

Exercise 3.2: TreeMaps, Area and Stacked Area Charts

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Plots Using R

```
knitr::opts_chunk$set(echo = TRUE, warning = FALSE)

# Set Working Directory
setwd("C:/Users/micha/OneDrive/Documents/GitHub/DSC640/Weeks5-6/")

# Load libraries
library(treemap)
```

```
## Warning: package 'treemap' was built under R version 4.1.2
```

```
library(ggplot2)
```

Load Data

```
# Load data
unempDF <- read.csv("unemployment_cleaned.csv")
expenDF <- read.csv("expenditures.csv")
```

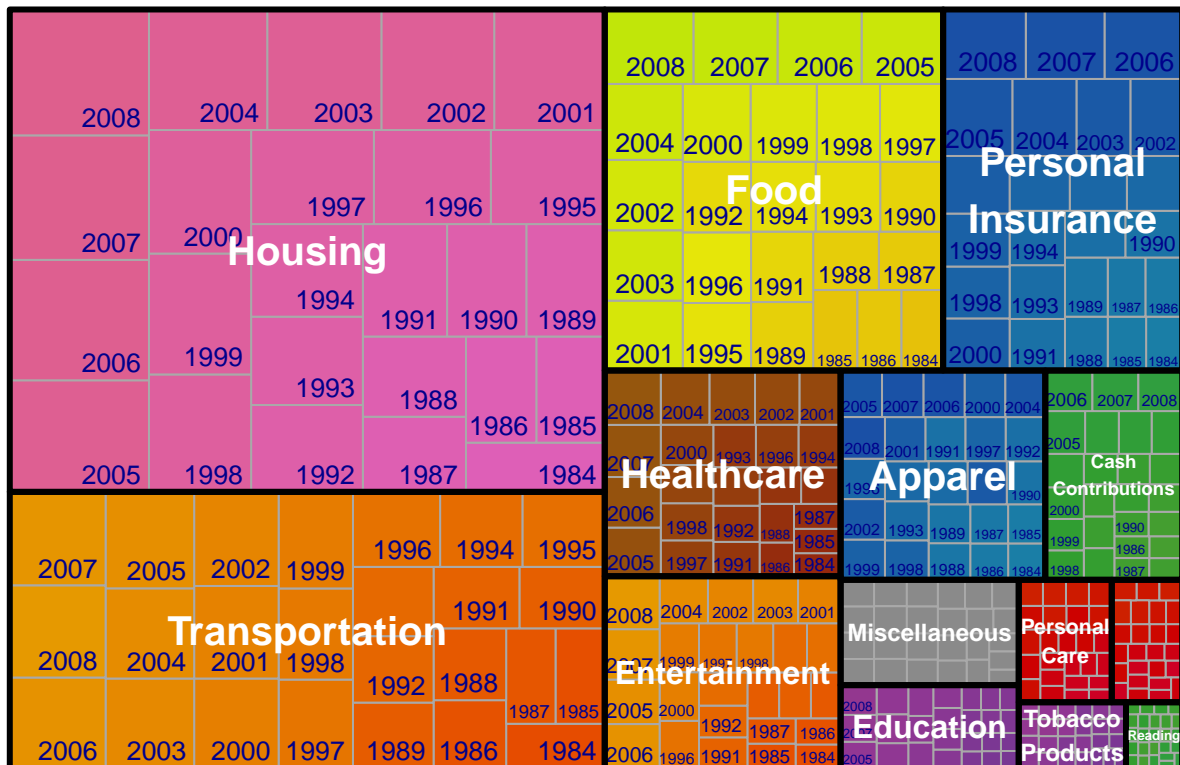
Tree Map

```
# Plot a TreeMap
treemap(expenDF,
  index = c("category", "year"),
  vSize = "expenditure",
  type = "index",
  palette = "Set1",
  title = "Annual Expenditures by Category",

  fontsize.labels = c(15, 10), # Label size by level
  fontcolor.labels = c("white", "dark blue"),
  fontface.labels = c(2,1), # 2: bold, 1: normal
  bg.labels = c("transparent"), # Label background
  align.labels = list( # Label locations
    c("center", "center"),
    c("right", "bottom")),
  overlap.labels = 0.5, # Label overlap tolerance
  inflate.labels = FALSE, # Increase label to size of box

  border.col = c("black", "dark gray"), # Color of borders
  border.lwds = c(3,1) # Line width of borders
)
```

