DSC640_Exercise_3-2_JakeMeyer

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Assignment Instructions

Submit 1 tree map, 1 area chart, and 1 stacked area chart with R.

Show Working directory

```
getwd()
```

```
## [1] "C:/Users/jkmey/Documents/Github/DSC640_Course_Assignments/DSC640_Repository/Weeks5&6"
```

```
dir()
```

```
## [1] "~$DSC640_Exercise_3-2_JakeMeyer.pptx"
## [2] "DSC640_Exercise_3-2_JakeMeyer.ipynb"
## [3] "DSC640_Exercise_3-2_JakeMeyer.pbix"
## [4] "DSC640_Exercise_3-2_JakeMeyer.pptx"
## [5] "DSC640_Exercise_3-2_JakeMeyer_Chartspdf.pdf"
## [6] "DSC640_Exercise_3-2_JakeMeyerRCode.Rmd"
## [7] "expenditures.txt"
## [8] "unemployement-rate-1948-2010.csv"
```

```
 # setwd("C:/Users/jkmey/Documents/Github/DSC640_Course_Assignments/DSC640_Repository")
```

Import the necessary libraries

```
library(readxl)
library(ggplot2)
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.2 --
## v tibble  3.1.8      v dplyr   1.0.10
## v tidyr   1.2.1      v stringr 1.5.0
## v readr   2.1.3      v forcats 0.5.2
## v purrr   0.3.5
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(dplyr)
library(scales)
```

```
##
## Attaching package: 'scales'
##
## The following object is masked from 'package:purrr':
```

```
##
##     discard
##
## The following object is masked from 'package:readr':
##
##     col_factor
```

```
library(plotly)
```

```
##
## Attaching package: 'plotly'
##
## The following object is masked from 'package:ggplot2':
##
##     last_plot
##
## The following object is masked from 'package:stats':
##
##     filter
##
## The following object is masked from 'package:graphics':
##
##     layout
```

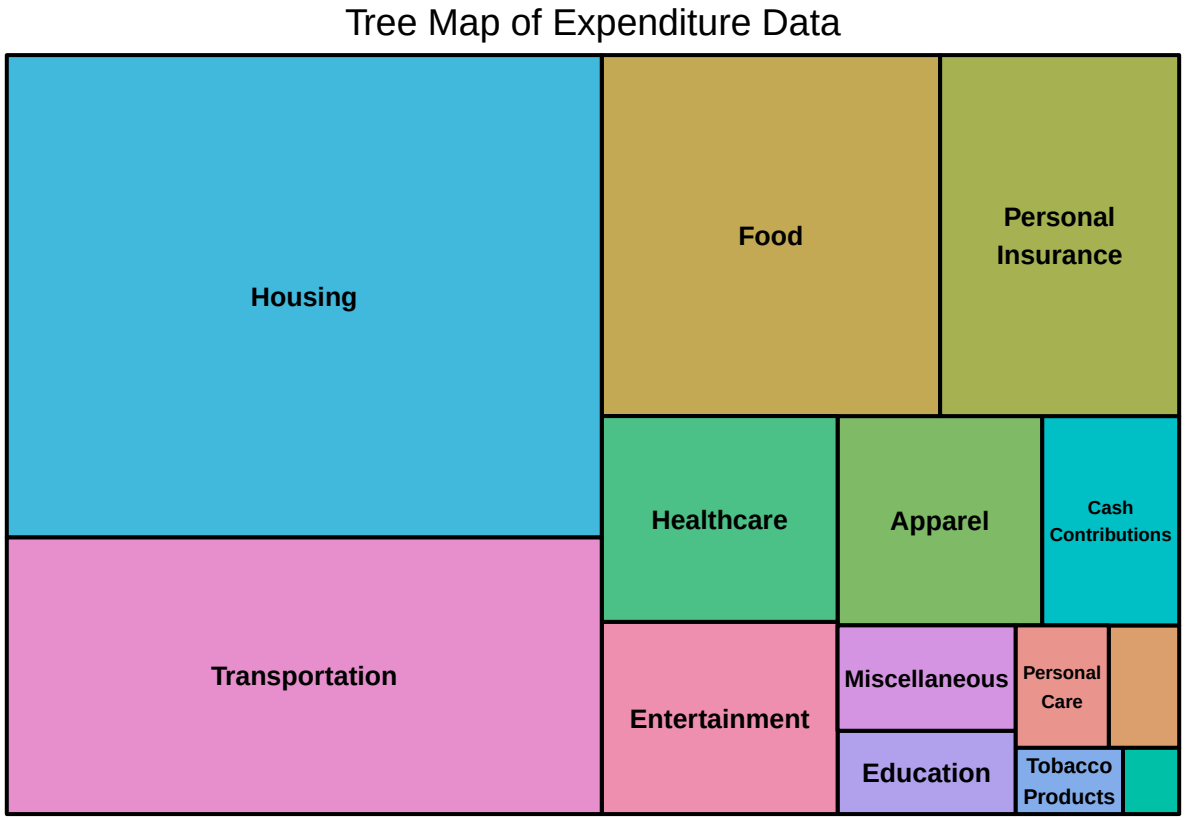
```
library(treemap)
library(RColorBrewer)
library(treemapify)
theme_set(theme_minimal())
```

