R and Leaflet

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Plotting data on a map using R and Leaflet

Agenda

- Overview of Leaflet
- Requirements to use Leaflet
- Cleaning the Data
- Plotting the Data
- Code examples
- Questions

Overview - Leaflet

Leaflet is a lightweight JavaScript library appropriate for general mapping applications including on mobile devices. There is a Leaflet package for R that enables mapping directly from an R application.

Today we'll take a quick look at how simple it is to take data from R and place it on a map.

Requirements

- R, I recommend RStudio
- Packages - We'll cover these in the demo
- Data with latitude and longitude information

Cleaning Data

Cleaning the data involves:

- Reading the data into an R dataframe
- Taking care of NAs and corrupt data
- Making sure the data classes are correct for your purposes
- There is a lot more to cleaning data depending on your objective

Plotting

Once the data has been stored in an R dataframe and cleaned you are ready to use Leaflet to plot the data on a map. This will be covered in more detail during the code review and demo.

Demo and Code

The demo is derived from a project that was part of the Johns Hopkins data science course. The code, and data, has been included in this repository or you can clone it directly from my public GitHub repository at Seamans - StarbucksUSA. There are a number of other public projects from the data science course in my GitHub repository. Feel free to clone any of them.

Links

- StarbucksUSA GitHub
- StarbucksUSA Shiny App
- Starbucks-In-Arizona GitHub
- Starbucks-In-Arizona WebPage
- OpenStreetMap

Questions

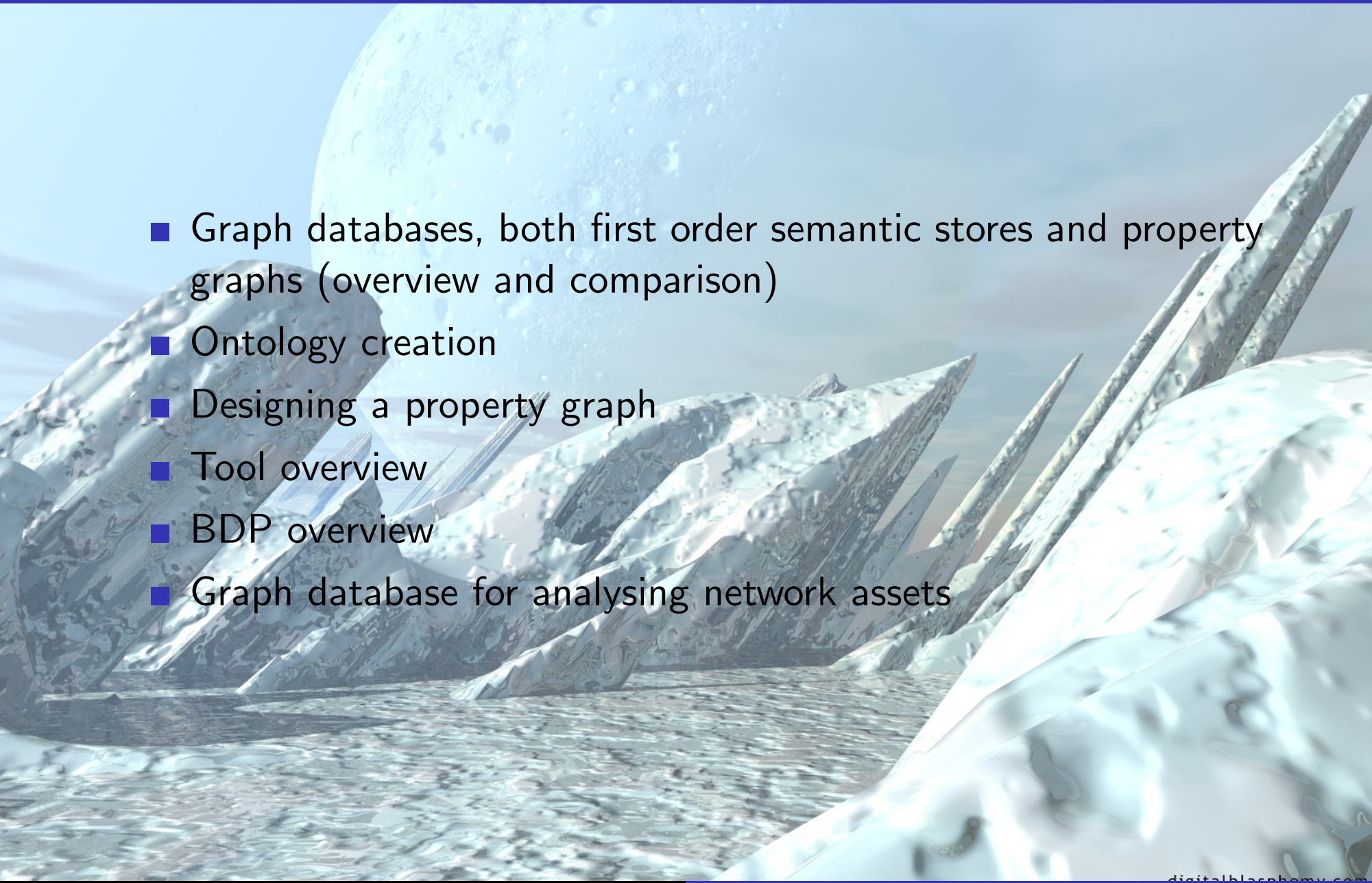
R Brown Bags

- Documentation with R - Knitr (Scheduled for 31 January 1130 - 1215)
- Installing RStudio
- Data loading from (flat files in various formats, databases)
- Integrating R with Big Data sources.
- Data cleaning
- Statistical Inference (Would need to be split up.)
- Machine learning (would need to be split up in to several, e.g. Intro including partitioning/cleaning datasets, Random Forests, Nave Bayes, Boosting & Bagging, etc)
- Exploratory data analysis techniques
- Regression modelling
- Creating custom R packages
- Misc topics including RStudio (feeding and maintenance), Shiny, Plotly, etc.

Software Security Brown Bags

- Using Kali
- Overview of software security best practices (development)
- Penetration testing
- Overview of tools for developing/analyzing secure software

General Topics Brown Bags



- Graph databases, both first order semantic stores and property graphs (overview and comparison)
- Ontology creation
- Designing a property graph
- Tool overview
- BDP overview
- Graph database for analysing network assets