

## List, for Loop, and Numpy Array Questions

1. Given the list ['John Smith', 'Michael Anderson', 'Archibald Farnsworth the Fourth'] add another name in between the second and third entries.
2. Given the list ['s', 'h', 'j', 'k', 'd', 'q'], rearrange it in reverse alphabetical letter.
3. Given the list ['s', 'h', 'j', 'k', 'd', 'q'], write a program that will return every other letter in the list starting with the second. Do not use the length of the list in your code.
4. Use range to create the list [2,4,6,8,10,12,14,16,18,20,22].
5. What is the result of range(13,40,5).
6. Given the list ['John Smith', 'Michael Anderson', 'Archibald Farnsworth the Fourth'], use one line of code replace the middle entry with some other name.
7. Take a user input of form MM/DD/YYYY, convert it into a string of form 'Day Month Year' and print the string. You will need to split the string that the user enters at the '/' characters (use the split() method) and then use the three substrings to construct a new string.
8. Write a program that prints out the squares of all the positive integers from 1 to 10.
9.
  - a. Write a program that sums the first 100 positive integers and prints the sum.
  - b. Now write a program that sums the first n integers and prints the sum. n should be read from user input.
10. Ask the user to input a positive integer n and print out its factorial  $n! = 1 \times 2 \times 3 \times \dots \times n$ .
11. What is wrong with the following code?

```
for i in range(0, 10, 0.1):  
    print i
```
12. Ask the user for a positive integer. Print out all the integer divisors of this number, including 1 and itself.
13.
  - a. Write a program that accepts input entered by the user and stores each entry in a list. The program should stop when the user enters 'end'.
  - b. Add code to the program that will print out all the data entered by the user (print each element on a separate line).
  - c. Add code to the program that will print out only those entries that are numbers (hint: you will need the isalpha() method; type help(str) in the Python shell)
14. Write a program that prints out the first 100 prime numbers. A number is prime if it is a positive integer such that its only integer divisors are 1 and itself. By convention, 1 is not considered a prime number.
15. Write a program that accepts two integers as user input and prints their greatest common divisor.