DATA VISUALIZATION

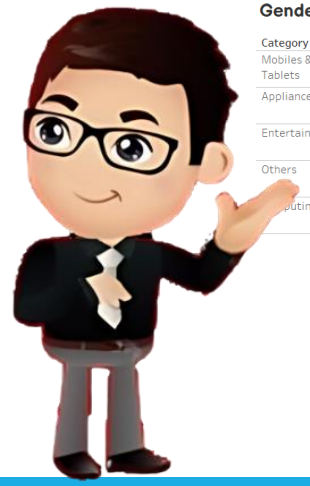
WITH TABLEAU

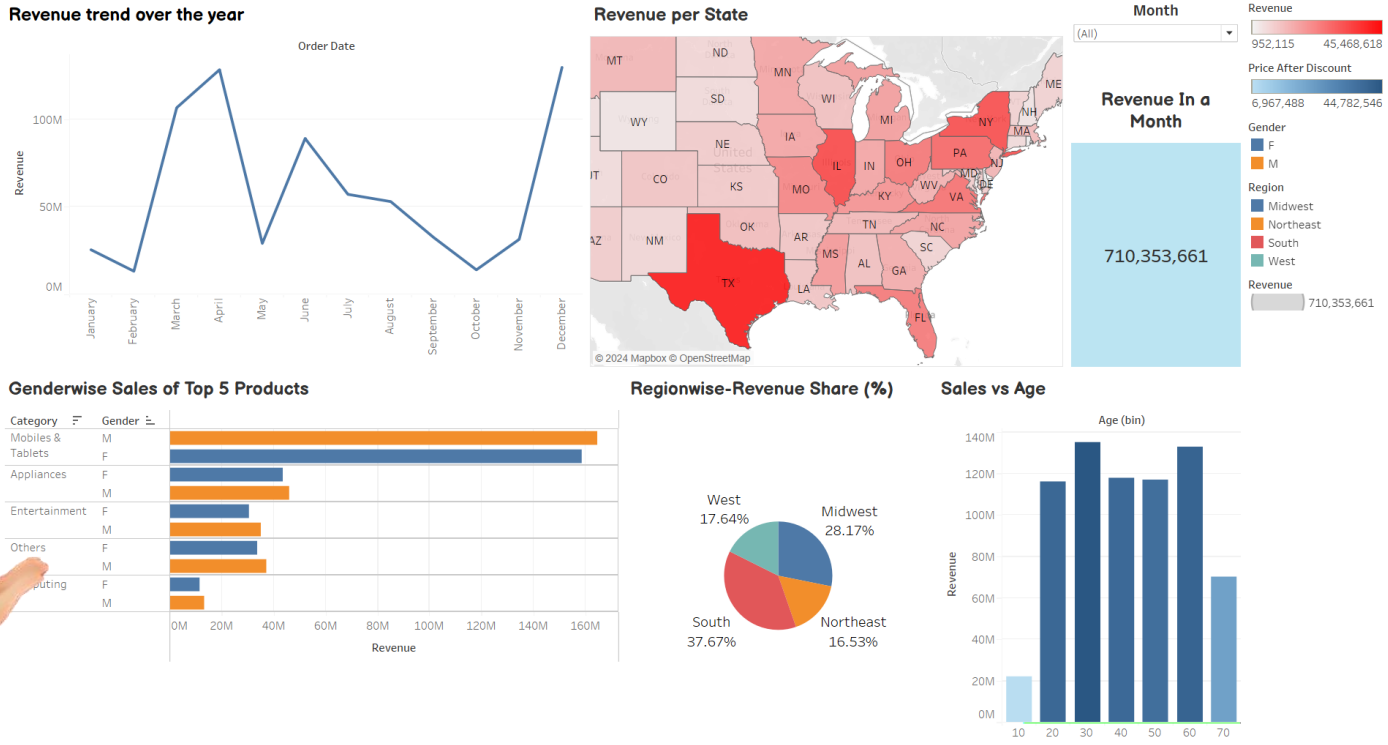
INSTALLING TABLEAU

1. Visit https://www.tableau.com/products/public
2. Click on “Go to Tableau Public”.
3. Sign up for Tableau Public with your details and create an account.
4. After Sign in, go to “Create” and select “Download Tableau Public Edition”.
5. Download the Tableau Public edition.
6. Agree the terms and conditions, install the software, click on “Restart” to reboot your computer.

WHAT IS DATA VISUALIZATION?

Graphical representation of information and data using visual elements like charts, graphs, and maps.





