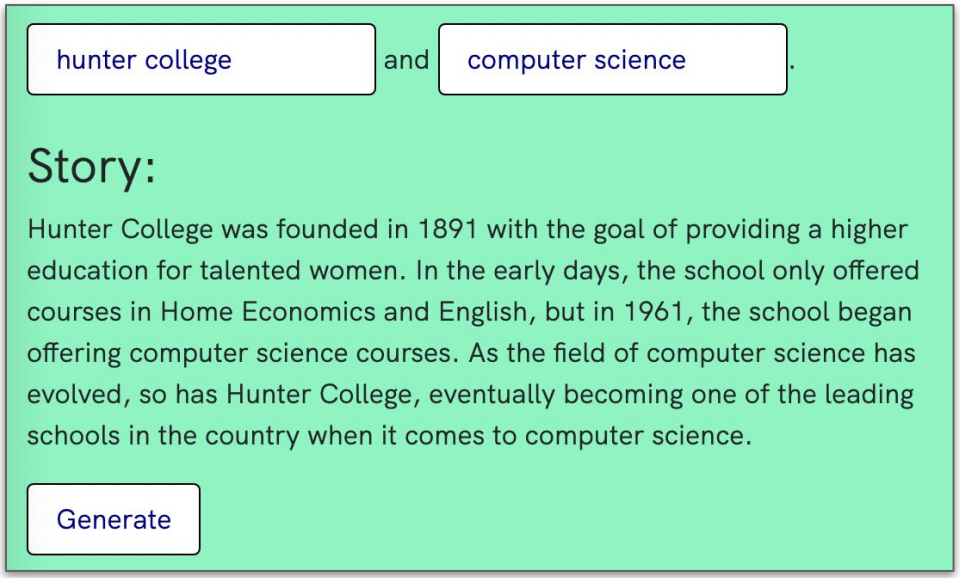
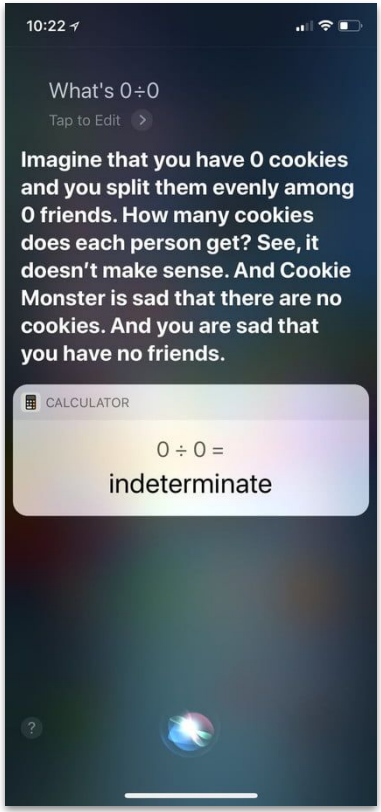
Sentence Generation

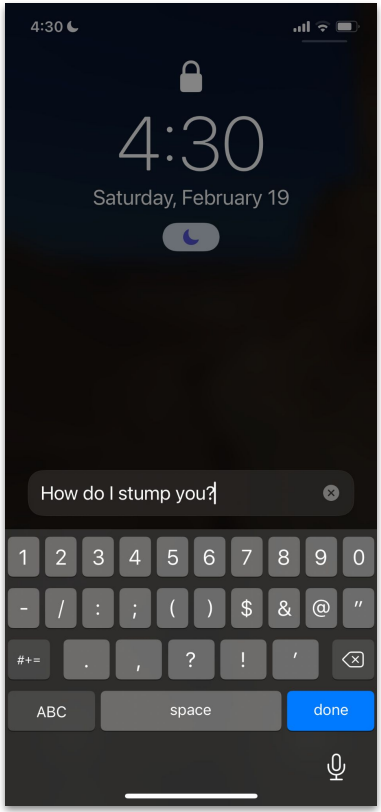
#cstopics-attendance (5 minutes)

