WELCOME TO GIS!
WATS 4930/6920 & 6915

I can sign any Registration Options Forms (Add/Drop; time conflict, etc.) and answer situation specific questions now or after class.

Watershed Sciences 4930 & 6920
GEOGRAPHIC INFORMATION SYSTEMS

WEEK ONE - Lecture 1
Introduction to Course, Review of Maps & WebGIS

Joe Wheaton
PURPOSE OF TODAY’S LECTURE:

“I Introduction to Course, Review of Maps, & WebGIS”

- Cover Introductions
- Go through syllabus & define goals of course
  - Manage your expectations about course & my expectations of you
  - Answer any questions you have about course logistics
- Review some basics about maps to help you do better on lab assignments and become a more effective communicator with maps
- Intro to WebGIS

TODAY’S PLAN

I. Introductions
II. Syllabus
III. Review of Maps
IV. WebGIS
V. Questions/Summary
WHO IS THIS JOE WHEATON GUY?

• Assistant Professor in Watershed Sciences (since 2009)
• Fluvial Geomorphologist
• Education:
  - Started studying Civil Engineering at Utah State University
  - BSc in Hydrology from University of California at Davis
  - MS in Hydrologic Sciences from University of California at Davis
  - PhD in Geography at University of Southampton (England)
• Professional Background:
  - Consulting Civil Engineering (California - 4 years)
  - Researcher - Fluvial Geomorphology & Ecohydraulics (since 2000)
  - Lecturer (i.e. Assistant Professor) in Physical Geography at Aberystwyth University (Wales – 2 years)
  - Research Assistant Professor in Geology at Idaho State University (1 year)

YOUR TA & UTF

• Shannon Belmont – Lab Instructor
  - Be nice to her as she’ll be grading your work!
• Tommy Thompson – Undergrad Teaching Fellow
HOW MANY OF YOU....

• Registered for this course because you were told you had to?
• Registered for this course because you thought it might be interesting and you wanted to learn a valuable skill?
• Have changed your major?
• Have some GIS experience
• Taken a GIS course before
• Like maps
• Want to be here

WHAT CLASS IS RIGHT FOR YOU?

About the Courses (Syllabi)

• WATS 4901/6901 - Advanced GIS & Spatial Analysis (3 credits) - 16 weeks
• WATS 4935/6935 - GIS Research Projects (1 credit) - 12 weeks
• WATS 4950 - GIS Fundamentals (1 credit) - 12 weeks

Which Course(s) Should I Take?

WATS 4901/6901 is what you should take if you want to get a comprehensive understanding of GIS and advanced spatial analyses. GEOG 2110 is a prerequisite for WATS 4901.

WATS 6935 is the first four weeks of WATS 6901. The course is targeted at graduate students who want a crash course or refresher introduction to GIS, but don’t have the time or need for the full 16-week course. No prior GIS experience is necessary, but the pace is rapid. It’s perfect for someone wanting to know how to make some basic maps for their thesis or dissertation, as well as an introduction to building interactive web maps and doing basic spatial analyses.

WATS 4935/6935 is a five-week follow-up course to WATS 4901/6901, which puts the skills and principles learned in Advanced GIS & Spatial Analysis into practice through student research projects. WATS 4935 is available for capstone credit to Marietta Science students. Students will prepare a poster to present in poster session and a mock dissertation for potential publication.

*These courses are based on the content of the former WATS 4901/6901 course (4 credits, last offered in Spring 2018), but have been expanded and redesigned to better meet the diverse needs of both our undergraduates and graduate students.
WATS 4930/6920 – 10 INTENSE WEEKS

WATS 4930/6920 is what you should take if you want to get a comprehensive understanding of GIS and advanced spatial analyses. GEOG 1800 is a prerequisite for WATS 4930.

WATS 4931/6921 – 5 MORE WEEKS

WATS 4931/6921 is a five week follow up course to WATS 4930/6920, which puts the skills and principles learned in Advanced GIS & Spatial Analyses into practice through student research projects. Students will prepare a poster to present in poster session and a mock manuscript for potential publication.

