Analysis

Overview

This is our analysis of the Science Museum of Minnesota member data for participation in the Analyze This! 2016 Science Museum Summer Challenge.

Keep It Statistically Simple Team

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Import the data into dataframes

Let's start by pulling the data into local variables. Noted here so you can see where the data comes from. If you do not have a copy of the `SMM Competitor Workbook 5.25.16.xlsx` file, please contact Beth Varro at bvarro@smm.org and fill out an NDA.

```
library(readxl)
workbook.file <- "data/SMM Competitor Workbook 5.25.16.xlsx"
ad <- read_excel(workbook.file, sheet="Analytics Dataset")
ml <- read_excel(workbook.file, sheet="Mbrshp Level")
pm <- read_excel(workbook.file, sheet="Pmt Mthd")
sc <- read_excel(workbook.file, sheet="Sales Channel")
o1 <- read_excel(workbook.file, sheet="Offer on 1st Ren Notice")
ei <- read_excel(workbook.file, sheet="Email Indicators")
eo <- read_excel(workbook.file, sheet="EMail Options")
d1 <- read_excel(workbook.file, sheet="Demo_1")
zc <- read_excel(workbook.file, sheet="Zip Code")
kp <- read_excel(workbook.file, sheet="Key people on Membership")
nv <- read_excel(workbook.file, sheet="Num Visits")
cs <- read_excel(workbook.file, sheet="CSIs")
co <- read_excel(workbook.file, sheet="Communication")
```

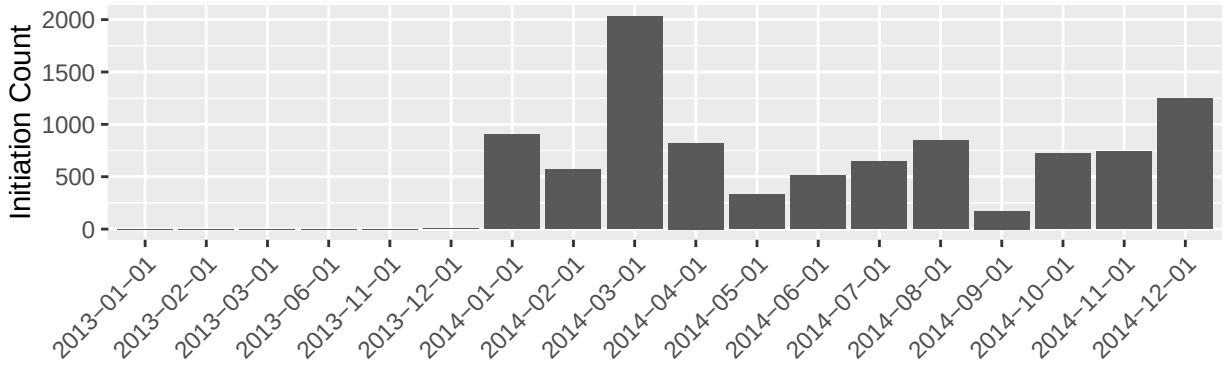
```
## Warning in read_xlsx_(path, sheet, col_names = col_names, col_types =
## col_types, : [9106, 1]: expecting numeric: got 'Grand Total'
```

Basic Visuals

Let's take a first pass to see what the data looks like.

```
library(ggplot2)
ad$`Initiation Month` <- cut(ad$`Initiation Date`, breaks="month")
ad$`Expiration Month` <- cut(ad$`Expiration Date`, breaks="month")
```

Here we have a bar chart showing in what months the initiations are found.



And this shows the expirations by month. Showing expirations as a negative count.