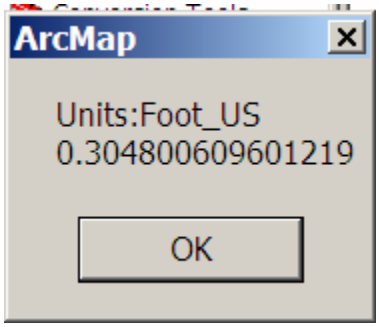
ArcObjects: ISpatialReference
Due by Friday 6pm

Modify your VBA code from last week by first checking that your feature class is in a projected coordinate system. Then compute the area of each polygon in m^2 and hectares.

You can use the ***ILinearUnit. ConversionFactor*** property to convert the units to meters. For example:

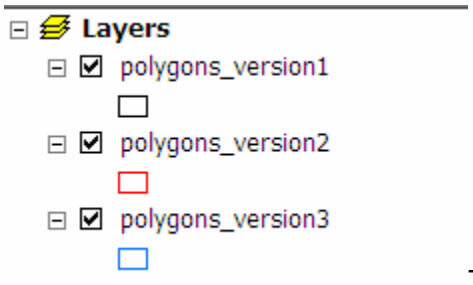
```
Dim pmxdoc As IMxDocument, pFeatureLayer As IFeatureLayer, pFeatureClass As IFeatureClass
Set pmxdoc = ThisDocument
Set pFeatureLayer = pmxdoc.ActiveView.FocusMap.Layer(0)
Set pFeatureClass = pFeatureLayer.FeatureClass


Dim pGeoDataset As IGeoDataset, pSpatialReference As ISpatialReference
Set pGeoDataset = pFeatureClass
Set pSpatialReference = pGeoDataset.SpatialReference
Message = MsgBox(pSpatialReference.Name, vbOKOnly, "Coordinate System: ")
Dim punit As ILinearUnit, pProjectedCoordSys As IProjectedCoordinateSystem
Set pProjectedCoordSys = pSpatialReference
Set punit = pProjectedCoordSys.CoordinateUnit
MsgBox "Units:" & punit.Name & vbNewLine & punit.ConversionFactor
```



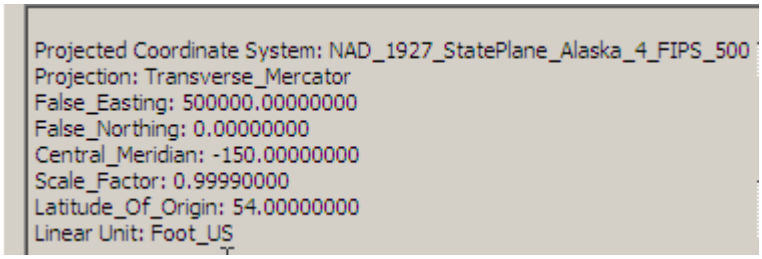
Download the winzipped file ***polygons.exe*** from
http://nrm.salrm.uaf.edu/~dverbyla/nrm638/data/

The unzipped folder will contain three polygon themes in three different coordinate systems and units…you can use these to test drive your VBA code.

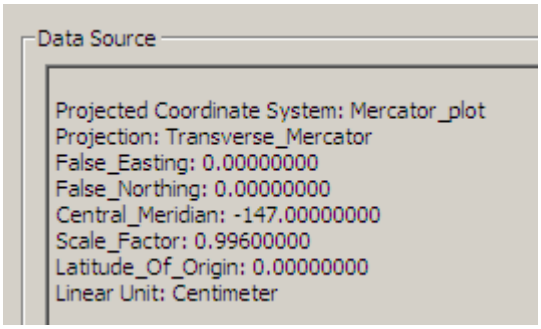


The coordinate systems all are different:

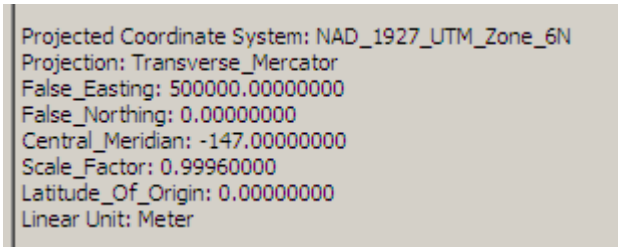
Version 1 is in feet:



Version 2 is in cm:



Version 3 is in meters:



Your VBA code should return the following polygon areas in m^2 and hectares:

Attributes of polygons_version1

FID	Shape *	OBJECTID	meters2	hectares
0	Polygon	1	32483.617744	3.248362
1	Polygon	2	60703.855878	6.070386
2	Polygon	3	385608.780916	38.560878

Attributes of polygons_version2

FID	Shape	OBJECTID	meters2	hectares
0	Polygon	1	32227.167805	3.222717
1	Polygon	2	60224.802816	6.02248
2	Polygon	3	382567.905331	38.256791

Attributes of polygons_version3

FID	Shape	OBJECTID	meters2	hectares
0	Polygon	1	32460.556309	3.246056
1	Polygon	2	60660.949632	6.066095
2	Polygon	3	385338.454438	38.533845

Email me (D.Verbyla@uaf.edu) your VBA program by Friday.