These courses are based on the content from the former WATS 4930/6920 courses (4 credits, last offered in Spring 2010), but have been expanded and reorganized to better meet the diverse needs of both undergraduates and graduate students.

USU Advanced GIS Courses by Wheaton et al. (2009-2013) is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.
WATS 6915 - 4 INTENSE WEEKS

About the Courses (Syllabi)

WATS 6915 is the first four weeks of WATS 6920. The course is targeted at graduate students who want a crash course or refresher introduction to GIS, but don’t have the time or need for the full 16 week course. No prior GIS experience is necessary, but the pace is rapid. Its perfect for someone wanting to know how to make some basic maps for their thesis or dissertation, as well as an introduction to building interactive web maps and doing basic spatial analyses.

DEATH-GRIP ON THE OBVIOUS

What your friends said about this course was probably true... it is a lot of work

SURGEON GENERAL WARNING:
These classes are a ton of work! Continuing may cause headaches, shortness of breath, loss of sleep, and increased stress levels. But you just might learn a lot about GIS too.
INTRODUCE YOURSELF (< 10 sec.)

- Just your First Name
- Where You’re From

TODAY’S PLAN

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   II. Topics
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   IV. Text & Software
   V. Course Policies
   VI. Grades

III. Review of Maps

IV. WebGIS

V. Questions/Summary
ALL YOU NEED TO KNOW...

ADVANCED GIS COURSES
WATS 4930/6920, 4931/6921, 6915

About the Courses (Syllabi)

This page and its sub-pages act as the syllabus for the following advanced GIS courses offered through WATS:

- WATS 4930: Advanced GIS & Spatial Analysis (3 credits - 16 weeks)
- WATS 6931: GIS Research Project (3 credits - 16 weeks)
- WATS 6920: GIS Fundamentals (4 credits - 16 weeks)

Which Course(s) Should I Take?

WATS 4930/6920 is for students who want to gain comprehensive understanding of GIS and advanced spatial analysis. WATS 6931 is a prerequisite for WATS 6920.

WATS 6920 is for graduate students who want to practice advanced GIS & spatial analysis in a research project. WATS 4930 is for students who want to gain comprehensive understanding of GIS and advanced spatial analysis.

http://gis.joewheaton.org

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I WANT YOU TO:

- Gain confidence in teaching yourself techy-stuff
- Become more tech-savvy
- Learn a bunch of tricks that set you apart from the rest...
- Use that knowledge to address problems and questions that interest you
- Discover how to stay on top of rapidly evolving fields...
- Act like a professional, not a student
TODAY’S PLAN

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BROAD TOPICS

- Introduction/Review of GIS
- Abstracting the World to Digital Maps
- Working with Data in GIS & Geoprocessing
- Vector Analyses
- Raster Analyses
- GIS Modeling
- Collecting Your Own Data
COURSE TOPICS

Course Topics

These courses are organized into a series of topics, which we will cover in the order listed below. For each topic, you will find downloads of lecture materials, links to readings, assignments, links to lab assignments and materials, and additional information. Please note that:

- topic pages may not be fully populated until we get to that topic in lecture; some lecture topics will appear populated with lectures and content from the previous year's lecture.
- topic pages may be updated even after we've covered a topic as types and inconsistencies are brought to our attention or as we find new material that may help you better understand a topic.
- if you find any problems or something that is confusing, please post a comment or question to the appropriate topic forum.

WATS 4930/6920 Topics

Note: Week 1-4 are WATS 4930 Topics.

**Course Topics (by week)**

Week 02: Abstracting the World to Digital Maps

Week 03 & 04: Working with Data in GIS

Week 05: Vector Analyses

Week 06 & 07: Raster Analyses

Week 08 & 09: GIS Modeling

Week 10: Collecting Your Own Data & Course Summary
TODAY’S PLAN

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V. Questions/Summary
LABS ARE EVERYTHING!

