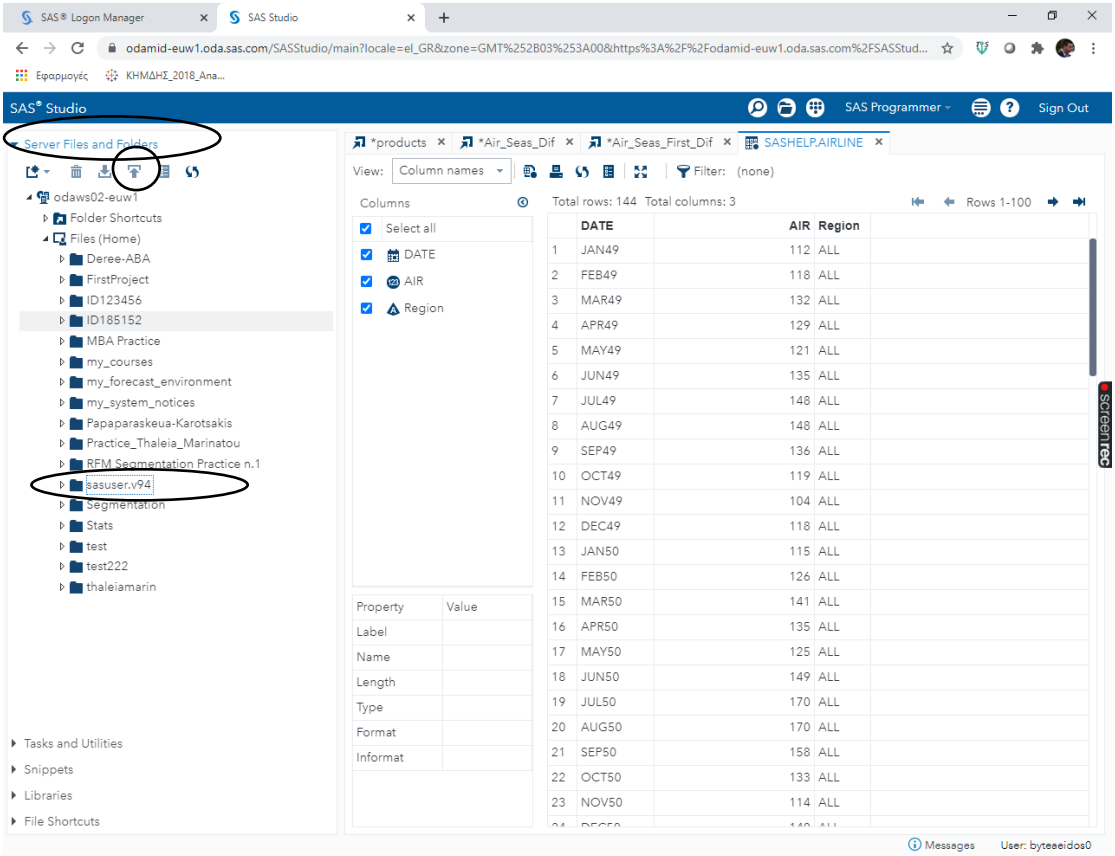
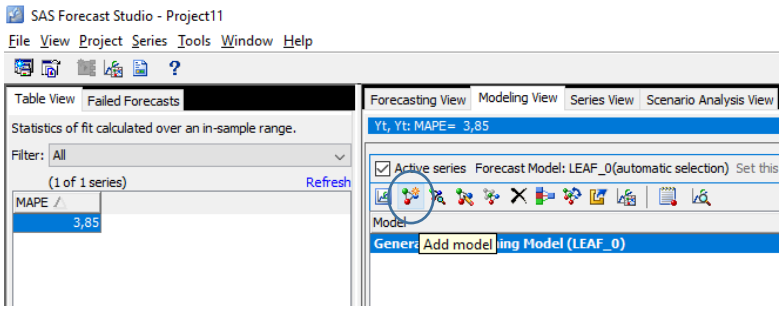
Demo Exponential Smoothing: Winter's Method

1) Open google chrome
2) Go to welcome.oda.sas.com
3) Select Europe in the drop down menu and press sign in
4) Insert your credentials
5) In the dashboard select SAS Studio
6) On the left hand side select Server Files and Folders and then sasuser.v94
7) Press the upload button (the one with the arrow heading upwards).



8) Select the file "Airline_Data_Mult_WES_For_SAS.sas7bdat"
9) Press Upload
10) Open SAS Forecast Studio
11) In the projects window press New.
12) In step 1 name the project "Exponential Smoothing With Trend and Seasonality" and press next.

13) In step 2 open the sasuser library, Select the “Airline_Data_Mult_WES_For_SAS” data set and press next.
14) In step 3 press next
15) In step 4 select Date as the time id variable.
16) In step 5 select Yt as the dependent variable.
17) In step 6 press next
18) In step 7 set 12 in the Change the number of periods to forecast (horizon). Press Change Other Forecasting Settings and select the Model Generation tab. Uncheck the System Generated ARIMA models. Select the Model Selection tab. Check the Use Holdout Sample for Model Selection option and input 24 and 25. Press OK. Press Next.
19) In step 8 press finish
20) In the Forecast Summary window double click on the Model Type box. What do you observer? Press close.
21) In the Forecasting view window, comment on the characteristics of the time series. Is your observation in line with the results of the previous step (model type)?
22) Select the Series View window. Select plot Unit Root Test. Which one of the three windows should you look (Zero Mean, Single Mean, Trend)? What do you conclude? Is this in line with the results in the two previous steps?
23) Select plot Seasonal Unit Root. What do you conclude? Note that we have quarterly data.
24) Select the ACF plot on the actual data. What do you conclude?
25) Select the Modelling View window. Select Add Model.



26) Select Exponential Smoothing and press OK
27) Select the appropriate options in the Method window one by one (except Automatically Selected models). Name each model (e.g. in stead of ESM1,2,3,4 write Winters, Additive Winters etc.
28) Select Compare Models. Press Close.
29) Which model has the lowest MAPE?