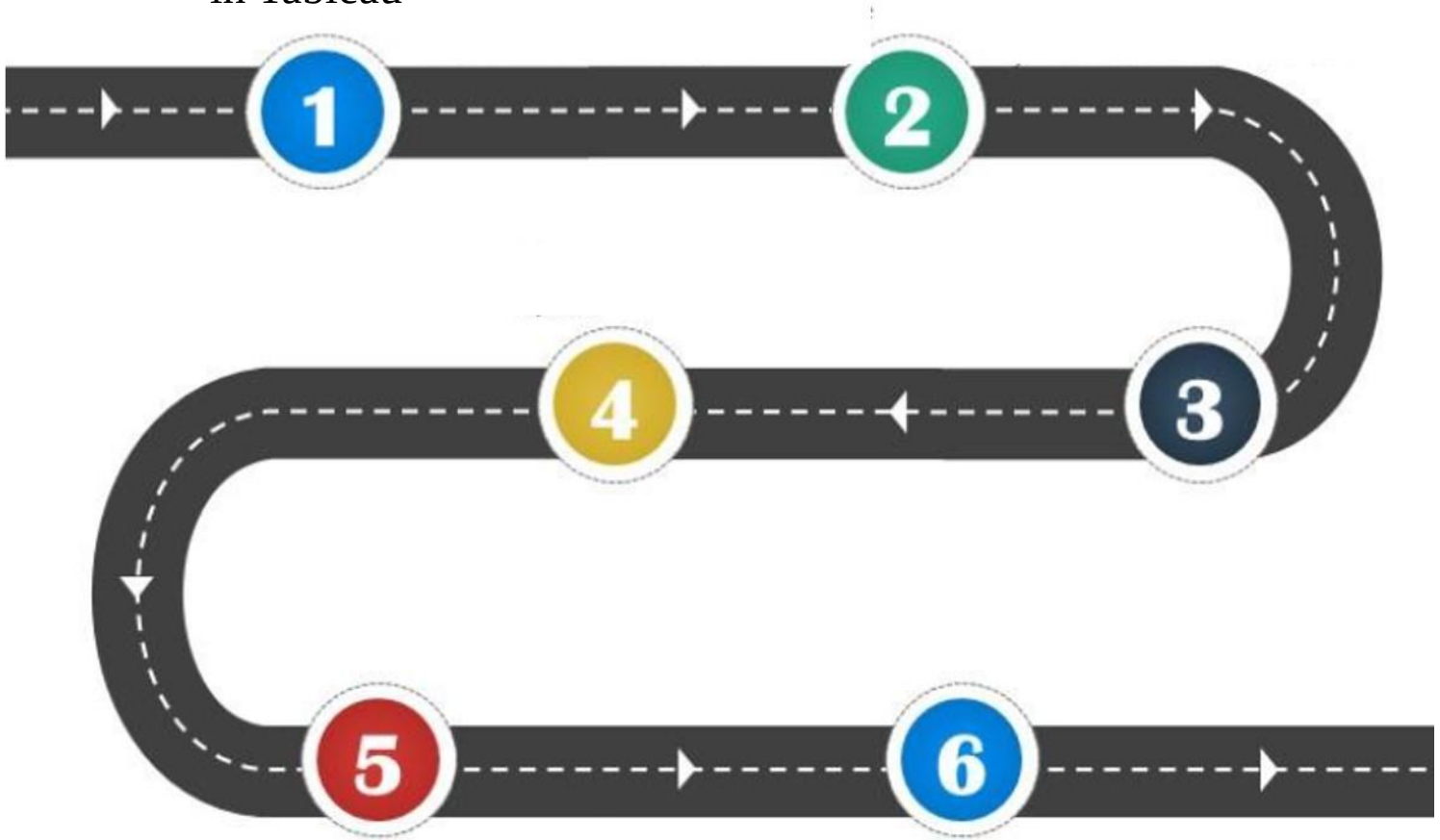
PROJECT: SUPERSTORE SALES ANALYSIS

Learning outcomes:

- Importing data in tableau
- Introduction to Tableau window components
- Understanding data types, discrete and continuous fields
- Understanding dimensions and measures
- Understanding use of mark cards
- Understanding aggregate functions
- Creating calculated fields

ROADMAP

Import the data
in Tableau



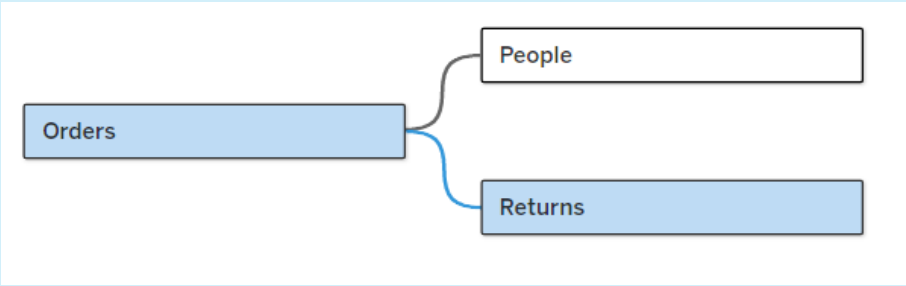
TASK 1

Import the data from the file **‘Sample Superstore’**.

Link

Take Notes

Relationships define the logical connections between tables in a database, specifying how data in one table relates to data in another.



DATA TYPES IN TABLEAU

Text / String Value

Geographical Field

Discrete Date and Time

Continuous Numerical Field

Discrete Date

Calculated Field

TASK 2

Analyze the sales distribution from different regions of USA.

