Journal

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This is a Son Nguyen's journal in Dr. Mohlenkamp reseach group, Spring 2011

1 Week 1

- I read material about Python's class how a class structure and how to create a class output of a function.
- At first I have difficult of checking correctness of my function since the output is a list of class instance. Then, I figure out that we can check this list by writing some method for the class, and call these method in the function out put.
- I also started reading about data structure in Python.

2 Week 2

- I fixed the bug that Dr.Mohlenkamp point out in our previous meeting. I have shortened the code by removing some unnecessary parts.
- I run a test for my code and the results seem correct.
- I discussed the code with Ranjita and Vusi to understand more our tasks.

3 Week 3

- I was working on the proposition genericgabbmgeneric. My ideas is to convert the FIVlist input into the form of base and indexconnections and using the code in cuspcases. My code run.
- I had trouble with testing the result since the sumFIVlist and integrateFIVlist functions were not ready to run.

4 Week 4

- I had a hard time figuring out how to work with FIVList since I could not understand the theory behind the algorithm of summing over index and integrating over variables. I ended up without the code for this week.

5 Week 5

- I read about dictionary type in Python and was trying to understand the meaning of the functions: ihasi, ihasv, vhasi, vhasv. There were still some parts of the IVConnectivity that I could not understand.
- I implemented the algorithm that Dr.Mohlenkamp's suggested, and resulted the running code.

6 Week 6

- I tried to understand the meaning of the vhasv, ihasi, ihasv, vhasi functions. Still, I have not completely understood these functions
- I applied Dr Dr.Mohlenkamp's algorithm to write a new code.

7 Week 7

- I studied the note and finally understand how the functions: ihasi, vhasv...work.
- I wrote the code based on the algorithm that Dr Mohlenkamp suggested. The code was tested to be correct by me.

8 Week 8

- I figured the logic to detect the triangle, and the way these variables connect in the FIVlist of the proposition that I am supposed to write.
- There were some points on the order of operation in each proposition that I am not totally sure. I planned to discuss this with Dr.Mohlenkamp on our next meeting.

9 Week 9

- I modified the code for the remaining propositions with the same code from previous week, and also wrote the test these code.

- There was a point when I misunderstood the vhasi functions. I had realized it later on, and correct the code.

10 Conclusion

- This Spring, there are two important things that I had learned in doing research with Dr.Mohlenkamp's group: how data structure works and how to use better algorithm to reduce the length and complication in coding. In team of data structure, since I had been working with Python for few quarters, I already understood some fundamental concepts around basic data type like list, tuple, set.... However, to put all of those types in a complete package as class changes the way we handle each of those data types. Working with class is new to me and I encounter some difficulties in the first weeks. As the time goes by, I started to realize that classes can improve productivity, and also classes help organize codes and form the code in a total package which truly help users and programmers have a big picture of the code. Classes is also the center concepts of object - oriented programming. During the quarter, I was also learning how to work with dictionaries, which was a brand-new concept to me.

- As for algorithm, I used to think of it as a solution to the problems, but not the efficient solution. Therefore, I did not think about how to improve algorithms after I came up with one. As a result, most of the time, my algorithms were long and complicated. Dr. Mohlenkamp had guided me with his algorithm, which is usually shorter, using less memory and sometime is a combination solution of more than one problems. I came to realize that a smarter algorithm is extremely important when working with a large project. The efficient algorithm not only helps to speed up the program, it also make the error checking process easier. A better algorithm also organized the code so that the coder can see the big picture of the problems. And because I have learned somewhere that programming = data structure + algorithms, I think I have, again, improved my programming skills.

- After almost two years working in the group under the guide of Dr. Mohlenkamp, I have mature a lot in programming, team work, and also in how to communicate my ideas in English, which used to be a big issue for me since I came studying in America. I would like to thanks Dr. Mohlenkamp for such a excellent advisor, who always believe in me and understand all of my questions. I know that the time I worked in the group is one of most beautiful time in Ohio University.