Viz5 - Dashboards

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```
#Step 1 - Load requisite libraries into coding environment
options(repos = c(CRAN = "https://cloud.r-project.org/"))
#install.packages("scales")
#install.packages("lubridate")
library("lubridate")
```

```
##
## Attaching package: 'lubridate'
```

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

```
library("scales")
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
```

```
library("ggplot2")
library("reshape2")
library("readxl")
library("viridis")
```

```
## Loading required package: viridisLite
```

```
##
## Attaching package: 'viridis'
```

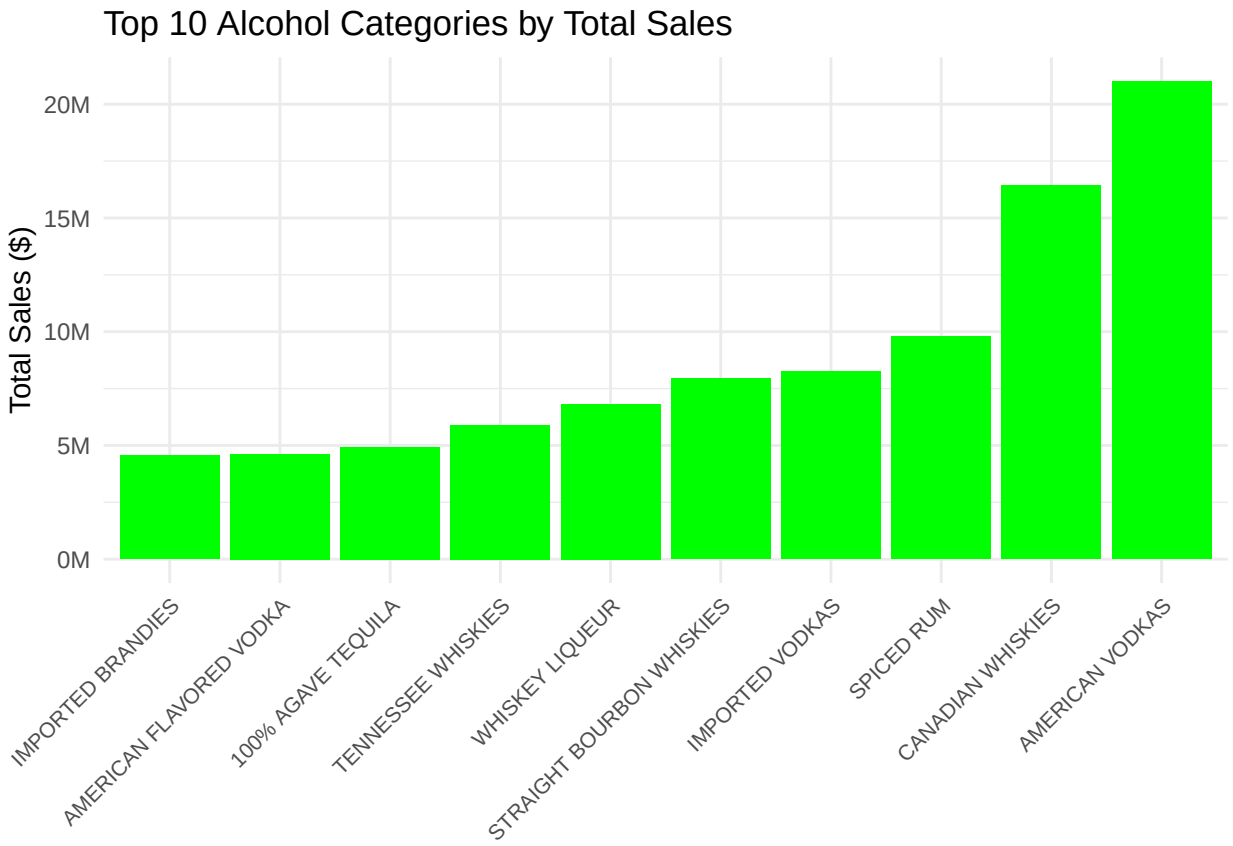
```
## The following object is masked from 'package:scales':
##
##     viridis_pal
```