ROADMAP

Import the data in Tableau

Understand Tableau window component

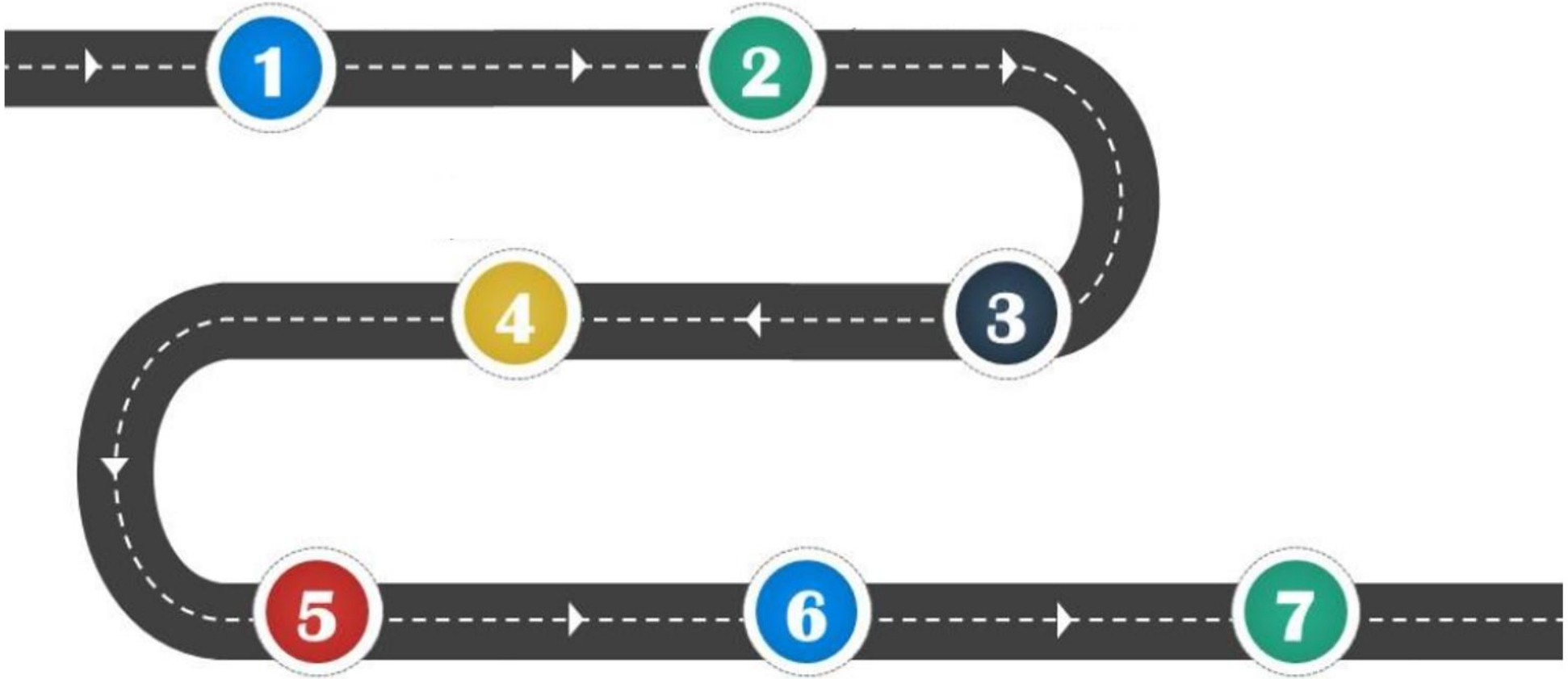


TABLEAU WINDOW COMPONENTS

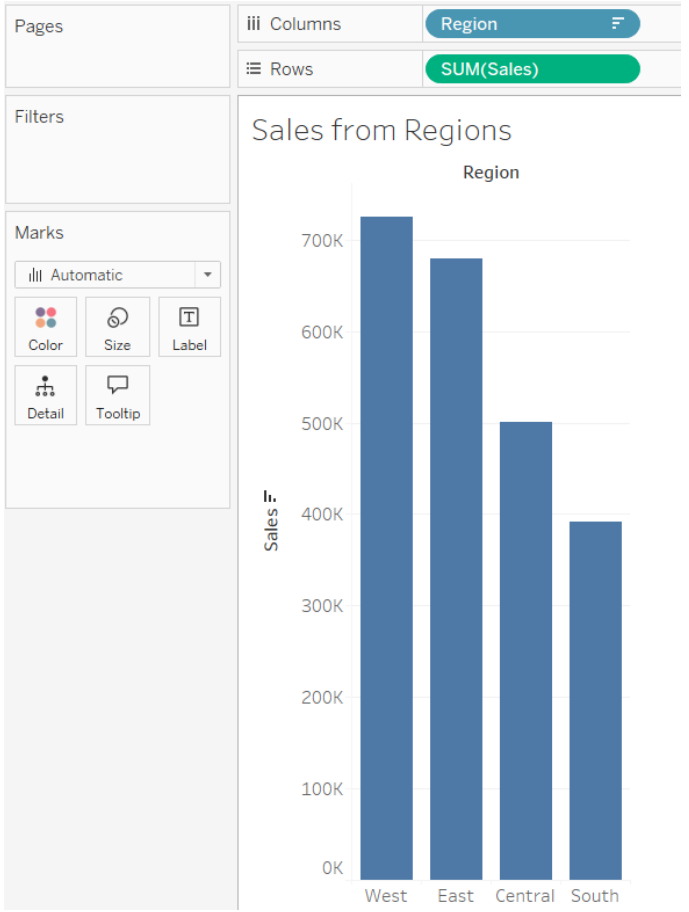
1. Data Pane
2. Analytics Pane
3. Pages Shelf
4. Filters Shelf
5. Marks Card
6. Rows Shelf
7. Columns Shelf
8. Sheet Tabs
9. Toolbar
10. Show Me Panel

COLUMN CHART

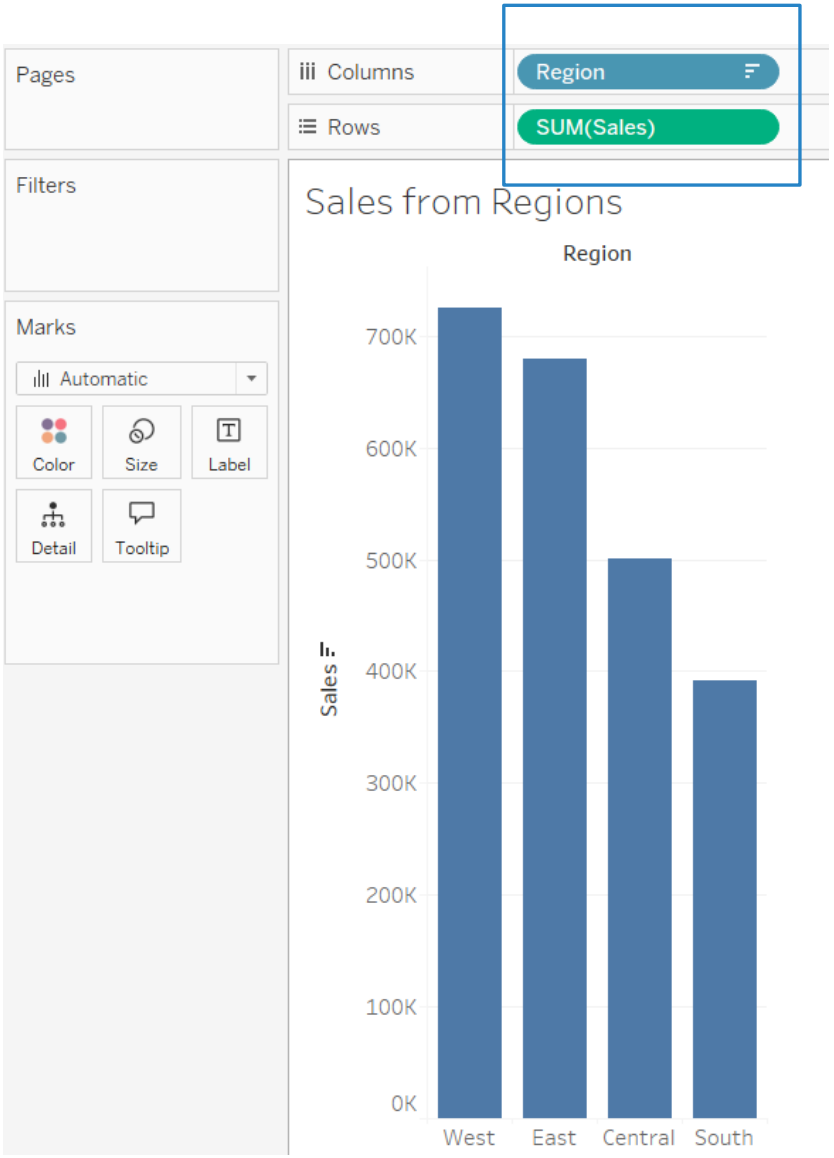
Purpose:
Compare numerical values across categories to highlight trends.

Row Pane: Sales.

