coding in python

week 4

today, we are going to put everything together

❏ we will be focusing on a small project for today

❏ remember what we learned

    ❏ **if else** statements

    ❏ **for** loops

last week's assignment

- ❏ the rocket ship countdown

today's exercise/project

❏   what if we want to make flashcards from a list of words

    ❏   ie. vocabulary or multiplication tables

❏   this is a very valid problem in the real world, especially for students!
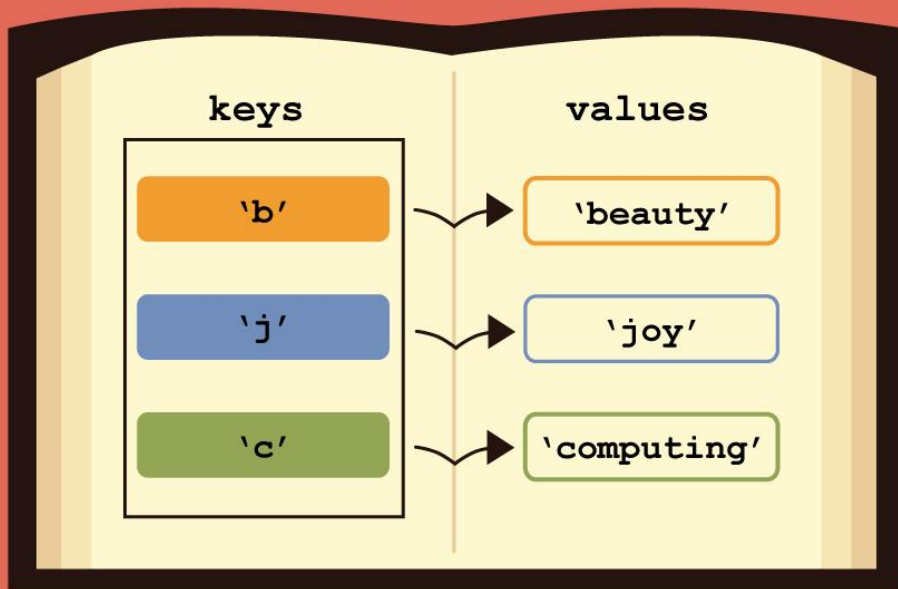
how to begin

- ❏   given a list of words, generate definitions for all of them

- ❏   basically, use python to create a dictionary

dictionaries in python!

❏ it just so happens that python has a perfect way for us to represent

this!

❏ dictionaries in python are basically lists, but each value in the list has

another value, just like a real life dictionary

how to create a dictionary

❏ dictionaries are created using curly braces

❏ entries can be inputted at the same time by using colons and commas

>>> my_empty_dictionary = {}

>>> my_dictionary = {'python': 'a programming language', 'a': 'a letter'}

things to remember about keys

❏ keys are what we use to grab entries from the dictionary

❏ there can't be two of the same key in the dictionary

❏ keys have to be immutable values

  ❏ what that means is that we have to use values that can't be changed

  ❏ for example, we can't use lists because they can be changed using functions

  ❏ Strings, numbers, and booleans work

things to remember about values

- ❏ values are a lot simpler than keys

- ❏ keys can be anything really

- ❏ remember real dictionaries!

getting information from dictionaries

❏   think about real dictionaries

❏   how do you find a definition? you look for the key, right?

❏   doing this in python is basically just indexing as we learned before.

```
>>> my_dict = {'apple': 'red', 'banana': 'yellow'}

>>> my_value = my_dict['apple']
```

creating new entries in a dictionary

❏   creating new entries is very easy

>>> my_dict = {'apple': 'red', 'banana': 'yellow'}

>>> my_dict['watermelon'] = 'green'

removing entries from list

❏   dictionaries have a function for this

❏   we use pop() to remove the entry with a specific key

>>> my_dict = {'apple': 'red', 'banana': 'yellow'}

>>> my_dict.pop('apple')

editing dictionaries

❏   we can change the value of a key in a dictionary

>>> my_dict = {'apple': 'red', 'banana': 'yellow'}

>>> my_dict['apple'] = 'green'

iterating through a dictionary

❏ we can iterate through a dictionary's keys using a for loop

❏ the variable of the for loops will represent the key, and we can use it

to get the value

let's start!

things to remember:

❏ how to iterate through strings using a for loop

❏ dictionaries

provided values/functions

- ❏ get_list(*filename*)

    - ❏ this is a string that is basically just our list of words

    - ❏ remember that "\n" represents a new line

- ❏ define(*word*)

    - ❏ this function gives the definition of a word as a string

- ❏ split function

    - ❏ look it up

another challenge

❏ if you are done, try this

❏ what if we want to only find definitions of terms starting with a specific letter?

homework

- ❏ practice with dictionaries

- ❏ finish the exercise and the additional challenge

- ❏ think about an idea for a final project