```
#Step 2 - Read clean data into coding environment

iowa_sales <- read_xlsx("Smaller_Iowa_Liquor_Sales.xlsx", sheet = 1, .name_repair = "universal")

#Step 3 - Summarize the top categories and group them by category name. Summarize total sales. Do the s
```

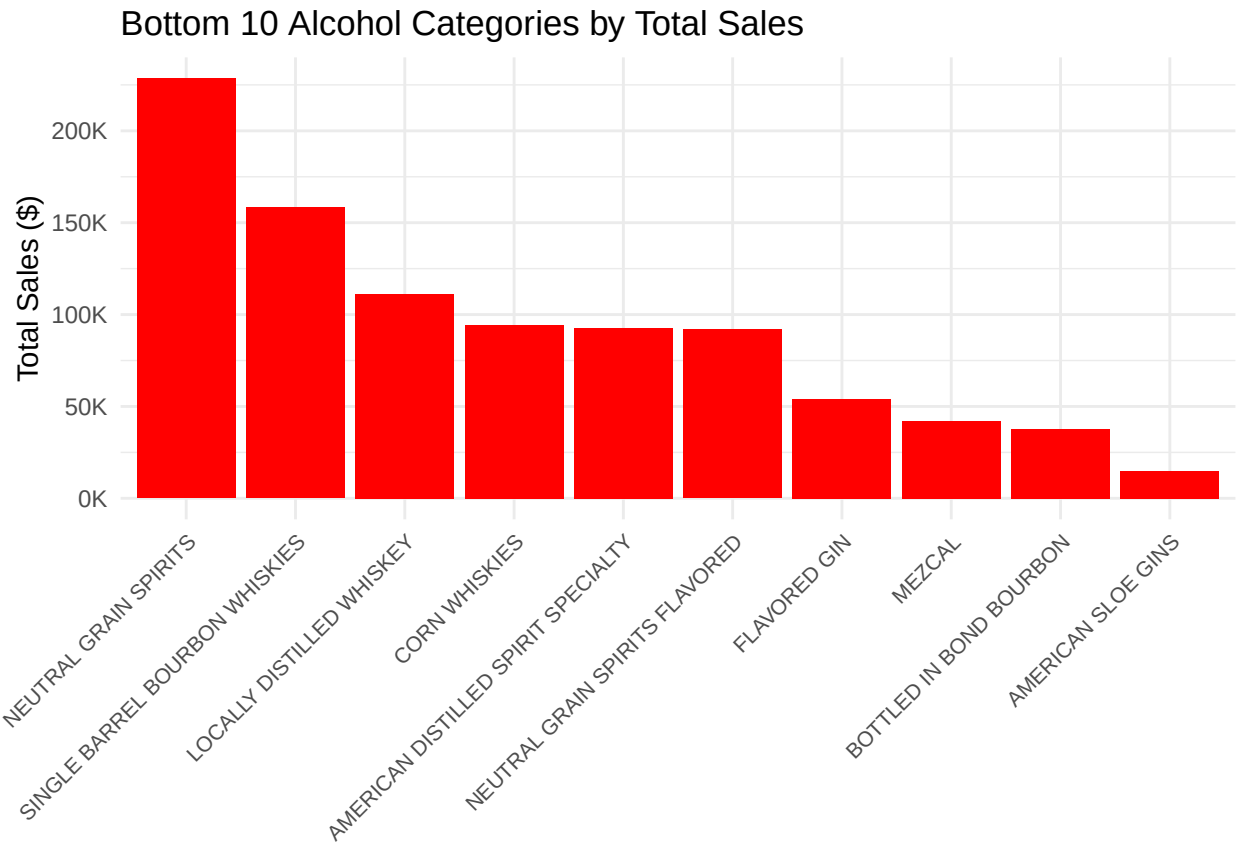
```r
top_categories <- iowa_sales %>%
   group_by(Category.Name) %>%
   summarize(TotalSales = sum(State.Bottle.Retail * Bottles.Sold))
top_categories <- top_categories %>%
   arrange(-TotalSales) %>%
   head(10)

