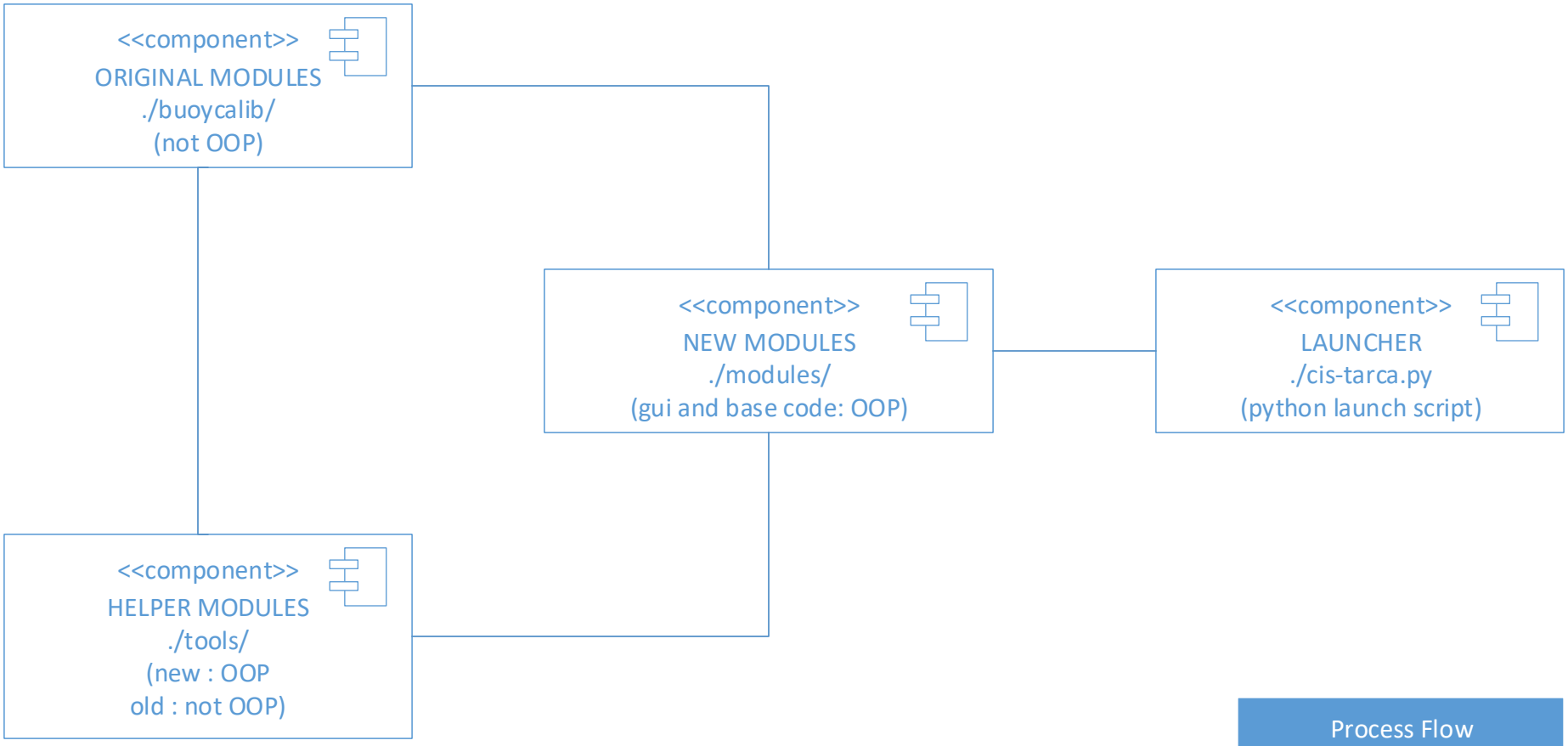
Main Components



Process Flow

Full Diagram

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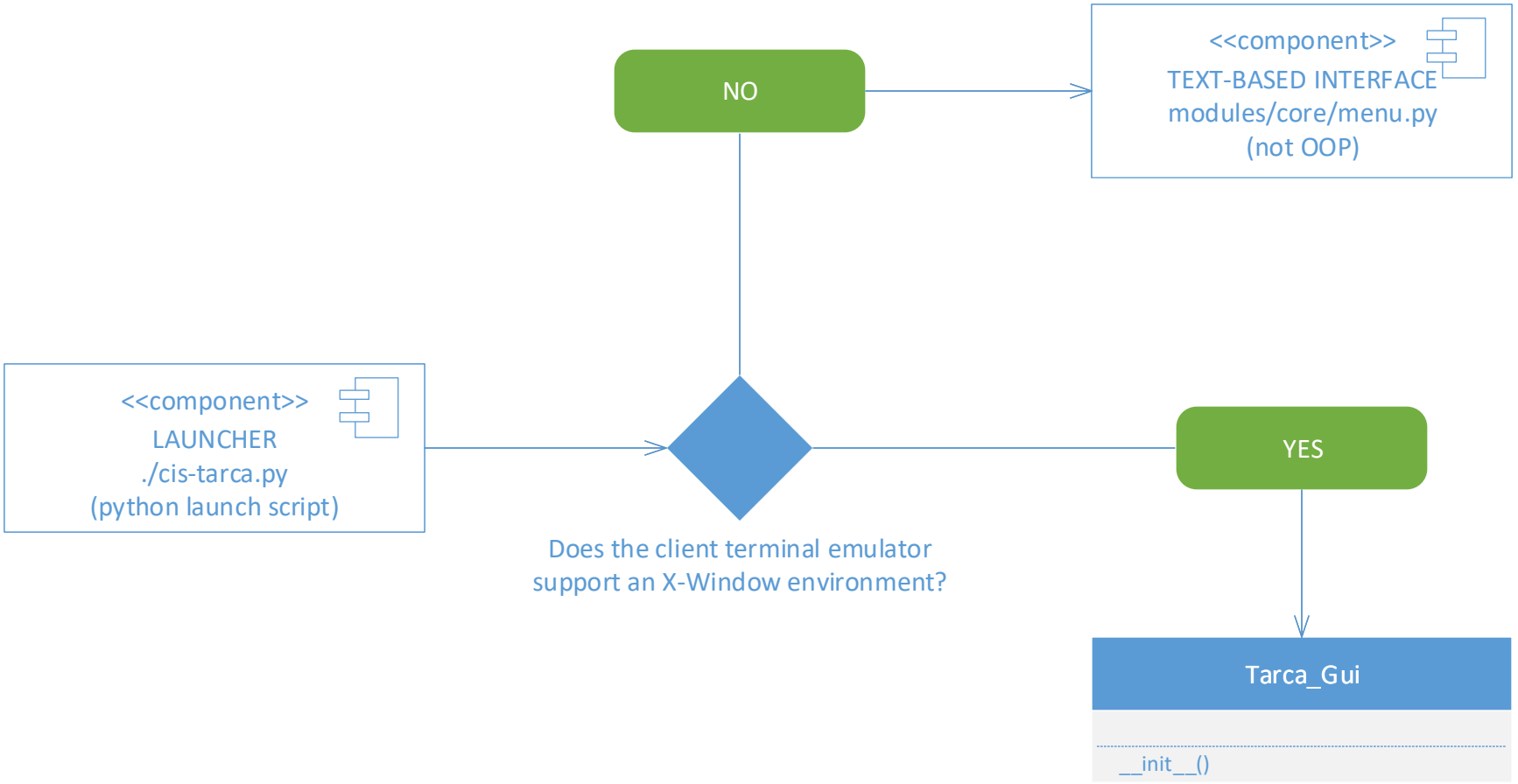
Application Launch



