Introduction to Power BI: Making Visualizing Data More Accessible

Michelle Tin
Office of Institutional Research and Assessment
The University of Alabama
What does “BI” stand for?

• The “BI” in Power BI stands for **Business Intelligence**

  – Technology-driven analysis of data for the purpose of making strategic decisions
Power BI Desktop Workspace
Power BI Desktop Workspace
The Visualizations panel has buttons for the most commonly used items such as bar charts and line graphs, as well as more advanced visualizations like waterfall charts and geographic maps. You can also import custom visualizations from templates or from the Microsoft marketplace.
Line and Clustered Column Chart

Undergraduate Academic Reputation

(Institution names hidden per Data Use Agreement)
Stacked Horizontal Bar Chart

Categorical Expenditures for Fiscal Year 2018

- University of Illinois—Chicago
- University of Utah
- University of Arizona
- Arizona State—Tempe
- University of Kentucky
- University of Colorado—Boulder
- Temple University
- University of Kansas
- University of Cincinnati
- University of South Florida
- University of Tennessee
- Iowa State University
- Louisiana State—Baton Rouge
- Average (not including UAs)
- Oregon State University
- University of South Carolina
- Auburn University
- University of Alabama
- University of Missouri
- University of Nebraska—Lincoln
- University of Oregon
- University of Oklahoma
- University of Arkansas
- George Mason University
- University of Vermont
- University of Texas—Dallas
- University at Albany—SUNY
- San Diego State University
- University of New Hampshire
- Rutgers University—Newark
- University of California—Merced
- Michigan Technological Univ.
- SUNY Coll. of Env. Sci. & Forestry

- Academic Support (FY18)
- Institutional Support (FY18)
- Instruction (FY18)
- Public Service (FY18)
- Research (FY18)
- Student Services (FY18)

Expenditures in Millions ($)
Data Management
Data Management

The “Transform Data” option opens the Power Query Editor.

You can edit your data at this point, or click “Load” to complete the import and open the Query Editor later if you need to.
Power Query Editor

Right click cell to edit

Click for dropdown options
Power Query Editor

Right click column for options
Transformation options are automatically different for text and numeric variables
Power Query Editor

You can also edit your data outside of PBI, then right click on the dataset and select “Refresh data”. As long as the path is still valid, any changes will update on your visualizations.
An empty dummy graph appears in your workspace when you choose a visualization. Drag and drop variables from the Fields section onto the empty graph or into the appropriate section on the Visualizations pane. PBI will do nothing if you try to drop a variable into a section that requires another data type.
Visualizations
Visualizations

The diagram shows a bar chart comparing enrollment numbers across different universities. The universities listed include:

- The University of Alabama
- Auburn University
- Troy University
- Samford University
- University of West Alabama
- Athens State University

The chart indicates enrollment numbers for men and women in the specified academic years. The University of Alabama has the highest enrollment, followed by Auburn University and Troy University. The University of West Alabama and Athens State University have the lowest enrollment numbers.
Visualizations
Visualizations

The University of Alabama
Visualizations
Visualizations
Visualizations

The University of Alabama

Auburn University

Troy University

Samford University

Athens State University

University of West Alabama
Visualizations

- Institution Name
- Legend
- Y axis
- X axis
- Data colors
- Data labels
- Plot area
- Title
- Background
- Lock aspect
- Border
- Tooltip
- Visual header
Visualizations

- **X axis**: On
- **Data colors**: Off
- **Data labels**: Off
- **Plot area**: On
- **Title**: On
  - **Title text**: Fall 2018 Enrollment by Sex
  - **Word wrap**: Off
  - **Font color**: Black
  - **Background color**: White
  - **Alignment**: Center
  - **Text size**: 14 pt
  - **Font family**: DIN
- **Color**:
  - **Text size**: 9 pt
  - **Font family**: Segoe UI
  - **Display units**: Auto
  - **Value decimal places**: Auto
  - **Title**: On
    - **Style**: Show title only
    - **Title color**: Black
  - **Axis title**: Enrollment
  - **Title text size**: 12 pt
Visualizations
Visualizations
Visualizations

- Grand total men (EF2018A All students Undergraduate total)
  - Color choice:
- Grand total women (EF2018A All students Undergraduate total)
  - Color choice:

Options:
- Revert to default
- On/Off switch for color display
Visualizations

Fall 2018 Enrollment by Sex

- The University of Alabama
- Auburn University
- Troy University
- Samford University
- Athens State University
- University of West Alabama

Enrollment

0K 5K 10K 15K 20K 25K 30K 35K
Visualizations
Visualizations
Visualizations

Export to PDF

• Generating a PDF of your report ...

Cancel
All done!

Fall 2018 Enrollment by Sex

- The University of Alabama: 14.6K men, 18.4K total
- Auburn University: 12.7K men, 11.9K total
- Troy University: 5.2K men, 8.3K total
- Samford University: 1.2K men, 2.4K total
- Athens State University: 0.9K men, 2.0K total
- University of West Alabama: 0.9K men, 1.3K total
Power BI Products

• Power BI Desktop
  – **Free** Windows application for PC
  – Can upgrade to Power BI Pro ($10/month)

• Power BI Service
  – Power BI Premium (~$5,000/month)
  – Online cloud-based Software as a Service

• Power BI Mobile Apps
  – Viewer for Windows, iOS, and Android devices
Go from data to insight to action with Power BI Desktop

Create rich, interactive reports with visual analytics at your fingertips—for free.