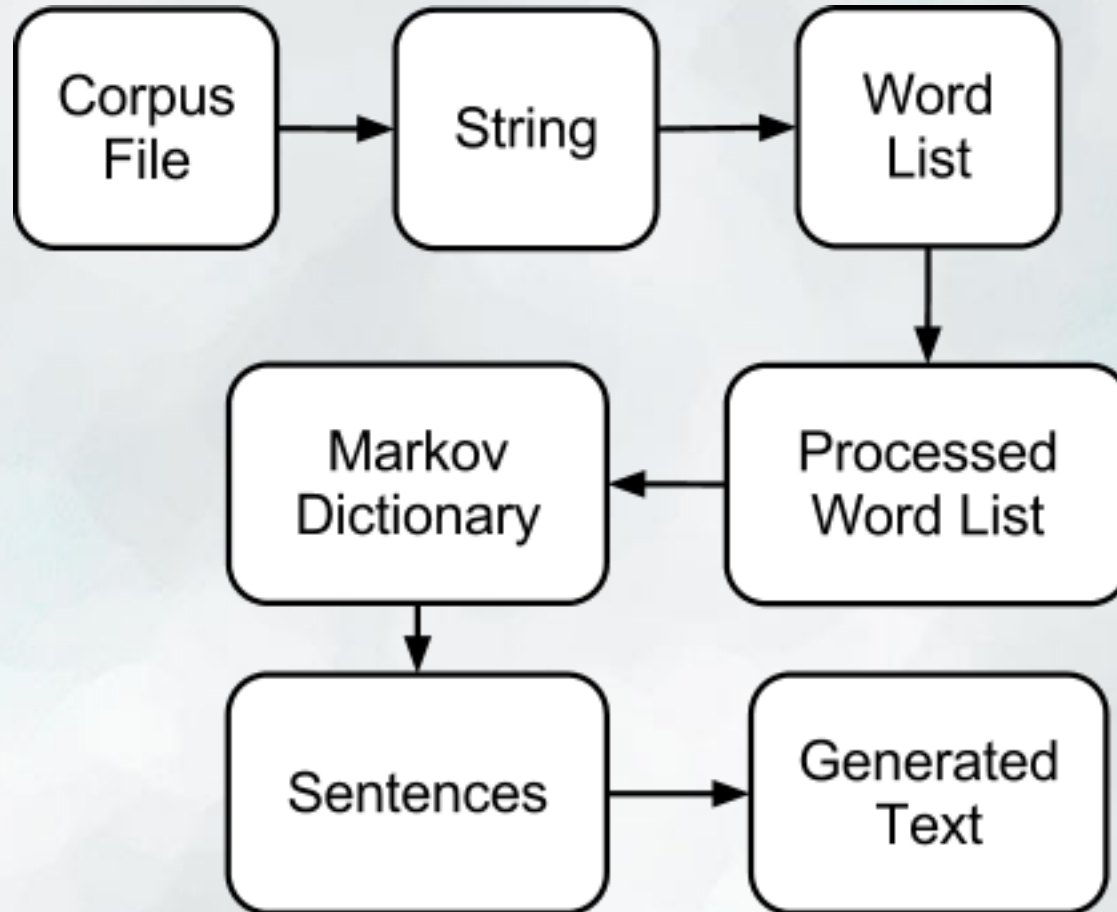


# CIS 122

## List Manipulations

# Markov Text Generation



# Lists Reviewed

- Lists are sequences of values
  - `L = [1, 2, 3]`
- These values can be of any type
  - `L = [True, 2, 'C', (4.1, 5.2)]`
- How many elements are in this list?
  - (If you're not sure, try the `len` function)

# Lists Reviewed

- What can we do with lists?
  - Anything we can do with strings
- Index them
  - $L[2]$
- Add them
  - $[1,2,3] + [4,5,6]$
- Multiply them
  - $[1,2,3] * 3$

# Lists Reviewed

- What can we do with lists?
  - Some things strings can't do
- Change them
  - `L[2] = 100`
  - Doesn't just reassign variable
  - Actually changes the list!
- Use list-specific methods
  - Like what?

# Lists Reviewed

- Lists have a number of really useful methods
- Some return information
  - `L.index('b')` # Return index of first 'b' in list
  - `L.count('b')` # Return number of 'b' s in list
- Some just modify your list
  - `L.append(x)` # Add x to the end of L
  - `L.sort()` # Sort elements of L

# List Practice

What does myList look like after each line?

```
>>> myList = [ 10, 20, 30 ]
```

```
>>> myList.append(5)
```

```
>>> myList[ 0 ] = 15
```

```
>>> myList.sort()
```

# List Practice

What does this code do?

```
L = []
```

```
for x in range(10):
```

```
    L.append(x)
```

```
print L
```



# List Practice

- Let's build up a list
- Write a method `stringToList(string)`
  - Takes a string as input
  - Splits string into a list of characters

```
>>> stringToList("Hello World")  
['H', 'e', 'l', 'l', 'o', ' ', 'W', 'o', 'r', 'l', 'd']
```

- Give it a shot

# Markov Text Generation

- Let's write a function `processText(text)`
  - Takes string as input
  - Breaks string into list of words
  - Processes list of words to split out periods
- Where do we start?

# Markov Text Generation

- Splitting a string is easy
  - There's a string method for splitting strings
  - You'll be writing your own on the homework

```
>>> "This string contains multiple words".split()  
["This", "string", "contains", "multiple", "words"]
```

- Processing the word list is harder
  - Need to iterate through list of words, checking for periods
  - Build a new list as we go
- Give it a try