worst_categories <- iowa_sales %>%
   group_by(Category.Name) %>%
   summarize(TotalSales = sum(State.Bottle.Retail * Bottles.Sold)) %>%
   arrange(TotalSales) %>%
   head(10)

top_categories
```

```
## # A tibble: 10 x 2
##    Category.Name             TotalSales
##    <chr>                          <dbl>
##  1 AMERICAN VODKAS            21007688.
##  2 CANADIAN WHISKIES          16438968.
##  3 SPICED RUM                  9780703.
##  4 IMPORTED VODKAS             8235447.
##  5 STRAIGHT BOURBON WHISKIES   7942365.
##  6 WHISKEY LIQUEUR             6817983.
##  7 TENNESSEE WHISKIES          5895243.
##  8 100% AGAVE TEQUILA          4924266.
##  9 AMERICAN FLAVORED VODKA     4627030.
## 10 IMPORTED BRANDIES           4564791.
```

```r
#Step 4 - Visualize the Top 10 Total sales by category

ggplot(top_categories, aes(x = reorder(Category.Name, TotalSales), y = TotalSales)) +
  geom_bar(stat = "identity", fill = "Green") +
  labs(title = "Top 10 Alcohol Categories by Total Sales",
       x = NULL,
       y = "Total Sales ($)") +
  theme_minimal() +
  theme(axis.text.x = element_text(angle = 45, hjust = 1, size = 8)) +
  scale_y_continuous(labels = scales::label_number(scale = 1e-6, suffix = "M"))
```



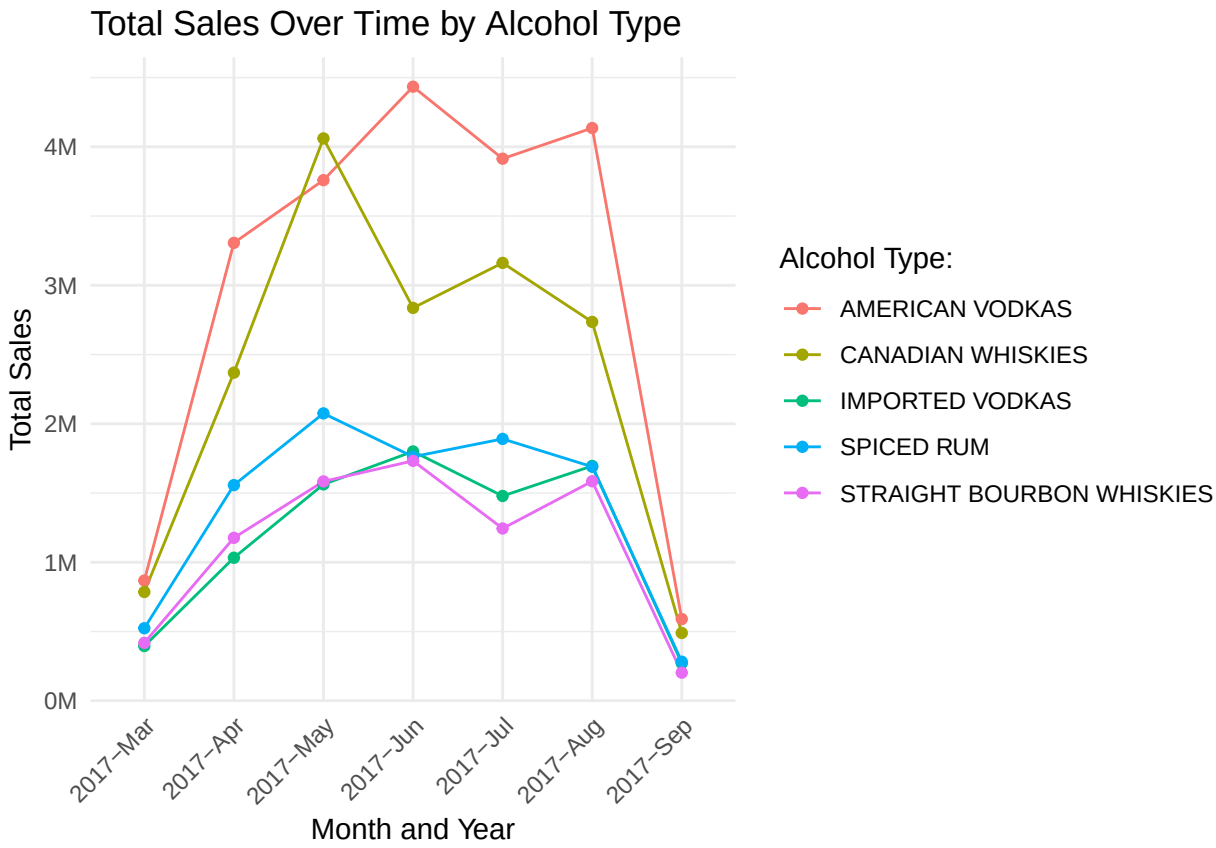

