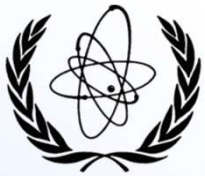
Structure of programs in X4Pro

Viktor Zerkin
International Atomic Energy Agency, Nuclear Data Section



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Location of database and modules

Database, Windows packages

```
\---x4pro1-trial
    |   COPYRIGHT.TXT
    |   LICENSE.TXT
    |   readme.txt
    |   run-x4pro.bat
    |   VERSION.TXT
    |   win-env.bat
    |   x4sqlite1.db
    +---win-bash-gfortran
    +---win-python3
    \---x4pro9
```

Common modules, shell scripts

```
x4pro9
|   auto_corr.py
|   COPYRIGHT.TXT
|   dbConn-sqlite.py
|   dbConn.py
|   endf2plot-matpl.py
|   endf2plot-plotly.py
|   endf2plot.py
|   exfor2plot-matpl.py
|   exfor2plot-plotly.py
|   exfor2plot.py
|   expert_corr.py
|   index.html
|   init-lin.sh
|   LICENSE.TXT
|   quick-test.sh
|   quick-test3.sh
|   readme.txt
|   run-all.sh
|   run-all3.sh
|   rweb11.py
|   rweb12.py
|   set1.sh
|   set2.sh
|   times.log-0
|   tree.txt
|   VERSION.TXT
|   x4out.py
|   x4pro.txt1
+---part1-0-sig
. . . . . .
```

Examples by parts

```
+---part1-0-sig
+---part1-1-sig
+---part1-2-da
+---part1-3-dap
+---part1-4-de
+---part1-5-dae
+---part1-6-fy
+---part1-7-covar
+---part1-fortran
+---part2-1-sig1
+---part2-2-da1an
+---part2-3-da1ei
+---part2-4-de1eo
+---part2-5-dae1eo
+---part2-6-fy
+---part3-1-auto1
+---part3-2-user1
+---part3-3-expert1
+---part3-4-auto2
+---part3-5-ratio2sig
+---part3-6-daleg2sig
+---part3-7-legrs2da
+---part3-8-leg2r33
\---part4-0-couchdb
```

Content of example directory

*.py	*Python codes (main script and modules)*
runme.sh	*Run example(s) using python*
runme3.sh	*Run example(s) using python3*
*.tto.txt	*Terminal output (stored)*
*.tto	*Terminal output (last run by user)*
*.htm	*Html output (stored)*
*.html	*Html output (last run by user)*
*.json.txt	*JSON output (stored)*
*. json	*JSON output (last run by user)*
*.pdf, *.png	*Last PDF produced by Matplotlib*

Structure of program in Python

1) Import packages and common modules

```
import os
import sys
import datetime
sys.path.append('./')
sys.path.append('../')
import dbConn
from rx5de import *
from x4out import *
from exfor2plot import * #plot by plotly or matplotlib
```

2) Open database

3) Create SQL command

4) Execute SQL command

5) Process rows and create List of datasets, where dataset={label, x[], y[], dx[], dy[]}

6) prepareExforDataForPlot(datasets, plotting params)

7) Required Libs={LibName:LibColor,...}

8) webEndfDataForPlot: retrieve list of ENDF datasets, retrieve datasets

9) prepareEndfDataForPlot

10) myOfflinePlot(x4datasets, endfdatasets, params)

11) print('\nProgram successfully completed')

Switch output by setup scripts

Most of the scripts can be switched from using
Plotly to Matplotlib and back
*(replacing source files *.py)*

```
Windows:
1) Set Plotly
   x4pro9> bash set1.sh
2) Set Matplotlib
   x4pro9> bash set2.sh

Linux/MacOS:
1) Set Plotly
   $ ./set1.sh
2) Set Matplotlib
   $ ./set2.sh
```

Thank you.