HINDU COLLEGE, AMRITSAR

PG Department of Computer Science & Applications

Fundamental of Data Analysis Using Tableau

Add on Courses

PG Department of Computer Science & Applications

Academic Year 2022-23

Date 10/08/2022

NOTICE

All the students of our institute are hereby informed that the PG Department of Computer Science & Applications is going to start value added Certification course on 16 August 2022, as per the following schedule: -

Course Name	Timing
Fundamental of Data Analysis using Tableau	8.20 AM to 9 AM

Course Coordinator

Course Content: Fundamental of Data Analysis using Tableau

Course Outcome:

- By the end of this course Students understand the inner workings of the data analytics pipeline from joining, filtering, extracting data to developing dashboards.
- By the end of this course you'll understand the inner workings of the data analytics pipeline from joining, filtering, extracting data to developing dashboards.
- Develop a solid understanding of how calculations on Tableau work.
- Work with sets and Level of Detail Calculations.
- Be able to create in depth analyses with bar charts, line charts, donut charts and even geographical maps.
- Be able to understand joining data sources on Tableau and understanding types of joins

Syllabus

1. Introduction to Tableau

2. Creating our first visualizations
User Interface - Data Source page, sheets tabs and status bar, User Interface - Side Bar, Shelves and Card, Dimensions v Measures, and Introducing Date Hierarchies, Explain the difference between Discrete and Continuous fields, Changing the aggregation, both for a single viz, or changing default aggregation

3. Publishing our first visualizations
Exporting as PowerPoint, Share as image, PDF and PowerPoint presentation, Additional exporting options in the full Tableau Desktop program, Error saving to Tableau Public, Practice Activity Number 1

4. Developing the marks card
Tips to importing data better, Organising fields, Creating aliases, Adding multiple fields using Show Me!, Adding colors, Choosing between discrete and continuous colors, Using colors in stacked bar charts, and using tooltips, Line charts, Size button, Practice Activity Number 2

5. Scatter and Bubble charts, data highlighter and Filtering
Scatter plots, Custom shapes, bubble charts, and packed bubbles, Data Highlighter, Filters card - Selecting Items, Filter card - Using wildcards, conditions and top, Filtering dates, and different displays of filter cards, Practice with Filters, and using Context Filters, Apply filters to multiple sheets and data sources

6. The Pages Shelf, Labels and Annotations
Pages card, Use viz animations, Use mark labels, Use Annotations, Formattingvizzes, More about Tableau Public, Practice Activity Number 3

7. Dashboards
Creating our first dashboard, Pre-designing the layout, and using floating and tiled objects, Rearranging the filters in a vertical column, Fine-tuning layout, Device Layout and Device Designer, including layout for mobile devices, Dashboard filters and using a highlight as a filter, Fine-tuning dashboard actions, Creating a drill down report, Best visual practices for dashboard design, Buttons/Navigation and Export objects, Renaming Dashboard Items, Build stories, Practice Activity Number 4

8. Maps
Navigate maps, including Pan & Zoom, and geographic roles, Lasso and Radial selection, and grouping into custom territories, Density Maps, Map layering, Geographic search, Modifying locations within Tableau, and problems, Practice Activity Number 5

9. Organizing and simplifying data
Build hierarchies, Combining hierarchies and filters, Sorting data - an introduction, Sort data, including manual sorting, Changing default field properties (types, sorting etc.), Build groups, Build sets, Practice Activity Number 6

10. Field and Chart Types

Utilize auto-generated fields, including measure names and values, Basic chart types, including area and pie chart types. Use titles, captions and tooltips effectively, Using vizzes in tooltips, Edit axes, Creating bins, Histograms, Heat maps and Cross tabs, Tree maps, Combined Axis Charts and Dual Axis Charts, Scatter plots revisited, Practice Activity Number 7

11. Advanced Field and Chart Types with Basic Analytics

Instant Analytics - Constant and Average Lines, Median and Average with Confidence ,intervals, and Clusters, Reference Lines, Desktop Specialist certificate, Reference Bands and Reference distributions, Box plots, Bullet graphs, Statistical summary card, Create quick table calculations, Paretos, Practice Activity Number 8

12. Gantt Bar chart, calculations and date Analytics

Gantt Bar Charts, Sparklines, Creating a date calculation, Creating an arithmetic calculation and use ad-hoc calculations, Trend lines and Trend model, Forecasting, Quick table calculations using date ,Practice Activity Number 9

13. Working with data sources

Joining tables from single data source - Relationships (Tableau 2020.2 or later), Joining tables from single data source, Creating data source with multiple connections + replacing existing data sources

14. Calculations

Work with aggregation options, Build logic statements, Manipulate string calculations, Manipulate date calculations, Write type conversion functions, Build arithmetic calculations, Build grand totals and sub-totals, Formulas used in Quick Table Calculations, Create a predictive model, Practice Activity Number 10

15. Parameters

Parameters, Dynamic Parameters and using Parameters with filters, Using parameters with reference lines, Swap sheets by using parameters or sheet selector