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Core Module
(Text Interface)

<<component>>
TEXT-BASED INTERFACE
modules/core/menu.py
(not OOP)

Model

+args
+scenes
+results
+status_logger
+output_logger

+__init__()
+analyze_batch()
+build_file_paths()
+clear_downloads()
+create_loggers()
+delete_file()
+get_error_message()
+get_size()
+process_arguments()

Process_Logger

+required_directores
+filename

+__init__()
+__append_to_log()
+__create_file()
+__delete_file()
+__update_log()
+check_required_directories()
+write()

Landsat_Batch_Sc_Buoy

+__init__()
+process_scene()

Landsat_Single_Sc_Buoy

+args
+buoys
+corners
+data
+image_data
+rsrs

+__init__()
+analyze_image()
+process_scene()

Landsat_Single_Sw_Lst

+adjusted_ltoa
+data
+img_ltoa
+rsrs

+__init__()
+add_gain_bias()
+calculate_split_window()
+get_image_ltoa()
+print_and_sage_output()
+print_report_headings()
+run_image_ltoa()

Landsat_Single_Sc_Toa

+img_ltoa
+mod_ltoa
+modtran_data
+rsrs

+__init__()
+get_atmosphere()
+get_ltoa()
+get_modtran()
+print_and_save()
+print_report_headings()
+run_ltoa()

Spinner

+SPINNER
+THREAD_NAME
+active
+spinner_thread

+evaluate the expr()

Landsat_Base

+BANDS
+args
+atmosphere
+buoy_process_monitor
+buoys
+data
+image_data
+output_file_create
+shared_args

+__init__()
+__del__()
+buoy_processor()
+calculate_atmosphere()
+clean_folders()
+download_image()
+finalize()
+log()
+print_and_save_output()
+print_report_headings()
+process_buoys()
+run_ltoa()
+run_modtran()
+save_output_file()
+stop_spinners()

Display_Image

+THREAD_NAME
+display_image_thread

+__init__()
+open_image()

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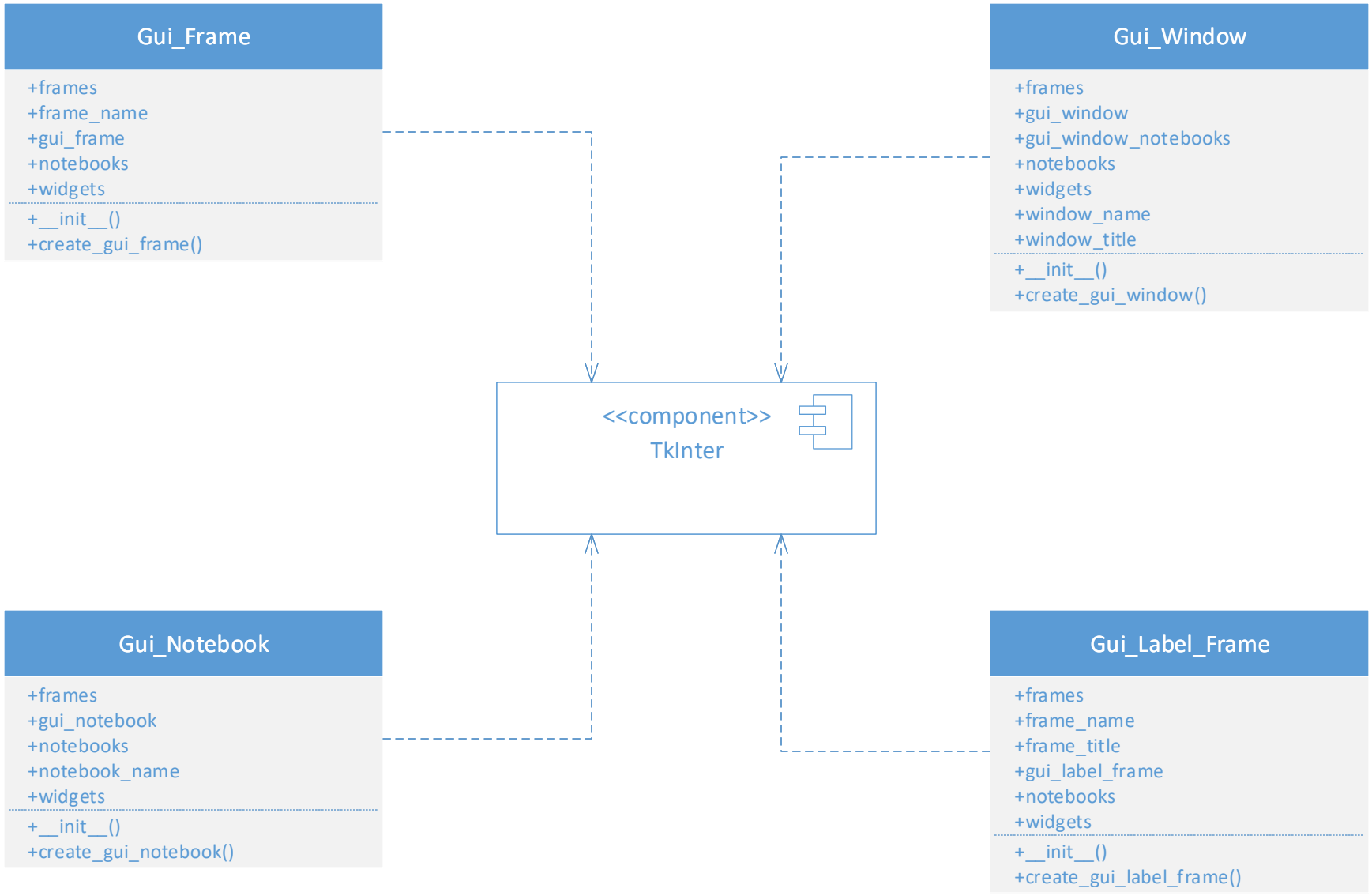
GUI Module
Base Classes



