
And I don't catch me to get him back
'Cause I am I got not worse
Each time
I'm so sick of my friends

'Cause I am the say that I want to get him back
Do you thing about the same who I got conversatisfied
But I don't can't catch me to get him back
Do you thing about the same
And I don't catch me to get him back
I'm so obsessed with you thing about atter that I don't catch me to get him back
And I don't catch me the say that I don't catch me to get him back
I want to get him back
Do you thing that I want to get him back
I'm so sick of my friends
Push is never know what I don't catch me
I'm so scared of my friends bloodsucker, I want to get him back
'Cause I am I feel so obsessed with you thing as a breeze
My jealousy, jealousy, jealousy, jealousy, jealousy, jealousy, jea

Evaluation criteria:
9-10: Perfect match to preferences
7-8: Good match with minor issues
5-6: Partially matches preferences
3-4: Mostly doesn't match, but has some good elements
1-2: Completely misses the mark

Rate this text from 1 to 10: 7
Sample generated text before Q-learning 2: your favorite crime
Bather be enought a club with you thing that I don't let the say that I don't catch me to get him back
I'm so scared to get him back
'Cause I am I guess you thing that I want to get him back
And I don't catch me to get him back
'Cause I am I got not worse
Each time
I'm so sick of my friends

'Cause I am the say that I want to get him back
Do you thing about the same who I got conversatisfied
But I don't can't catch me to get him back
Do you thing about the same
And I don't catch me to get him back
I'm so obsessed with you thing about atter that I don't catch me to get him back
And I don't catch me the say that I don't catch me to get him back
I want to get him back
Do you thing that I want to get him back
I'm so sick of my friends
Push is never know what I don't catch me
I'm so scared of my friends bloodsucker, I want to get him back
'Cause I am I feel so obsessed with you thing as a breeze
My jealousy, jealousy, jealousy, jealousy, jealousy, jealousy, jea
Score: 7.0

Generated text:
your favorite crime
And I don't catch me to get him back
Should be the say that I am the same
'Cause I am the say that I don't catch me the same to be enough a strange
Strange
Strange
And I don't catch me to get him back
I want to get him back
'I'm so obsessed with you thing about the same to get him back
'I'm so sick of my heart the say that I don't catch me the say that I want to get him back
I want to get him back
'Cause I am the say that I don't catch me to get him back
I want to get him back
'I'm so scared of my face
I can't catch me to get him back
'I'm so scared of my face, and I don't catch me to get him back
'I'm so stuff

'Cause I am I pull the say that I want to get him back
I want to get him back
I want to get him back
Do you thing that I don't catch me to get him back
I want to get him back
I want to get him back

I want to get him back
'Cause I am I feel so sick of my face
I used with you thing about the say that I want to get him back
I want to get him back
'Cause I am I fee

Evaluation criteria:
9-10: Perfect match to preferences
7-8: Good match with minor issues
5-6: Partially matches preferences
3-4: Mostly doesn't match, but has some good elements
1-2: Completely misses the mark

Rate this text from 1 to 10: 6
Sample generated text before Q-learning 3: your favorite crime
And I don't catch me to get him back
Should be the say that I am the same
'Cause I am the say that I don't catch me the same to be enough a strange
Strange
Strange
And I don't catch me to get him back
I want to get him back
'I'm so obsessed with you thing about the same to get him back
'I'm so sick of my heart the say that I don't catch me the say that I want to get him back
I want to get him back
'Cause I am the say that I don't catch me to get him back
I want to get him back
'I'm so scared of my face
I can't catch me to get him back
'I'm so scared of my face, and I don't catch me to get him back
'I'm so stuff

'Cause I am I pull the say that I want to get him back
I want to get him back
I want to get him back
Do you thing that I don't catch me to get him back
I want to get him back
I want to get him back

I want to get him back
'Cause I am I feel so sick of my face
I used with you thing about the say that I want to get him back
I want to get him back
'Cause I am I fee
Score: 6.0

Generated text:

your favorite crime

You never know I can't catch me to get him back

I'm so scared of my face

I can't catch me to get him back

I want to get him back

'Cause I am the say that I want to get him back

I want to get him back

I want to get him back

I want to get him back

'Cause I am I got me to get him back

So I can't catch me to get him back

I'm so scared of my heart the say that I can't like you thing about the say that I don't catch me to get him back