16. Fixed level of detail calculations

Calculating percentage of running total – Reminder,FIXEDLOD,Different contexts for the FIXED LOD, Using FIXED LODs and Filters, A quick way to make FIXED LODs, Practice Activity 11, Dynamic Parameters and LODs - and a Practice Activity

17. Data Connections Part 1

Tableau 2020.2 and later, Use calculations in join clauses, Union, Prepare Data For Analysis – Blending, Pivot and Data Interpreter, About the next two videos...,Join tables from single and multiple file types or databases, Understand how to use Automatic & Custom Split

18. Data Connections

Installing Tableau Desktop, Connect to different file types and Tableau Server, Pull data from relational databases by using custom SQL queries, Create data extracts - differences between live connections and extracts, Save metadata properties in a .TDS file, Understand Shadow extracts

19. Other aspects of Tableau Desktop and Tableau online

Printing content and publishing visualization or workbook, Create extract filters, connect to .hyper files, and publish a data source, Schedule data extract refreshes, Create subscriptions ,Create alerts

20. Creating data Flows

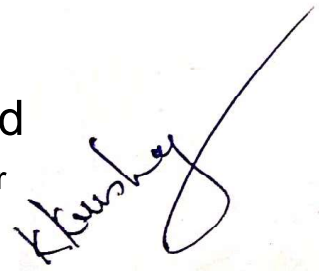Creating a data flow, Managing, editing and running data flows

List of Students for
Add on Course on Fundamental of Data Analysis using Tableau

The following students have been enrolled in Add on course.

Roll Number	Name
7701	Gitish Kumar
7703	Tanvi Arora
7704	Anitya Sharma
7712	Kapil
7713	Karan Sharma
7719	Agam Mehra
7722	Sunil
7727	Nishan Singh

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Register of Daily Attendance of _____ fundamental DA way Tablew _____

Class for the month of _____ July–Dec _____ 20

Roll No.	Name of Scholar	16/7	17/8	18/8	19/8	8/10	8/22	23/8	24/8	25/8	26/8	27/8	30/8	4/9	1/9	5/9	8/9	7/9	10/9	12/9	14/9	15/9	11/9	20/9	22/9	23/9	24/9
7703	Tanni Arora	P	P	P	A	P	P	P	A	P	P	P	P	P	P	P	A	P	A	P	P	P	P	A	P	P	P
7701	Gutesh Kumar	P	P	P	P	A	P	P	P	P	P	P	P	P	A	P	P	P	A	P	P	P	P	A	P	P	P
7719	Agam Mehra	P	P	A	P	P	P	P	A	P	P	T	A	P	C	P	P	P	P	A	P	P	P	P	P	P	P
7204	Amitya Sharma	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	
7712	Kapil	P	A	P	P	A	P	P	A	P	P	A	P	P	P	P	P	P	P	P	P	P	A	P	P	A	P
7713	Karan Sharma	P	P	P	A	P	P	P	A	P	P	P	P	P	P												
7722	Sunil																										
7727	Nishan Singh																											

Roll No.	Name of Scholar	27/9	28/9	29/9	39/9	1/10	3/10	4/10	4/10	13/10	13/10	17/10	15/10	17/10	11/10	19/10	20/10
7701	Gutesh Kumar	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P
7703	Tanni Arora	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A
7204	Amitya Sharma	P	A	P	P	P	P	P	P	P	P	P	P	P	P	A	A
7712	Kapil	P	P	P	P	A	P	P	P	P	A	P	P	P	P		
7713	Karan Sharma	P	P	P	P	A	P	P	P	P	P	P	A	P	P	P	P
7719	Agam Mehra	P	A	P	P	P	P	A	P	P	P	P	P	P	P	P	P
7722	Sunil	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P
7727	Nishan Singh	A	P	P	P	P		P	P	P	P	P	P	P	P		

Tanvi Arora → Gutesh Kumar
Tanvi Arora
Amitya
Kapil
Karan
Agam Mehra
Sunil
Nishan Singh

MM: 60
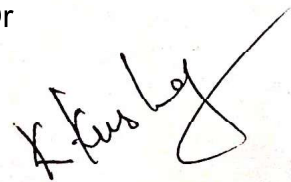
allowed: 1 Hour

1. Which one of the following is not a valid data type in Tableau?
A. String   B. Integer
C. Boolean   D. Complex

2. Which of the following statements is true about Tableau?
A. Tableau is a relational database management system.
B. Tableau is a business intelligence and data visualization tool.
C. Tableau is a programming language used for statistical analysis.
D. Tableau is an operating system.

3. Which one of the following is not a type of join in Tableau?
A. Inner join   B. Left join
C. Right join   D. Top join

4. Which one of the following is not a valid aggregation function in Tableau?
A. Sum   B. Count
C. Average   D. Maximize

5. Which one of the following is not a valid chart type in Tableau?
A. Line chart   B. Bar chart
C. Pie chart   D. Cube chart

6. What is a dimension in Tableau?
A. A measure that is computed based on the values of one or more dimensions.
B. A column in a data source that contains categorical data.
C. A data type used to represent numerical values.
D. A type of join used to combine data from multiple tables.

