Problem Set 6, Problems 0, 1, and 2

Problem 0: Reading and response

Economics is a human science. An area of knowledge that is very much wrapped around human behaviour. The article by insidescience touch bases on this idea that I agree very much. They claim that scientific models are often used by academics in the natural sciences field where data and hypothesis can be tested in an environment with controlled variables. However, an economic market is very hard to simulate as it is very dependent on the behavior of millions of people. Economics also fluctuates and has its paradigm shifts with changes in the market such as new products, collapse of another currency, natural disaster, a major political decision, etc... I personally believe that making models is one way we can generalize information and can potentially make useful conclusions out of. In the scientific domain, making models is great to educate and form hypotheses and come to conclusions, however in non-scientific domain, models should only be used to see patterns and educate people on those patterns and not use them to form opinions or conclusions. For example, a model that is used in economics should not be used to make big decisions as we know it can never be perfect, but it should be used to teach students about generally how the market in economics works.

A reason I feel strongly this way is because information in the scientific domain is very consistent and rarely subject to paradigm shifts. Earth will most likely always rotate around the sun, a ball when thrown from a cliff will always go down, etc.. but market behaviour is unpredictable. In scientific-domain, models are made from theories that have been tested rigorously but in non-scientific domain, models are made from data collected at that moment, that data is always subjected to change. Therefore to conclude, I don't think that models can ever be 100% correct. The accuracy of models are always going to be based on the complexity of the situation you are modeling. A model that is supposed to encompass an entire market will obviously never be perfect since as I mentioned before it is based on data collected by response of several people which is always subject to change. The same goes with modeling the earth's climate. At times there are unprecedented factors we cannot include into our model. A great example for economics would be the COVID-19 and how it impacted the market world wide.

Problem 1: Tracing function calls

global variables

a	b	c
3	5	2
3	15	2

foo's local variables

a	b	c
2	3	5
6	3	15
19	3	15

bar's local variables

a	c	b
15	9	6
15	19	6

mystery's local variables

c	a
18	15
9	15
9	6
10	6

output (the lines printed by the program)

```
3 5 2
foo 6 3 15
bar 15 9 6
foo 19 3 15
3 15 2
```

Problem 2: Understanding loops

2-1)

i	values[i]	values[i-1]	count
-	-	-	0
0	4	1	0
1	7	4	0
2	3	7	1
3	5	3	1
4	8	5	1
5	1	8	2

return value: 2

2-2)

a	b	value printed
8	3	8 3
5	2	7
3	1	4
2	0	2