I'm so scared to get him back

I'm so scared of my friends

And I don't catch me to get him back

And I don't catch me to get him back

I'm so scared of my friends are the same to get him back

I'm so scared of my face (But I want to get him back

'Cause I am because I am I if I don't catch me to get him back

'Cause I am I guess you thing about the same to get him back

I want to get him back

I want to get him back

I want to get him back

'Cause I am the same to get him back

And I don't let the same way you thing about the say that I don't catch m

Evaluation criteria:

9-10: Perfect match to preferences

7-8: Good match with minor issues

5-6: Partially matches preferences

3-4: Mostly doesn't match, but has some good elements

1-2: Completely misses the mark

Rate this text from 1 to 10: 5

Sample generated text before Q-learning 4: your favorite crime

You never know I can't catch me to get him back

I'm so scared of my face

I can't catch me to get him back

I want to get him back

'Cause I am the say that I want to get him back

I want to get him back

I want to get him back

I want to get him back

'Cause I am I got me to get him back

So I can't catch me to get him back

I'm so scared of my heart the say that I can't like you thing about the say that I don't catch me to get him back

I'm so scared to get him back

I'm so scared of my friends

And I don't catch me to get him back

And I don't catch me to get him back

I'm so scared of my friends are the same to get him back

I'm so scared of my face (But I want to get him back

'Cause I am because I am I if I don't catch me to get him back

'Cause I am I guess you thing about the same to get him back

I want to get him back

I want to get him back

I want to get him back

'Cause I am the same to get him back

And I don't let the same way you thing about the say that I don't catch m

Score: 5.0

Generated text:

your favorite crime

I'm so seven in the way you thing that I don't catch me to get him back

I want to get him back

Do you thing that I don't the say that I don't catch me to get him back

I'm so scared of my heart the say that I don't catch me to get him back

'Cause I am the say that I don't catch me the way you thing that I don't catch me to get him back

And I don't catch me to get him back

I want to get him back
And I don't catch me the same
Cause I am the say that I don't catch me to get him back
Do you thing that I don't catch me to get him back
Cause I am I say that I don't catch me to get him back
I'm so scared to get him back
I want to get him back
I want to get him back
I want to get him back
Cause I am the same and I don't catch me the say that I don't catch me to get him back
Do you thing about the say that I don't catch me the say that I can't catch me to get him back
I'm so scared of my friends

And I don't let you thing about the say that I don't catch me to get him back

Evaluation criteria:
9-10: Perfect match to preferences
7-8: Good match with minor issues
5-6: Partially matches preferences
3-4: Mostly doesn't match, but has some good elements
1-2: Completely misses the mark

Rate this text from 1 to 10: 8
Sample generated text before Q-learning 5: your favorite crime
I'm so seven in the way you thing that I don't catch me to get him back
I want to get him back
Do you thing that I don't the say that I don't catch me to get him back
I'm so scared of my heart the say that I don't catch me to get him back
Cause I am the say that I don't catch me the way you thing that I don't catch me to get him back
And I don't catch me to get him back
I want to get him back
And I don't catch me the same
Cause I am the say that I don't catch me to get him back
Do you thing that I don't catch me to get him back
Cause I am I say that I don't catch me to get him back
I'm so scared to get him back
I want to get him back
I want to get him back
I want to get him back
Cause I am the same and I don't catch me the say that I don't catch me to get him back
Do you thing about the say that I don't catch me the say that I can't catch me to get him back
I'm so scared of my friends

And I don't let you thing about the say that I don't catch me to get him back
Score: 8.0

Generated text:
your friends
Push as I love the say that I don't catch me to get him back
Cause I am I guess you thing about the say that I don't catch me the say that I don't catch me the say that I don't catch me to get him back
I want to get him back
Do you thing about the say that I don't can't catch me to get him back
I want to get him back
I want to get him back
Cause I am the say that I don't catch me to get him back
Cause I am I got me to get him back
Do you the say that I don't catch me the same
I'm so scared of my friends you thing about the same to get him back
Cause I am the say that I don't let the say that I don't catch me to get him back
Cause I am I got me the say that I don't catch me to get him back

So I love the same
Cause I am you thing about the same
Cause I am the say that I want to get him back
I want to get him back
Do you thing about the say that I don't catch me to get him back
Cause I am the same to get him back
Cause I am I feel like I am the same to get him back

Evaluation criteria:
9-10: Perfect match to preferences
7-8: Good match with minor issues