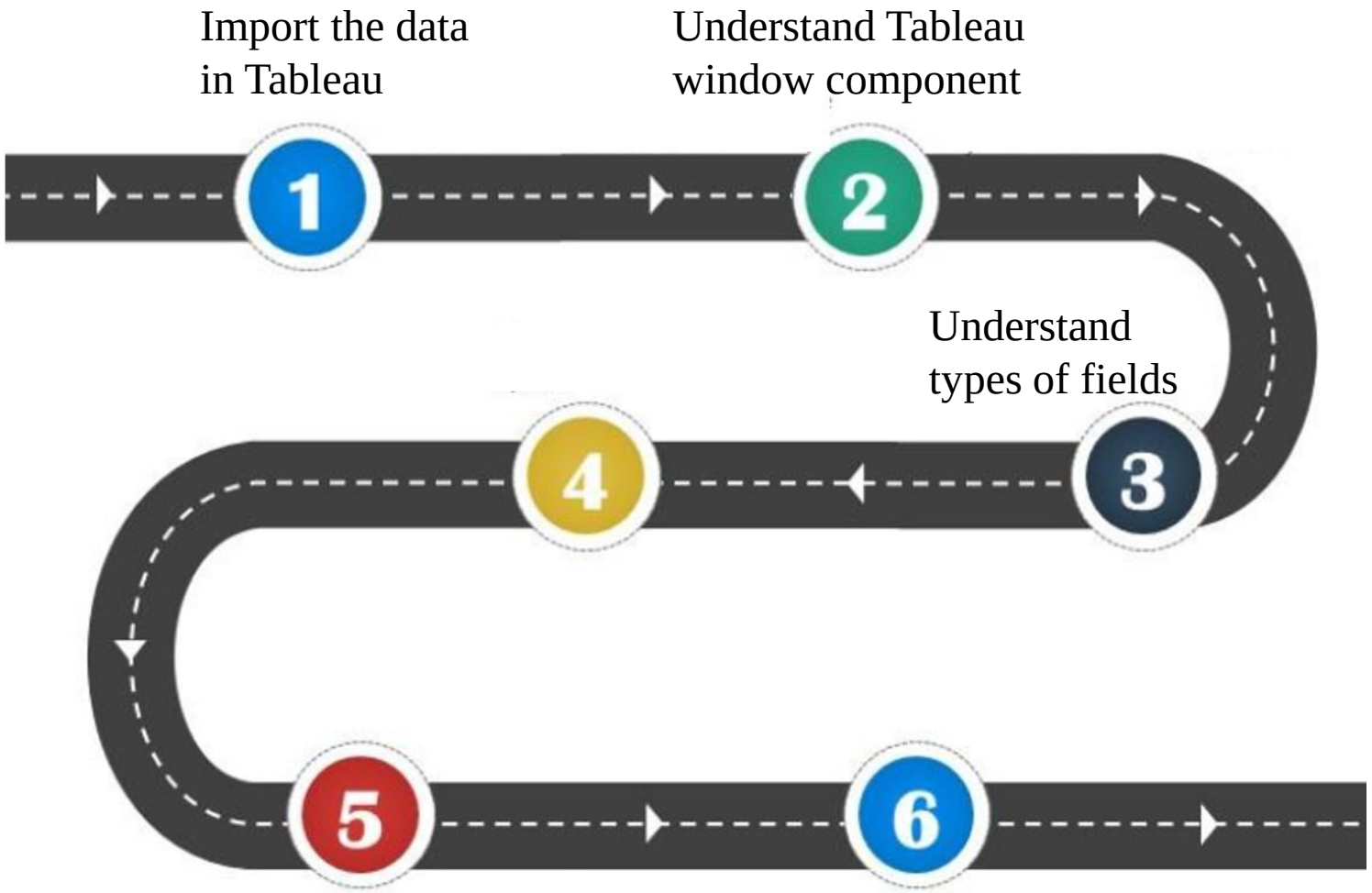
Columns: Region.



Why region pill is blue coloured and the sales pill is green coloured ?



ROADMAP


Import the data in Tableau
Understand Tableau window component
Understand types of fields
1
2
3
4
5
6

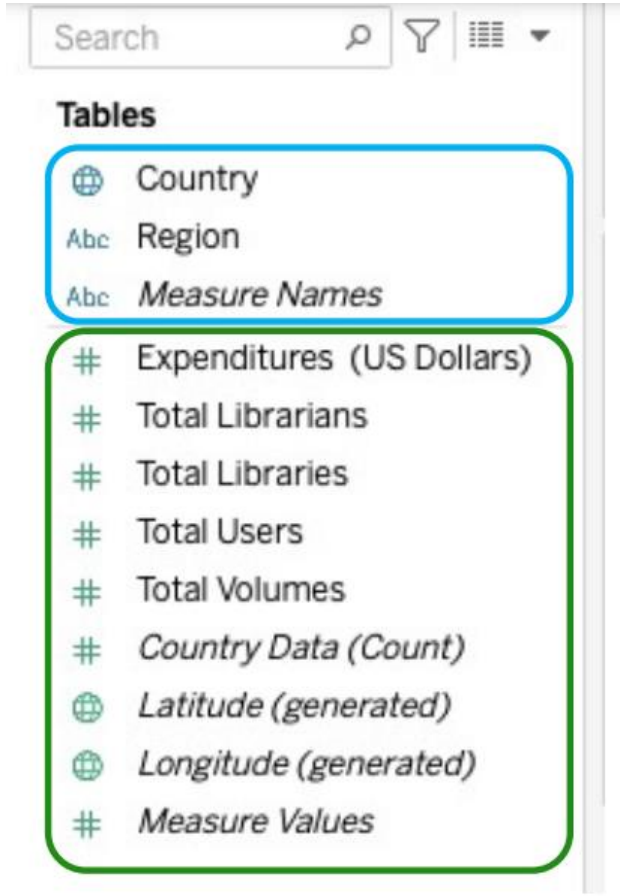
DISCRETE AND CONTINUOUS FIELD

Feature	Discrete	Continuous
Definition	Represents distinct, separate values	Represents an unbroken range of values
Appearance	Blue pills	Green pills
Usage	Used for categorical data	Used for quantitative data
Examples	Categories like "Region" or "Product Type"	Features like “Profit" or “Revenue"
Aggregation	Typically not aggregated	Aggregated

DIMENSIONS AND MEASURES

Dimensions:
Categorical fields used to segment, filter, and group data, like names or dates.