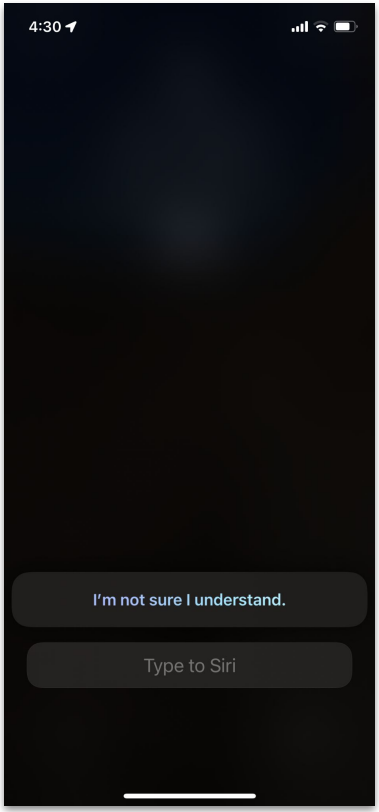
- Click the link: https://narrative-device.herokuapp.com/
- Try out different words
- Respond in the Slack channel with your favorite example



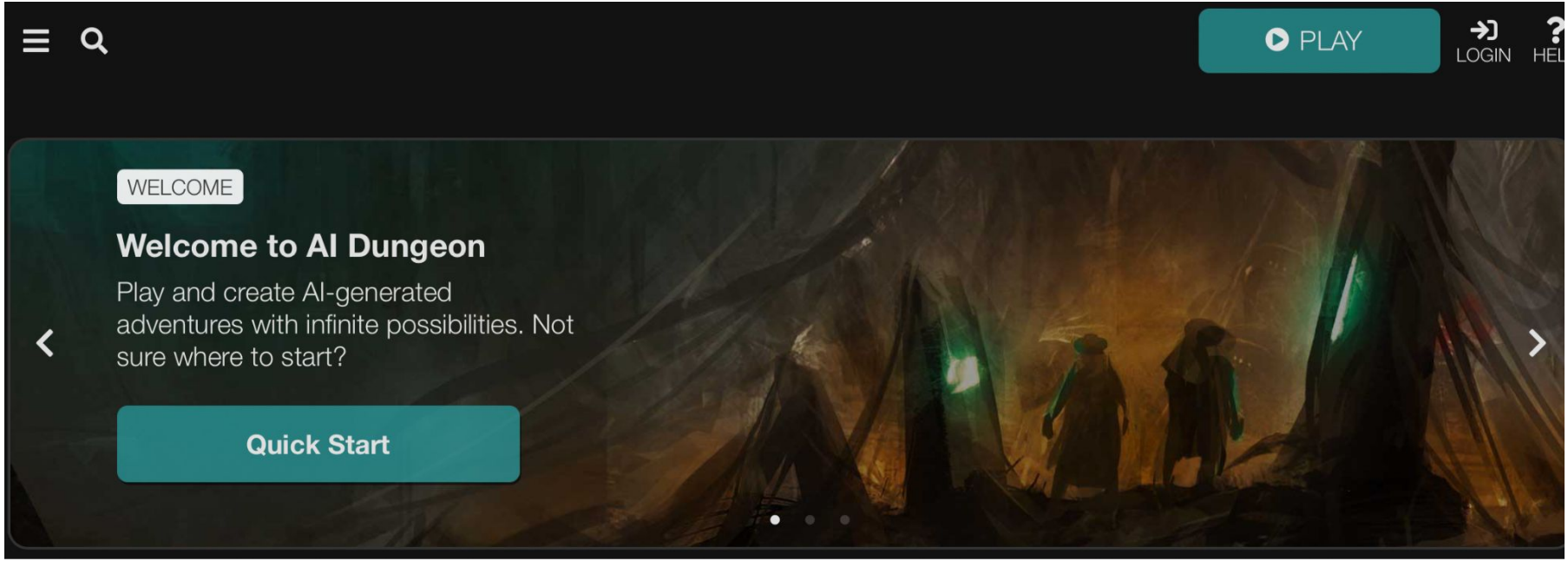
Can Siri be stumped?







