

CSC290: Code Samples

There are four versions of a function that translates a word in English to a word in piglatin. Each function translates a lower-case word in English into a word in Piglatin according to these rules:

	Example	Output
When a word begins with one or more non-vowels, these non-vowels are moved to the end of word, followed by the string 'ay'.	"string"	"ingstray"
When a word begins with a vowel (excluding 'y'), the string 'way' will be inserted at the end of word.	"apple"	"appleway"
If a word contains no vowels, the word is returned unchanged.	"csc290"	"csc290"

Version A

```
def f(w):
    """Return the translation of word 'w' from English to Piglatin. """
    if (w[0] == "a" or w[0] == "e" or w[0] == "i" or
        w[0] == "o" or w[0] == "u"):
        return w + "way"
    elif (("a" not in w) and ("e" not in w) and ("i" not in w) and
          ("o" not in w) and ("u" not in w)):
        return w
    else:
        i = 0
        while i < len(w) and (w[i] != "a" and w[i] != "e" and w[i] != "i" and
                               w[i] != "o" and w[i] != "u"):
            i = i + 1
        return w[i:] + w[:i] + "ay"
```

Version B

```
def translate_to_piglatin(word):
    """Return the translation of word from English to Piglatin.

    Precondition: word is lower case
    """
    if word[0] in "aeiou": # first character is a vowel
        return word + "way" # return the word + "way"
    elif (("a" not in word) and ("e" not in word) and ("i" not in word) and
          ("o" not in word) and ("u" not in word)):
        return word # return the word
    else:
        # find the position of the first vowel
        i = 0
        while i < len(word) and (word[i] not in "aeiou"):
            i = i + 1 # increment i
        return word[i:] + word[:i] + "ay"
```

Version C

```
def index_of_first_vowel(word, vowels = "aeiou"):
    """Return the index of the first vowel in word, or len(word) if
    word does not contain a vowel.

    Precondition: word is lower case
    """
    i = 0
    while word[i] not in vowels:
        i = i + 1
    return i

def piglatin(word):
    """Return the translation of word from English to Piglatin.

    Precondition: word is lower case
    """
    i = index_of_first_vowel(word)
    if i == 0: # begins with vowel
        return word + "way"
    if i == len(word): # no vowel
        return word
    return word[i:] + word[:i] + "ay"
```

Version D

```
VOWELS = "aeiou" #TODO: include y?

def hasVowel(word):
    """Return whether word contains a lowercase vowel."""
    for vowel in VOWELS:
        if vowel in word:
            return True
    return False

def first_vowel_index(word):
    """Return the index of the first lowercase vowel in word,
    or len(word) if word does not contain a vowel."""
    i = 0
    while word[i] not in VOWELS:
        i = i + 1
    return i

def english_to_piglatin(str):
    """Return the translation of word str from English to Piglatin.

    Precondition: str is lower case
    """
    if hasVowel(str):
        # Rule 1
        if first_vowel_index(str) == 0:
            return str + "way"
        # Rule 2
        elif first_vowel_index(str) != 0:
            return str[first_vowel_index(str):] + str[:first_vowel_index(str)] + "ay"
    else:
        # Rule 3
        return str
```