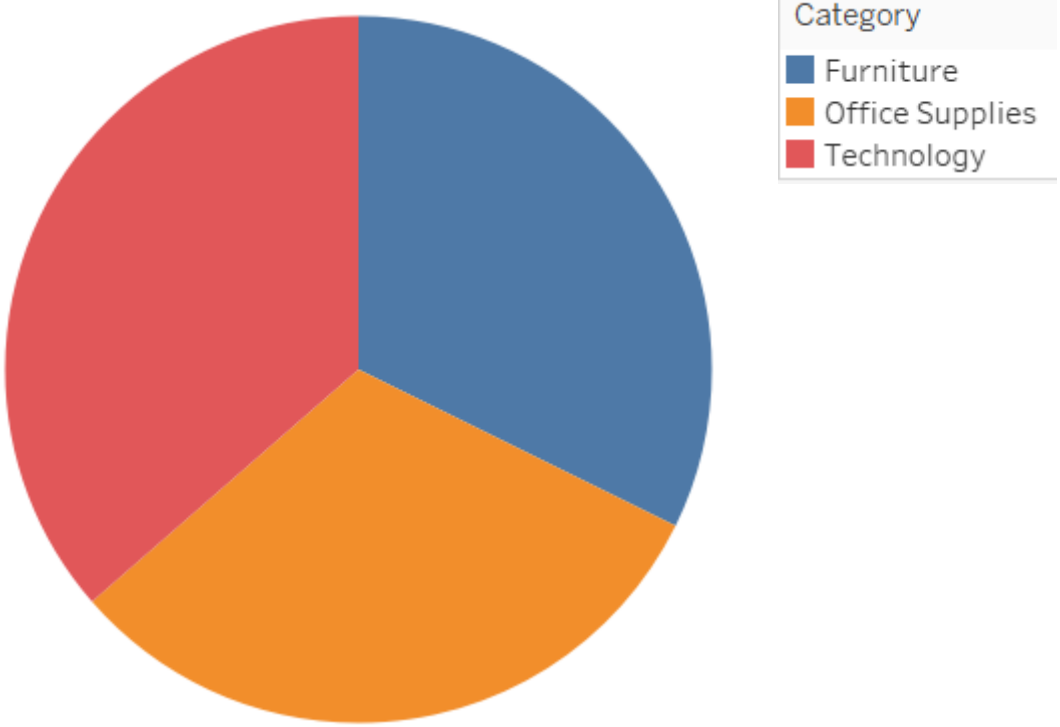
Measures:
Quantitative fields used for calculations and aggregations, like sales figures or profit margins.



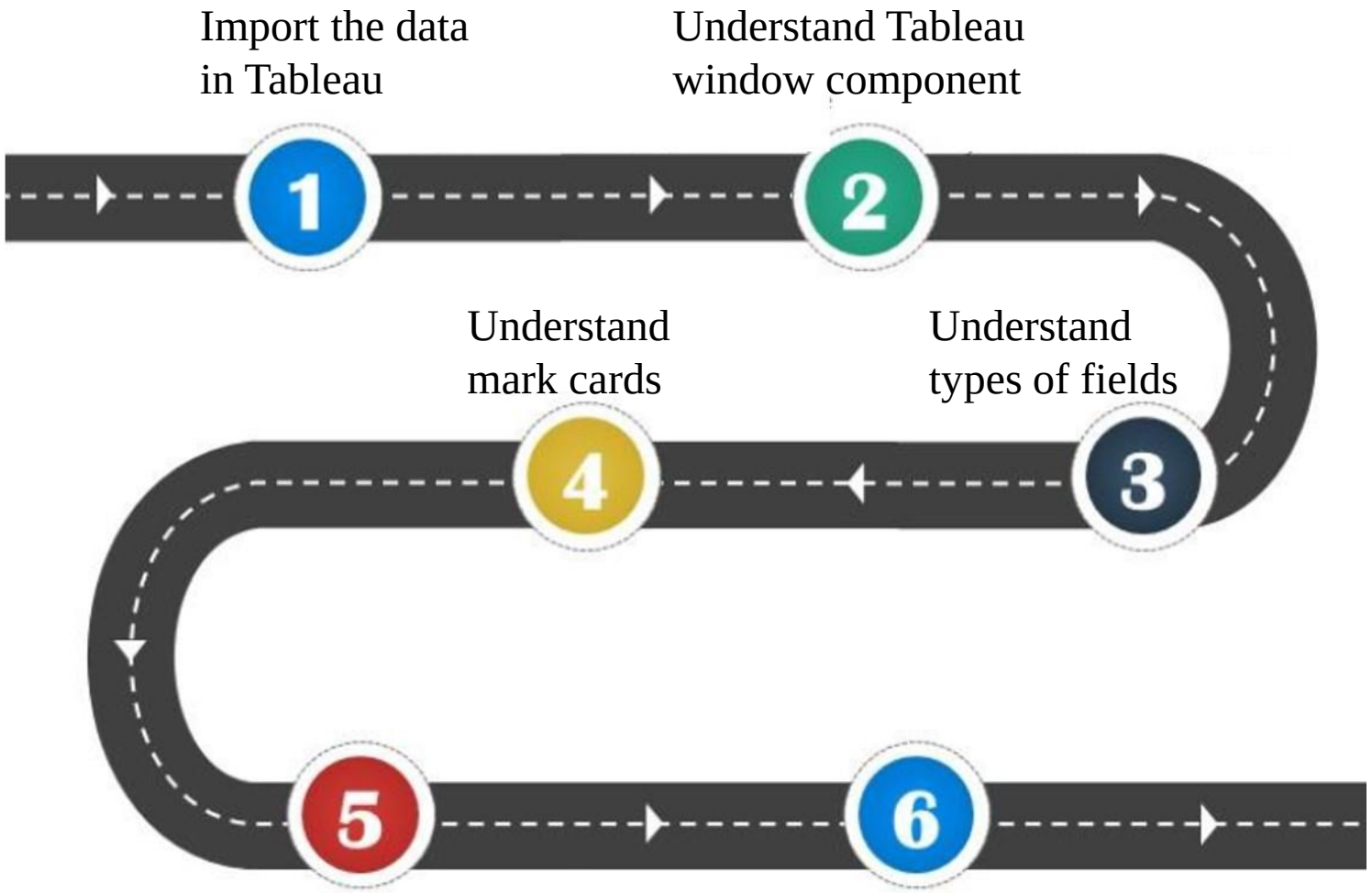
TASK 3

How is the total sales amount distributed among different product categories?

Can we add more information to this visual?