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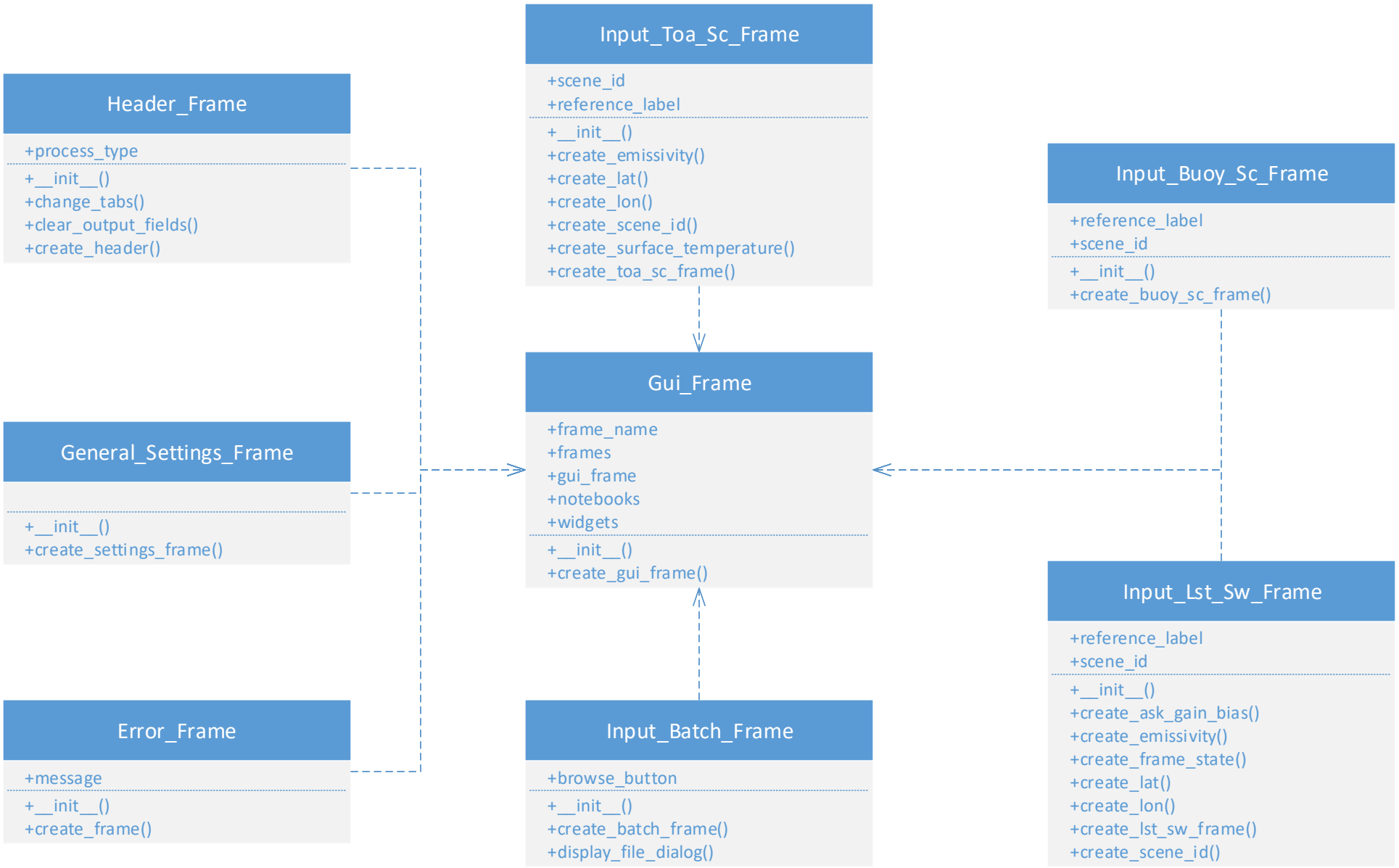
Gui_Frame