Import the data

```
df1 <- read.table("expenditures.txt", header = TRUE, sep = "\t")
```

Tree Map using treemap()

```
treemap(df1, index = c('category'), vSize = 'expenditure',
        title = "Tree Map of Expenditure Data", fontsize.labels = c(10, 8),
        align.labels = list(c('centre','centre'),c('left','top')))
```



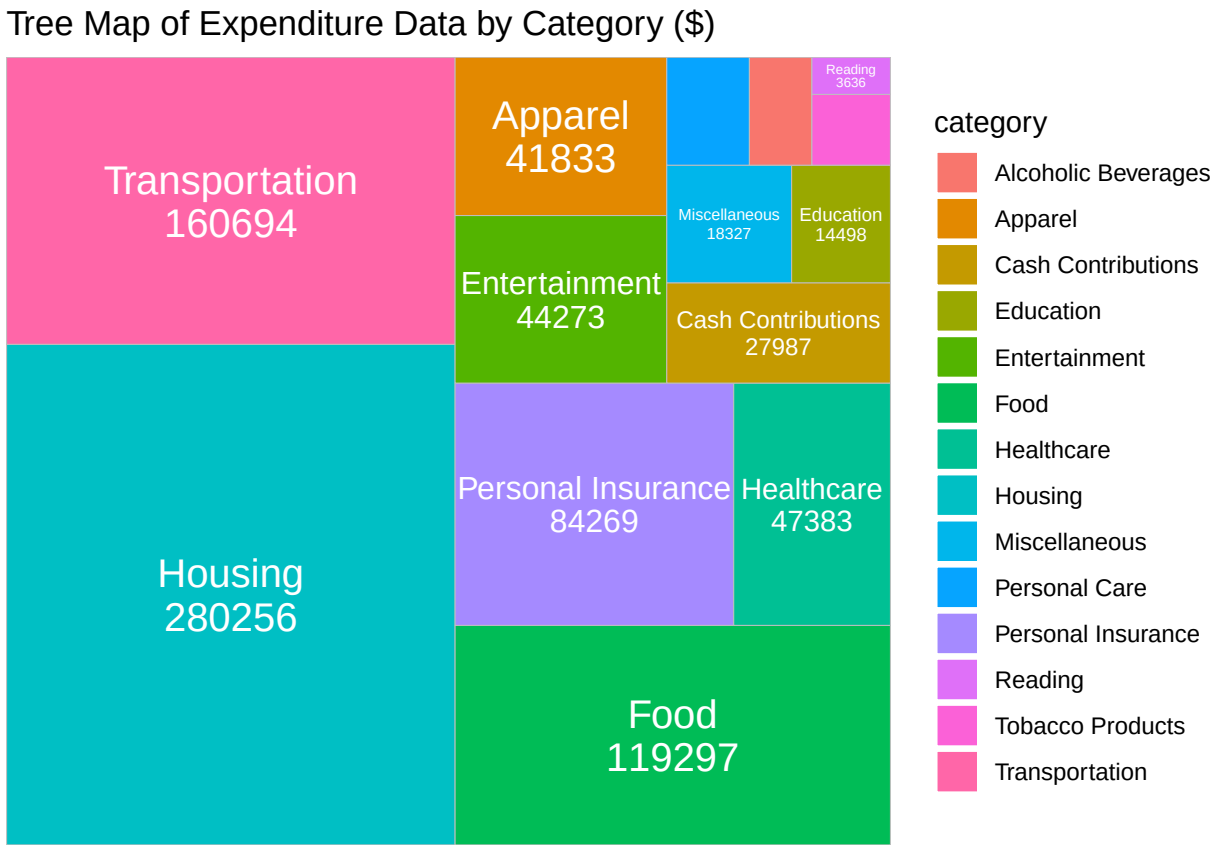

```
df_agg <- aggregate(expenditure ~ category, df1, sum)
df_agg
```

```
##               category expenditure
## 1  Alcoholic Beverages        8424
## 2              Apparel       41833
## 3   Cash Contributions       27987
## 4            Education       14498
## 5        Entertainment       44273
## 6                 Food      119297
## 7           Healthcare       47383
## 8              Housing      280256
## 9        Miscellaneous       18327
## 10       Personal Care       11123
## 11  Personal Insurance       84269
## 12             Reading        3636
## 13    Tobacco Products        6936
## 14      Transportation      160694
```