AI Dungeon


PLAY
LOGIN
WELCOME
Welcome to AI Dungeon
Play and create AI-generated adventures with infinite possibilities. Not sure where to start?
Quick Start

You are Dumbledore, a wizard living in the kingdom of Larion. You have a staff and a spellbook. You finish your long journey and finally arrive at the ruin you've been looking for. You have come here searching for a mystical spellbook of great power called the book of essence. You look around and see the door is buried deep in the ground. The entrance is well above the ground, but low enough for a person to enter. You look around and see several hand and foot shaped stones, each in their own square.

🏃 You enter the ruin.

You walk over to the door and look down at the steps leading into the ruin. You then use your staff to knock on the door. A gruff voice answers, "What is it that you want?"

🏃 You want to find a spellbook.

"I'm looking for a book, a spellbook," you reply.
"What do you want a spellbook for?" the old man asks.
"I'm going to study to become a great wizard."

You are Dumbledore, a wizard living in the kingdom of Larion. You have a staff and a spellbook. You finish your long journey and finally arrive at the ruin you've been looking for. You have come here searching for a mystical spellbook of great power called the book of essence. You look around and see the door is buried deep in the ground. The entrance is well above the ground, but low enough for a person to enter. You look around and see several hand and foot shaped stones, each in their own square.

🚶 You enter the ruin.

You walk over to the door and look down at the steps leading into the ruin. You then use your staff to knock on the door. A gruff voice answers, "What is it that you want?"

🚶 You pizza Hut.

The door opens and a large, brutish looking man appears. He is dressed in filthy rags and has a long beard reaching his chest.

AI Dungeon (5 minutes)

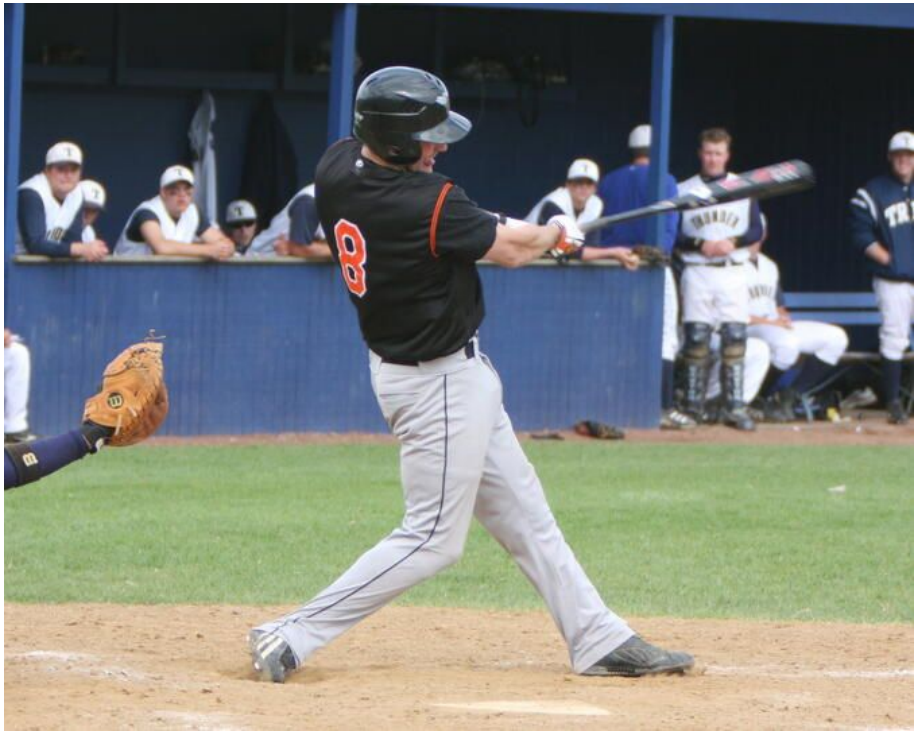
Play AI Dungeon with your breakout room

- What prompts does it understand?
- Were you able to stump it? If so, what did you ask?