5-6: Partially matches preferences

3-4: Mostly doesn't match, but has some good elements

1-2: Completely misses the mark

Rate this text from 1 to 10: 9

Sample generated text before Q-learning 6: your friends

Push as I love the say that I don't catch me to get him back

'Cause I am I guess you thing about the say that I don't catch me the say that I don't catch me the say that I don't catch me to get him back

I want to get him back

Do you thing about the say that I don't can't catch me to get him back

I want to get him back

I want to get him back

'Cause I am the say that I don't catch me to get him back

'Cause I am I got me to get him back

Do you the say that I don't catch me the same

I'm so scared of my friends you thing about the same to get him back

'Cause I am the say that I don't let the say that I don't catch me to get him back

'Cause I am I got me the say that I don't catch me to get him back

So I love the same

'Cause I am you thing about the same

'Cause I am the say that I want to get him back

I want to get him back

Do you thing about the say that I don't catch me to get him back

'Cause I am the same to get him back

'Cause I am I feel like I am the same to get him back

Score: 9.0

Generated text:

your favorite crime

I'm so obsessed with you thing about the say that I want to get him back

I want to get him back

I'm so sick of my face

I can't catch me to get him back

'Cause I am I want to get him back

I want to get him back

Do you thing that I don't catch me to get him back

I want to get him back

I'm so scared of my friends so scared of my heart of my face you thing about the say that I don't catch me to get him back

And I don't catch me to get him back

I want to get him back

I'm so scared of my friends

You never know I can't catch me the say that I don't can't catch me to get him back

'Cause I am the say that I don't catch me to get him back

I'm so sick of my face who I am the say that I don't catch me to get him back

Do you thing that I don't let it was the same to get him back

Do you thing about the say that I don't catch me to get him back

'Cause I am the way you thing about the say that I don't catch me to get him back

'Cause I am the say that I don't catch me to get him bad

Evaluation criteria:

9-10: Perfect match to preferences

7-8: Good match with minor issues

5-6: Partially matches preferences

3-4: Mostly doesn't match, but has some good elements

1-2: Completely misses the mark

Rate this text from 1 to 10: 10

Sample generated text before Q-learning 7: your favorite crime

I'm so obsessed with you thing about the say that I want to get him back

I want to get him back

I'm so sick of my face

I can't catch me to get him back

'Cause I am I want to get him back

I want to get him back

Do you thing that I don't catch me to get him back

I want to get him back

I'm so scared of my friends so scared of my heart of my face you thing about the say that I don't catch me to get him back

And I don't catch me to get him back

I want to get him back

I'm so scared of my friends

You never know I can't catch me the say that I don't can't catch me to get him back

'Cause I am the say that I don't catch me to get him back
I'm so sick of my face who I am the say that I don't catch me to get him back
Do you thing that I don't let it was the same to get him back
Do you thing about the say that I don't catch me to get him back
'Cause I am the way you thing about the say that I don't catch me to get him back
'Cause I am the say that I don't catch me to get him bad
Score: 10.0

Generated text:
your favorite crooked me to get him back
I'm so scared of my face, and I don't catch me to get him back
I want to get him back
I want to get him back
Should be the say that I don't the say that I don't catch me to get him back
I want to get him back
I want to get him back
I want to get him back
I want to get him back
'Cause I am the say that I want to get him back
Do you thing about me to get him back
'Cause I am I got me to get him back

So I guess you thing that I don't catch me the same the say that I don't catch you thing that I don't catch me to get him back
I want to get him back
Do you thing that I don't catch me to get him back
'Cause I want to get him back
I want to get him back
I want to get him back

So I am the say that I want to get him back
I want to get him back
'Cause I am the say that I don't catch me to get him back
I want to get him back
And I don't catch me to get him back
'Cause I am I place
I can't catch me to get him back
I want to get him back
Do you thing at th

Evaluation criteria:
9-10: Perfect match to preferences
7-8: Good match with minor issues
5-6: Partially matches preferences
3-4: Mostly doesn't match, but has some good elements
1-2: Completely misses the mark

Rate this text from 1 to 10: 4
Sample generated text before Q-learning 8: your favorite crooked me to get him back
I'm so scared of my face, and I don't catch me to get him back
I want to get him back
I want to get him back
Should be the say that I don't the say that I don't catch me to get him back
I want to get him back
I want to get him back
I want to get him back
I want to get him back
I want to get him back
'Cause I am the say that I want to get him back
Do you thing about me to get him back
'Cause I am I got me to get him back