7. What is a measure in Tableau?
A. A column in a data source that contains categorical data.
B. A data type used to represent numerical values.
C. A type of join used to combine data from multiple tables.
D. A value that can be aggregated or computed based on other measures.

8. Which one of the following is not a valid filter type in Tableau?
A. Dimension filter   B. Measure filter
C. Table filter   D. Context filter

9. What is a parameter in Tableau?
A. A type of chart that displays values as bars.
B. A value that can be used to dynamically change the behavior of a calculation.
C. A type of data source that is optimized for live connections to data.
D. A type of join used to combine data from multiple tables.

10. What is a calculated field in Tableau?
A. A column in a data source that is created by performing a calculation on existing columns.
B. A chart that displays values as bars.
C. A type of data source that is optimized for live connections to data.
D. A type of join used to combine data from multiple tables.

11. What is a hierarchy in Tableau?
A. A type of chart that displays values as bars.
B. A grouping of related dimensions that can be navigated hierarchically.
C. A type of data source that is optimized for live connections to data.
D. A type of join used to combine data from multiple tables.

12. What is a group in Tableau?
A. A grouping of related dimensions that can be navigated hierarchically.
B. A type of chart that displays values as bars.
C. A type of data source that is optimized for live connections to data.
D. A type of join used to combine data from multiple tables.

13. What is a bin in Tableau?
A. A way to group numeric data into discrete ranges.
B. A type of chart that displays values as bars.
C. A type of data source that is optimized for live connections to data.
D. A type of join used to combine data from multiple tables.

14. What is a dual axis chart in Tableau?
A. A chart that combines two different chart types on the same axis.
B. A chart that displays values as bars.
C. A type of data source that is optimized for live connections to data.
D. A type of join used to combine data from multiple tables.

15. What is the difference between a worksheet and a dashboard in Tableau?
A. A worksheet is a single chart or table, while a dashboard is a collection of worksheets.
B. A worksheet is a collection of worksheets, while a dashboard is a single chart or table.
C. A worksheet is used for data exploration, while a dashboard is used for data analysis.
D. There is no difference between a worksheet and a dashboard in Tableau.

16. What is the difference between a measure and a dimension in Tableau?
A. A measure is a type of chart, while a dimension is a type of data.
B. A measure is a numeric value that can be aggregated, while a dimension is a categorical value that cannot be aggregated.
C. A measure is a categorical value that cannot be aggregated, while a dimension is a numeric value that can be aggregated.
D. There is no difference between a measure and a dimension in Tableau.

17. What is the difference between a discrete and a continuous field in Tableau?
A. A discrete field represents categorical data, while a continuous field represents numeric data.
B. A discrete field represents numeric data, while a continuous field represents categorical data.
C. A discrete field is represented by individual data points, while a continuous field is represented by a continuous range of values.
D. There is no difference between a discrete and a continuous field in Tableau.

18. What is a reference line in Tableau?
A. A line that indicates a specific value on a chart.
B. A type of chart that displays values as bars.
C. A type of data source that is optimized for live connections to data.
D. A type of join used to combine data from multiple tables.

19. What is a trend line in Tableau?
A. A line that shows the direction of a trend in the data.
B. A type of chart that displays values as bars.
C. A type of data source that is optimized for live connections to data.
D. A type of join used to combine data from multiple tables.

20. What is a table calculation in Tableau?
A. A calculation that is performed on a specific field in a table.
B. A type of chart that displays values as bars.
C. A type of data source that is optimized for live connections to data.
D. A type of join used to combine data from multiple tables.

21. What is the difference between a quick filter and a normal filter in Tableau?
A. A quick filter is a type of filter that can be applied quickly, while a normal filter requires more setup.
B. A quick filter is a type of filter that can be used for categorical data, while a normal filter is used for numeric data.

C. A quick filter is a type of filter that is applied to the entire worksheet, while a normal filter is applied to a specific chart or table.

D. There is no difference between a quick filter and a normal filter in Tableau.

22. What is a cross-tab table in Tableau?

A. A table that shows the relationships between different data sets.

B. A type of chart that displays data in a grid format, with rows and columns.

C. A type of data connection that allows for real-time updates to the data.

D. A type of aggregation function used to summarize data.

23. What is a parameter control in Tableau?

A. A type of chart that displays values as bars.

B. A type of filter that can be applied to a chart or table.

C. A visual control that allows users to adjust the values of a parameter.

D. A type of calculation that is performed on a specific field in a table.

24. What is a heat map in Tableau?

A. A type of chart that displays values as bars.

B. A type of chart that displays data as a series of points.

C. A type of chart that displays data as a color gradient.

D. A type of chart that displays data as a line graph.

25. What is a story point in Tableau?

A. A type of chart that displays data as a color gradient.

B. A type of dashboard that includes multiple charts and filters.

C. A visual representation of a data point in a chart or table.

D. A narrative sequence that explains the insights from a set of visualizations.