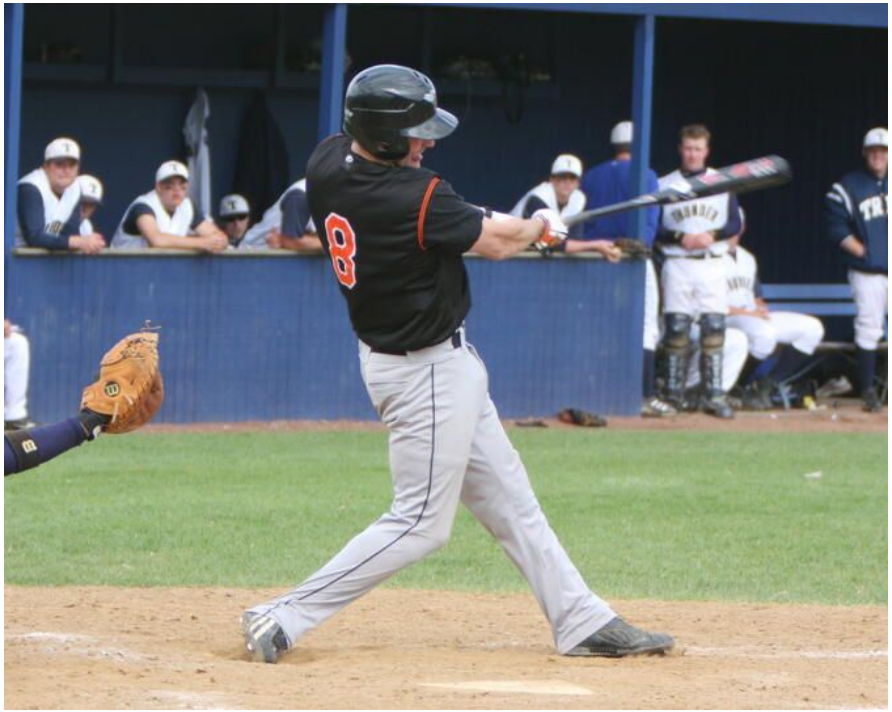
Chat Waterfall:

Make a prediction: how is AI dungeon generating text?

One person can share their screen while others suggest text to input! Have one group member share your prediction in the Slack!



Write a caption for this photo



A caption written with suggestions shown:

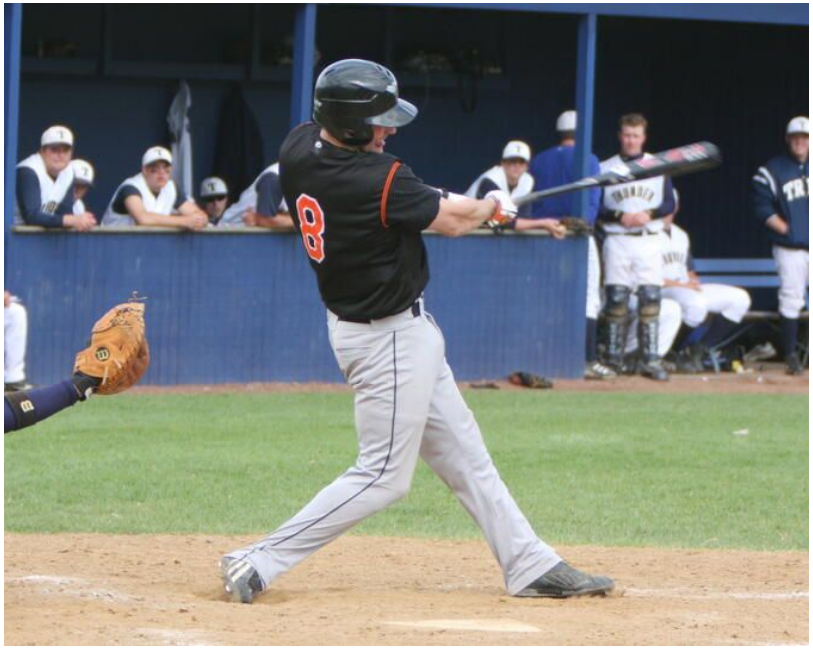
A man is swinging his bat at a baseball game.

Caption with suggestions hidden:

A baseball player wearing number eight swings a bat with people watching from the dugout.