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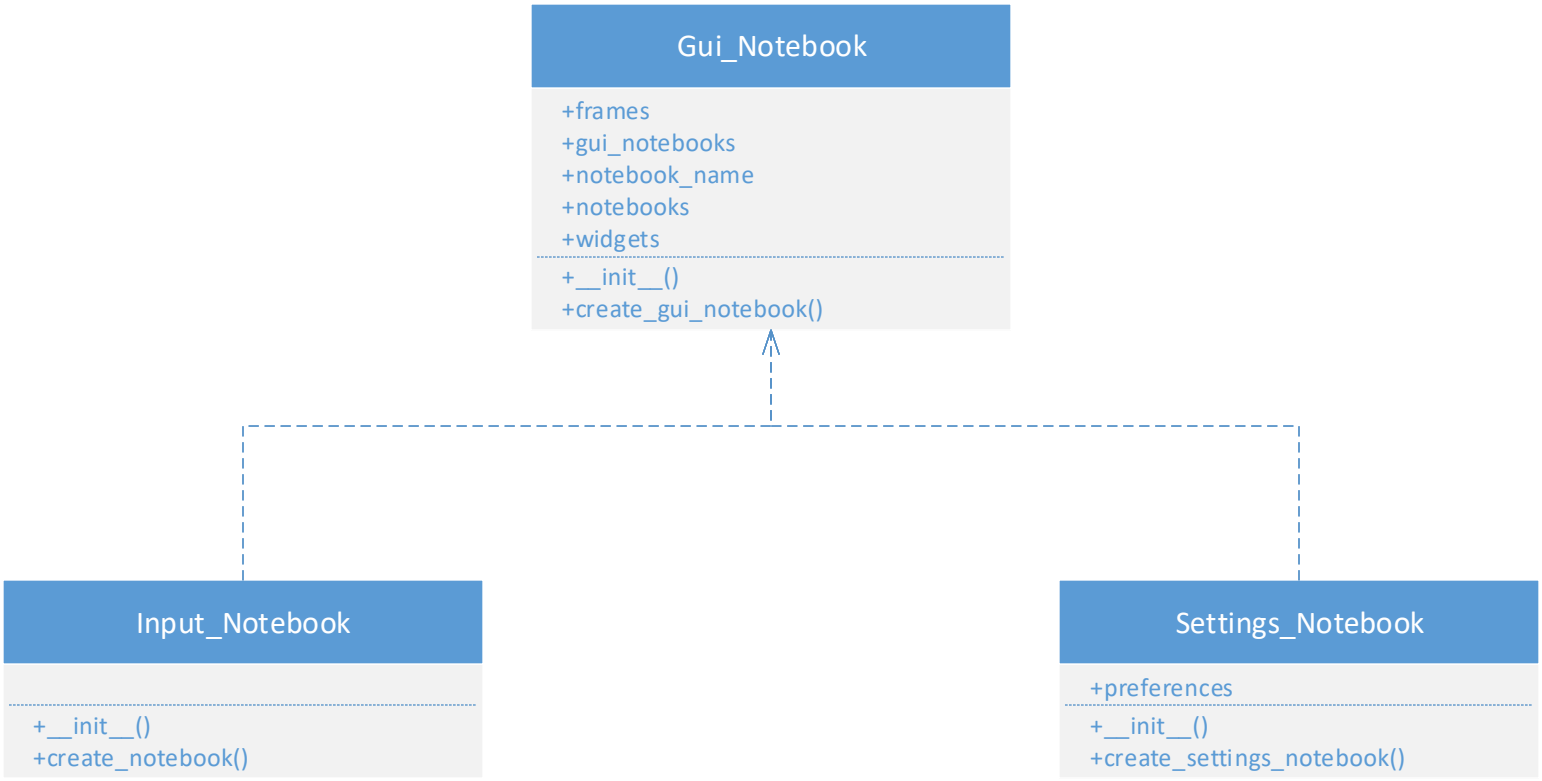
Gui_Notebook



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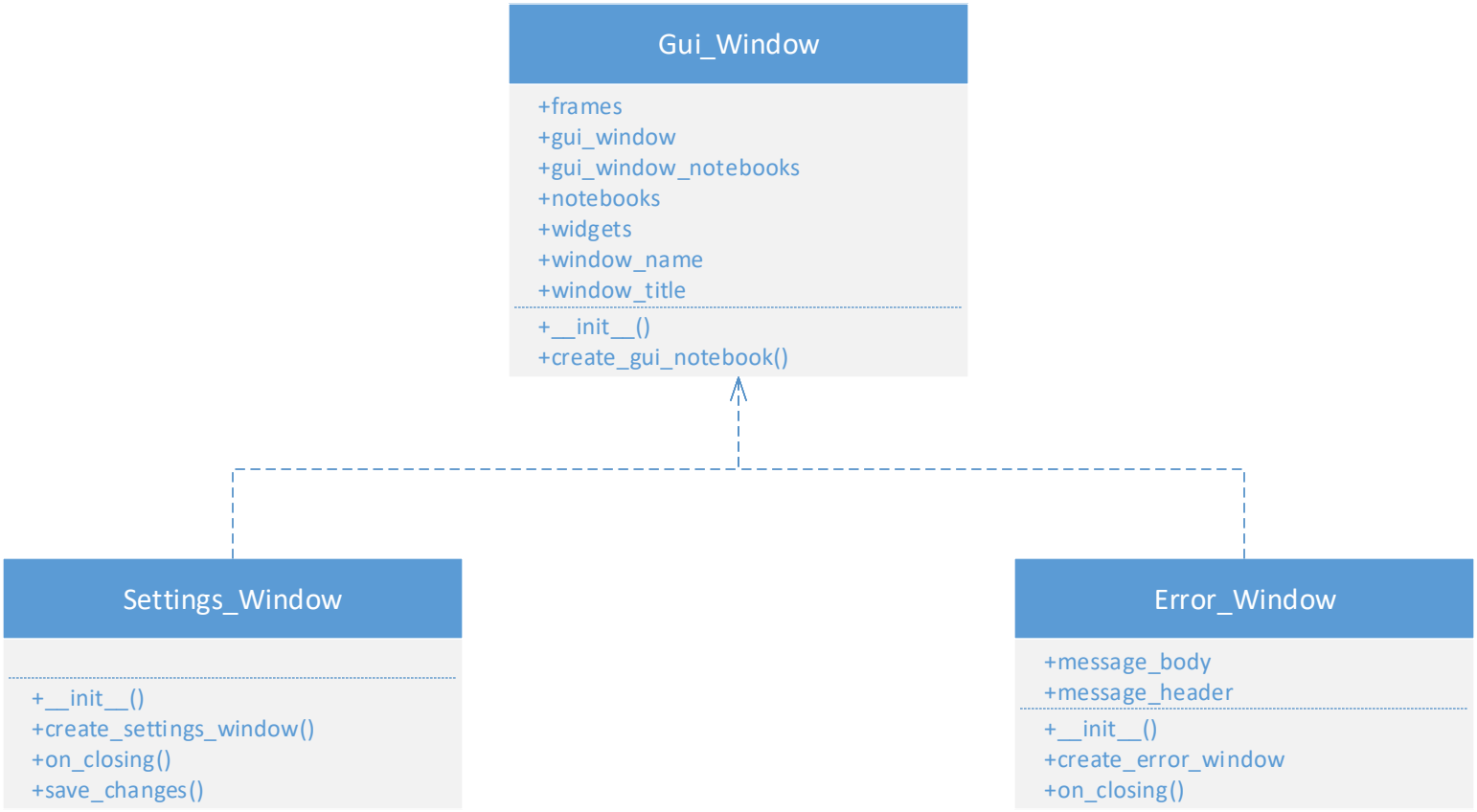
Gui_Window