ROADMAP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MARK CARDS

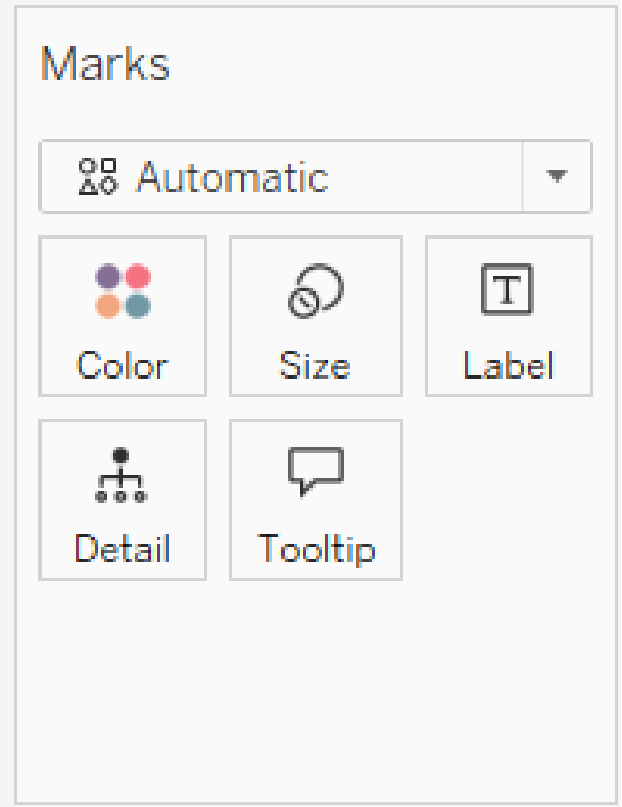
Color: Adjusts the color of marks based on the data.

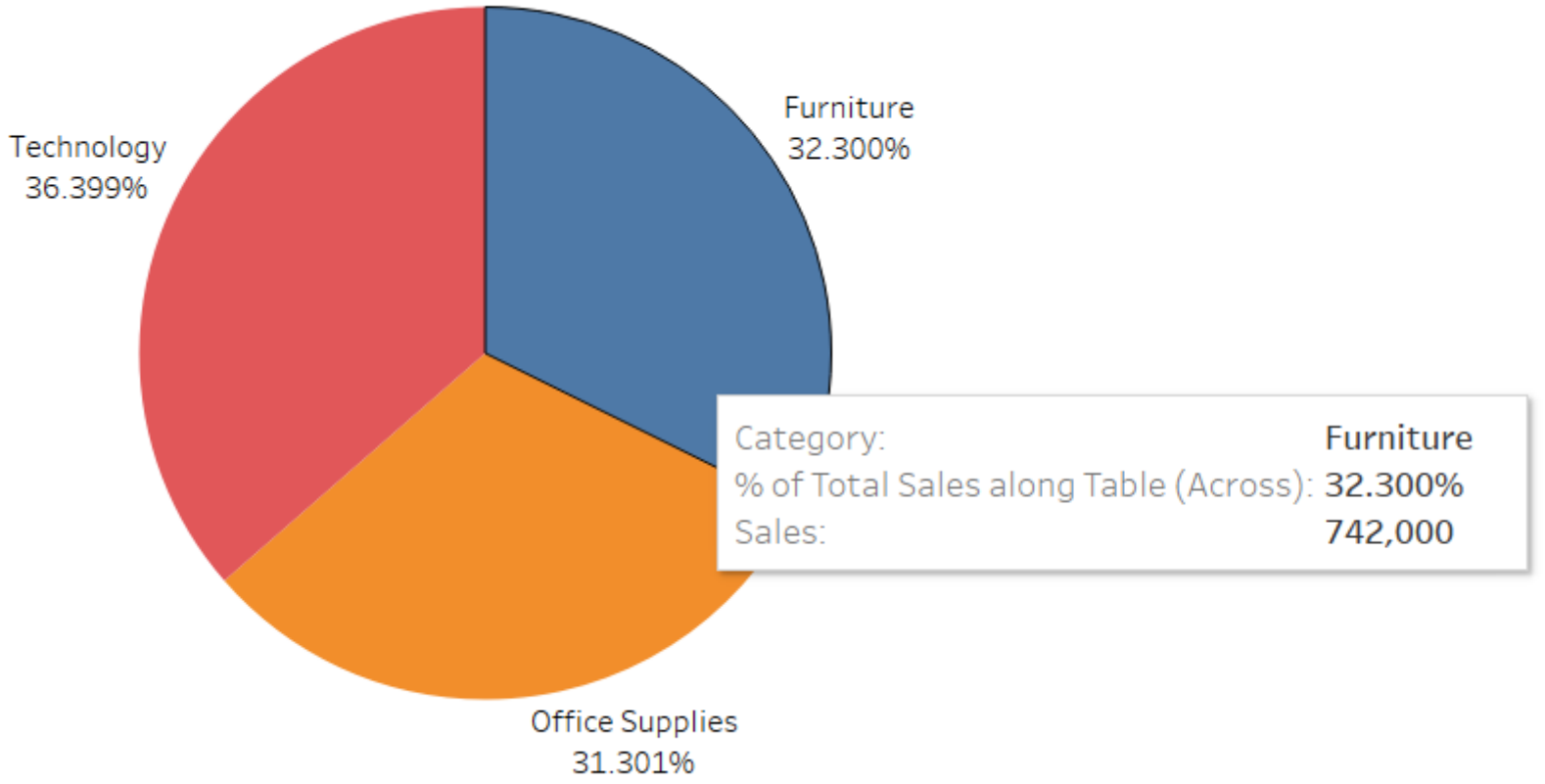
Size: Modifies the size of the marks.

Text: Adds text labels to the marks.

Detail: Adds additional dimensions to the visualization, affecting the level of detail.

Tooltip: Customizes the content shown in tooltips when hovering over marks.

