Saving Data

Learn how to save and load NumPy data.

Chapter Goals:

- Learn how to save and load data in NumPy
- Write code to save NumPy data to a file

A. Saving

After performing data manipulation with NumPy, it's a good idea to save the data in a file for future use. To do this, we use the `np.save` function.

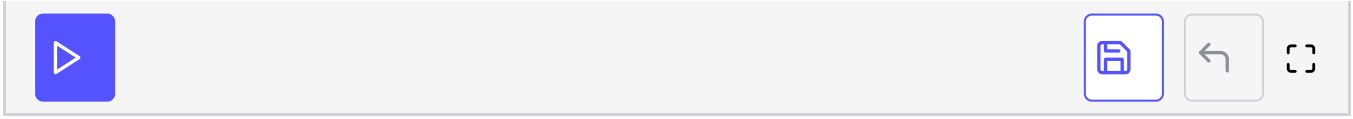
The first argument for the function is the name/path of the file we want to save our data to. The file name/path should have a ".npy" extension. If it does not, then `np.save` will append the ".npy" extension to it.

The second argument for `np.save` is the NumPy data we want to save. The function has no return value. Also, the format of the ".npy" files when viewed with a text editor is largely gibberish when viewed with a text editor.

If `np.save` is called with the name of a file that already exists, it will overwrite the previous file.

The code below shows examples of saving NumPy data.

```
arr = np.array([1, 2, 3])
# Saves to 'arr.npy'
np.save('arr.npy', arr)
# Also saves to 'arr.npy'
np.save('arr', arr)
```



B. Loading

After saving our data, we can load it again using `np.load`. The function's

required argument is the file name/path that contains the saved data. It returns the NumPy data exactly as it was saved.

Note that `np.load` will not append the ".npy" extension to the file name/path if it is not there.

The code below shows how to use `np.load` to load NumPy data.

```
arr = np.array([1, 2, 3])
np.save('arr.npy', arr)
load_arr = np.load('arr.npy')
print(repr(load_arr))

# Will result in FileNotFoundError
load_arr = np.load('arr')
```

Time to Code!

The coding exercise in this chapter will require you to complete the `save_points` function, which will save some randomly generated 2-D points in a file.

You'll generate 100 (x, y) points from a uniform distribution in the range [-2.5, 2.5), then save the points to `save_file`.

Set `points` equal to `np.random.uniform`, with the `low` and `high` keyword arguments representing the lower and upper ends of the range. The `size` keyword argument should be set to `(100, 2)`.

Call `np.save` with `save_file` as the first argument and `points` as the second argument.

```
def save_points(save_file):
  # CODE HERE
  pass
```