```
# Visualize the bottom 10 selling alcohol categories

ggplot(worst_categories, aes(x = reorder(Category.Name, -TotalSales), y = TotalSales)) +
  geom_bar(stat = "identity", fill = "Red") +
  labs(title = "Bottom 10 Alcohol Categories by Total Sales",
       x = NULL,
       y = "Total Sales ($)") +
  theme_minimal() +
  theme(axis.text.x = element_text(angle = 45, hjust = 1, size = 8)) +
  scale_y_continuous(labels = scales::label_number(scale = 1e-3, suffix = "K"))
```



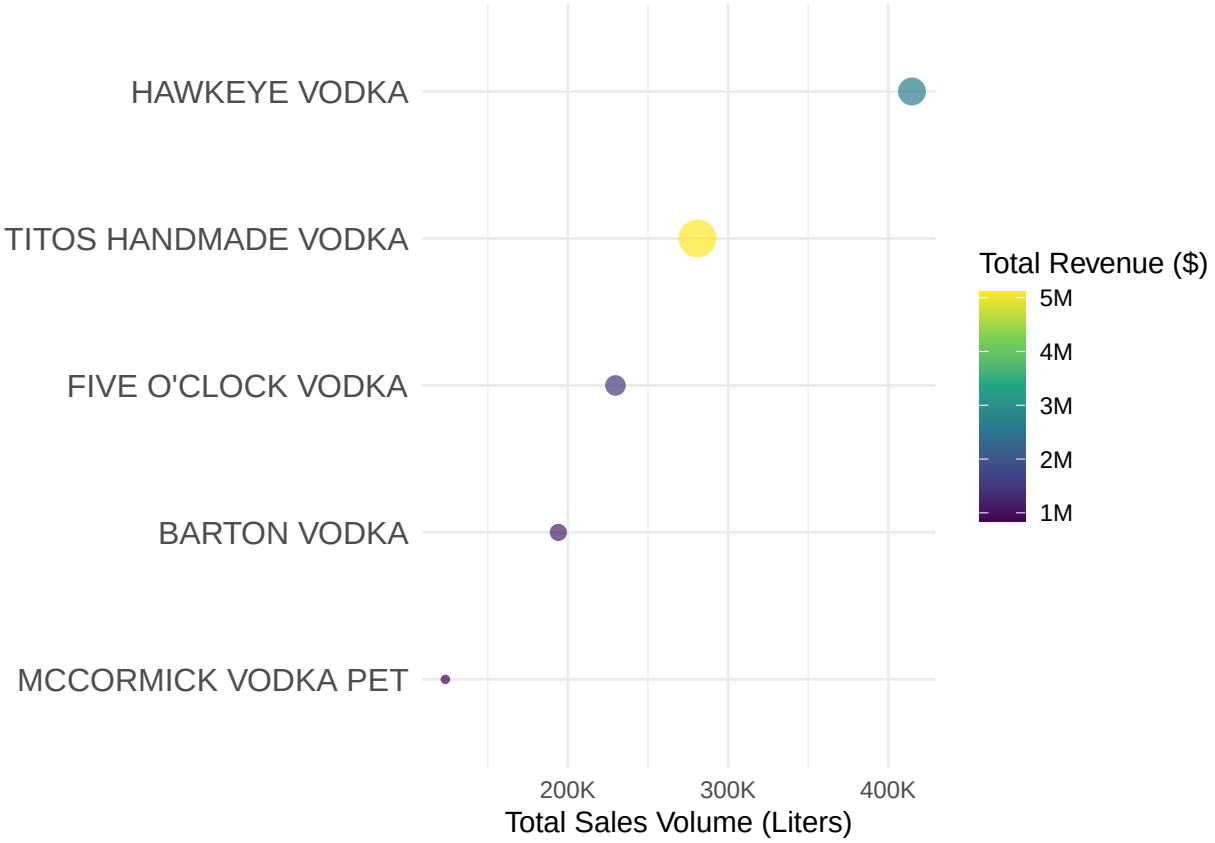

