

## Interview Challenge – Python

Create a python class that represents a directed graph (a set of vertices and a list of directed edges between vertices). This class should be able to

- Be constructed from a list of vertices and a list of pairs of vertices indicating the edges
- Print the number of vertices and edges
- Serialize and deserialize to/from HDF5 (<https://www.hdfgroup.org/solutions/hdf5/>)
- Plot a histogram of vertex out-degrees (the number of edges coming out of each of the vertices) and save it as PNG with appropriate title and axes labelling.

Requirements:

- Python 3
- Standard dependencies available through PIP