# PROJECT-1

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**Report on Analysis of Tree map Visualization Instance for mutual fund dataset**

**Data:** The dataset for the tree map consists of an investment portfolio broken down into three hierarchical levels: holding type, sector, and security. Each division is represented by its Portfolio Weight, which is shown by the size of each rectangle in the tree map. The dataset includes categories like Holding Type (equity, debt, cash), Sector (technology, healthcare), and individual Securities (e.g., Zomato, Tata). The data is visually encoded with color to represent different holding types.

- **Holding Type**: Represents asset categories (equity, debt, cash), encoded by color.

- **Sector**: Subdivides holdings into sectors like technology, finance, healthcare

- **Security**: Represents individual securities, with the size of each rectangle indicating its proportion of the total portfolio. (TATA, Zomato, ICICI)

**Task:** The main task is to analyze the portfolio's composition and allocation across different holding types, sectors, and securities. Users can:

1. **Assess Allocation Distribution**: See how investments are spread across holding types.

2. **Identify Sector Concentration**: Determine which sectors dominate the portfolio.

3. **Examine Security Importance**: Understand the relative weight of individual securities within each sector.

This enables users to make informed decisions about portfolio risk, diversification, and strategic adjustments.

**Idiom :**A **tree map** is ideal for visualizing this hierarchical data. The design includes:

- **Size Encoding**: Rectangles are sized based on Portfolio Weight, making it easy to identify which holdings, sectors, or securities are most significant.

- **Color Encoding**: Different colors represent Holding , helping users distinguish between asset classes.

- **Labels**: Sectors and securities are labeled for clarity and contextual understanding.

**Justification of Design Choices:** The tree map's hierarchical structure fits the data well, offering a clear, intuitive view of how each part of the portfolio contributes to the whole. **Size** and **color** encoding effectively represent allocation weights and holding types, making the visualization accessible and actionable.

# Project_1

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```r
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```r
library(ggplot2)
library(readr)
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ----------------------- tidyverse 2.0.0 --
## v forcats   1.0.0      v stringr   1.5.1
## v lubridate 1.9.3      v tibble    3.2.1
## v purrr     1.0.2      v tidyr     1.3.1

## -- Conflicts ------------------------------------------- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```r
library(treemap)
library(treemapify)
library(ggfittext)
```

```r
file_path <-"/Users/heda/Desktop/CLARKSON/Fall_2024/Info_Viz/Final_Project/Project_1/Motilal_Portfolio.
data <- read.csv(file_path)

colnames(data) <- make.names(colnames(data))

data$Portfolio.Weight <- as.numeric(data$Portfolio.Weight)
data$Return_3M <- as.numeric(data$Return_3M)

data$Security.Label <- paste0(
  data$Security
```

```
)

treemap(
  data,
  index = c("Holding.Type", "Sector", "Security.Label"),
  vSize = "Portfolio.Weight",
  vColor = "Holding.Type",
  type = "categorical",
  palette = "Set3",
  title = "Motilal Oswal Portfolio",
  fontsize.labels = c(0, 12, 10,10),
  align.labels = list(c("center", "center"),c("center","top")),
  fontcolor.labels = c("black", "black","black")
)
```

## Motilal Oswal Portfolio