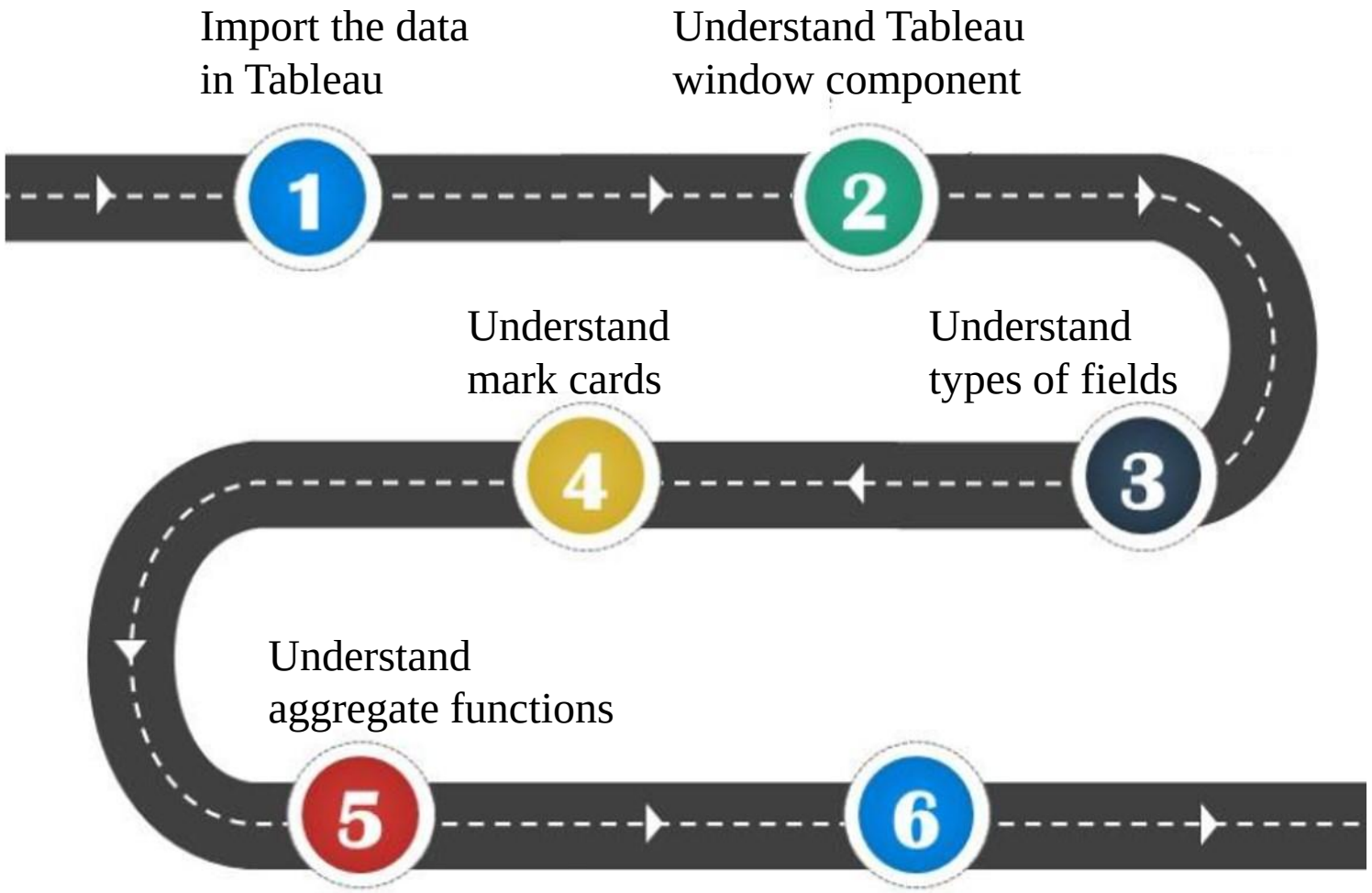



Technology
36.399%
Furniture
32.300%
Office Supplies
31.301%
Category: Furniture
% of Total Sales along Table (Across): 32.300%
Sales: 742,000

TASK 4

Find the count of orders received for each subcategory.

ROADMAP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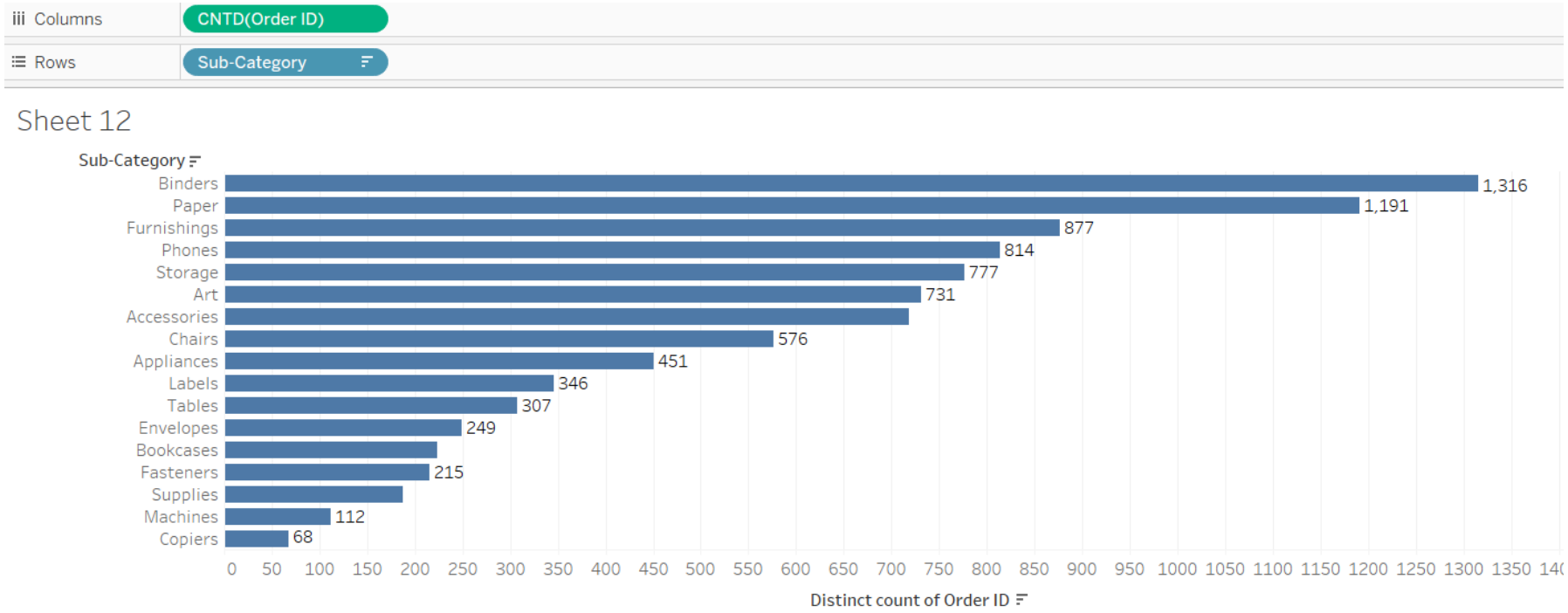
AGGREGATE FUNCTIONS

Function	Description
SUM(field)	Calculates the total sum of all values in the specified field.
AVG(field)	Computes the average of all values in the specified field.
MIN(field)	Returns the smallest value in the specified field.
MAX(field)	Returns the largest value in the specified field.
COUNT(field)	Counts the number of non-null values in the specified field.
COUNTD(field)	Counts the number of distinct (unique) values in the specified field.
MEDIAN(field)	Returns the median (middle) value of all values in the specified field.