```
#Step 5 - Make line plot for sales over time for top selling categories

filtered_data <- iowa_sales %>%
  filter(Category.Name %in% c("AMERICAN VODKAS", "CANADIAN WHISKIES", "SPICED RUM", "IMPORTED VODKAS",

filtered_data$Total.Sales <- filtered_data$State.Bottle.Retail * filtered_data$Bottles.Sold

summed_sales <- filtered_data %>%
  mutate(Year = year(Date), Month = month(Date, label = TRUE)) %>%
  group_by(Year, Month, Category.Name) %>%
  summarise(Total.Sales = sum(Total.Sales))
```

```
## `summarise()` has grouped output by 'Year', 'Month'. You can override using the
## `.groups` argument.
```

```
ggplot(summed_sales, aes(x = interaction(Year, Month, sep = "-"), y = Total.Sales, color = Category.Nam
  geom_line(aes(group = Category.Name)) +
  geom_point() +
  labs(title = "Total Sales Over Time by Alcohol Type", x = "Month and Year", y = "Total Sales", color =
  theme_minimal() +
  theme(axis.text.x = element_text(angle = 45, hjust = 1)) +
  scale_y_continuous(labels = scales::label_number(scale = 1e-6, suffix = "M"))
```




```r
# Make visualization for best selling American Vodkas

american_vodka_sales <- iowa_sales %>%
  filter(Category.Name == "AMERICAN VODKAS") %>%
  group_by(Item.Description) %>%
  summarize(TotalVolume = sum(Volume.Sold.Liters),TotalRevenue = sum(Bottles.Sold * State.Bottle.Retail
  arrange(-TotalVolume)

selected_vodkas <- c("HAWKEYE VODKA", "TITOS HANDMADE VODKA", "FIVE O'CLOCK VODKA", "BARTON VODKA", "MC

filtered_vodka_sales <- american_vodka_sales %>%
  filter(Item.Description %in% selected_vodkas)

ggplot(filtered_vodka_sales, aes(x = reorder(Item.Description, TotalVolume), y = TotalVolume)) +
  geom_point(aes(size = TotalRevenue, color = TotalRevenue), alpha = 0.7) +
  coord_flip() +
  theme_minimal() +
  labs(x = NULL, y = "Total Sales Volume (Liters)") +
  theme(axis.text.y = element_text(size = 12)) +
  guides(size = "none") +
  scale_color_viridis_c(name = "Total Revenue ($)", labels = scales::label_number(scale = 1e-6, suffix =
  scale_y_continuous(labels = scales::label_number(scale = 1e-3, suffix = "K"))
```




```
# Calculate profit margin for best selling vodkas and visualize it

profit_margin_data <- iowa_sales %>%
  filter(Item.Description %in% selected_vodkas) %>%
  group_by(Item.Description) %>%
  summarize(
    TotalRevenue = sum(State.Bottle.Retail * Bottles.Sold),
    TotalCost = sum(State.Bottle.Cost * Bottles.Sold)) %>%
  mutate(ProfitMargin = (TotalRevenue - TotalCost) / TotalRevenue * 100)

profit_margin_data
```

```
## # A tibble: 5 x 4
##   Item.Description     TotalRevenue TotalCost ProfitMargin
##   <chr>                       <dbl>     <dbl>        <dbl>
## 1 BARTON VODKA             1163141.   775014.         33.4
## 2 FIVE O'CLOCK VODKA       1491609.   993805.         33.4
## 3 HAWKEYE VODKA            2637605.  1757743.         33.4
## 4 MCCORMICK VODKA PET       843175.   562006.         33.3
## 5 TITOS HANDMADE VODKA     5111072.  3407003.         33.3
```

