**INAUGURAL PROJECT THINGS TO IMPROVE**:

Things to improve:

* We forgot to set a seed in question 7 (look at the slides)
* Say why you choose that optimizer.

Note on choice between optimizing method choice:

4a) ans 5a) using a **grid search**, since we are using a discrete set!!

4b) and 5b) you should use a **numerical optimizer**, since now we are looking at a continuous set!

* + Problem with numerical optimizer: starts with a starting value, hence the point in which we begin can lead to a problem: find a LOCAL minimum and not the GLOBAL minimum. -> Try different starting values. Then manually check the lowest one! Look at 5b), because something similar occurs, as the curve is quite flat around the minimum, so the optimizer struggles to find the minimum.
* Note that if we solved 4 incorrectly (solved the second problem sugnaled in the slide 3, regarding question 4) demand could have been higher than one, or not match supply which is a MISTAKE.

Things that I have changed in the Improving Assignment File:

1. Changed all the graphs to look exactly like the graph that they give us as an example.
2. In the exchange economy file I have changed the definition of demand, so that x1A, x2A and x1B and x2B are between 0 and 1 (which is because of the constraint).
3. In 4a) and 5a) I have used a grid search instead of a numerical optimizer, because my TA said that that is how we should proceed when we have a discrete set (in this case p1 belongs to a discrete set- called P1- and not to a continuous set). It belongs to a continuous set (p1>0) in questions 4b) and 5b), and in those I kept the numerical optimizer.
4. I have also changed the objective function in question 4, because we were solving it wrong as the TA says in this slide: A white paper with black text

   Description automatically generated
5. I have also set a seed in question 7 so that our random numbers are not being generated every time we run the code. – She also says to do this in her slides.

THINGS THAT I NEED TO ASK THE TA:

1. I need to ask if 4a) and 5a) are well done, because I think 5a) isn’t, given the graphical results.
2. In question 8, sometimes it changes the place where the initial endowment is. I need to understand how to avoid that!

I will ask her these questions on Wednesday 😊

In your **data analysis project**, you should show that you can:

1. Apply data cleaning and data structuring methods.

2. Apply data analysis methods.

3. Structure a code project.

4. Document code.

5. Present results in text form and in figures.

**1. Apply data cleaning and data structuring methods.**

From the Notebook Data\_load\_clean\_save:

* Aim is to clean the data itself on python. Not beforehand in excel.
* Columns shouldn’t have spaces nor numbers as their names.
* Columns and observations how to be deleted can be found here.

**2. Apply data analysis methods.**

From the Notebook Data\_load\_clean\_save:

* empl.describe() -> gives general statistics (eg. Mean, quartiles…)

**5. Present results in text form and in figures.**

From the Notebook Data\_load\_clean\_save:

* Interactive graphs

Suggestion of Idea:

Looking at spurious correlations:

E.g:

Share of the population using the Internet (https://ourworldindata.org/grapher/share-of-individuals-using-the-internet )

Chicken meat production <https://ourworldindata.org/grapher/chicken-meat-production?tab=chart>

Phones usage 100%people: <https://ourworldindata.org/grapher/ict-adoption-per-100-people>

homocide rate: <https://ourworldindata.org/grapher/homicide-rate?tab=chart&country=England~SWE~CHE~NLD~ITA~OWID_WRL>