- You only really learn GIS by doing it
- WATS 4930/6920
  - 10 Guided Labs
  - Due following week
- WATS 6915
  - First 4 Labs
  - Due them at your own pace... BUT

LABS CAN BE DONE ANYWHERE

- Data you need is online
- Instructions are spelt out on lab pages often w/ video tutorials
  - Bring headphones!
- ALWAYS backup to a portable drive
  - As often as you’re comfortable redoing something
- Encourage you to work off your own machine
TODAY’S PLAN

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TEXT

About the Courses (Syllabus)
Text & Readings

WATS 4930 has no required text. WATS 4930 & WATS 4935 share the same required textbook:

Required Text:

Dr. Johnston has put a lot of resources associated with this book online for free.

Other Readings:
See here for reading assignments.

Recommended Text:
- You may think this is ridiculous, but much of what you need to know (and students frequently forget) is covered in the Dr. Suess Book! In fact, the GIS CS you will be presented are based on principles outlined in this book that a 3 year old can understand.
SOFTWARE – ArcGIS & Google Maps/Earth

DESPITE WHAT IMPRESSION ESRI GIVES

• They are not the only game in town
• There are lots of commercial and open source alternatives
• If you have interest in these, you may consider WILD 6900 -
### SOFTWARE FOR GIS:

<table>
<thead>
<tr>
<th>Full GIS</th>
<th>Raster GIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• ESRI, Inc.</td>
<td>• ERDAS/Imagine</td>
</tr>
<tr>
<td>• MapInfo</td>
<td>- long established leader in remote sensing</td>
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<tr>
<td>• MapWindow</td>
<td>- acquired by Leica Geosystems in 2001</td>
</tr>
<tr>
<td>• LandSerf</td>
<td>• ER MAPPER</td>
</tr>
<tr>
<td>• Saga GIS</td>
<td>- aggressive newcomer originating in</td>
</tr>
<tr>
<td>• Quantum GIS</td>
<td>Australia</td>
</tr>
<tr>
<td>• Intergraph</td>
<td>• ENVI,</td>
</tr>
<tr>
<td>• Bentley Systems (MicroStation)</td>
<td>- relative newcomer, radar specialization</td>
</tr>
<tr>
<td>• Autodel (AutoCAD MAP)</td>
<td>- acquired by Kodak in 2000</td>
</tr>
<tr>
<td><strong>Vector GIS</strong></td>
<td>• PCI--Geomatica</td>
</tr>
<tr>
<td>• Smallworld Systems</td>
<td>- long-term Canadian player</td>
</tr>
<tr>
<td>• Manifold</td>
<td>• CARIS</td>
</tr>
<tr>
<td>• Maptitude</td>
<td>- newer Canadian entry</td>
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<td>- newer Canadian entry</td>
</tr>
</tbody>
</table>

**MapWindow**

- Free! Open-source GIS
- Developed both here at USU and up at ISU
- Like lots... Extendible, Simple

[MapWindow](http://www.mapwindow.org/)
TODAY’S PLAN

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IV. WebGIS

V. Questions/Summary
COURSE POLICIES

• Just be respectful of your peers
• Turn off your phones
• No texting in lectures
• Laptops fine for notes/demos

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TODAY’S PLAN

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EVERYTHING YOU NEED TO KNOW TO GET AN A

- A highly recommended text... $8.99
- If for nothing else, impress your folks

HE CAN’T BE SERIOUS... THIS IS A SENIOR / GRADUATE LEVEL CLASS!

- I am...
- Maps are the ultimate end product of GIS and GIS analyses
- GIS makes it easy to make maps
- Making good and effective maps is an art that is being lost (i.e. cartography)
- You intuitively know this... but you probably forgot
LETS REFER TO THE CAT IN THE HAT

I'm the Cat in the Hat and I'm happy to say there's a map on my lap—let's get on our way! We will travel the world. See the whole U.S.A. And still be back home by the end of the day!

