

ARISS Moderator Script Generator - Helper

By: Ken McCaughey (N3FZX)

On: 2025-05-20

Ver 3.1.0

This file provides helpful information for users new to Python to help run the ARISS Moderator Script Generator. You do not need to know Python to run this tool!

The **README** file has information on how the tool works. This file has information on how to setup Python and run the tool. This is where known issues are documented and additional tips reside.

Contents

- Python
 - Suggested File Structure
 - Installing the `docxtpl` Python Library
 - Run a Python Test Script
 - Running `ARISS_mod_script_gen.py`
- Thonny Python IDE
 - Installing Thonny on a Mac
 - Thonny Virtual Environment Setup
 - How To Add Python Libraries in Thonny
 - Installing `docxtpl` Library in Thonny
 - Setup `ARISS_mod_script_gen.py` in Thonny
 - Running `ARISS_mod_script_gen.py` in Thonny

Python

Python comes with Linux and Raspberry Pi's. Macs often have Python, but it is not configured for user projects. Windows doesn't come with Python.

Linux and Raspberry Pi systems also come with Libre Office needed to open MS-Word `.docx` files. Thonny is in the Raspberry Pi software repository and most Linux repositories. These systems are generally easier to setup to use this tool. Libre Office is available for Windows and Macs in addition to Linux.

The two sections below assume Python is already installed on your system. If you are a beginner or Python is not installed, skip the the next section and consider installing Thonny.

Suggested File Structure

It is suggested to create a folder called `Python_Projects` . Within this folder create the local Python virtual environment (`venv`).

Place the `ARISS_mod_script_gen-main` folder under `Python_Projects` . Within the `ARISS_mod_script_gen-main` folder add **copies** of the `working` folder each ARISS event.

For each ARISS event, run the Python script within the folder setup for that event. The folder for each event will contain all the files needed and created for that event.

Example File Structure

```
Python_Projects
├── ARISS_mod_script_gen-main
│   ├── Examples
│   ├── Templates
│   ├── working
│   ├── My_school_event_1
│   └── My_school_event_2
└── venv
```

Installing the `docxtpl` Python Library

This tool requires the `docxtpl` Python library that is not normally included with a Python installation. It must be added. How it gets added depended on your setup. The latest version of the library can be found at <https://pypi.org/project/docxtpl/>.

In general it can be installed using the command line command:

```
`pip install docxtpl` or `python3 -m pip install docxtpl`.
```

If you are using a virtual environment (i.e. `venv`), execute the command in that folder with the virtual environment active.

Alternatively, use Thonny and its tool to install library packages. This is detailed below.

Run a Python Test Script

A short simple Python test script is provided for beginners. This script will be successful if the required libraries are present. To run the test script open a terminal (or command) window with a command line interface. Make sure you are the folder with the test script. Use a change directory command (i.e. `cd <folder>`) as needed. Check for the presence of the script using a file listing command (i.e. `ls` or `dir`). Run the script with the following command:

```
`python3 ARISS_Python_Test.py`
```

Output should reassemble...

```
Python script: ARISS Python Test.py
V.: 1.1.0
By: Ken McCaughey, N3FZX
On: 2025-02-16
```

```
This is a simple test script for new Python users.
It is intended to make sure scripts can be executed.
```

```
Hello World!
```

```
The current date and time is 2025-02-16 11:18:55.113509
```

```
Success! Congratulations, you just ran a Python script.
```

Running `ARISS_mod_script_gen.py`

To run the tool, open a terminal and at the command line enter:

```
`python3 ARISS_mod_script_gen.py`
```

It runs fast and is not interactive. A number of lines of messages will stream down the window. It will resemble the example below in the Thonny section. You can scroll up to see what you may have missed. If it ends with `Success!` then you are all set.

There should now be more or updated files in the `ARISS_mod_script_gen` folder. The files of interest are the script and outline files.

```
Python script: ARISS_mod_script_gen.py
V.: 3.1.0
By: Ken McCaughey, N3FZX
On: 2025-05-20
```

```
This tool creates an ARISS Moderator Script.
It reads data from a form text file and a MS-Word docx template file.
Then generates a complete script and timeline report.
```

```
Required Input Files:
```

```
Moderator form --> ARISS_mod_script_form.txt
Script template --> ARISS_mod_script_temp.docx
```

```
Blank moderator form text file generated...
Form text file found...
Form text file read...
Output filenames generated...
Timeline calculations complete...
Outline report file generated...
Variable dictionary updated...
Template file found...
New moderator script generated...
```

```
Output Files Created:
```

```
Blank form file --> ARISS_mod_script_form_blank.txt
Outline report --> ARISS_mod_script_outline_Example_V1.txt
Complete script --> ARISS_mod_script_Example_V1.docx
```

```
Success!
```

```
Python Script Done
```

Thonny Python IDE

Thonny is a decent basic Python Integrated Development Environment (IDE). It is free and runs on Linux (and Raspberry Pi's), Macs, and Windows. It also bring along its own Python installation. Installing Thonny gets you a good tool and Python in one step. This is recommended for Python beginners. The software may be in your machine's software repository (or store). Or the files for your OS can be found at <https://thonny.org/>. The wiki for Thonny can be found at <https://github.com/thonny/thonny/wiki>.

