Spatial Pattern of Flash-flood Vulnerability in Texas

Team 4

About us

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Motivations & Objectives

TEXAS A&M UNIVERSITY

- Motivation
  - Dangerous
  - But difficult to monitoring

- Objectives
  - Python Toolbox
    - Generate maps
    - Spatial pattern of vulnerability to flash-flood

Data & Methods

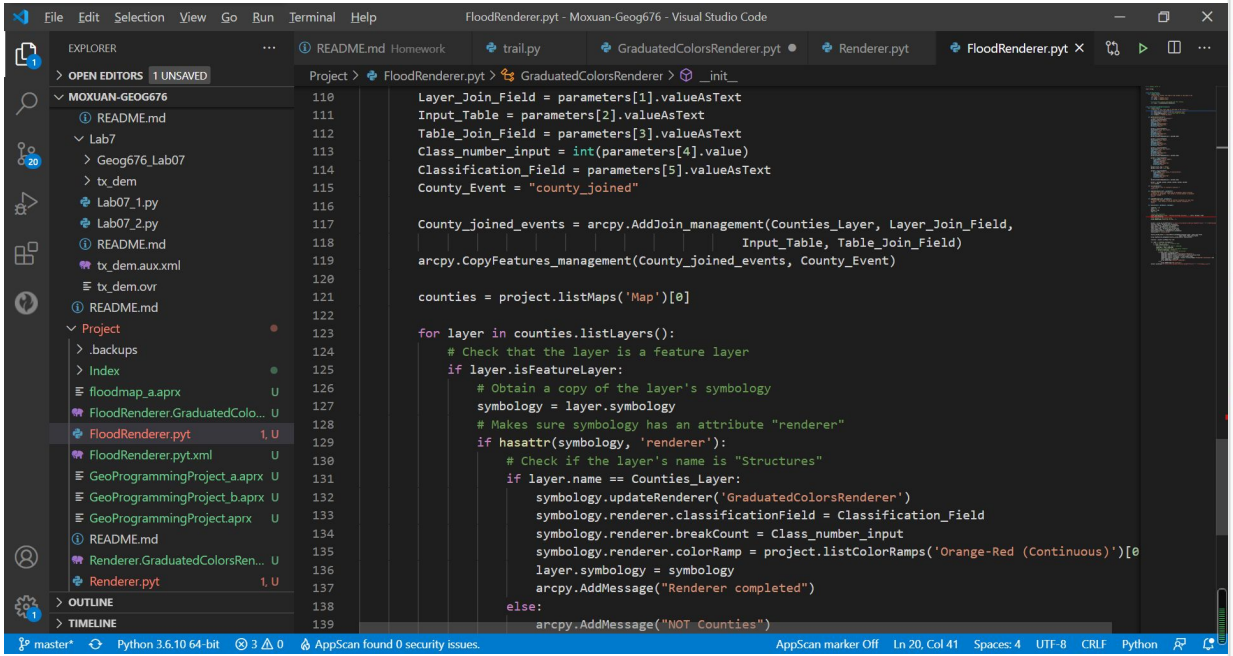
- Data
  - Event Data
    - Provided by NOAA
  - County Shapefile
    - Provided by Texas Department of Transportation
- Method
  - Join the event data with county shapefile
  - Using Average Hourly Damage Per Capita (AHDPC) as the index of Vulnerability
  - Visualize it via graduated colors renderer

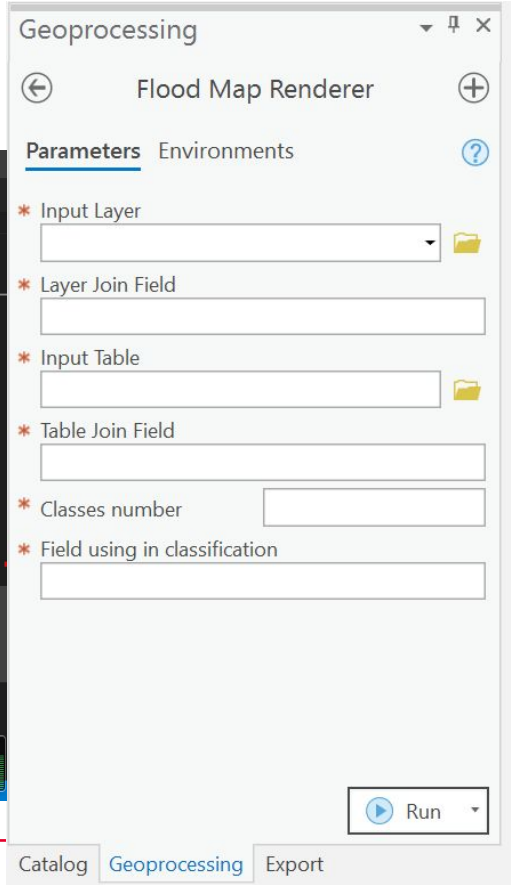
Programming Components

- Python Toolbox
  - Flood Map Renderer
    - User-defined input layer and input table
    - Join the layer with the table
      - User-defined fields
    - Render the map by Graduated Colors Renderer
      - User-defined field for classification