Tree Map using ggplot2 and treemapify

```
ggplot(df_agg, aes(area = expenditure, fill = category,
                   label = paste(category, expenditure, sep = "\n"))) +
  geom_treemap() + geom_treemap_text(colour = "white",
                                     place = "centre",
                                     size = 15) +
```

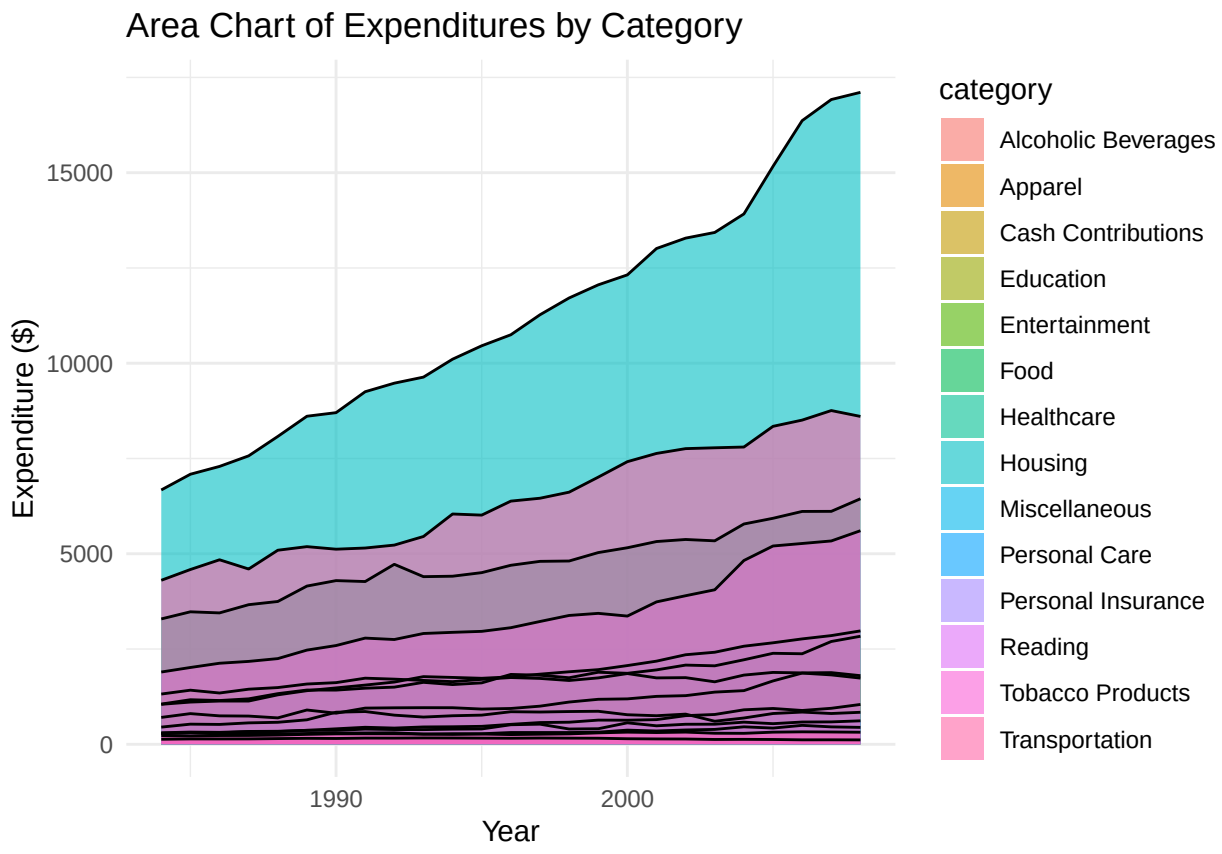
```
  ggtitle("Tree Map of Expenditure Data by Category ($)")
```