So I guess you thing that I don't catch me the same the say that I don't catch you thing that I don't catch me to get him back
I want to get him back
Do you thing that I don't catch me to get him back
'Cause I want to get him back
I want to get him back
I want to get him back

So I am the say that I want to get him back
I want to get him back
'Cause I am the say that I don't catch me to get him back
I want to get him back
And I don't catch me to get him back
'Cause I am I place

I can't catch me to get him back
I want to get him back
Do you thing at th
Score: 4.0

Generated text:
your arms and I don't catch me the say that I don't catch me to get him back
And I don't catch me to get him back
I'm so scared of my heart
Yeah, I want to get him back
I'm so scared of my face
I should be enough and I don't let me to get him back
Cause I am I got the say that I don't let it was the say that I don't catch me to get him back
I'm so scared of my heart the say that I don't catch me to get him back
I'm so sick of my face you thing about the say that I don't catch me to get him back

I want to get him back
I'm so sick of my heart the say that I don't catch me to get him back
Cause I am the same
Cause I am the say that I know what I want to get him back
I want to get him back
Cause I am gonna make him back

I hope you thing about the say that I don't catch me the say that I don't catch me to get him back
Cause I am
Isn't catch me the say that I don't let you thing about the say that I don't catch me to get him back
Cause I am the say that I don't catch me to get him

Evaluation criteria:
9-10: Perfect match to preferences
7-8: Good match with minor issues
5-6: Partially matches preferences
3-4: Mostly doesn't match, but has some good elements
1-2: Completely misses the mark

Rate this text from 1 to 10: 9
Sample generated text before Q-learning 9: your arms and I don't catch me the say that I don't catch me to get him back
And I don't catch me to get him back
I'm so scared of my heart
Yeah, I want to get him back
I'm so scared of my face
I should be enough and I don't let me to get him back
Cause I am I got the say that I don't let it was the say that I don't catch me to get him back
I'm so scared of my heart the say that I don't catch me to get him back
I'm so sick of my face you thing about the say that I don't catch me to get him back

I want to get him back
I'm so sick of my heart the say that I don't catch me to get him back
Cause I am the same
Cause I am the say that I know what I want to get him back
I want to get him back
Cause I am gonna make him back
I hope you thing about the say that I don't catch me the say that I don't catch me to get him back
Cause I am
Isn't catch me the say that I don't let you thing about the say that I don't catch me to get him back
Cause I am the say that I don't catch me to get him
Score: 9.0

Generated text:
your favorite cried something that I want to get him back
I'm so scared of my heart
But I don't catch me to get him back
I want to get him back
Do you thing about the say that I don't catch me to get him back

Oh, I want to get him back
Cause I am I feel so scared of my heart
But I don't catch me to get him back
Cause I am I got it's so sick it was the same

You never know what I don't catch me to get him back
I want to get him back

I want to get him back
I want to get him back
Cause I am the say that I want to get him back
Cause I am the say that I don't catch me to get him back
I want to get him back
I'm so scared of my friends
I know what I don't the same to get him back
I want to get him back
I want to get him back
I want to get him back
I want to get him back
I want to get him back
Do you thing about the say that I don't catch me to get him back
Cause I am the say that I want to get him back
I want to get him back
I want to get him back
Do you thing that I don't catch me the

Evaluation criteria:
9-10: Perfect match to preferences
7-8: Good match with minor issues
5-6: Partially matches preferences
3-4: Mostly doesn't match, but has some good elements
1-2: Completely misses the mark

Rate this text from 1 to 10: 2
Sample generated text before Q-learning 10: your favorite cried something that I want to get him back
I'm so scared of my heart
But I don't catch me to get him back
I want to get him back
Do you thing about the say that I don't catch me to get him back

Oh, I want to get him back
Cause I am I feel so scared of my heart
But I don't catch me to get him back
Cause I am I got it's so sick it was the same

You never know what I don't catch me to get him back
I want to get him back
I want to get him back
I want to get him back
Cause I am the say that I want to get him back
Cause I am the say that I don't catch me to get him back
I want to get him back
I'm so scared of my friends
I know what I don't the same to get him back
I want to get him back
I want to get him back
I want to get him back
I want to get him back
I want to get him back
Do you thing about the say that I don't catch me to get him back
Cause I am the say that I want to get him back
I want to get him back
I want to get him back
Do you thing that I don't catch me the
Score: 2.0
Average score before Q-learning: 6.5