INDR 501 PROJECT

For this project, I created two code. One code for algorithm and other code for GUI. Let me explain algorithm code first. I worked on Jupiter notebook, then downloaded as python so I am attaching both .ipynb and .py versions of code. This algorithm is written from scratch without looking any previous code. I created code for maximization problems where the code accepts 3 constraints. All 3 constraints must be entered to the system. The tricky point is there has to be 3 constraints. Otherwise code may not work properly. It is because when equality constraints came in we first solve simplex and it is becoming more complex. When I create the problem with '<=' it could accept infinite number of constraints. If wanted I can send that version later. Also our code accepts x1 to x10 number of variables however if you just have 3 variables , you need to leave other constraint variable points empty in GUI.

I tried to write algorithm code as easy to understand as possible. So I think you can easily understand it as I use same parameter names like in revised simplex in the code. For instance, I used parameter names as C_b, Z, X_b etc. which are the same in revised simplex as well. I added comment on hard points to understand.

In conclusion, I couldn't do operate on GUI however code work on itself. I tried it lots of hours but couldn't manage to do it. Right now, I am including both codes. You can code named 'Algorithm_Code_INDR501_Emre_Uzel.py' and 'Algorithm_Code_INDR501_Emre_Uzel.py'. They get user input and they work fine. Find the optimal solution. I tried it with multiple problems and found the true solution.