

Routes in Dynamic Segmentation

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Geog 475/575

Definition Of Route

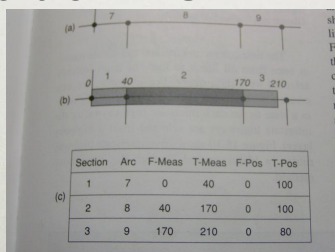
- A linear feature with a linear measurement system stored in its geometry.
- **Examples** : Streets, Highways, Streams

Routes in Dynamic Segmentation

- How are routes stored ?
- It varies depending on data structure.
- **Coverage**
- **Shapefile / Geodatabase**

Coverage Data Structure

- Coverage treats routes as a subclass in a line coverage. Based on the geometric lengths of the **ARCS**.

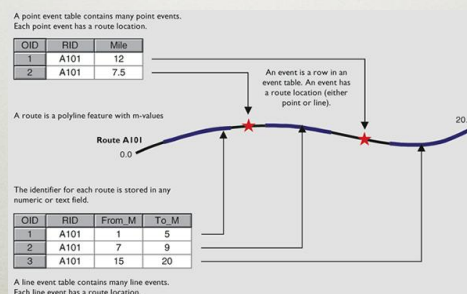


Shapefile/ Geodatabase file structure

- Routes are treated as a ***polyline feature class***.
- Stores the linear measurements as an “m” value in the geometry.
- (x,y) locates linear feature
(m) route’s linear measurement
(based on geometric length of line segments)

Examples in Shapefile / Geodatabase structure

- Highway mile posts
- River mile markers



Creation of Routes

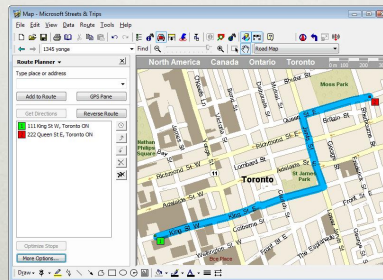
- Manually Digitized
- Data Query Methods
- ESRI _ ArcGIS: Use the Create Routes Tool under the *Linear Referencing Toolbox*
(Introduced in ArcMarine Lab)

Four Types of Routes

- Simple Route
- Combined Route
- Split Route
- Looping Route

Simple Route

- **Definition** : A route that follows one direction and does not loop or branch.



Combined Route

- **Definition** : A route that is joined with another route.



Split Route

- **Definition :** A route that subdivides into two routes.

- At the split, two linear measurements begin...

One continues, and the other stops at the end of the route.
(ie. business route)

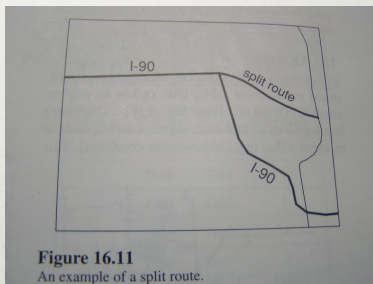


Figure 16.11
An example of a split route.

Looping Route

Definition : A route that intersects itself.

- 1. Origin to the first crossing.
- 2. Between first and second crossing.
- 3. Back to the Origin.
- *Route then re-measured for accuracy...*

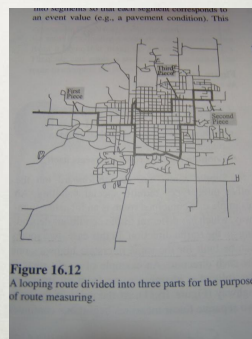


Figure 16.12
A looping route divided into three parts for the purpose of route measuring.

Questions ?

- How is the linear measurement stored in a coverage data model ?
- How is the linear measurement stored in the shapefile / geodatabase data model ?
- Define “Combined Route” and name an example.
- Define “Simple Route” and name an example.

Questions ?

Thanks !

References

- Chang, Kang-Tsung. "Geocoding and Dynamic Segmentation."
Introduction to Geographic Information Systems. 5th ed. New York, NY:
McGraw-Hill, 2009. Print.
- ESRI 9.3 Desktop Help. "Dynamic Segmentation". 2009.
- Microsoft Streets and Trips. (map)