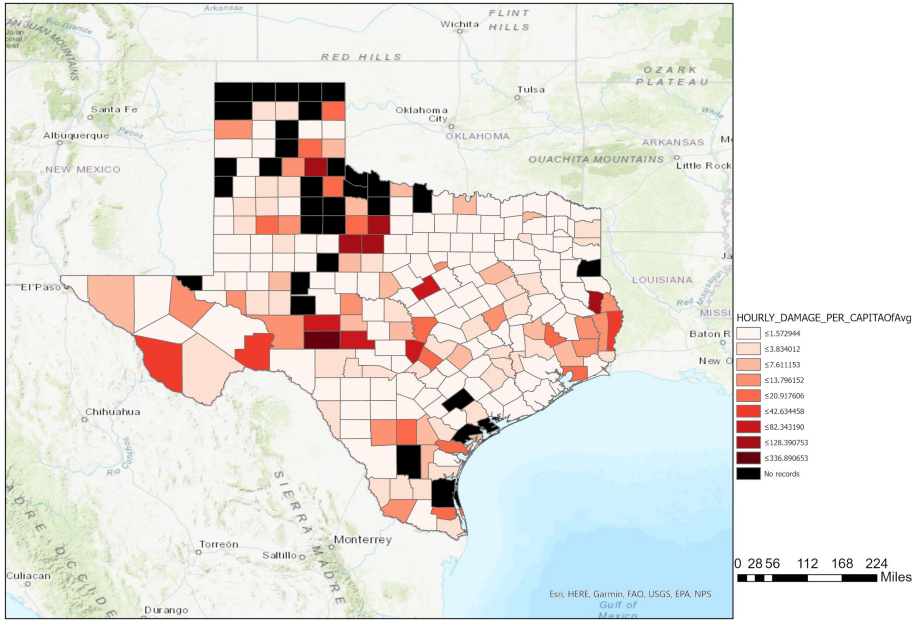
Programming Components

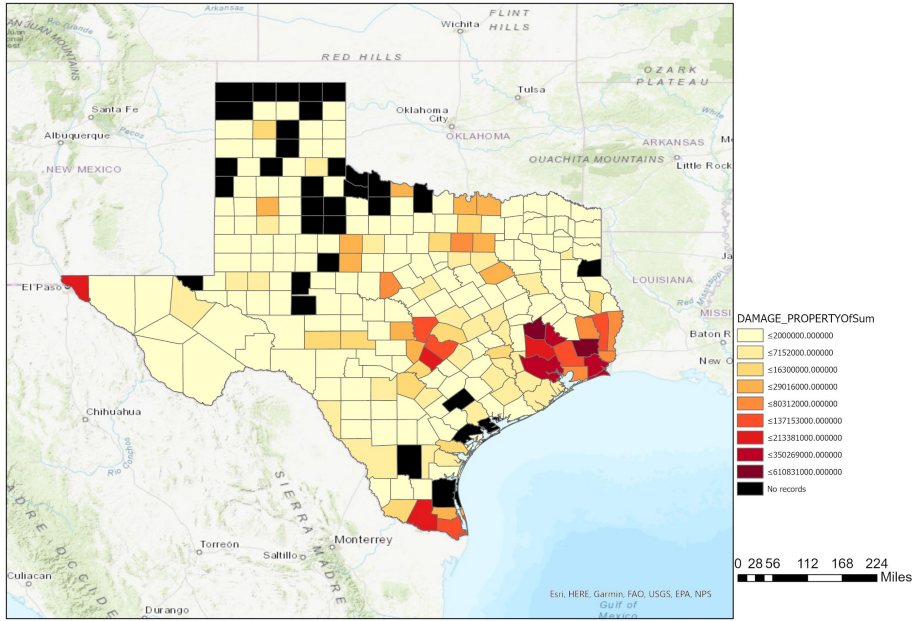
- Python Toolbox





Results & Discussion





Results & Discussion

- Average Hourly-Damage Per Capita (AHDPC)
  - Used to evaluate the Vulnerability
  - High vulnerability areas:
    - Surrounding Houston
    - Some Inland areas
- Total Damage vs. AHDPC
  - Inconsistent
    - High damage but not high AHDPC
      - Hays & Hidalgo
    - Low damage but high AHDPC
      - Some inland areas

Thanks for Your Attention!