

JB100 Visualization Group 33 2020/2021 Tool starting guide

This readme provides documentation regarding how to start the visualization tool of group 33.

The tool can be started 2 ways:

1. Opening the webpage
2. Running the python script

Opening the tool using the JBI100_GUI.html file

To open the webpage, navigate to the downloaded folder, and locate the JBI100_GUI.html file. Clicking it will open the tool in a new browser tab using your default internet browser.

Should certain function of the tool not appear to operate, or should any visual bugs occur, please make sure your browser supports html-5. If the issue persists, the tool should be opened through the python script.

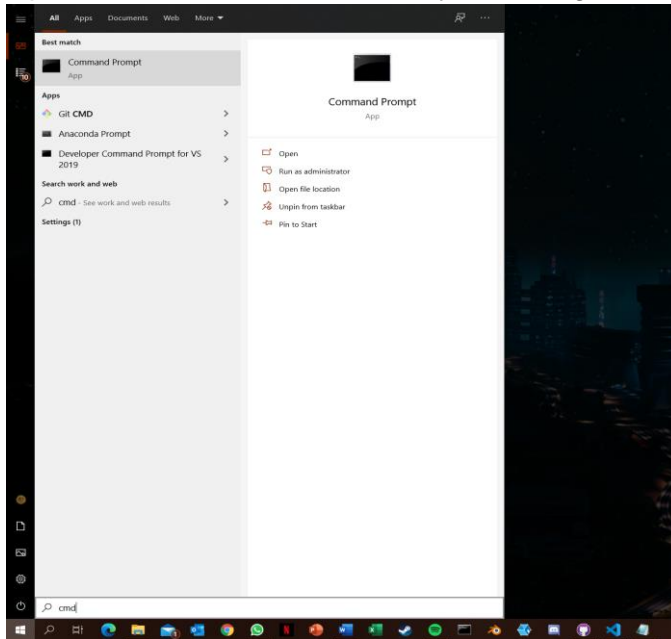
Opening the tool using the JBI100_GUI.py file

Opening the tool through the python script will (re)create the JBI100_GUI.html file, and open it in a new browser tab. Before running this file, make sure that python 3.7 or higher has been installed (<https://www.python.org/downloads/>). *Note that as of 4th of February 2021, there is a bug in the pandas module that could prevent the tool from working, though a workaround has been implemented, due to the untested nature of this fix it is recommended to use python 3.7 or 3.8 instead¹.* Furthermore, the script requires additional python modules. Below the installation steps is a table listing all prerequisite modules, their install command, and usage.

To install the required python modules, follow the following steps:

¹ The fix and issue documented: <https://stackoverflow.com/questions/64264563/attributeerror-elementtree-object-has-no-attribute-getiterator-when-trying>

1. Open a new command terminal by searching for cmd in the windows search bar.



2. Execute the commands listed in the table below. These follow the structure of pip install [module name] and will require an internet connection.

Command Prompt	Command Prompt	Command Prompt
C:\Users\20191887>pip install Bokeh	C:\Users\20191887>pip install pandas	C:\Users\20191887>pip install openpyxl

Running these commands will result in pip fetching and installing the modules and their dependencies. Note that pip may throw error (as it also did in the picture below), but this is fine as long as it concludes with successfully installed [module name]

```
C:\Users\20191887>pip install pandas
Collecting pandas
  Downloading pandas-1.2.1-cp38-cp38-win32.whl (8.2 MB)
    8.2 MB 6.8 MB/s
Requirement already satisfied: python-dateutil<=2.7.3 in c:\users\20191887\appdata\local\programs\python\python38-32\lib\site-packages (from pandas) (2.8.1)
Requirement already satisfied: pytz>=2017.3 in c:\users\20191887\appdata\local\programs\python\python38-32\lib\site-packages (from pandas) (2019.3)
Requirement already satisfied: numpy>=1.16.5 in c:\users\20191887\appdata\local\programs\python\python38-32\lib\site-packages (from pandas) (1.18.1)
Requirement already satisfied: six>=1.5 in c:\users\20191887\appdata\local\programs\python\python38-32\lib\site-packages (from pandas) (1.13.0)
Installing collected packages: pandas
ERROR: pip's dependency resolver does not currently take into account all the packages that are installed. This behaviour is the source of the following dependency conflicts.
pypplot 0.7.0 requires bokeh>=1.0.0, which is not installed.
Successfully installed pandas-1.2.1
```