How does autocomplete impact our writing?

- A recent study found that predictive text systems that suggest words or phrases change how we write
- Writing becomes more succinct, more predictable and less colorful (fewer adjectives)
- ***How has autocomplete impacted your writing?***



How does sentence structure

Unplugged Activity - Inputting Data

- You will be assigned a letter in the alphabet
- When we get to your letter, unmute and say your letter
- Keep track of how many times you said your letter
- Keep track of who said their letter right before you

A-Z

A - Victoria	I - Chris	Q - Eduardo
B - Alex	J - Eric Liu	R - Jiyoon
C - Ian	K - Mamudu	S - Marisa
D - Emma	L - Benson	T - Daiana
E - Michele P	M - Marina	U - Michelle B
F - Liam	N - Julian	V - Steph
G - Lyuba	O - Eric Wilson	W - Peter
H - Jovani	P - Tiffany	X and Y - Brian
		Z - Z

The quick brown fox jumps over the lazy dog

The quick brown fox jumps over the lazy dog

A	B	C	D	E	F	G	H	I	J	K	L	M
1	1	1	1	3	1	1	2	1	1	1	1	1

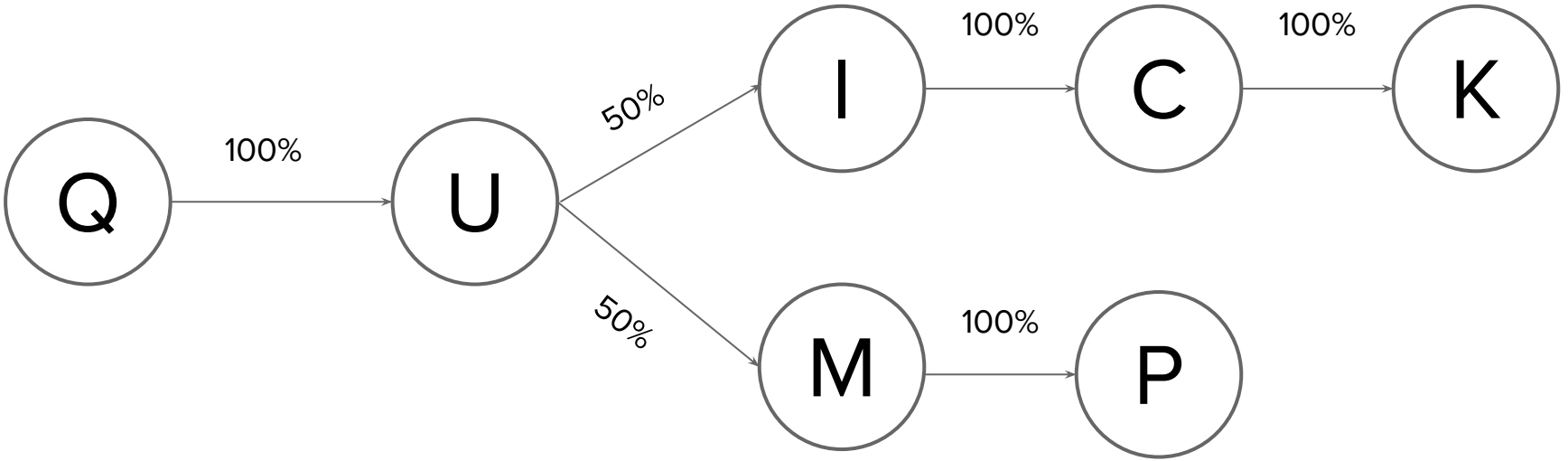
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	4	1	1	2	1	2	2	1	1	1	1	1

