Basic ArcGIS editing tasks

- Digitize new features from a paper map or scanned map.
- Examples: field boundaries, roads, rock contacts, faults, etc. (other examples from your background?)
- Construct new features from survey descriptions based on air photos or satellite imagery.
- Update features that have changed since they were created, or fix errors.
- Update or correct attributes of features.
- Advanced: create and validate

The Editor Toolbar

- Create/change **vector data** geometry and attribute values interactively ("digitizing")
- Edit features in an existing layer or make a new layer for new features (via ArcCatalog!)
- Need to find the Editor toolbar
- Activate: Press or Customize-Toolbars-Editor

Create a new layer for the new features (using **Arc Catalog**)

- Create a new File Geodatabase in U:\ArcGIS\mgisdata\Austin called Edwards

Rename New File Geodatabase into Edwards

Make it your Default GeoDB

Hands-on editing demo using the ch. 12 tutorial

U:\ArcGIS\mgisdata\MapDocuments\ex_12a.mxd

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Hands-on editing demo using the ch. 12 tutorial

U:\ArcGIS\mgisdata\MapDocuments\ex_12a.mxd
Make a new feature class ("layer") called **faults** inside the Edwards GeoDB
Set faults coordinate system to NAD 1983 Texas State Plane Central

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**What about Coordinate systems?**

- ArcMap can edit across coordinate systems, e.g.:
  - GPS points layer file has unprojected GCS
  - Editing is performed in the data frame’s UTM and converted on the fly
  - But: Edited GPS points are permanently stored in GCS when edit mode is left.

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**Start Editing mode**

- Editor bar will get color (not be greyed out any more)
- An new Window called Create Feature will appear
- Create Feature shows the faults layer from the TOC
- The Construction Tools part shows different Feature Templates - use the simple Line for now
Feature templates

- Feature templates store all info needed to add a feature to a feature class.
- They also have different construction tools that can be used to create new features.

- Created automatically or manually
- Can have multiple templates for each layer
- Can also enter values in attribute fields

Adding features

- Choose template and construction tool
- With edit tool, click inside map to create vertices of a “sketch”
- You can Zoom, pan, etc., resume sketch with
- Double-click or F2 to “finish the sketch.”

The Edit tool

The Edit tool is used to select features so they can be moved, deleted, or edited.

Uses standard Select Features and -Clear Selection Tools (Main tool bar, etc.)

Select Features

Click on feature to select
Shift-click to add another feature
Drag a box around several features
Click on empty space to clear selection
Use Clear Selection

Clear Selection

Editing context menus

Sketch menu

Verte menu

Right-click on sketch (vertex,line)

Route Measure

Insert Vertex

Delete Vertex

Move...

Move To...

Edit

Trim to Length...

Delete Sketch

Finish Sketch

Finish Part

Properties...

Right-click outside sketch
Avoiding dangles

Automatically connects features and ensures logical consistency. Two approaches are used.

1. Let the vertex be placed anywhere and correct it afterwards.
2. Ensure that vertex is created in the right location.

Correct topology — the horizontal line intersects the vertical one, creating three lines.

Snapping

Automatically connects new point to existing point or line

Correct topology — the horizontal line intersects the vertical one, creating three lines.

Circle: Snap distance around mouse cursor

SNAP!

Snapping

Tolerance units

- **Screen units**
  - User sets the tolerance as the number of pixels on the screen.
  - Remains consistent regardless of the zoom level.
  - Easy to work with at all scales

- **Map units**
  - User sets the tolerance in map units (meters, feet, degrees)
  - Ensures consistent precision at all scales
  - May become difficult to work with when zoomed far in or far out from normal editing scale

Setting snapping
Types of snapping

- Point snapping
- End snapping
- Edge snapping
- Vertex snapping

Sketching - summary

- Temporary sketch for creating new features
- Select layer to add feature to (target layer) and press pencil button
- You can use zoom, pan while sketching (click sketch button again to go back)
- Right-click: pulldown menu for context menus:
  - On vertex: vertex menu
  - Not on vertex: sketch menu
- Double click to end sketch and create actual new feature (newly made feature will be selected)
- Click on Select tool (Black Arrow) exits sketch mode
- Delete feature: Select - Hit Delete Key (Ctrl-Z Undo)

Saving work

- Stops editing and asks to save any unsaved edits
- Saves and continues editing

Save early, save often!!!
**Edit Sketch Properties**

Use to view and/or edit vertex coordinates.

- **Vertex menu**
  - Insert Vertex
  - Delete Vertex
  - Move...
  - Move To...
  - Change Segment
  - Pipe
  - Trim to Length...
  - Port
  - Delete Sketch
  - Ctrl-Delete
  - Flash Sketch
  - F2
  - Finish Edit

**Attributes window**

Useful window for editing the attributes of selected features.

- **Right-click item for context menu**
- **Shows the currently selected features**
- **Edit the attributes of the highlighted feature**
- **Edit the attributes here**

**Editing attributes**

- **Edit a single feature**
  1. Click to flash the feature and see which it is.
  2. Edit the field.

- **Edit multiple features**
  1. Click layer name
  2. Edit the field.

**Wrap up**

- Ch 12 Tutorial - 31
- HW10 will be ex 1,2,3,4 extra 5 (due Nov 8)
- Mini proj 2 questions?
- Mini proj 3 questions?