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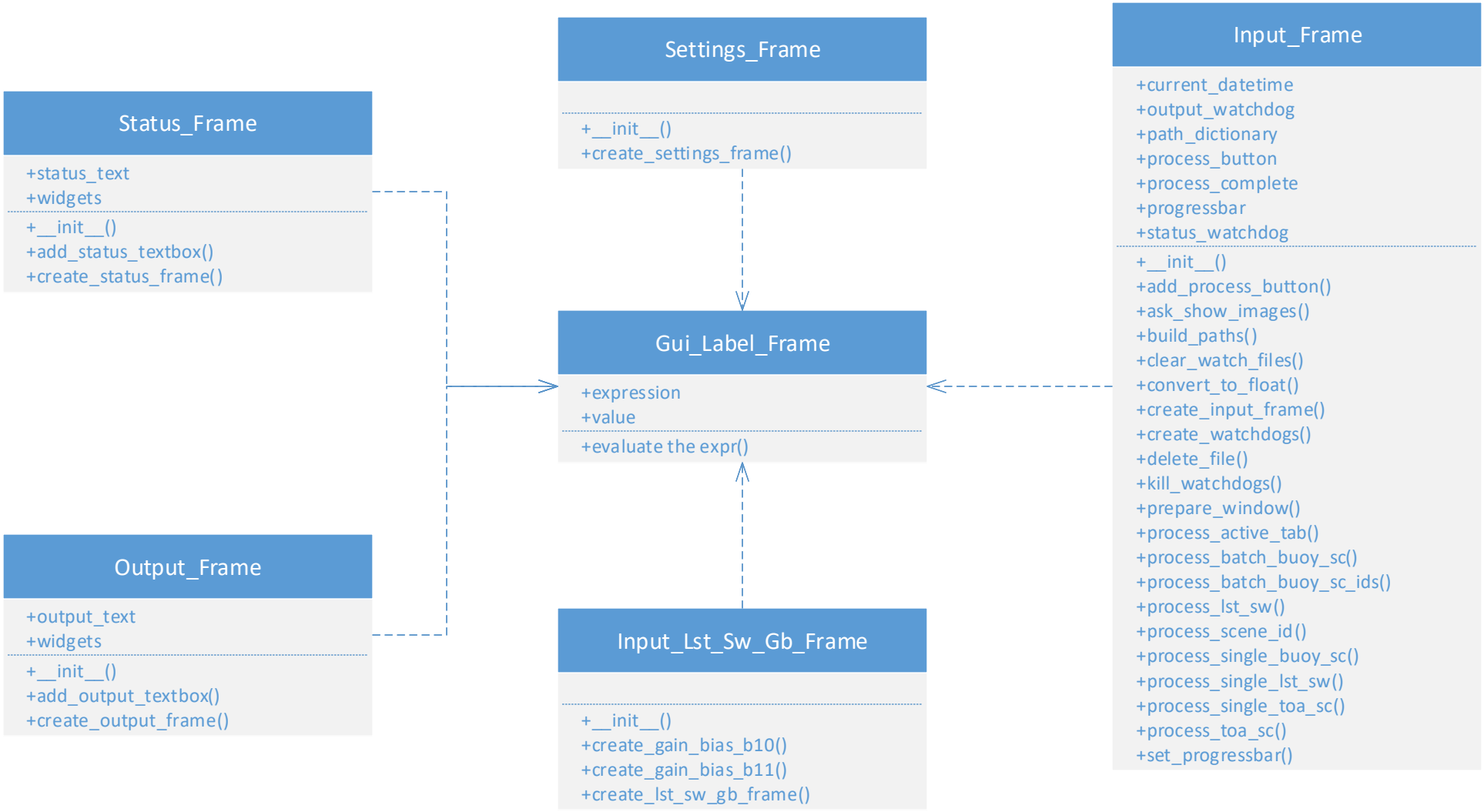
Gui_Label_Frame



