

## Programming Project Submission Requirements

All figures and output (including tables) in the report for a given problem should be produced by a single program with a single execution. For example, if the project has three problems, there should be three executables (they can use other files as dependencies of course).

In the readme file, you should include a list of the figures and tables in the report, and the corresponding relative path and file name for each output (it is ok for the command line to print a table as long as you mention this also and output the table title in the command line as well).

### Programming environments:

While all high-level language programming environment is allowed, we recommend you use the following.

Python on a local machine, Python on the ODU HPC cluster, Python on notebooks, (local notebooks or Jupyter notebooks on the HPC cluster) and Matlab submissions.

### All environments:

- As a rule, I should not need to edit any code to run it. Consider the following:

No absolute paths (e.g. `C:/Users/khan/Documents/computer_vision_project/problem_1.py` would not be acceptable code in any program file)

It is not allowed to have code that needs to be edited to change values to produce different figures, every value that needs to be tested should be hardcoded (and if there are large number of cases, a loop should be used).

- A readme file with all information needed to run the code needs to be included.
- All of these environments are easy to run, but the following needs to be done.

### Python on a local machine:

Be sure it runs on Google Colab (this is straightforward and ensures your library dependencies are portable) if you are unsure of how to use Google Colab **contact in advance** ([mrahm006@odu.edu](mailto:mrahm006@odu.edu)) of the deadline to be sure your code is acceptable and can run on this environment. This is required because Google Colab has a current and comprehensive library base, and therefore we can avoid deprecated libraries or unusual library combinations that do not mix well.

### Python on the ODU HPC cluster:

The readme file should indicate which cluster this runs on (i.e. Turing or Wahab).

A bash script (or any shell) should be provided to load the required libraries.

So the following commands should work to run your code for problem 1 after I paste it into the folder “workspace”:

```
cd “workspace”
```

```
salloc
```

```
source ./load_dependency_script.sh
```

```
python problem_1.py
```

Of course, if you need a different environment (e.g. gpu), you will need to provide the appropriate salloc command in your readme file.

### **Python on notebooks:**

If you are running a notebook locally, test it on Google Colab (see the instructions for Python on a local machine above).

If you are running on the HPC Jupyter, I should have no problem running your notebook.

### **Matlab:**

Include the version of Matlab in the readme along with any Matlab libraries used from the Matlab addons.

### **Other environments (C++, Java, etc.):**

If you plan on using any other development tools, **you need to discuss in advance** your plan for making the code portable to my system so I can give feedback.

GitHub code, Matlab file exchange code, and any library or existing code should be approved by Dr. Iftekharuddin. This will be explained in the project requirements for each project and in class.

**Project submission email: [mumai001@odu.edu](mailto:mumai001@odu.edu)**