Why need automation?

- Required to use Excel as the report format
- Typical report: multiple tabs with multiple tables, cut-paste is error-prone
- Many reports needs to be updated in the same time
- Only data in the table to be updated
- Monthly, quarterly, annual reports which having the same structure
What tools available in SAS

- Using different tagsets which use SAS ODS.
- Using DDE
- Using Enterprise Guider to do that.
Output Delivery System (ODS) Basics

- To start output being delivered to ODS the general syntax is:
  - `ods output-format<options>;`
- To end output being delivered to ODS:
  - `ods output-format close;`
- Between the above two statements are SAS codes.
- Normally we use the following statements before and after the above statements:
  - Before “`ods output-format<options>””:
    - `Ods listing close;`
    - `Ods noresults;`
  - After “`ods output-format close””:
    - `Ods listing;`
    - `Ods results;`
What object will be used?

- Discussion of eligible list (tagsets: excelXP, msoffice2k, html)
Available or unavailable?

- Benefits of each tagsets

<table>
<thead>
<tr>
<th>Benefit</th>
<th>ExcelXP</th>
<th>MSOFFICE2K / HTML3</th>
<th>CSV</th>
<th>MSOFFICE2K_X</th>
<th>TableEditor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creates Multiple Worksheets</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Creates Graphics</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Adds or Modifies Styles</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Uses Options</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Updates Worksheets</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Creates Output on all Operating Systems</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

- TableEditor is not a default tagsets in our environment

- Download from support.sas.com and run it to add it to the template)
Problems using tagsets

- Basiclly each tagsets has advantages and disadvantages
- Header and footer only accept text file for excelXP and msoffice2k_x, no icon allowed
- excelXP has problem to format the data in #,### though other formats are ok
- Msoffice2k_x can not generate multiple tabs though can join them in one excel file later, naming issue
- Can not retain the current Excel template features.
Alternatives

- Possible to use dde to call excel macro to insert the logo to the existing file?
- DDE might be able to realize my task but and I did not try that.
- Using excel as a dataset?
Major Steps Using EG (or SAS)

- Cook the data to generate same structure as the target table in excel tabs
- Name the range for each target tables in the excel tabs
- Open the excel file as a library and you will see the ranges and excel sheet as the table in the library folder
- Export the table to the target table by deleting and replacing
- Close the excel file
Things to Pay Attention

- Name convention when defining the range: no space in the name
- The name should be exactly the same when doing the exporting (case sensitive)
- Can use prompt to change other stuff, like folder name, titles and notes in the report
Questions?