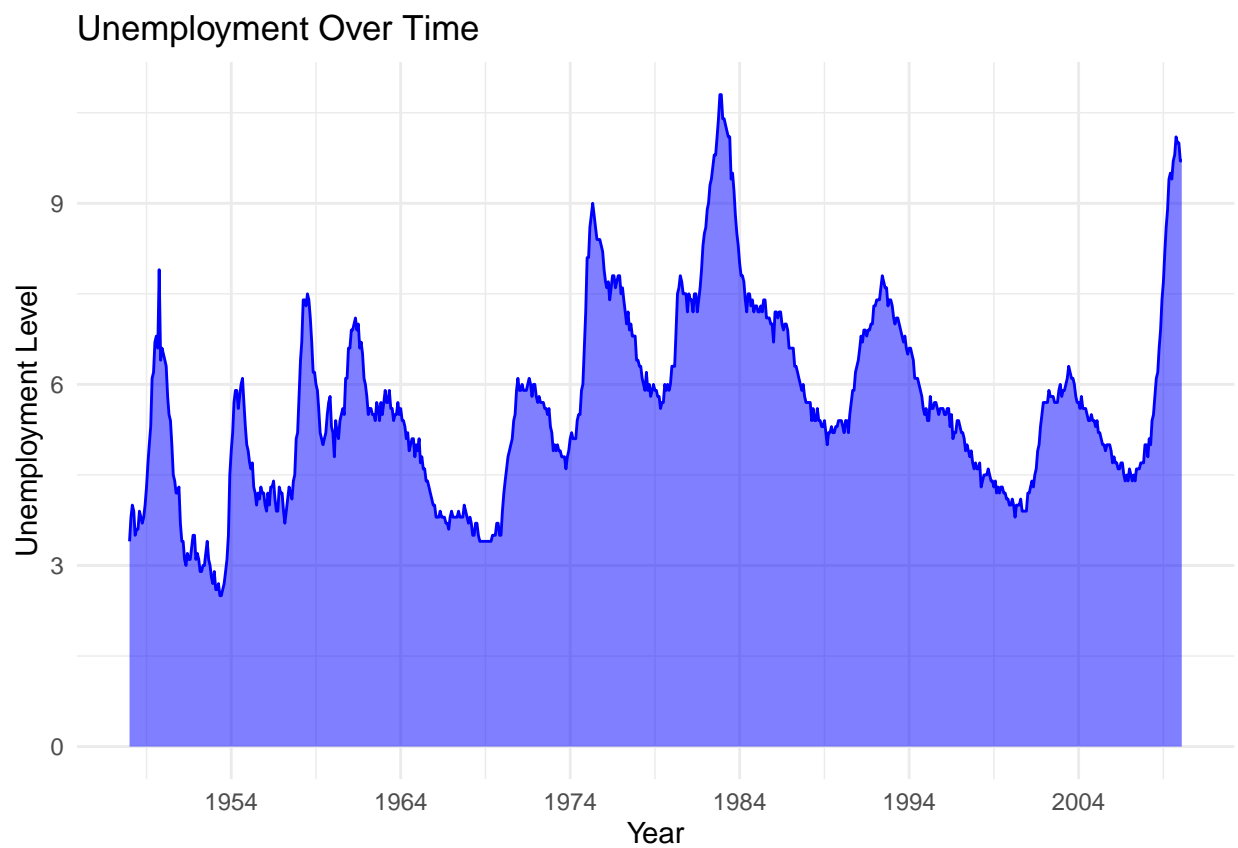
Annual Expenditures by Category



Area Chart

```
# Convert column to datetime data type
unempDF$MoYr <- as.Date(unempDF$MoYr, format = "%Y-%m-%d")

# Plot Area Chart
ggplot(unempDF, aes(x=MoYr, y=Value)) +
  geom_area(fill="blue", alpha=0.5) +
  geom_line(color="blue", size=0.5) +
  theme_minimal() +
  labs(y="Unemployment Level", x="Year") +
  ggtitle("Unemployment Over Time") +
  scale_x_date(date_labels="%Y", breaks = "10 years")
```



Stacked Area Chart

```
# Plot Stacked Area Chart  
ggplot(expenDF, aes(x=year, y=expenditure, fill=category)) +  
  geom_area() +  
  theme_minimal() +  
  labs(y="Expenditure ($USD)", x="Year") +  
  ggtitle("Expenditure Categories Over Time")
```