Character Frequency Table

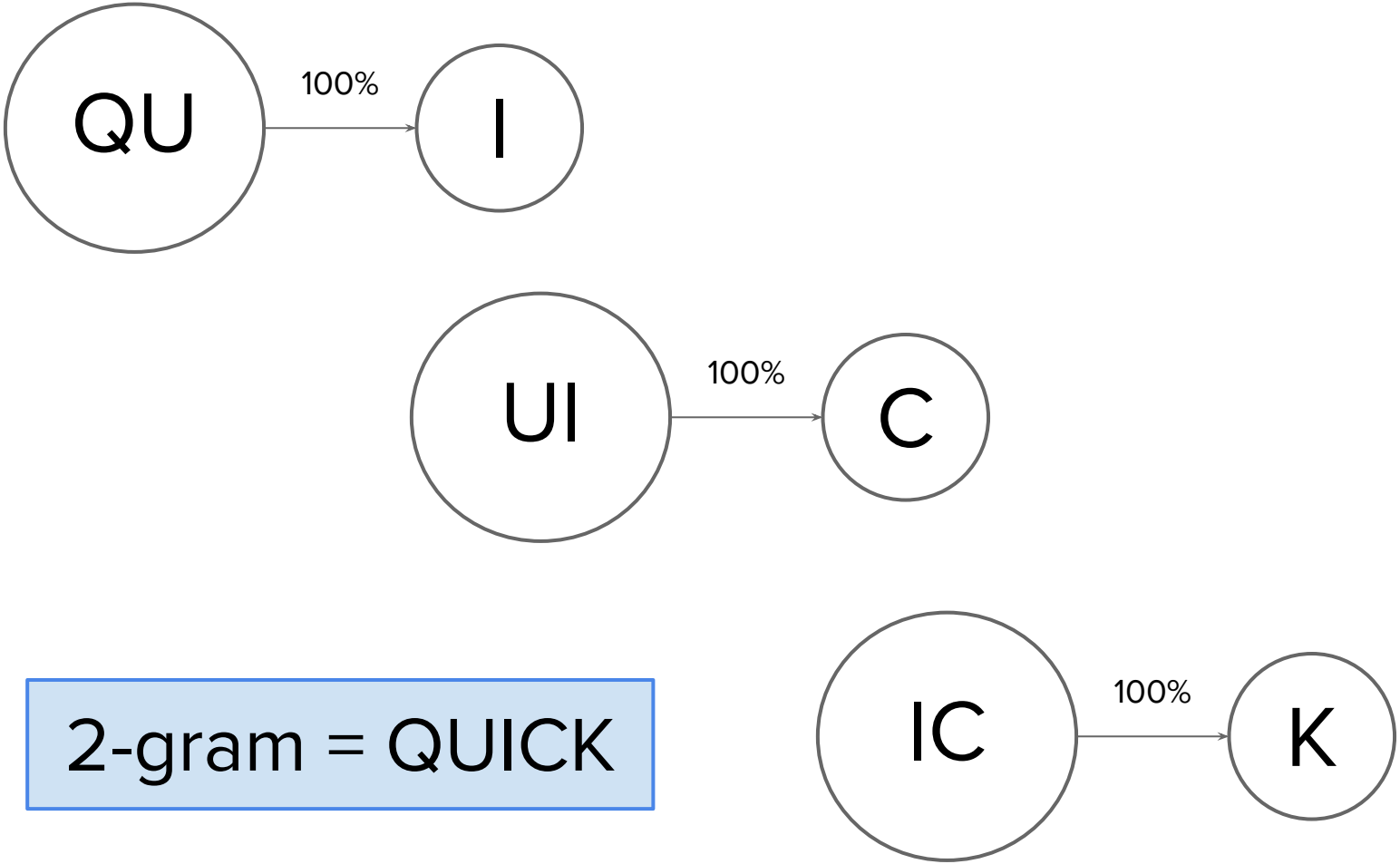
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
a																										1
b																		1								
c											1															
d															1										1	
e												1					1	1								
f															1											
g																										
h					2																					
i			1																							
j																					1					
k		1																								
l	1																									
m																1										
n						1																				
o							1															1	1	1		
p																			1							
q																					1					
r															1					1						
s															1											
t								2																		
u									1				1													
v					1																					
w														1												
x										1																
y																										
z																									1	

Markov Model Output: Create your own 5-letter word by starting with a random letter and tracing through the possible outcomes from the chart.

The quick brown fox jumps over the lazy dog



1-gram = QUICK or QUMP



2-gram = QUICK

Corpus:
Mary was scared because of me.
Mary was scared because of roaches.