For Windows and the Mac it is best to install for current user only, not all users. This should not require admin privileges.

Once installed, turn on the file viewer. In Thonny, from the main toolbar click on **View** then click to add a check mark for **Files**. It will add a sub-window to the left side. When you are running the script this should be set to your working directory with all the ARISS Moderator Script files.

Installing Thonny on a Mac

A good guide for installing Thonny on Mac is at the link below. It also has some instructions for adding libraries.

<https://www2.seas.gwu.edu/~cs4all/1012/editor-install/thonny-mac.html>

Thonny Virtual Environment Setup

Starting with Python version 3.11, a virtual environment is required. This is in essence a local container of the Python files for users to use. It isolates any Python files the operating system may be using to protect your OS. Thonny supports the virtual environment. This needs to be setup only once for Thonny. It can use used for all your Python projects.

Note that the virtual environment setup is not required under Windows.

Start by making a Python project folder, i.e. **Python_Projects**. Within the folder create a new empty folder called **venv**. This will be the location for the user virtual environment, which will be setup below.

In Thonny, from the main toolbar click on **Tools** then **options**. It will open a window. Select the **Interpreter** tab.

Which kind of interpreter... should be **Local Python 3**. If not click on the drop down menu and select **Local Python 3**.

At the bottom right of the window find `New virtual environment`. Click on that, and select the `venv` folder created above.

Now set Thonny to use that virtual environment. `Python executable` has a drop down menu. Click on it and find the path that corresponds to the `venv` folder. Note that the path will end with something like `.../Python_projects/venv/bin/python3`. Click on `OK` to close the `Thonny Options` window.

How To Add Python Libraries in Thonny

In Thonny, from the main toolbar click on `Tools` then `Manage packages...`. A window will open up. All the installed packages are listed in a column on the left. These are all packages only installed in the virtual environment.

In the box at the top you can enter the name of the package (or library) needed. It will provide a list of matches under `Search results`. Click on the one you need. It will then give you a more detailed description with an option to `Install`. Click on `Install`. A small window will appear as it is installed. Once complete it will appear on the list column on the left. There is also an option to `Uninstall`. Note that if it was already installed, there may be an options to `Upgrade` if a newer version has been released. Click `Close` when done.

Installing `docxtp1` Library in Thonny

To install the `docxtp1` library needed by the ARISS script generator, in Thonny, from the main toolbar click on `Tools` then `Manage packages...`. In the search box, enter `docxtp1`. Click on `docxtp1` in the search results. Click on `Install`. Click `Close` when done.

Setup `ARISS_mod_script_gen.py` in Thonny

Download the Zipped package from GitHub at: https://github.com/twk6809/ARISS_mod_script_gen

Unzip the GitHub file `ARISS_mod_script_gen-main.zip`. Find the the `ARISS_mod_script_get-main` folder and copy to the `Python_projects` folder.

Running `ARISS_mod_script_gen.py` in Thonny

It is possible to associate Python files (with the `.py` ext) with Thonny. The method varies with OS, so it is not included here. If you do this, a double click on any `.py` file can open it up in Thonny automatically.

Open Thonny and on the main toolbar click on `File`, then `Open` and work your way to the folder with the file `ARISS_mod_script_gen.py` and open the file. It will open the Python script in its own tab.

In the Thonny Files sub-window (left side) you should see all the ARISS Moderator Script files.

Any of the sub-windows in Thonny can be resized. Just grab the edges with the mouse and drag to suit.

Thonny can open and edit text files, such as the `ARISS_mod_script_form.txt` file. It can open the outline report file as well. Clicking on any of the `.docx` files should open them up in MS-Word or Libre-Writer.

To run the script, just click on the `Run` button (green circle with right arrow) on the toolbar. Or on the toolbar click on the `Run` menu, then click on `Run current script...`.

It runs fast and is not interactive. A number of lines of messages will stream down the `Shell` sub-window. It will resemble the example below. You can scroll up to see what you may have missed. If it ends with `Success!` then you are all set.

There should now be more or updated files in the `ARISS_mod_script_gen` folder. The files of interest are the script and outline files.

It is advised to open the script file and check it. Make sure all the variables have been filled in correctly. Please proof read prior to any distribution. Recommend generating a PDF to be included in any distribution.