



Comparative Analysis of Data Visualization Using Tools in Data Science

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ABSTRACT:

Power bi could be a data visualization tool and tableau could be a data intelligence tool and r programming is for analysing a data in graphs. In power bi, the cost is cheap and easy to use and volume of data is limited and the speed is slow compared to others. In tableau, the cost is high and hard to use and the volume of data is not limited and the speed is high compared to others. In R programming, the cost is very low and easy to use and the volume of data is limited and the speed is very slow.

Keywords: Tableau-Powerbi-Rprogram-Analysis-Data.

INTRODUCTION:

Data visualizations are tools which such as graph used for data analysis by data scientists and data analyst. It is easier to work comfortably with data. It is effective because time is saved. Tools used for data visualization are varying often. Marketing of data is also done here. The proper data visualization tools can bring the facility of information analytics to simply about any user in a corporation. From marketing to finance to HR and other departments, data visualization tools make massive amounts of data from proprietary to external sources—interpretable and actionable across different lines of business. There's great marketing potential within the practice of constructing data more meaningful to people throughout your organization. This practice results in data-driven decision-making, pattern identification, increased efficiency, and new insights.

Data visualization tools are:

- Tableau
- Power BI
- R Programming

TABLEAU:

About tableau:

Tableau disrupted business intelligence with intuitive, visual analytics for everybody. Tableau was founded in 2003. Aimed to enhance the flow of research and make data more accessible to people through visualization. Tableau helps people drive change with data. Data has limitless potential to rework businesses and also the world as long as people are empowered to use it. Our community is using Tableau to make an information culture and to vary lives.

Working mechanism of Tableau:

The major work of Tableau software is to connect and also to extract the knowledge stored within the assorted places. It can pull data from any platform. Tableau can extract data from any database, be it Excel, PDF, Oracle, or perhaps Amazon Web services. Tableau uses a workbook and sheet file structure, very kind of like Microsoft Excel. These dashboards make it easier for non-technical analysts and end users to convert data into understandable, interactive graphics.

Steps involved in Tableau:

Step 1: Learn everything there's to know about the first runner and how to tie your data to it.

- Step 2: Drag and drop to bear a primary appearance. Get to know the Tableau workspace, learn the Tableau language, and start analysing your data.
- Step 3: Concentrate your Issues To enhance your views and acquire perceptivity into your data, ask further questions and use other tools.
- Step 4: Fantasize your data on a chart. To see if you will be suitable to notice any trends, learn how to compass your data on a chart.
- Step 5: Drill into the teen print. Drill down into the most important aspects of your data and figure out how to produce a top sludge.
- Step 6: Produce a dashboard to display your findings. Learn how to make and structure a dashboard to show off your visualisations.
- Step 7: Produce a donation Story To convey your findings, learn how to produce and format a story.
- Step 8: Present your findings to others. Partake your findings with your Platoon using Tableau Garçon or Tableau Desktop.

Features of Tableau:

Tableau provides the following features, depending on its usability: Easy to access from various sources, no requirement for technical or programming skills, and Quick reaction time while creating a dashboard. The data file can be downloaded locally on mobile or desktop for quick access and analysis, multilingual data representation, realtime exploration of any data set and so on. It provides a number of advanced capabilities for connecting and sharing data, including collaboration and distribution, high security, many data sources connections, and easy import and export of large amounts of data.

POWERBI:

About Power BI:

It's a group of software services, apps, and connectors that employment together to remodel your disparate data sources into coherent, visually immersive, and interactive insights. Your data might be within the type of an Excel spreadsheet or a hybrid data warehouse that's cloud-based and on-premises.

Working mechanism of Power BI:

The Microsoft Power BI connects the information sources and provides the users with a business intelligence dashboard. It can link with an Excel spreadsheet or will bring the cloud based and on-premises the info warehouses the together. The data is automatically refreshed from the cloud-based the sources like Salesforce

CRM.