Area Chart

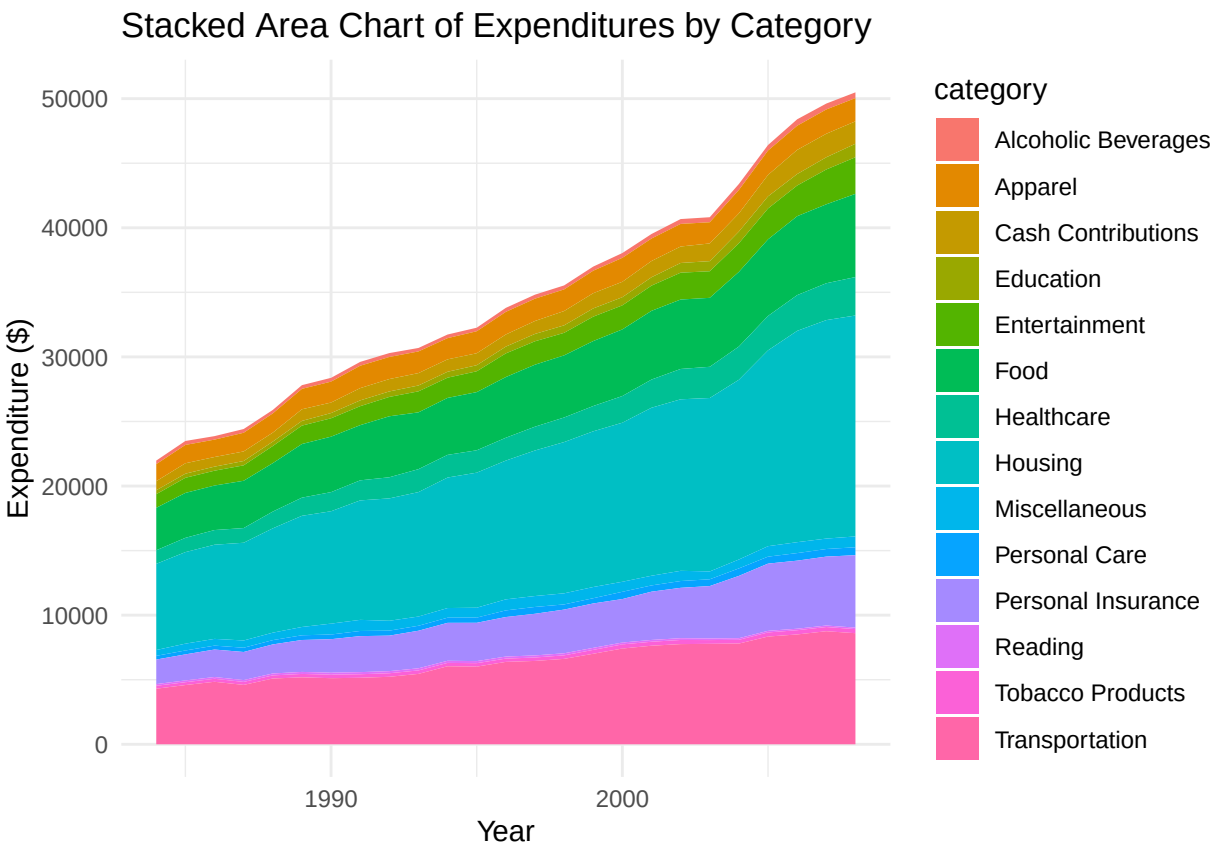
```
ggplot(df1, aes(x = year, fill = category)) +
  geom_area(aes(y = expenditure), position = position_dodge(), alpha = 0.6) +
  geom_line(aes(y=expenditure)) +
  ggtitle("Area Chart of Expenditures by Category") + xlab("Year") +
  ylab("Expenditure ($)")
```

```
## Warning: Width not defined. Set with `position_dodge(width = ?)`
```



Stacked Area Chart

```
ggplot(df1, aes(x = year, fill = category)) + geom_area(aes(y = expenditure)) +
  ggtitle("Stacked Area Chart of Expenditures by Category") + xlab("Year") +
  ylab("Expenditure ($)")
```


Stacked Area Chart of Expenditures by Category
Expenditure ($)
50000
40000
30000
20000
10000
0
1990
2000
Year
category
Alcoholic Beverages
Apparel
Cash Contributions
Education
Entertainment
Food
Healthcare
Housing
Miscellaneous
Personal Care
Personal Insurance
Reading
Tobacco Products
Transportation