WHAT ARE MAPS? ALL HAVE A PURPOSE

Maps are drawings that help to find out where you are and get where you're going—no matter how far.

When mapmakers make maps, they must first decide who will be using the map and what it needs to do.
ALL MAPS HAVE A PURPOSE

• What point is the map trying to convey?
• Context helps convey that point

<table>
<thead>
<tr>
<th>The Map</th>
<th>Example Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location Map</td>
<td>Show the location of something within a broader geographic context of common knowledge to audience (e.g. state, country, world)</td>
</tr>
<tr>
<td>Geology Map</td>
<td>Show spatial distribution of underlying geology</td>
</tr>
<tr>
<td>Habitat Map</td>
<td>Show spatial distribution of different habitat types</td>
</tr>
<tr>
<td>Topographic Map</td>
<td>Show spatial distribution of elevations</td>
</tr>
<tr>
<td>Watershed Map</td>
<td>Show delineated boundary of watershed</td>
</tr>
<tr>
<td>Election Map</td>
<td>Show which areas voted for which candidate</td>
</tr>
</tbody>
</table>

A GEOLOGY MAP: JUST GEOLOGY...
A GEOLOGY MAP: MORE VECTOR DATA

A Part of the Geologic Map of the Logan 30' x 60' Quadrangle

Data from Utah Geological Survey: http://geology.utah.gov/

A GEOLOGY MAP: ADD DRG USGS BASE

A Part of the Geologic Map of the Logan 30' x 60' Quadrangle

Data from Utah Geological Survey: http://geology.utah.gov/
A GEOLOGY MAP: ADD HILLSHADE RASTER

A Portion of the Geologic Map of the Logan 30' x 60' Quadrangle

Data from Utah Geological Survey: http://geology.utah.gov/
Topographic Data from: http://gis.utah.gov/

PROJECTIONS, LAT & LONG

The map of the earth that we use most of all is a globe. Like the earth, it is round as a ball.

Feel the skin off an orange and lay it out flat. A flat map of the earth would look something like that.

LONGITUDE:
These are long-line lines, which run up and run down.

LATITUDE:
Lat-line lines go around and around.
SCALE

Now, if maps were the size of the places they show, mapmakers would run out of paper, and so...

A chart called a scale makes maps easy to use, shrinking miles into inches on each map that you choose.

SCALE & PLANS

You can make a map of far places you roam, or a map—called a plan—of your very own home.

We used this scale—one inch equals three feet. It helped us do something we both think is neat! We drew our whole room so it fits on...

...one sheet!
DIRECTION / ORIENTATION

There are four main directions. All maps have got 'em. North is on top. South down at the bottom. If you look to the right, that is where East will be. Look to the left... and it's West that you see.

To remember all four, here is one easy way:

"Never Eat Soggy Wheat!"

is what I always say.

I have here an atlas. Come on, take a look! You will find lots of maps and they're all in this book.

LEGENDS & SYMBOLOGY

Sometimes maps use pictures to show where things are. A capital city is marked with a star. A tent shows a campsite. Tracks show where a train is. To get to the airport, just find where a plane is.

A chart called a legend, if you look carefully, will list and explain each picture you see.
SYMBOLOGY - COLORS & HATCHES

Some maps use colors to tell you a lot.
I used blue where it's cold and red where it's hot.
I made deserts light brown and jungles bright green.
The legend will show you what these colors mean.

SYMBOLOGY - COLORS & HATCHES

SYMBOLS, LINE-TYPES, ABSTRACTIONS

Marine charts help boaters. These maps let them know if a rock, reef, or sandbar is hiding below.

When you visit a city where you've never been, a city map helps you know where to begin.

Here is a map we both carry around. It shows where the subway runs under the ground.
TOPOGRAPHIC MAPS

Top-o-graph-i-cal maps are the kind hikers like. They use them to choose which direction to hike.

They show where the land rises hilly and steep or goes down into valleys all rocky and deep.

