Below Procedures were run for the wine data set analysis:

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| **SAS PROGRAM** | **Comments** |
| libname wine "/home/cmunegow0";  libname library "/home/cmunegow0"; | Set up the wine library |
| data redwine\_quality;  set wine.redwine;  if Quality=6 then winequality='Medium';  else If Quality>0 and Quality<=5 then winequality='Low';  else If Quality>6 then winequality='High';  run; | Classification of wine quality values |
| proc contents data=wine.redwine;  run; | Desciption of wine quality data set. |
| ods graphics / width=500;  proc freq data=redwine\_quality;  tables winequality;  title1 'Frequency table for wine quality';  run;  title; | Frequency table for wine quality |
| data ds2;  set wine.redwine;  int=1;  run;  proc boxplot data=ds2;  plot quality \* int;  run; | Box plot to check the distribution of data. |
| proc sgplot data=ds2;  vbox total\_sulfur\_dioxide;  title 'Wine Data Distribution';  run; | SGplot to check the distribution of data |
| proc sgplot data=redwine\_quality;  hbox free\_sulfur\_dioxide/ category=winequality;  title 'Association between free sulfur dioxide and winequality';  run; | SGplot to check the association of variables. |
| proc logistic data=work.redwine\_quality;  model winequality = pH;  run; | Binary Regression Logistic model. |
| ods graphics / width=700;  proc logistic data=REDWINE\_QUALITY  plots(only)=(effect oddsratio);  model winquality(event=High) = fixed\_acidity pH alcohol  volatile\_acidity /  selection=backward clodds=pl;  title1 'LOGISTIC MODEL (Medium):winequality=fixed\_acidity pH alcohol volatile\_acidity ';  run; | Multiple Regression Logistic Model. |