Steps involved in Power BI:

- Step 1: Using Power Query to connect your data sources.
- Step 2: Querying Data and Importing it into the Navigator.
- Step 3: Changing the Table's Queries.
- Step 4: Refining the Data to Your Specificati ons.
- Step: Merging Queries from Different Tables. Step 6: Open Power BI Desktop and load the report.

Features of Power BI:

Product Updates Every Month (all), Extrapolate information from big datasets (varies), R and Python can be used to create custom visualisations (all), Examine your data in Excel (Pro or Premium only), Use your data to create attractive maps (all), Power Query makes it simple to find and transform data (all), Data refreshes on an ongoing basis (Pro or Premium only), App for Power BI on Mobile (all), Datasets can be reused in several reports and dashboards (Pro or Premium only), Integration with other Microsoft products is strong (varies).

R PROGRAMMING:

About R programming:

The R Core Team and the R Foundation for Statistical Computing support R as a statistical computing and graphics programming language. R is a statistical programming language developed by statisticians Ross Ihaka and Robert Gentleman. It is used by data miners and statisticians to analyse data and develop statistical software.

Working mechanism of R programming:

You can use R to clean, analyse, and graph your data because it is a computer language for statistical computation and graphics. It is frequently used by researchers from a variety of disciplines to estimate and display results, as well as by statisticians and research techniques instructors.

Steps involved in R Programming:

- Step 1: Why should you learn R? The first step is the setup.
- Step 2: Recognize the R Syntax. R-> packages is the third step. Step 4: Can you assist me?
- The Data Analysis Workflow is the fifth step.

Step 5: Data Importing and Manipulation of Data

Step 6: Become a R guru and start learning new things

Features of R programming:

Open-source, R is an open-source software environment, Strong Graphical Capabilities, Highly Active Community, A Wide Selection of Packages, Comprehensive Environment, Can Perform Complex Statistical Calculations, Distributed Computing

Computing,	Running Code	Without a
Compiler,	Distributed	Computing
Computing,	Running Code	Without a
Compiler.		

V.Conclusion:

Tableau is widely used for business applications since it includes more particular functions such as creating worksheets, being easily accessible, requiring minimal technical knowledge, and supporting enormous volumes of the data. Power BI is a cloud- based business analytics application that allows you to create live views of your whole data set. Connecting to data in SQL Server Analysis Services on premises, data from Microsoft Cloud assets like Dynamics and Office 365, or data from Azure data services like SQL DB, Azure Stream Analytics, or a partner solution hosted on Azure.Both intellectually and financially, computer programming may be a very satisfying vocation. Programmers must be open to learning new skills and tackling difficult situations.Web, mobile, game development,and systems engineering are just a few of the programming topics to investigate.

TABLE 1:COMPARISION OF DATA VISUALIZATION TOOLS

Parameters	Tableau	Powerbi	R programming
Speed	Very fast	Slower	Slower
Usage	Hard to use	Easy to use	Easy to use
Cost	High	Low	Cheap

REFERENCES:

- Marija Blagojevic, Zivadin Micic, "A web-based Intelligent report e-learning system using data mining technique, Computers and Electrical Engineering, Elsevier, 2013; 39: 465-474.
- Agarwal, R., Gao, G., DesRoches, C., Jha, A.K., 2010. "Research commentary — the digital transformation of healthcare: current status and the road ahead." Inf. Syst. Res. 21(4), 796–809.
- Bezanson J, Edelman A, Karpinski S, Shah VB (2015). "Julia: A Fresh Approach to Numerical Computing." arXiv:1411.1607.
- Daniel J. "Power, Understanding Data Driven Decision Support Systems, Information Systems management 2008" 25: 2, 149-154.
- Bodenheimer, T., 2005." High and rising health care costs. Part 1: seeking an explanation." Ann. Intern. Med. 142 (10), 847