SYMBOLIC REPRESENTATION

Dot maps, like this one, are covered with dots. Some have a few dots, but some others have lots.

Each dot stands for something. On this map you see, each dot stands for one Frizzle-Frazed Frazee. (Most Frazees live up north, where the haircuts are free.)
ROUTE ANALYSES (MIN. COST)

When you look at a map, it's important to see there is more than one way from point A to point B. Firefighters use maps when they go fight a fire. The short way would take them down Voogel to Vyer. But traffic on Vyver can be a disaster.

So they choose a long way that's also much faster.

MEASUREMENT QUERIES

But in order to go from Fazode to Fazend on the fifteenth of May for the big Fazning Sing—

When you want to go from Fazode to Fazend, you can measure the miles, for the road does not bend.
THE EVER RELIABLE STRING TECHNIQUE

...first cut off some string.

Put it down on the road all the way to FaHizing.

Then take out your ruler and measure the string.

The scale on this map helps you see that it’s far. One inch equals ten miles, so...

...you should take the car!

GRID REFERENCES & COORDINATES

Use this trick to read maps. You’ll be glad that you did. Some are covered with lines. This is known as a grid.

There are letters on top. Numbers run down the side. Want to find where you are? Let the grid be your guide.

Trace a line down from A. Look across at line four. The lines cross at A4— at your very own door!

We are having a party. We’re waiting for you. Take a look at the grid. There’s our house at E2.
SOLVING PUZZLES WITH MAPS

Here is a map that I just got today. It's a puzzle map showing the whole U.S.A. Puzzle maps come in pieces, and here's the best part—you can put them together, then take them apart.

Now, which of the states do you think is the smallest? You're right! It's Rhode Island—the smallest of all!

PATTERN RECOGNITION

Here's a game that we play, so feel free to play too.

What does each of the fifty states look like to you?

Michigan looks like a scarf and a mitten.

Louisiana looks like a chair you could sit in.
ISN'T THAT NICE?

You will have great adventures your whole life, and so I give you these maps. Oh, the places you'll go!

You may travel the world, but no matter how far, with a map on your lap you will know where you are.

You can always use maps. They will help you in knowing where you have been and just where . . .

. . . you are going!

EVEN HAS A GLOSSARY

GLOSSARY

Capital: A city where the government of a state or country is located.

Cartographer: A person who makes maps.

Equator: An imaginary line that circles the middle of the earth between the North and South Poles.

Globe: A representation of the earth in the shape of a ball.

Grid: A pattern of lines on a map usually running north-south and east-west that is used for giving positions.

Latitude: Imaginary lines on the earth that run east and west, parallel to the equator.

Legend: The part of a map that lists and explains the symbols, colors, and scale used for the map.

Longitude: Imaginary lines on the earth that run north and south and meet at the poles.

Map: A flat representation of the earth or a part of the earth that shows the relative position of places.

Scale: The relationship between the actual size of an area and its size on a map.

Symbol: A sign or drawing that stands for something else.

Topographical map: A map that shows the shape and changing elevation of the land's surface.
WHY SHOULD YOU CARE?

• Making bad maps is easy with GIS!
• You need to know how to speak the language (i.e. nomenclature and terminology matters)
• You need to understand the spatial analyses you perform
• We’re going to grade you based on the Cat and the Hat and the 6 C’s

TOO MUCH OVERLAY....
THE 6 C’s TO EARN BETTER THAN A C

1. Colorful (but not cluttered)
2. Creative (but not confusing)
3. Consistent
4. Context (location, coordinates, scale, orientation, setting)
5. Convincing (fit for purpose)
6. CORRECT

ABOUT BEING CORRECT...

- Although you have an ethical responsibility...
- Good mapmakers (you will be) convey & emphasize what you want to -> This is Cartography
ON DIGITAL REVOLUTION

On the impact of the digital revolution

"Well, I fall into two camps here. I use, you know, my maps on my phone. And it's far easier to put my GPS on than to have to consult a map. But gosh, I mean, do we lose a lot? We lose the beauty of maps; we lose the romance of maps; we lose that terrible feeling that we'll never be able to fold up a map again.