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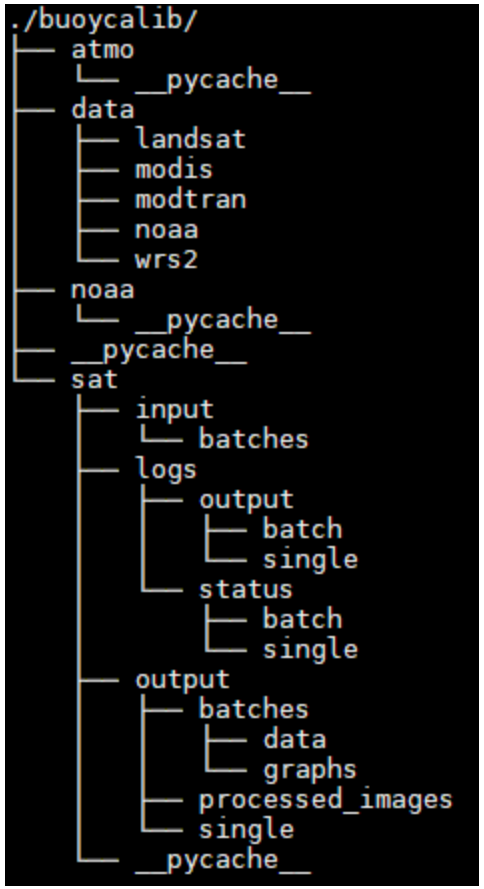
Original Modules

The original modules contain an amalgamation of code that was compiled by the scientist who created the original program. It contains code from various sources, some of which is OOP, however most are just scripts.



atmo

data

noaa

sat

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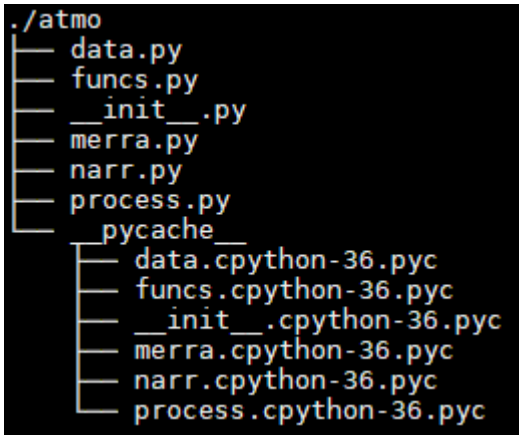
./atmo
├── data.py
├── funcs.py
├── __init__.py
├── merra.py
├── narr.py
├── process.py
└── __pycache__
    ├── data.cpython-36.pyc
    ├── funcs.cpython-36.pyc
    ├── __init__.cpython-36.pyc
    ├── merra.cpython-36.pyc
    ├── narr.cpython-36.pyc
    └── process.cpython-36.pyc

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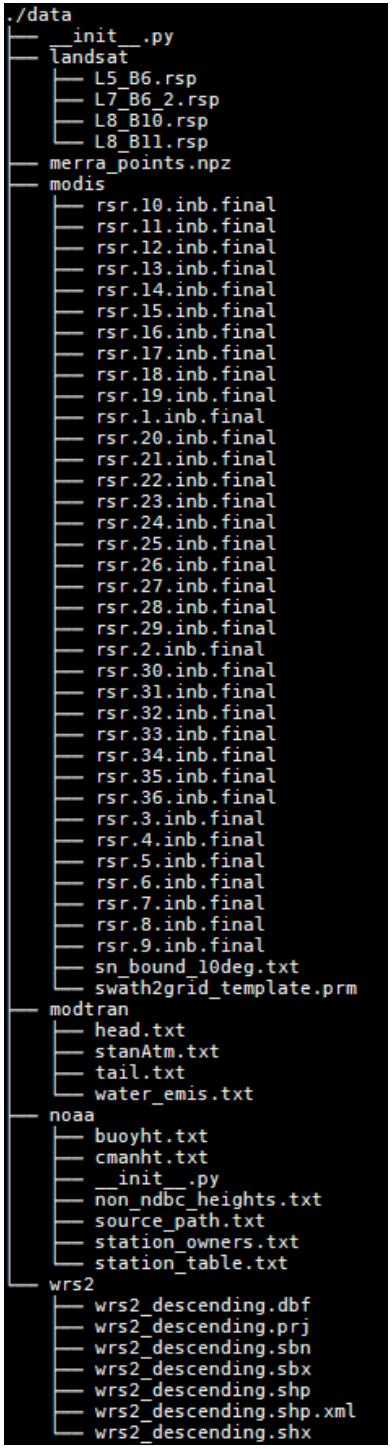
./data
├── __init__.py
├── landsat
│   ├── L5_B6.rsp
│   ├── L7_B6_2.rsp
│   ├── L8_B10.rsp
│   └── L8_B11.rsp
├── merra_points.npz
├── modis
│   ├── rsr.10.inb.final
│   ├── rsr.11.inb.final
│   ├── rsr.12.inb.final
│   ├── rsr.13.inb.final
│   ├── rsr.14.inb.final
│   ├── rsr.15.inb.final
│   ├── rsr.16.inb.final
│   ├── rsr.17.inb.final
│   ├── rsr.18.inb.final
│   ├── rsr.19.inb.final
│   ├── rsr.1.inb.final
│   ├── rsr.20.inb.final
│   ├── rsr.21.inb.final
│   ├── rsr.22.inb.final
│   ├── rsr.23.inb.final
│   ├── rsr.24.inb.final
│   ├── rsr.25.inb.final
│   ├── rsr.26.inb.final
│   ├── rsr.27.inb.final
│   ├── rsr.28.inb.final
│   ├── rsr.29.inb.final
│   ├── rsr.2.inb.final
│   ├── rsr.30.inb.final
│   ├── rsr.31.inb.final
│   ├── rsr.32.inb.final
│   ├── rsr.33.inb.final
│   ├── rsr.34.inb.final
│   ├── rsr.35.inb.final
│   ├── rsr.36.inb.final
│   ├── rsr.3.inb.final
│   ├── rsr.4.inb.final
│   ├── rsr.5.inb.final
│   ├── rsr.6.inb.final
│   ├── rsr.7.inb.final
│   ├── rsr.8.inb.final
│   ├── rsr.9.inb.final
│   ├── sn_bound_10deg.txt
│   └── swath2grid_template.prm
├── modtran
│   ├── head.txt
│   ├── stanAtm.txt
│   ├── tail.txt
│   └── water_emis.txt
├── noaa
│   ├── buoyht.txt
│   ├── cmanht.txt
│   ├── __init__.py
│   ├── non_ndbc_heights.txt
│   ├── source_path.txt
│   ├── station_owners.txt
│   └── station_table.txt
└── wrs2
    ├── wrs2_descending.dbf
    ├── wrs2_descending.prj
    ├── wrs2_descending.sbn
    ├── wrs2_descending.sbx
    ├── wrs2_descending.shp
    ├── wrs2_descending.shp.xml
    └── wrs2_descending.shx

