GIS 6103
Programming for GIS
Assignment 6

Part A

This part of the assignment does not involve the use of arcpy. It is a task that requires the use of a python dictionary.

Background
As you know, Hillsborough County went thru a foreclosure crisis during the last recession. There was an avalanche of foreclosure filings at the County court in the year 2008 and the following years. Obtaining (affordable) data on these foreclosures was challenging since the only data sources for this were private data collectors who were collecting and selling data mainly for the purpose of real estate buyers and investors. Much of this data was collected *manually* by visits to the County court records. On top of that, the legal foreclosure process is convoluted with different stages and outcome possibilities, and it was being done at an exceptionally rate back in that period. As a result, **multiple** records were often collected on the same property either reflecting simple errors or duplication of data collection, or for different stages in the process.

For an analysis we wish to undertake, we need to know when a property first (in time) entered the foreclosure process (known as *lis pendens*). We also need to know if the property was actually ever sold under a "Sheriff's Sale" before the end of the study period. A "Sheriff Sale" represents the final outcome of the foreclosure process where the property is sold to someone else. Given the issues mentioned above, the data you have received is quite a mess! For your task, it has been reduced to three fields. There are nearly 36,000 records in this file and a small section of the file is reproduced below.

```
'066595.6010","NO",863
'191875.0000","NO",863
'051499.1126","NO",859
'029225.0310","NO",859
'086422.2776","NO",859
'075111.0000","NO",862
'145644.0000","YES",649
'077684.5278","YES",551
'004037.5520","YES",219
'144787.0000","YES",240
'047449.0000","YES",620
```

The first column represents the *folio number* of a property. The last column represents the "date" of the data record. Note that the "date" is actually coded in so-called *julian* days, which in this case is the number

of days since January 1, 2008. The middle column indicates whether the data record represents a "Sheriff's Sale" on that date.

Your task is to produce a new text file where each property (folio number) has just one unique record. That record will indicate the first recorded date (still in julian days) that the property entered the foreclosure process and will indicate whether the property was ever sold thru a "Sheriff's Sale" before the end of the study period. An important note is that the data is such a mess that you can't expect all the records for a property to be listed or sorted from earliest to latest in time.

Sidenote: It is possible, especially given the depth and length of the crisis, that a particular property could have gone thru the foreclosure process more than once during the study period. However, all we need to know is the earliest date that a property *ever* entered into foreclosure, and whether it *ever* sold thru a "Sheriff's Sale".

You have been provided with a start script for this – a6partA.py. Again, note that this does not involve arcpy at all. Note that you will need to be able to read a file into python and also be able to write out to another file.

Part B

From the a6partB folder, open ArcMap via the provided map document. You will see two feature classes, trails and floodplain. While in ArcMap, execute a tool that will create the point locations where the trails change their underlying floodplain designation or cross the study area boundary. Add the result to the display so you can verify you have the points. Go to the results of your task and copy the code snippet for this tool to the a6PartB.py script that is provided.

Using python/arcpy, your first task is to take the points that resulted from the execution of the tool and generate a new line feature class that joins the points in a west to east sequence (i.e. the line never kinks back west). You also need to ensure that there is only one actual point at each location before the line is created. If you unsure as to why there may be more than one, take a look at the point feature class attribute table you produced in ArcMap.

Your second task is to create a second line feature in the same line feature class that joins the points up in a south to north direction.

Your third task is to generate two more lines in the same line feature class that join the points in an east-to-west, and then a north-south direction.

Note that you will need to use the CreateFeatureclass tool to create an empty line feature class. Place this line feature class in the same location as the two feature classes provided.

< End of Assignment >