Spatial Programming Lab 4

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(Python scripts for all 4 questions attached with assignment submission)

Question 1 script:

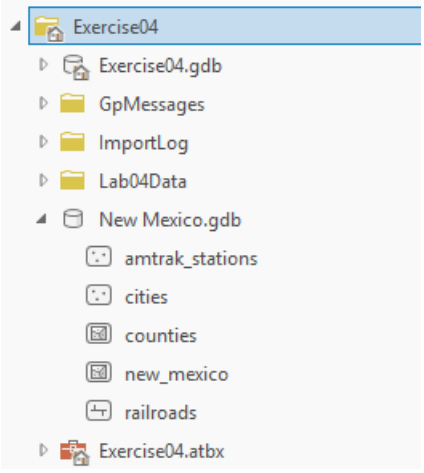
```
# Lab 4 Question 1

import arcpy
import os
arcpy.env.overwriteOutput = True
wkspace = "C:/PythonPro/Exercise04"
data_folder = "C:/PythonPro/Exercise04/Lab04Data"
new_gdb = "New Mexico.gdb"
arcpy.CreateFileGDB_management(wkspace, new_gdb)
arcpy.env.workspace = data_folder
ftr_classes = arcpy.ListFeatureClasses() #get all feature classes in Lab04Data folder
for fc in ftr_classes:
    fc_name = arcpy.da.Describe(fc)["baseName"]
    new_fc = os.path.join(wkspace, new_gdb, fc_name) #copy paths to new gdb
    arcpy.CopyFeatures_management(fc, new_fc) #copy features to new gdb

#Print all feature classes in "New Mexico.gdb"
arcpy.env.workspace = "C:/PythonPro/Exercise04/New Mexico.gdb"
nm_fc = arcpy.ListFeatureClasses()
print("Feature classes in \"New Mexico.gdb\": ")
for fc in nm_fc:
    print(fc)
```

Question 1 output:

```
========== RESTART: C:/PythonPro/Exercise04/q1.py ==========
Feature classes in "New Mexico.gdb":
amtrak_stations
cities
counties
new_mexico
railroads
```



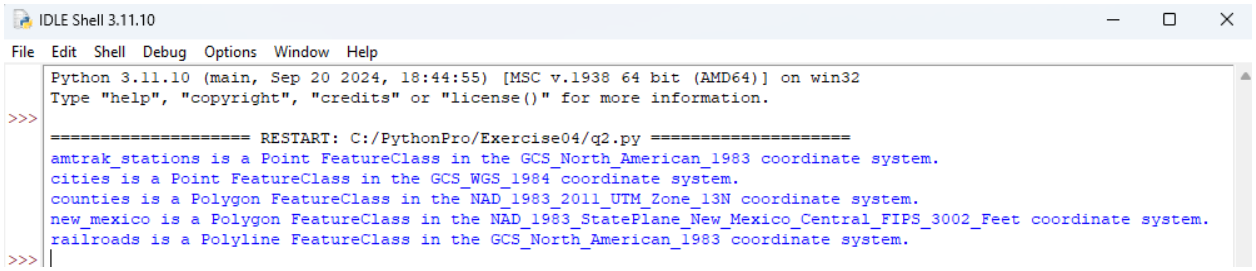
<-- copied files in new New Mexico gdb

Question 2 script:

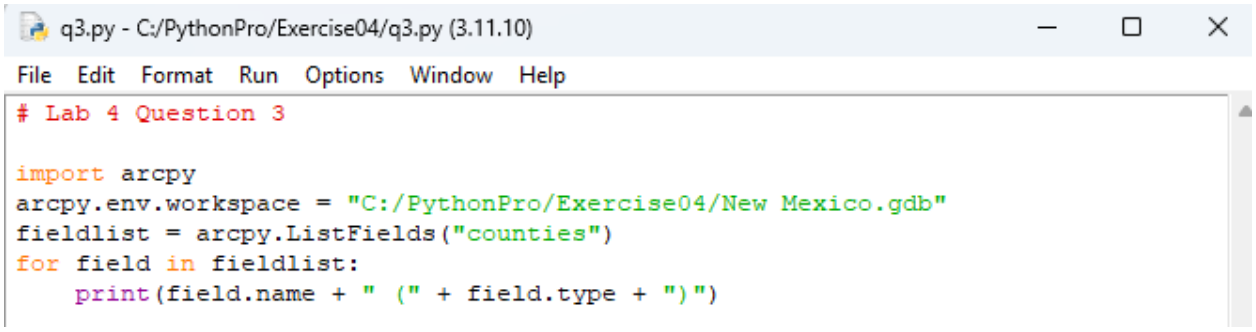
```
# Lab 4 Question 2

import arcpy
arcpy.env.workspace = "C:/PythonPro/Exercise04/New Mexico.gdb"
fclist = arcpy.ListFeatureClasses()
for dataset in fclist:
    description = arcpy.da.Describe(dataset)
    name = description["baseName"]
    data_type = description["dataType"]
    shape_type = description["shapeType"]
    coord_sys = description["spatialReference"].name
    print(f"{name} is a {shape_type} {data_type} in the {coord_sys} coordinate system.")
```

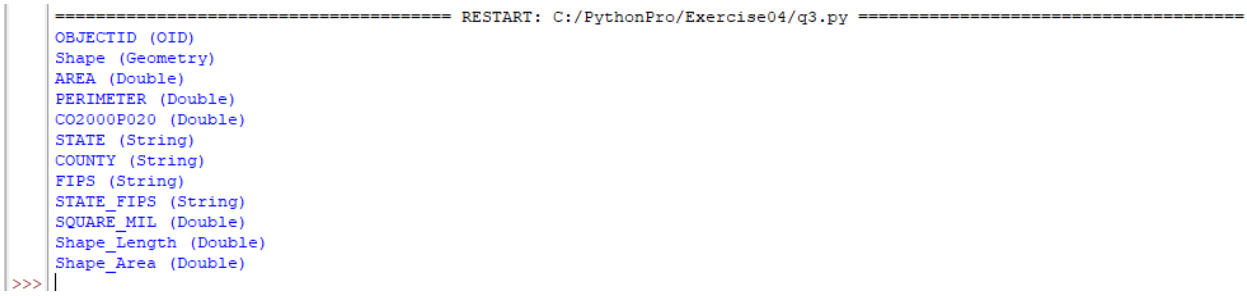
Question 2 output:



Question 3 script:



Question 3 output:



Question 4 script:

q4.py - C:/PythonPro/Exercise04/q4.py (3.11.10)

File Edit Format Run Options Window Help

```
# Lab 4 Question 4

import arcpy
arcpy.env.workspace = "C:/PythonPro/Exercise04/New Mexico.gdb"
feature_count = arcpy.management.GetCount("cities")
print(f"The cities feature class has {feature_count} features.")
```

Question 4 output:

```
========== RESTART: C:/PythonPro/Exercise04/q4.py ==========
The cities feature class has 487 features.
>>>
```

“The cities feature class has 487 features.”