

## Using Numpy to Write a Dictionary to a Table

It is pretty common to use dictionaries when processing data inside a (search) cursor. When you want to write the data from the dictionary to a ArcGIS table, there are several ways to do this. Most commonly you will create an empty table or featureclass, add the fields and write the data in a loop using an insert cursor, like this;

```
# code omitted ...

# create table
arcpy.CreateTable_management(out_ws, tbl_name)
tbl_out = os.path.join(out_ws, tbl_name)
arcpy.AddField_management(tbl_out, fld_mapcode,
                          "Text", 9, "", 10, "", "NULLABLE", "")
arcpy.AddField_management(tbl_out, fld_freq,
                          "LONG", 9, 0, "", "", "NULLABLE", "")
arcpy.AddField_management(tbl_out, fld_datasource,
                          "Text", 9, "", 255, "", "NULLABLE", "")

# insert values
with arcpy.da.InsertCursor(tbl_out, flds) as curs:
    for mc, val in dct.items():
        lst_ds = sorted(set(val[1]))
        freq_tot = val[0]
        row = (freq_tot, mc, ";".join(lst_ds))
        curs.insertRow(row)
```

In [this thread](#) someone pointed out that you can use [numpy](#) for this purpose. It uses less code and is actually faster than the method mentioned above.

```
# code omitted ...

# create list for use in numpy; each item is a tuple of frequency, map code
and list of datasources
lst_out = [(val[0], mc, ";".join(sorted(set(val[1])))
           for mc, val in dct.items())

# convert the list to a numpy array
npa = numpy.array(lst_out, numpy.dtype([(fld_freq, numpy.int32),
                                       (fld_mapcode, '|S9'), (fld_datasource, '|S255')]))

# store the table
arcpy.da.NumPyArrayToTable(npa, os.path.join(out_ws, tbl_name), flds)
```

It is based on these steps:

- First you will need a list in which each element is a tuple of the values you want to write to the table. You can use some list comprehensions to achieve this.
- Next will be the create the numpy array specifying the list of field names and types using [dtypes](#).
- The last step uses a conversion from numpy array to table, to create the final table.

Related threads:

- <https://geonet.esri.com/thread/88780#post367261>

- <https://geonet.esri.com/thread/90657#post375983>
- <https://geonet.esri.com/thread/90654#post375982>