YEAH: Assignment 5

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Part 1: Strings & Dictionaries

String Encoding

Goal: Given a string encoded, return the decrypted string

- Example: ‘B1o2k2e2p1e1r1!3’ -> ‘Bookkeeper!!!’
  - Each letter is followed by the number of times it is displayed consecutively
  - 1 if not repeated, like the B in Bookkeeper

- Many possible approaches

String Encoding

Goal: Given a string encoded, return the decrypted string

- Think about the characters encoded in *pairs*
  - Each pair has a character followed by a digit
  - ‘B1o2k2e2p1e1r1!3’-> ‘B1 o2 k2 e2 p1 e1 r1 !3’

- Digits can only be 1-9
  - A character is guaranteed to be followed by a digit

Credit Card Bill

INPUT_FILE

```
9/2/19 [Target] $12
9/21/19 [Stanford Bookstore] $102
9/30/19 [Jamba Juice] $5
10/7/19 [Target] $17
10/22/19 [Jamba Juice] $8
10/28/19 [Target] $45
```

PROGRAM OUTPUT

```
Target: $74
Stanford Bookstore: $102
Jamba Juice: $13
```

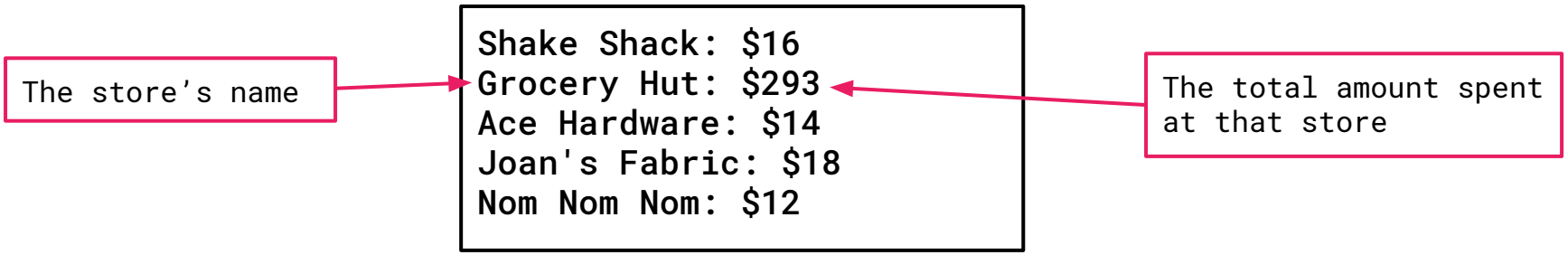
How did we calculate this?

- Read in INPUT_FILE
- Extract the information you need

- Print the store name and total amount spent there

Credit Card Bill

- What information do we need to keep track of?



- Dictionaries map a key to a value
  - You can access a value by its key and update it

Hint: Use a dictionary!

Part 2: WordGuess

Part 1: Getting a secret word

_ _ _

- Choose a random word using `get_word()`
  - For Part 1, there are 3 possible secret words: `'HAPPY'`, `'PYTHON'`, and `'COMPUTER'`
- Pass the chosen word into `play_game()`
  - This will be the word the user tries to guess!
- In Part 2, you'll expand the set of possible secret words

Part 1: Play the game

_ _ _

*Make sure the user only enters single characters

Get the user's guess

*Notice that the user can guess lower *or* upper case letters

Print out messages to user

```
play_game('PYTHON')
```

```
The word now looks like this: ------
You have 8 guesses left
Type a single letter here, then press enter: a
There are no A's in the word
The word now looks like this: ------
You have 7 guesses left
Type a single letter here, then press enter: p
That guess is correct.
The word now looks like this: P-----
You have 7 guesses left
Type a single letter here, then press enter: H
That guess is correct.
The word now looks like this: P--H--
You have 7 guesses left
```

Keep track of the user's word

Keep track of remaining guesses

*The number of guesses starts at INITIAL_GUESSES

Part 1: Play the game

_ _ _

- Proofreading user input
  - Must be a single character
  - Must be able to compare it to characters in the secret word
    - How do we check that ‘p’ is in ‘PYTHON’?

- Printing out messages to the user
  - What user’s word currently looks like - ex.’P__H__’
  - How many guesses they have left
  - Prompt user for a new guess
  - Report whether or not the guess was correct

Part 1: Play the game

`___`

How should we update the user's word?...Pretend our secret word is 'PYTHON'

- Step 1: Initialize user word to a row of dashes: `______`
- Step 2: Update the user word when a guess is correct
  - If the user guesses 'p', update it to P_____
- Step 3: Figure out when no more updates are needed

Part 1: Play the game

- Continue playing until the game ends

- Detect the end of the game
  - When the secret word has been guessed
  - When the user is out of guesses

- Print out a message informing the user
  - “Congratulations, the word is: <insert word>” or "Sorry, you lost. The secret word was: <insert word>”

- Think about control flow!

Part 2: Reading a word list from a file

- Reimplement `get_word()` to choose a secret word out of a much larger set

- Get possible words out of `LEXICON_FILE` (about 122,000 words)

`LEXICON_FILE`

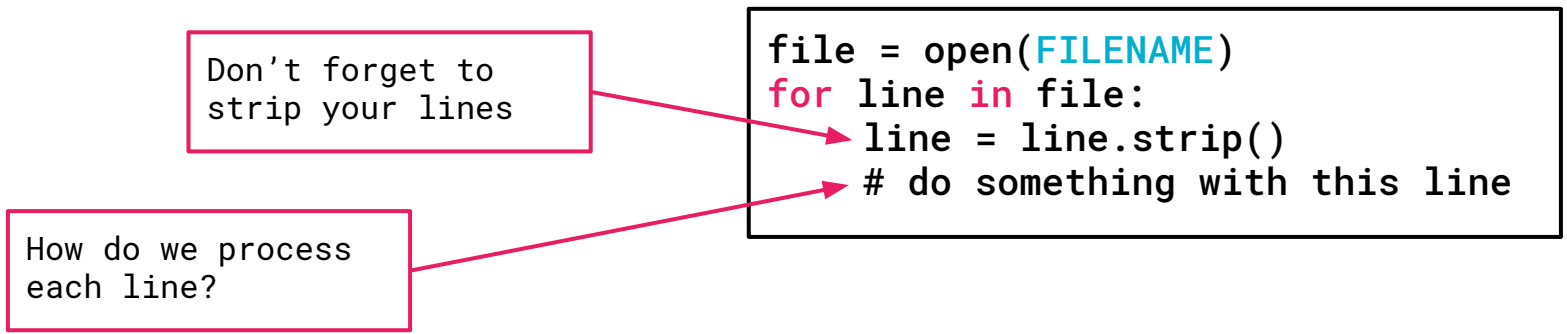
```
ZIBETS
ZIGGED
ZIGGING
ZIGGURAT
ZIGGURATS
ZIGZAG
```

*If you're curious what's in `LEXICON_FILE`, you can open up `'Lexicon.txt'`

Here's a snippet!

Part 2: Reading a word list from a file

- Read the lines from `LEXICON_FILE` into a list
  - Each line in the file stores a word
- Randomly choose a word from the list and return it
  - `random.randrange()`, `random.randint()`, `random.choice()`



Good luck!