"And I think the other thing, you know, we lose, is a sense of how big the world is. Because now we look at our map, there's a real sense of, 'Get me to where I want to go.' Now you get the feeling, actually, 'It's all about me'... It's a terribly egocentric way of looking at the world. So I think the view of where we are in the world, in the history of the world, is changing. And I think in a way it's one of the biggest, if not the biggest impacts of the digital and technological revolution — is how we see ourselves in the world."

TODAY’S PLAN

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• What is the role of the mapmaker with egocentric maps (i.e. webGIS)?
Web GIS QUESTIONS

- What is it?
- What's out there?
- What's it used for?
- How does it differ from desktop GIS?
- How is it deployed?
- How could you deploy it?

WHAT IS IT?

- Return to our definition of GIS.... Just implemented and delivered over the web
  - Typically simpler user interface than desktop GIS
  - Typically more complicated backbone...
  - Often free for users

“A GIS is a computer-based system to aid in the collection, maintenance, storage, analysis, output and distribution of spatial data and information.”
WHAT’S OUT THERE?

- The common map/directions sites
  - Google Maps
  - Bing Maps (Live)
  - Mapquest
- Data viewers
- Data distribution centers
- Personal data repositories
- Project sites...
- Commercial Sites
- Web mapping services (WMS)

RANGE FROM SIMPLE....

- Soil Web via Gmaps

http://casoilresource.lawr.ucdavis.edu/soilweb_gmaps/
TO COMPLEX...

MAPQUEST

- One of the first... lost its marketshare
BING.COM/ MAPS (FORMERLY LIVE MAPS -> Microsoft)

- Microsoft had to do something... to fight back Google

BING.COM - COOL FEATUES

- Built in 3D Viewer: Virtual Earth (w/ plugin; analogous to Google Earth)
- Birds Eye View
WHAT’S IT USED FOR?

• Just directions?
• A better question is: what is it not used for?

Examples of WebGIS at Work
Backed by ESRI ArcGIS Server:
  • Renewable Energy Atlas of Vermont - See article from ESRI Observer
Backed by ESRI’s ArcGIS Online
  • Browse a plethora of public maps at ArcGIS Online’s Gallery
  • Oregon Watershed Enhancement Board Investment Tracker
Backed by Google Maps
  • OpenTopography Portal
  • Housing Maps.com
  • 19 Great Journeys in a Car
  • 2010 Tour de France Route - with interactive profiles
  • 2008 Tour de France - Street View (see video)
Backed by Bing Maps
  • Gas Prices
  • 2010 Tour de France Route - Different features like Bird’s Eye View
  • Photosynth

Web GIS QUESTIONS

• What is it?
• What’s out there?
• What’s it used for?
• How does it differ from desktop GIS?
• How is it deployed?
• How could you deploy it?
HOW DOES IT DIFFER FROM DESKTOP GIS?

- You can answer this...
- What of the ArcGIS family of products is WebGIS?

ArcGIS EXPLORER ONLINE

- Improved dramatically...
WHAT IS A WEB MAP?

Web maps are visual presentations of useful information that communicates ideas and designs, they provide an effective metaphor for modeling and representing geographic information as a series of data layers. For example, you could find a local street map that highlights a new bike path or a map showing the age distribution of populations across parts of Southern California.

A web map is an interactive display of geographic information that you can use to answer questions. For example, you may find a website with a map layer showing the location of fire stations across a county. You can see which fire stations are near you and click on them to get more information. A map is also a web application if you can create your own maps and share them with others, or if you can create your own map layers and add them to web maps.

For context, the map has a topographic base that includes cities, roads, and buildings overlaid on land cover and shaded relief imagery.
Web GIS QUESTIONS

- What is it?
- What’s out there?
- What’s it used for?
- How does it differ from desktop GIS?
  - **How is it deployed?**
  - How could you deploy it?