	Mary	was	scared	because	of	me	roaches
Mary	0	1	0	0	0	0	0
was	0	0	1	0	0	0	0
scared	0	0	0	1	0	0	0
because	0	0	0	0	1	0	0
of	0	0	0	0	0	1	1
me	0	0	0	0	0	0	0
roaches	0	0	0	0	0	0	0

...because of...

50%
me

50%
roaches

2-gram

What do you SEE, THINK, and WONDER?

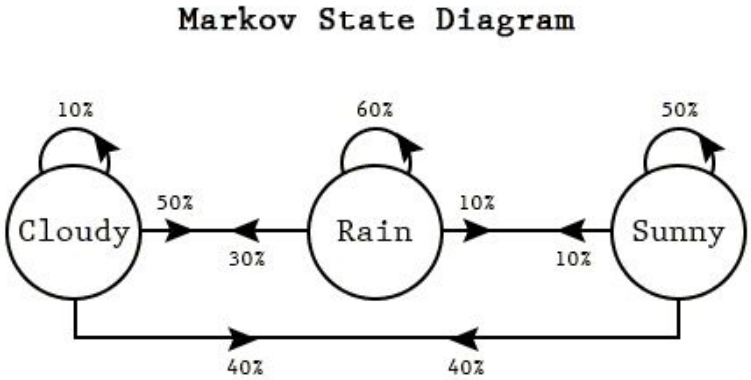
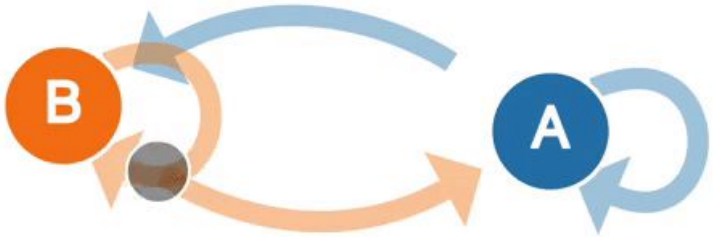


Figure 2



Markov Models

- A way of model **stochastic** processes (i.e., random processes)
  - I.e., Weather
- The following state is NOT dependent on the previous states
- We can use this with language, too!

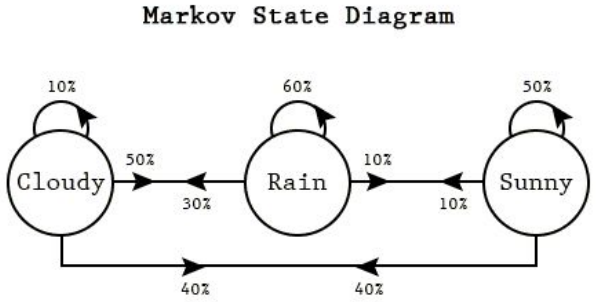
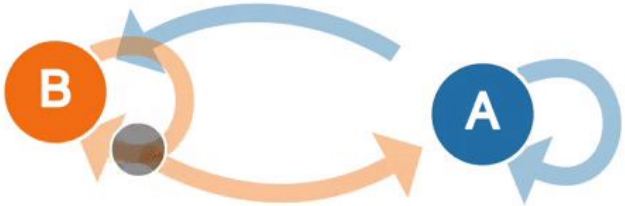


Figure 2



Homework Assignment

1) Make a copy of this google doc template!
2) Everyone completes the Homework assignment:

   Complete the simple_sentence_generator.py program to generate four different types of sentences.

3) Your work should go in the **sentence_generation** folder of your repo!

Async Assignment

Choose **ONE** of the following Async assignments:

1) **Hard:** Create a Markov model in a text-based language of your choice that models a stochastic (randomly determined) process, such as the weather. (use the in-class weather example as starting point)
2) **Harder:** Clone the lyric generating program you saw today and improve it:
   a) Make it add line-breaks where appropriate
   b) Skip/filter out text like “[Chorus]” and “[Verse]”
3) **Hardest:** Create a program that generates text using a recurrent neural network, a technique we did not discuss today. You can use this resource as a starting point!