Worksheet: Strings and loops

COSC 101, 2018-02-26

1) Warm-up
What is the output of this program?
phrase = 'Once upon a time'
print(phrase[1], phrase[-1])
print(phrase[5:7], phrase[-6:-5])
print(phrase[:4], phrase[12:]):

2) Iterating by character
What is the output of the following programs?
   a) phrase = '12cd'
      for character in phrase:
          print(ord(character))  # Hint: ord('a') is 97 and ord('0') is 48

   b) word = 'three two one blast-off!'
      for character in word:
          if character == ' ':  
              print('...', end='')
          else:
              print(character, end='')

   c) word = 'meow'
      vowels = 'aeiou'
      for character in word:
          if character in vowels:
              print(character*3, end='')
          else:
              print(character, end='')

3) Interating by index
What is the output of the following programs?
   a) word = 'WIKIPEDIA'
      for i in range(len(word)):
          if i % 3 == 0:
              print(word[i])

   b) word = 'magical'
      for i in range(len(word)):
          if i % 2 == 0:
              print(word[i].upper(), end='')
          else:
              print(word[i], end='')
c) phrase = 'I do not understand'
   stop = (len(phrase) + 1) * -1
   for i in range(-1, stop, -1):
       print(phrase[i], end="")

4) Accumulator pattern
What is the output of the following programs?
   a) letters = 'lbn'
      noun = 'A'
      for ch in letters:
          noun = noun + ch + 'a'
      print(noun)

   b) letters = 'ssp'
      noun = 'M'
      for ch in letters:
          noun = noun + 'i' + ch * 2
      noun = noun + 'i'
      print(noun)

   c) k = ''
      for i in ['alice', 'bob', 'carlos']:
          for j in i:
              k = k + j.upper()
              k = k + ' '  
      print(k)

5) Programming practice
   a) Write a function called pig_latin that takes a single word (as a string) as an argument and translates the word to pig latin. To translate a word to pig latin, move the first letter to the end of the word and add "ay" to the end. For example:
      pig_latin('pig') returns 'igpay'
      pig_latin('latin') returns 'atinlay'

   b) Write a function called pirate that takes a string as an argument and for each occurrence of 'ar' in the string, the 'r' is repeated four times. For example:
      pirate('arching') returns 'arrrrching'
      pirate('ardvark') returns 'arrrrdvarrrrk'
      pirate('iron') returns 'iron'