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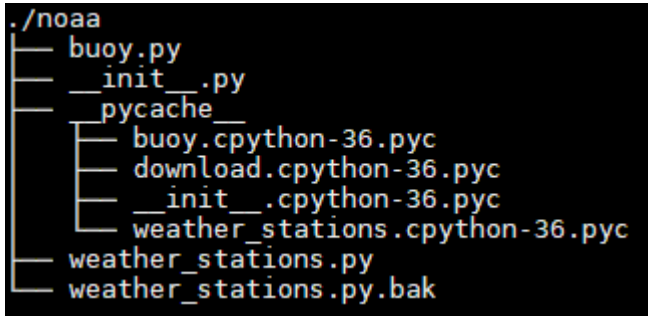
./noaa
├── buoy.py
├── __init__.py
├── __pycache__
│   ├── buoy.cpython-36.pyc
│   ├── download.cpython-36.pyc
│   ├── __init__.cpython-36.pyc
│   └── weather_stations.cpython-36.pyc
├── weather_stations.py
└── weather_stations.py.bak

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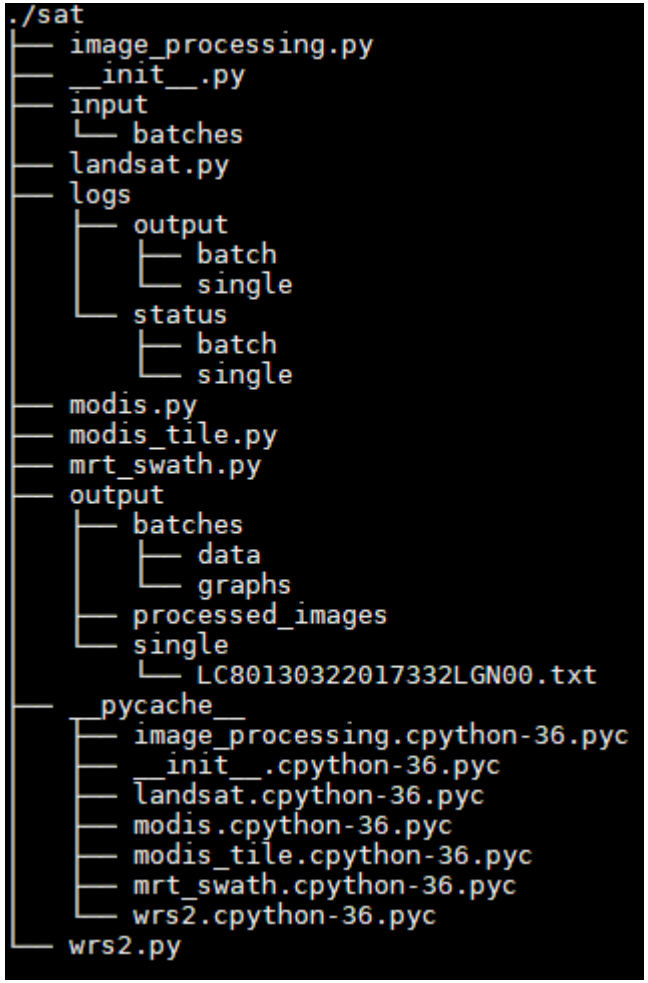
./sat
├── image_processing.py
├── __init__.py
├── input
│   └── batches
├── landsat.py
├── logs
│   ├── output
│   │   ├── batch
│   │   └── single
│   └── status
│   ├── batch
│   └── single
├── modis.py
├── modis_tile.py
├── mrt_swath.py
├── output
│   ├── batches
│   │   ├── data
│   │   └── graphs
│   ├── processed_images
│   └── single
│   └── LC80130322017332LGN00.txt
├── __pycache__
│   ├── image_processing.cpython-36.pyc
│   ├── __init__.cpython-36.pyc
│   ├── landsat.cpython-36.pyc
│   ├── modis.cpython-36.pyc
│   ├── modis_tile.cpython-36.pyc
│   ├── mrt_swath.cpython-36.pyc
│   └── wrs2.cpython-36.pyc
└── wrs2.py

