Pop Quiz 5

November 6, 2018

Name: ____________________________

1. **(1 pt)** Which of the following is not a true, good reason to use Numpy?
   
   (a) it allows us to quickly match any custom-designed string pattern
   
   (b) it provides an intuitive way to represent a matrix data structure
   
   (c) it provides useful numerical functions that are not natively built-in to Python
   
   (d) it allows us to compute numerical calculations extremely quickly

2. **(2 pts)** Here is a small Python program:

   ```python
   def main():
       cm_heights = [161, 174, 91, 182, 170]
       everyone_can_ride_rollercoaster = True
       i = 0
       while everyone_can_ride_rollercoaster == True:
           if cm_heights[i] < 100:
               everyone_can_ride_rollercoaster = False
           else:
               print("Person is tall enough!")
               i = i + 1
   
   if __name__ == "__main__":
       main()
   ```

   If we were to run it, how many times will the message on line 9 get printed to the screen?
   
   (a) 0
   
   (b) 2 (the while loop is executed while the conditional statement is True)
   
   (c) 3
   
   (d) 4

3. **(1 pt)** What are regular expressions *and* why are they useful?

   A regex is a String that we define, which represents a pattern we wish to find within a particular, different String of text. Specifically, we can find and return all occurrences of the pattern (via `findall()`), and optionally replace them with a different String if we want (via `sub()`). They are useful because the syntax to define such is very compact and powerful, allow for complex sequencing, which otherwise would be a nightmare to program with our regular Python approaches.