```
#Make plot for alcohol that generates the least amount of revenue

iowa_sales <- iowa_sales %>%
  mutate(Revenue = State.Bottle.Retail * Bottles.Sold)

least_revenue_alcohol <- iowa_sales %>%
  group_by(Item.Description) %>%
```

```
  summarize(TotalRevenue = sum(Revenue)) %>%
  arrange(TotalRevenue)

least_revenue_alcohol <- head(least_revenue_alcohol, 20)

least_revenue_alcohol
```

```
## # A tibble: 20 x 2
##    Item.Description                              TotalRevenue
##    <chr>                                                <dbl>
##  1 YB BOURBON 50ML TRIPPLE                               7.02
##  2 STOLICHNAYA CRUSHED RUBY RED GRAPEFRUIT MINI          8.82
##  3 YB BOURBON 100ML                                     10.0
##  4 YB BOURBON 200ML                                     14.0
##  5 KAHLUA CHILI CHOCOLATE                               18.0
##  6 CASTILLO SPICED RUM                                  18.7
##  7 YB BOURBON 375ML PILAR                               19.4
##  8 GJERGJ KASTRIOTI SKENDERBEU V.S.O.P KONJAK           19.5
##  9 BENCHMARK EGG NOG                                    24
## 10 GRANNY'S GINGERBREAD CREAM                           24.8
## 11 CALIBER TRIPLE SEC                                   26.0
## 12 MARIE BRIZARD PEACH                                  29.0
## 13 HOLSTEIN SINGLE BARREL SIPPIN' RUM                   30.3
## 14 CHARLES BAUR FINE D'ALSACE                           33
## 15 SCHWARTZHOG KRAUTER LIQUEUR MINI                     37.8
## 16 YAHARA BAY APPLE CRISP(APPLE PIE)                    38.6
## 17 YB BOURBON 1 LITER                                   38.9
## 18 RONDIAZ MINI                                         42.1
## 19 CALIBER PEACH SCHNAPPS                               43.3
## 20 CALIBER SOUR APPLE SCHNAPPS                          43.3
```

```
ggplot(least_revenue_alcohol, aes(x = Item.Description, y = TotalRevenue)) +
  geom_point(color = "red") +
  coord_flip() +
  labs(title = "Worst Selling Products", x = NULL, y = "Total Revenue ($)") +
  theme_minimal() +
  theme(axis.text.x = element_text(angle = 45, hjust = 1)) +
  theme(axis.text.y = element_text(size = 8))
```


Worst Selling Products
YB BOURBON 50ML TRIPPLE
YB BOURBON 375ML PILAR
YB BOURBON 200ML
YB BOURBON 100ML
YB BOURBON 1 LITER
YAHARA BAY APPLE CRISP(APPLE PIE)
STOLICHNAYA CRUSHED RUBY RED GRAPEFRUIT MINI
SCHWARTZHOG KRAUTER LIQUEUR MINI
RONDIAZ MINI
MARIE BRIZARD PEACH
KAHLUA CHILI CHOCOLATE
HOLSTEIN SINGLE BARREL SIPPIN' RUM
GRANNY'S GINGERBREAD CREAM
GJERGJ KASTRIOTI SKENDERBEU V.S.O.P KONJAK
CHARLES BAUR FINE D'ALSACE
CASTILLO SPICED RUM
CALIBER TRIPLE SEC
CALIBER SOUR APPLE SCHNAPPS
CALIBER PEACH SCHNAPPS
BENCHMARK EGG NOG
10
20
30
40
Total Revenue ($)