Applied programming

Exercise

Task 1

Remember the exercise on tables and graphs. Use the code from this exercise to write a program called "owntable" which

- runs regressions over a user-defined group (with different levels)
- stores the regression outputs (N, coefficient, s.e., p-value, CI) for the first explanatory variable in one single temporary matrix
- gives the matrix meaningful row and column names
- displays the matrix
- exports the matrix (including row and column names) into an (user-defined) excel file

Hints: Instead of calculating the p-value and CI on your own, use the matrix stored in r(table). This is a matrix provided in the return list after a regression was run. Do not show significance stars. For file exports, either use “replace” within the program (inferior solution) or provide the user an option to replace existing files (optimal solution)

a. Write the program for numeric group variables only. Use the values of the group variables as row names.

b. Now, let the program check if the group variable has a value label. If so, the program should use the value labels instead of values as row names. If not, it should use again the values as row names. Hint: Use extended macro functions.

c. **Bonus I.** Instead of storing and displaying always the results of the ***first*** explanatory variable, the user should have the option to specify for which explanatory variable the results should be stored and displayed.

d. **Bonus II.** Make the program work for string group variables. Consider that string variables would require a different code for extracting the row names and the regression.

Example (using auto.dta):

```
. owntable price length using "Appl_Prog_Task_1", over(foreign)

                  N  Coefficient         S.E.      p-value     CI lower     CI upper
Domestic         52    77.393411    18.910494    .00015537    39.410565    115.37626
 Foreign         22    157.03573    24.555887    3.073e-06    105.81304    208.25841
file Appl_Prog_Task_1.xlsx saved
```

Task 2

Now complement the program with the option to plot and save a graph as described in the exercise to graphs and tables. Alternatively, you can also construct the graph using the coefplot command. Try to make the program work for group variables with more than two levels (quite advanced).