July 11, 2018

Course: CIS570 – Business Intelligence
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Assignment: Final Exam
Due Date: Wednesday, July 11@ 11:59pm

Re: PowerBI Visuals and Description Information

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Domestic Flight Routes – Sankey Diagram

Data Set Description

I. Location: https://www.kaggle.com/miquar/explore-flights-csv-airports-csv-airlines-csv/data
II. Contains US domestic flight route information and relevant statistics such as flight origin/destination, flight time, miles, delays, etc.
III. Directed network data set of airport routes
IV. 10,397 Records

Data Transformations

I. None required – data used as is

Visual Elements

I. Sankey Diagram
    a. Custom Import
        i. https://appsource.microsoft.com/en-us/product/power-bi-visuals/WA104380777?tab=Overview
        ii. **NOTE**: this **MUST** be installed for the visual to work correctly
            1. PowerBI\Visual1-USFlight-Sankey\SankeyDiagram.1.9.0.0.pbiviz
II. Controls
    a. Slicer 1
        i. Source Airport selector
    b. Slicer 2
        i. Destination Airport selector
    c. Slicer 3
        i. Airline selector
    d. Table
        i. Displays relevant statistics for a given or range of flights based on slicer selection(s) or specific Sankey route
        ii. Carrier, Tail#, Distance, Arrival Delay, Departure delay

Narrative

- The visual I created using this data set incorporates a Sankey diagram and identifies domestic flight routes between source and destination airports.
- The user can select relevant source, destination, and carrier options using the slicers to narrow down or expand the visible Sankey routes
- When placing the cursor on a route line, the source and destination airports are shown along with the number of flights that have been made for that route

Global Earthquake Locations – Geo Map

Data Set Description

I. Location:
II. Contains global earthquake specific data over a 7day period. Includes region of occurrence, latitude/longitude, magnitude, depth, datetime.
III. Designed for use with geo-based visuals
IV. 1,176 Records

Data Transformations

I. None required – data used as is

Visual Elements

I. ESRI ArcGIS Mercator Map
II. Controls
    a. Slicer 1
        i. Region Selector

Narrative

I. This visual I created using this data set incorporates the use of an ESRI ArcGis visual. Earthquakes are grouped together by region and displayed on a global Mercator map.
II. Using the slicer, the user view earthquake data from any of the available regions.
III. By placing the cursor on any of the visible bubbles an interactive popup is displayed that allows selection of any of the earthquakes that have occurred within the specific sub region
    a. The left and right selection arrows are used to navigate between the various earthquakes.
    b. Attributes include:
        i. Number of occurrences
        ii. Magnitude
        iii. Depth
        iv. Specific latitude & longitude
        v. Date and time of the occurrence

University Peer Institution Funding – Stacked Bar Chart (Donut, Tree-Map optional)

a. Data Set Description
    I. Location: Colorado State University
        1. http://irpe-reports.colostate.edu/peer-institutions.aspx
    II. Contain National Science Foundation (NSF) award totals from the years 2003-2012 for CSU and its associated peer universities.
    III. 149 Records

Data Transformations

I. None required – data used as is

Visual Elements

I. Stacked Bar Chart
II. Donut Chart (optional)
III. Tree-Map (optional)
IV. Controls
    b. Slider 1
        I. Year Selector
    c. List 1
        I. Institution Selector

Narrative

I. This visual is used to contrast and compare NSF funding for the years 2001-2012 for the 13 identified Colorado State University peer institutions
II. User can select year and institution on any chart and can compare NSF funding between institutions to measure funding and award performance
III. By placing the cursor on any bar segment, a visual popup is displayed which identifies the institution name, award year, total award amount, and a count of the number of awards received