Problem #2309: Greatest English Letter in Upper and Lower case (Easy)

<https://leetcode.com/problems/greatest-english-letter-in-upper-and-lower-case/description/>

My Solution: Runtime beats 78.7%, Memory beats 98.10%

<https://leetcode.com/problems/greatest-english-letter-in-upper-and-lower-case/solutions/3043885/easy-python-solution-runtime-beats-78-7-memory-beats-98-10/>

Easy Python Solution -- Runtime beats 78.7%, Memory beats 98.10%

[jjaganna](https://leetcode.com/jjaganna/)

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a few seconds ago

# Intuition

This solution uses ord() functions representing unicode number of a letter  
and chr() function representing the character of specified unicode.  
All upper case letters have unicode number between 65 (for 'A') and 90 for ('Z'). All lower case letters have unicode number beween 97 (for 'a') and 122 for (for 'z').

# Approach

1. Read the letters in s, if it is upper case, add its unicode number to the upper\_set, and if it is lower case, add its unicode number - 32 to lower\_set. Basically, unicode number of a lower case letter - 32 = unicode number of the corresponding upper case letter. For example, ord('A) = 65 and ord('a') = 97.
2. Get the set intersection of the lower\_set and upper\_set to find common letters.
3. If the intersection is empty, return "". Otherwise return the character value of the highest ord number in the set intersection

# Complexity

* Time complexity: O(n)

Since we have to parse each letter in the string s.

* Space complexity: O(1)

Since we can have a maximum set size of 26 only for both upper\_set and lower\_set.

# Code

class Solution:

def greatestLetter(self, s: str) -> str:

upper\_set = set()

max\_upper\_ord = ord('Z')

lower\_set = set()

for letter in s:

if ord(letter) <= max\_upper\_ord: # upper case letter

upper\_set.add(ord(letter))

else: # lower case letter

lower\_set.add(ord(letter) - 32) # Convert to upper case

set\_intersect = upper\_set.intersection(lower\_set) # Common letters

if len(set\_intersect) == 0: # No common letters found

return ""

# Get the greatest letter among common letters and return it

max\_ord = max(set\_intersect)

return chr(max\_ord)