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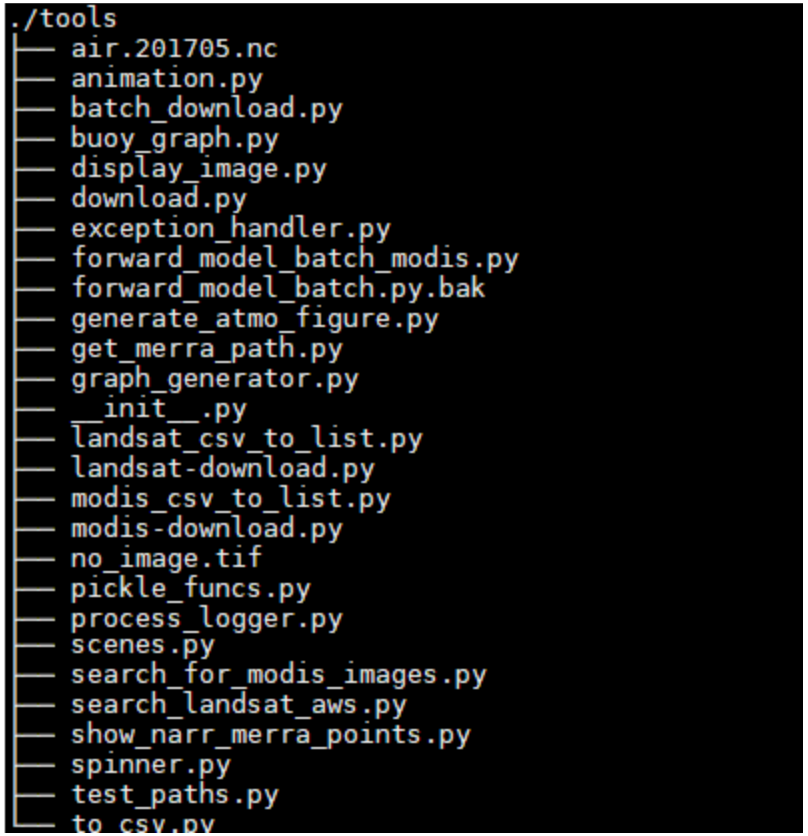
./tools
├── air.201705.nc
├── animation.py
├── batch_download.py
├── buoy_graph.py
├── display_image.py
├── download.py
├── exception_handler.py
├── forward_model_batch_modis.py
├── forward_model_batch.py.bak
├── generate_atmo_figure.py
├── get_merra_path.py
├── graph_generator.py
├── __init__.py
├── landsat_csv_to_list.py
├── landsat-download.py
├── modis_csv_to_list.py
├── modis-download.py
├── no_image.tif
├── pickle_funcs.py
├── process_logger.py
├── scenes.py
├── search_for_modis_images.py
├── search_landsat_aws.py
├── show_narr_merra_points.py
├── spinner.py
├── test_paths.py
└── to_csv.py

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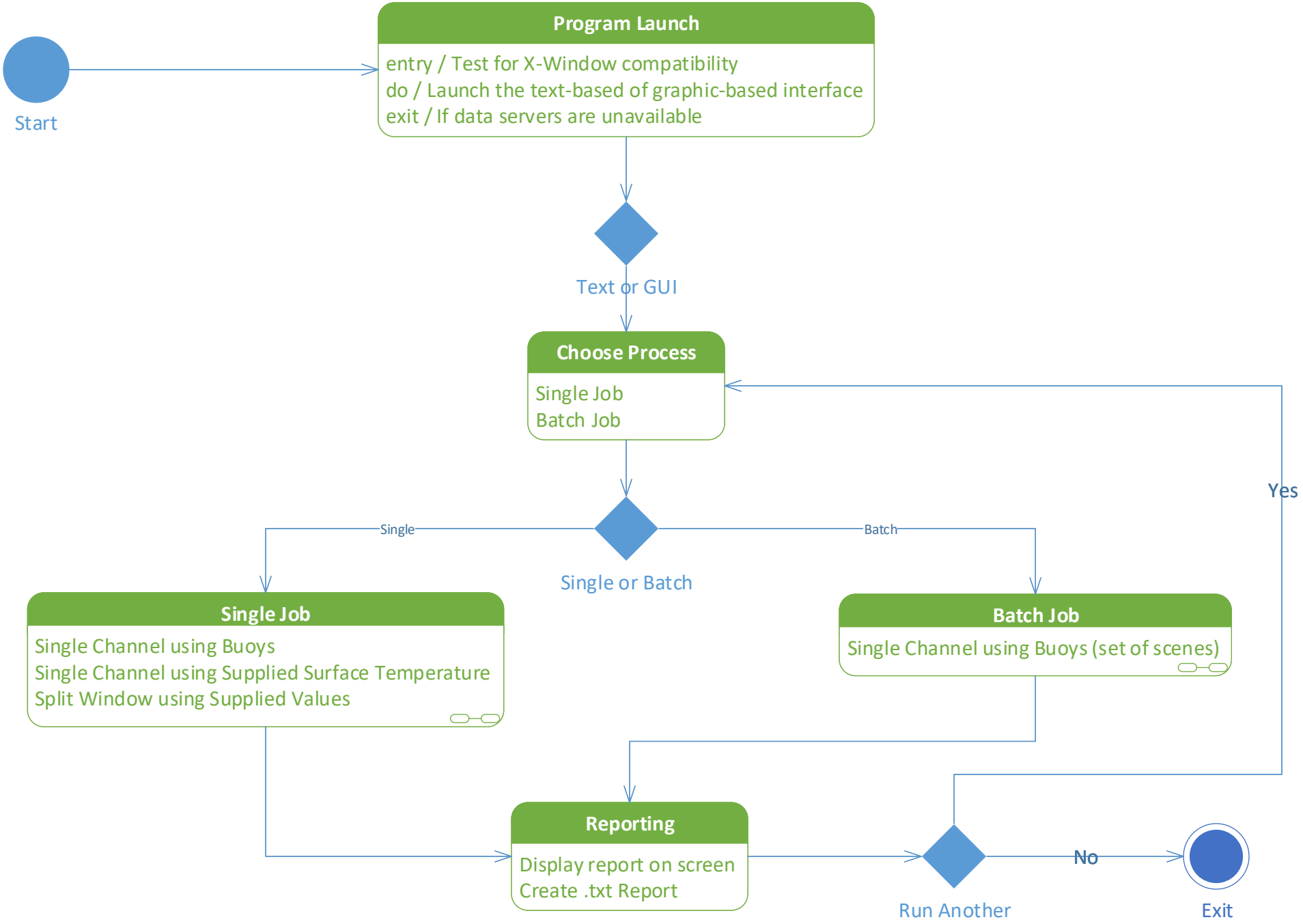
Program Launch
entry / Test for X-Window compatibility
do / Launch the text-based of graphic-based interface
exit / If data servers are unavailable
Start
Text or GUI
Choose Process
Single Job
Batch Job
Single
Batch
Single or Batch
Yes
Single Job
Single Channel using Buoys
Single Channel using Supplied Surface Temperature
Split Window using Supplied Values
Batch Job
Single Channel using Buoys (set of scenes)
Reporting
Display report on screen
Create .txt Report
Run Another
No
Exit

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CIS-Tarca Full Diagram