Introducing Web-based GIS using Survey123 and ArcGIS Online

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Towards Web-Based GIS: Agenda

• Pace University Context
• The Existing Course
  • Skills covered
• The Licensing Dilemma
• Survey123
• ArcGIS Online
• Creating Web Maps
• Creating Web Map Applications
Pace University and Course Context

• Pace University
• Seidenberg School of Computer Science and Information Systems
• BS, BA, MS, MBA (CS, IS, IT)
• Health Professions, Business, Liberal Arts, Education, Law
• Seidenberg Location Analytics and GIS Lab
The Introductory Course:  
Introduction to GIS (Graduate and Undergrad)

- Basic GIS Concepts
- Using ArcGIS Desktop (ArcMap 10x)
- Navigating Maps in ArcGIS
- Managing Map Data
- Spatial Analysis I: color-coded maps; selection, and join
- Data sources and types:
  - Public Data Sources (50+ List)
  - Data Types: Excel and Shapefiles
  - GPS
- Geocoding addresses
- Web-based GIS (Google Maps, ArgGIS Online)

<table>
<thead>
<tr>
<th>Data Source URL 1 - Description</th>
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<tr>
<td>A set of downloadable data sets, including shape files, for counties in NYS.</td>
<td><a href="https://gis.ny.gov/gisdata/inventories/index">https://gis.ny.gov/gisdata/inventories/index</a></td>
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The Licensing Dilemma

• We do not have a site licence
  • Purchase ESRI, Getting to Know ArcGIS (180 day license)
  • Use University 30 concurrent user license for computer labs
  • Use concurrent license for VM via VPN (very slow).

• Now have “Departmental License” 50 users includes:
  • ArcMap, ArcGIS Pro, Arcgis Online, Survey123, Story Maps, Business Analyst Online, Community Analyst Online, ArcGIS Enterprise Server, CityEngine

• https://www.platinumsystems.net/blog/why-legitimate-licensing-important-your-business
Learning Environment: Online

- Blackboard
- Weekly ArcGIS Desktop assignments
- 4 Quiz/Exams
- Term Project in the student’s discipline
- Each Week Materials:
  - Enhanced assignment instructions
  - Files (when not on the Internet)
  - Detailed instruction video
Beyond Google Maps -> Wanted to introduce a more meaningful web-based GIS Experience

• First week Google Maps Assignment
• Intrigued by field collected data
• Experimented with Collector
• Attended Education Summit/UC 2016
• Exposed to Survey 123
• Experimented with an Survey123 with Selfies
Initial Experiment – Introduce Yourself
Survey123: Restaurant App/Form: Design
Download Survey123 App – Collect Data

ESRI Education Summit, 2018
Survey123: Restaurant Data Analysis
Survey123: Export Restaurant Data
ArcGIS Online: Create a free account
Create the Restaurants Web Map
Create Web Application
Configure the Web Map Application
Launch the Configured Map
Extra Credit: Enhance the map and answer some questions (e.g., Identify restaurants in high/low neighborhoods). **Enhanced Map**
## Student generated crowdsource ideas

<table>
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<th>Idea</th>
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<tr>
<td>U-Bar</td>
<td>Collect location of bars and other nightlife options for college students, ages 18 and up</td>
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<tr>
<td>WifiSpotter</td>
<td>This app will collect the various locations of public wifi spots and their corresponding strengths.</td>
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<tr>
<td>Flood Control</td>
<td>For a person to record an area they believe is at risk of flooding and recommend ways of fixing the issue</td>
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<tr>
<td>Flash Sales Buzzer</td>
<td>It would use phone's GPS signal and user input to gather real time data about flash sales at various outlets.</td>
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<tr>
<td>RunningMate</td>
<td>Describe locations of running trails</td>
</tr>
<tr>
<td>Deer Spotted</td>
<td>Locations with maximum deer crash rates</td>
</tr>
<tr>
<td>The Street Guide</td>
<td>This application will provide intricate details like restrooms, food trucks, water fountains, etc. that aren't provided in Google Maps or Apple Maps.</td>
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<tr>
<td>GIS HELP</td>
<td>It collects location of crime scenes and notify the security present particularly in that region.</td>
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<tr>
<td>NCAA bar scanner</td>
<td>An app that will tell you where all the specific college bars are in NYC so that you can meet up with fellow fans to watch your alma matter play.</td>
</tr>
<tr>
<td>Street Clean up</td>
<td>Is bystanders see something wrong with the area that need to be cleaned up professional they take a picture of the scene and it alerts local authorities</td>
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<tr>
<td>Doggy Park Club</td>
<td>Location of Dogs in a dog park for another dog to have a friend in a park. So owners can take their pets to the park whenever their pets favorite friend is there.</td>
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Next Steps

- 9/2018 - Enhance module(s) with Survey123 assignment based on smartphone App ideas
- 1/2019 - Web-based GIS Course offered (becomes the 1st Course)
- 9/2019 - Desktop Spatial Analysis/Statistics introduced
- 9/2020 - Concentration in the MS/IS

- Web-based GIS
  - Basic concepts (ArcGIS Online)
  - Spatial Analysis
    - Selection
    - Density
    - Proximity
  - Location Analytics (Business Analyst Online)
  - Survey123 and Web Map Apps
  - Story Maps
Conclusion

• Thank you!

• Questions and Suggestions?