Pip will also notify you when a module is already installed, with a dumb of messages similar to Requirement already satisfied: [requirement for module] in [path] [optional: module]

```
C:\Users\20191887>pip install Bokeh
Requirement already satisfied: Bokeh in c:\users\20191887\appdata\local\programs\python\python38-32\lib\site-packages (2.2.3)
Requirement already satisfied: PyYAML>=3.10 in c:\users\20191887\appdata\local\programs\python\python38-32\lib\site-packages (from Bokeh) (5.3.1)
Requirement already satisfied: python-dateutil<=2.1 in c:\users\20191887\appdata\local\programs\python\python38-32\lib\site-packages (from Bokeh) (2.8.1)
Requirement already satisfied: Jinja2>=2.7 in c:\users\20191887\appdata\local\programs\python\python38-32\lib\site-packages (from Bokeh) (2.11.2)
Requirement already satisfied: numpy>=1.11.3 in c:\users\20191887\appdata\local\programs\python\python38-32\lib\site-packages (from Bokeh) (1.18.1)
Requirement already satisfied: pillow>=7.1.0 in c:\users\20191887\appdata\local\programs\python\python38-32\lib\site-packages (from Bokeh) (8.0.1)
Requirement already satisfied: packaging>=16.8 in c:\users\20191887\appdata\local\programs\python\python38-32\lib\site-packages (from Bokeh) (20.4)
Requirement already satisfied: tornado>=5.1 in c:\users\20191887\appdata\local\programs\python\python38-32\lib\site-packages (from Bokeh) (6.1)
Requirement already satisfied: typing_extensions>=3.7.4 in c:\users\20191887\appdata\local\programs\python\python38-32\lib\site-packages (from Bokeh) (3.7.4.3)
Requirement already satisfied: MarkupSafe>=0.23 in c:\users\20191887\appdata\local\programs\python\python38-32\lib\site-packages (from Jinja2>=2.7->Bokeh) (1.1.1)
Requirement already satisfied: six in c:\users\20191887\appdata\local\programs\python\python38-32\lib\site-packages (from packaging>=16.8->Bokeh) (1.13.0)
Requirement already satisfied: pyparsing>=2.0.2 in c:\users\20191887\appdata\local\programs\python\python38-32\lib\site-packages (from packaging>=16.8->Bokeh) (2.4.6)
```

3. Verify that both modules have been installed by running the pip list command, and confirming that both modules are listed in the shown list.

```

C:\Users\20191887>pip list
Package            Version
-----
aiohttp            3.6.2
altair              4.1.0
async-timeout      3.0.1
attrs              19.3.0
beautifulsoup4     4.8.2
bokeh               2.2.3
certifi             2019.11.28
chardet            3.0.4
colorama            0.4.3
colorcet            2.0.2
cyclor              0.10.0
demjson             2.2.4
discord             1.0.1
discord.py          1.3.2
entrypoints         0.3
et-xmlfile          1.0.1
holoviews           1.14.0
hvplot              0.7.0
idna                2.8
jdcal               1.4.1
Jinja2              2.11.2
jsonschema          3.2.0
kiwisolver          1.1.0
Markdown            3.3.3
MarkupSafe          1.1.1
matplotlib          3.1.2
multidict           4.7.5
nose                1.3.7
numpy               1.18.1
openpyxl            3.0.5
packaging           20.4
pandas              1.2.1
panel               0.10.2

```

Note that both pandas (last entry) and Bokeh (6th entry) are present. (openpyxl is also present, but it didn't fit in the view)

A list of all prerequisite modules for the tool:

Module name	Install command	Usage
Non-standard modules (require manual installation through 'pip')		
0 Bokeh	pip install Bokeh	framework for the visualization tool in python
1 pandas	pip install pandas	toolkit for parsing and processing data in python
2 openpyxl*	pip install openpyxl	alternate .xlsx file engine to avoid a bug in pandas*
Python standard library (automatically installed prerequisites)		
3 math	pip install math	toolkit for advanced calculation in python
4 numpy	pip install numpy	library of different constants and types of numbers
5 itertools	pip install itertools	toolkit for working with iterables in python

**openpyxl is only required if python 3.9+ is used, due to a bug in the pandas module.*

Dependencies for dependent modules should have been handled by pip.

After python, the bokeh library and the pandas library have been installed, locate the JBI100_GUI.py file. Run the file either using an python IDE of your choice, a terminal, or through the python interpreter that is installed with python using rightclick -> open with -> python.