TASK 4

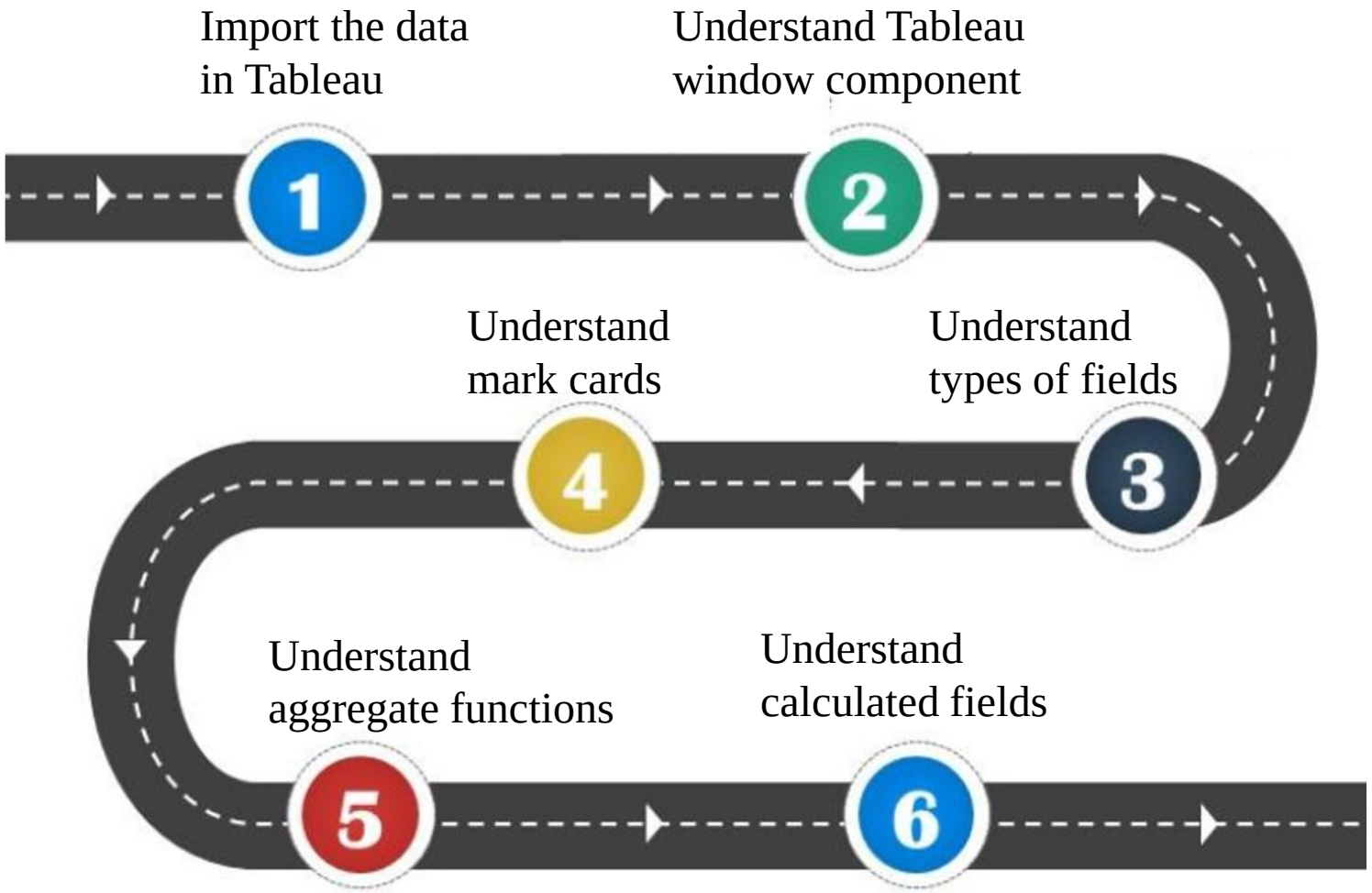
Find the count of orders received for each subcategory.



Task 5

Compare the shipping time distributions for different shipping modes.

ROADMAP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CALCULATED FIELDS

a custom field created by defining a formula using existing fields from your data source to derive new data

For example:

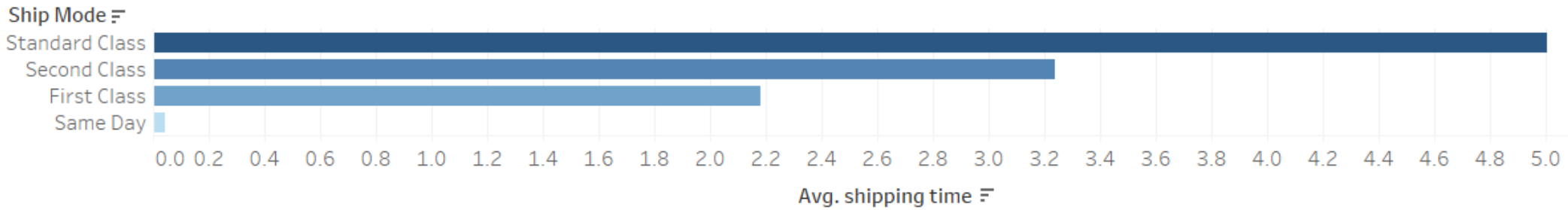
- Calculating profit margins.
- Deriving new dates or time periods.
- Performing conditional calculations (e.g., IF-THEN statements).

IMPORTANT FUNCTIONS

Function	Description
DATEDIFF(date_part, start_date, end_date)	Returns the difference between two dates in the specified date part.
DATEPART(date_part, date)	Returns the specified part of a date as an integer.
IFNULL(expression1, expression2)	Returns the first expression if it is not null; otherwise, returns the second expression.
ZN(expression)	Returns zero if the expression is null.
MID(string, start, [length])	Returns the substring starting from the specified position.
REPLACE(string, old, new)	Replaces occurrences of the old substring with the new substring.

Task 5

Compare the shipping time distributions for different shipping modes.



Task 6

Create a new field category code by extracting initial three letters from the feature “Product_ID”.

Task 7

Create a new field the sub-category code by extracting the middle of strings of the “Product_ID”.

Task 8

Create a calculated field using “Profit” field as follows and find the count of orders for each case of profit.

Profit	Profit or loss
Less than zero	loss
0 <= profit <= 200	Less profit
200 < profit <= 500	Medium profit
500 < profit	High profit

QnA