# Final Exam For Python CIS 104 (By Zackary Paulson)

**Section 1 -**

**Question choices for section 1**

**#1. Question :(What are the important parts of a loop? Why are they important? What are the two general categories of loops?)**

**Answer: The important parts of a loop is the variable used to iterate over a list of data from either a list of values or a dictionary in order to go through and find certain data to do something with, as well as the range or lack thereof in the loop. They're important because instead of the programmer or user having to go through manually or have the program use if and else statements the loop does that checking for us, which in turn saves us time. The two general categories of loops are while and for loops. While loops basically continue iterating through a program until a condition has been met and at that point the loop is then broken. The for loop on the other hand only iterates through a list or data at a set number of times.**

**#2. Question : Describe what lists are. Give an example using a list to solve a coding problem.**

**Answer: A list is a variable that stores many other variables with similar values. For example( list fruit = ['banana', 'apple', 'orange']). If there was a program that needed to be made for lets say a team of football players and we needed a list of players with their own separate list of information for example height, weight and major lifts then we would make a multi dimensional array. The first array would be an array of arrays and the second would be the array of information per player. So we could either enter in that data at a later time or all at once that way we could see the stats of each player.**

**#3. Question: What is Git and why is it useful? Give specific examples of situations where you would want to use Git.**

**Answer: Git is a version control system that basically more or less tracks the committed files by one or more people. A good example of this would be if there was a program that somehow became corrupted or some huge part of it happened to get deleted. With version control it's possible to restore the program to a previous state before any alterations were made. We also use git as a place to store programs so that it isn't saved to only one computer or server.**

**#4. Question : Why would you want to create your own function? Give an example.**

**Answer: You would want to create your own function because you don't want to have to reinvent the wheel every time you want something to be done. Let's use an example to explain that. Let's say that we wanted to make a program where you want to firstly assign some variables named dogs and cats which are lists. Inside of that list is a list of dogs or cats names depending on which list it is. Now let's say that we want to find out the number of dogs and cats when both lists are combined but in the**

**program you have the ability to append more dogs or cats into the list. Then I would suggest that you create a function that adds both lists together then counts the total number of variables or names of the combined lists. That way after each time you add a new name to the list you don't have to have a new set of instructions for the program. I would also suggest using a while loop and maybe breaking out of it that way once the client or user is finished adding names the new appended lists are then added together and counted. In addition I would make sure that the appended lists are being added together and then counted instead of counting the original lists.**

**P.S. : By the way I hope that you have a great winter break!**