Announcements

Grades through Exercise 17 are posted on CourseDen

- https://westga.view.usg.edu/

Lectures 4 - 8 (databases through vector graphics) are posted online

- http://www.westga.edu/~jconglet/geol2002/lectures.htm

March 25, 2019
REMINDER

Exercise 18 is due Wednesday, March 27
ANOTHER REMINDER

The Second Exam in this class will be this Friday, March 29

- Format will be short answer, definition
- But mostly, the exam will consist of short exercises on databases, presentation software, raster graphics, and CAD
Graphics and Imaging Programs

Review:

• Digital graphics come in two types:
  – Raster
  – Vector

• Raster model = simple rectangular array of pixels;
• Vector model = mathematical equations that define points, lines, and polygons.
Graphics and Imaging Programs

Raster Model

Dent, 1999
Graphics and Imaging Programs

Vector Model

Vector Data Model

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Spreadsheet linked to base map

Dent, 1999
Graphics and Imaging Programs

- Raster images cannot be resized or rescaled without losing quality.
- Vector images maintain their resolution at any scale or size.
• Think of vector graphic entities as mathematical expressions that describe the locations of points, lines, line segments, arcs, and polygons.

• These entities are referred to as “primitive objects.”
Graphics and Imaging Programs

• Primitive Objects in Vector Space:
  – Points
  – Lines
  – Polygons
  – Circles
  – Curves
  – Bézier Curves
  – “Bézigons”
  – Text (from Bézier Curves)

For more information on Bezier curves and the math behind them, see:
http://www.moshplant.com/direct-or/bezier/
Graphics and Imaging Programs

- CAD and GIS are related: Vector points, lines, and polygons correspond to the three map “feature types” used in Geographic Information Systems software (GIS)
Graphics and Imaging Programs

• Common vector programs that we’ll use:
  – AutoCAD
  – ArcGIS/ArcMap
How our $2,000 CAD software can keep you from burning up your design budget.

Until now, high-quality, professional computer-aided design could only be done on expensive, large-scale mini or mainframe computers.

But now there's AutoCAD®.

A full-function graphics program that turns your low-cost personal computer into a full-fledged CAD workstation. So that designing an automatic 50-350 GPM-class fire nozzle has never been easier. Or more cost-effective.

90% of mainframe CAD at 5% of the price.

AutoCAD is designed especially to work on today's most popular microcomputers to fully automate the drawing process. For just about any drawing job you can think of.

With its extensive, push-button editing facilities, AutoCAD lets you draw an object (or any part of one) rotate or scale it, drag it; zoom in and out on it; store it away in your own parts library and call it up whenever you need it; fill an area; use an unlimited number of layers, even automatically dimension distances and angles in any part of your drawing.

And, at only $2,000 for the complete AutoCAD program, you can have all this power in a fully-configured, top-of-the-line desktop workstation for less than $15,000.

You'll learn it in two days.

The beauty of AutoCAD is that you don't have to know a thing about computers. Even if you've never touched a keyboard, you'll pick it up in a matter of days, and feel comfortable inside a week.

Sound too good to be true? A simple one-touch command structure always points you in the right direction. A HELP command is always available to keep you on track. And AutoCAD even lets you choose in a growing number of manufacturers.)

PC boards, skyscrapers, and everything in between.

No matter what type of drafting your work involves—from electro-mechanical circuit layout to structural schematics to architectural design—AutoCAD can give you a whole new perspective on the drawing process.

And on saving money. Because whether you're in a two-person shop or a two-billion dollar company, you'll find that the AutoCAD system pays for itself in just a few short months.

Beyond that, your AutoCAD software will run on newer, and more powerful computers when they become available—so that you can be sure your investment in creating drawings and training staff will never go up in smoke.

Fire nozzle and nozzle design provided courtesy of TASK FORCE TIPS, Inc.

Fire off a letter.

There are currently over 7000 AutoCAD users world-wide. If you'd like more information, write or call your nearest AutoCAD dealer. He or she can provide you with all the details, including literature, specifications, and hands-on demonstrations.

AutoCAD. For designers, it's why the personal computer was invented.
AutoCAD

https://www.youtube.com/watch?v=_bMcXVe8zIs