HOW IS IT DEPLOYED

- What platforms is WebGIS consumed in?
  - Web applications (i.e. browsers)
  - Web services (i.e. desktop GIS)
  - Mobile applications (i.e. your smart phone)
- What software does a user need to use it?
- How is it deployed at the back end?
  - WMS Web Map Services (for user interactivity)
    - Allows creation of web maps that can call up data from multiple servers and sources
  - GIS server(s) for hosting GIS data
  - Other services for doing heavy lifting (number crunching)
YOU SHOULD BE AWARE OF ARCGIS SERVER

What is a service?
A service is a representation of a GIS resource that a server is making available to other computers on a network. This network can be a local one, such as your company’s computer system, or it can be a broader network, such as the Internet. The computers on the network that access your service are called clients. When you use ArcGIS Server to publish a service, you are giving clients access to a GIS resource. In many cases, clients can do the same things with the service that they could if a copy of the resource were on their own computer.

Using ArcGIS Server
As you use ArcGIS Server, you will follow a workflow of three steps to make your geographic information available through the server:
- Author the GIS resource using ArcGIS Desktop.
- Publish the resource as a service using ArcGIS Server.
- Use the service through a client application.


OPEN TOPOGRAPHY... SYSTEM ARCHITECTURE

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SOME OTHER CARTOONS...

The arrows and components can vary, but on the outside... there is always the client... blind to the details of the blackbox behind their browser:


Web GIS QUESTIONS

• What is it?
• What’s out there?
• What’s it used for?
• How does it differ from desktop GIS?
• How is it deployed?
  • How could you deploy it?
TODAY’S PLAN

I. Introductions
II. Syllabus
III. Review of Maps
IV. WebGIS
V. Questions/Summary

READING FOR THURSDAY

Reading Assignments will always be posted on the course website...

• I will try to highlight reading for you at the end of most lectures
  - Read Chapter One of Bolstad: “An Introduction to GIS”
• In general, you should get in the habit of checking the website. For this Thursday, see:
  - http://gis.joewheaton.org
THURSDAY’S READING/HOMEWORK:

Next Lecture

On Tuesday:

- Projections & Coordinate Systems

No Lecture This Thursday!
YOUR QUIZ FOR TUESDAY

• Find an example of a good map and a bad map and explain why in terms of the 6 C’s
• Post these two examples as URL’s or images and your justification to the class forum at:
  – GIS Questions & Discussions -> Week 02 -> Quiz 1
  – Post before Tuesday’s Lecture
  – Feel free to comment on others...
  – Also SUBMIT your links to CANVAS under Quiz 1 So I can give you credit

• PURPOSE:
  – Develop a critical eye about other’s maps, so that you can make your own maps better
  – Familiarize you with grading criteria

READING FOR TUESDAY

• Read Chapter Three of Bolstad: “Map Projections & Coordinate Systems” (pp. 69-122)
  – Skim 70-72 (History)
  – Read pp. 72-119 in detail
THIS WEEK’S LAB

Introduction

• Lab 01 – ArcGIS Refresher & Intro to WebGIS
  - You’ll make a very basic map in ArcGIS just to get you used to working in ArcGIS again ;)
  - You will create a website that will be the repository for ALL of your lab assignments
  - You will publish your map and build an interactive google map on your website...

Everything you need:
http://gis.joewheaton.org/assignments/labs/lab01

TODAY’S SUMMARY

• Nice to meet you...
• Syllabus is on http://gis.joewheaton.org
• Cat in the Hat and excellent reference

• 6’ C’s to avoid a C
REMEMBER, I WANT YOU TO:

• Gain confidence in teaching yourself techy-stuff
• Become more tech-savvy
• Learn a bunch of tricks that set you apart from the rest...
• Use that knowledge to address problems and questions that interest you
• Discover how to stay on top of rapidly evolving fields...
• Act like a professional, not a student

QUESTIONS??

• Post other questions to our Class Forum at http://forum.bluezone.usu.edu/gis