Miami-Dade-Analysis

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```
library(tidyverse)
```

```
## -- Attaching packages ---------------------------------------------------- tidyverse 1.2.1 --
```

```
## v ggplot2 2.2.1.9000     v purrr   0.2.5
## v tibble  1.4.2          v dplyr   0.7.5
## v tidyr   0.8.1          v stringr 1.3.1.9000
## v readr   1.1.1          v forcats 0.3.0
```

```
## -- Conflicts ------------------------------------------------------- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(lubridate)
```

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

```
## The following object is masked from 'package:base':
##
##     date
```

```
 setwd("C:/Users/volpem/Desktop")
books <- read.csv("JailBookings_Dec618.csv")
```

Pick Appropriate Charges

```
books$Charge1 <- as.character(books$Charge1)
books$Charge2 <- as.character(books$Charge2)
books$Charge3 <- as.character(books$Charge3)

charges <- data.frame(charges = sort(books$Charge1))
charges2 <- data.frame(charges = sort(books$Charge2))
charges3 <- data.frame(charges = sort(books$Charge3))

charges <- rbind(charges,charges2,charges3)

charges <- charges[!duplicated(charges$charges),]

rel_charges <-c("DWLS-NO PRIOR FELONY", "DWLS/2ND OFFENSE", "DWLS/3RD & SUBS OFFN", "DWLS/FIN RESP/REFUS
```

Filter Appropriate Charges

```
books_fil <- books %>%
  filter(Charge1 %in% rel_charges|
```

```
            Charge2 %in% rel_charges|
            Charge3 %in% rel_charges)
```

Examine Charge Codes

```
ChargeCodes <-books_fil$ChargeCode1[match(rel_charges, books_fil$Charge1)]
ChargeCodes<- unique(as.character(ChargeCodes))
```

```
# 322340010A - DWLS (No Prior Felony)
# 32234002B -  DWLS/2ND OFFENSE
# 32234002C - DWLS/3RD & SUBS OFFN
# 32420101  - DWLS/FIN RESP/REFUSE
# 322340010B2 - DWLS/FIN SUSP/SUB V (subsequent violation)
# 322340010B1 - DWLS/FINANCIAL SUSP
# 32234005    - DWLS/HABITUAL
# 32234002A   - DWLS/KNOWINGLY
```

Other Relevant Charges

```
other_charges <- c("ALIAS CAPIAS", "BENCH WARRANT", "DL/DRV WHL PERM/REVK")
OtherCodes <- as.character(books_fil$ChargeCode1[match(other_charges, books_fil$Charge1)])
```

Select DWLS (Most Likely) Candidates

```
books_fil <- books_fil %>% mutate(DWLS = case_when(
  Charge1 %in% rel_charges & Charge2 %in% rel_charges & Charge3 %in% rel_charges ~ 1,
  Charge1 %in% rel_charges & Charge2 %in% rel_charges & Charge3 == "" ~1,
  Charge1 %in% rel_charges & Charge2 == "" & Charge3 %in% rel_charges ~1,
  Charge1 %in% rel_charges & Charge2 == "" & Charge3 == "" ~1,
  Charge1 == "" & Charge2 %in% rel_charges & Charge3 == "" ~1,
  Charge1 == "" & Charge2 == "" & Charge3 %in% rel_charges ~ 1,
  Charge1 %in% other_charges & Charge2 %in% rel_charges & Charge3 %in% rel_charges ~1,
  Charge1 %in% other_charges & Charge2 %in% rel_charges & Charge3 == "" ~1,
  Charge1 %in% other_charges & Charge2 %in% other_charges & Charge3 %in% rel_charges ~1,
 !Charge1 %in% rel_charges|!Charge1 %in% other_charges  ~0
))
```

```
DWLS_Likely <- books_fil %>%
  filter(DWLS ==1)
```

Some Data Cleaning

```
DWLS_Likely$BookDate <- as.character(DWLS_Likely$BookDate)
DWLS_Likely$BookDate <- mdy(DWLS_Likely$BookDate)
DWLS_Likely$Year <- year(DWLS_Likely$BookDate)
```

"Naive" Analysis

```
#2016 Florida Corrections: Annual Jail Capacity Survey self-reported inmate per-diem cost is 156.00

#The Average Length of Stay for Mami Dade Corrections is 31.92

# first conviction may be a second-degree misdemeanor, punishable by a maximum fine of $500 and a maxim
#Your second conviction may be a first-degree misdemeanor, punishable by a maximum $1,000 fine and a ma
#Your third or subsequent conviction may be a third-degree felony, punishable by a maximum fine of $5,0

DWLS_Likely %>%
  group_by(Year)%>%
  summarise(n=n(),FTP.Ratio = ceiling((n*.05)), one.day.cost = 156*FTP.Ratio,
            two.day.cost = (2*156)*FTP.Ratio,
            average.stay.= (32*156)*FTP.Ratio,
            first.offense.max = (60*156)*FTP.Ratio,
            second.offense.max = (365*156)*FTP.Ratio,
            subsequent.offense.max = (1825*156)*FTP.Ratio)
```

```
## # A tibble: 4 x 9
##    Year     n FTP.Ratio one.day.cost two.day.cost average.stay.
##   <dbl> <int>     <dbl>        <dbl>        <dbl>         <dbl>
## 1  2015  1696        85        13260        26520        424320
## 2  2016  2345       118        18408        36816        589056
## 3  2017  2325       117        18252        36504        584064
## 4  2018  2120       106        16536        33072        529152
## # ... with 3 more variables: first.offense.max <dbl>,
## #   second.offense.max <dbl>, subsequent.offense.max <dbl>
```

All Known First Time Offenders

```
# 322340010A - DWLS (No Prior Felony)

DWLS_Likely %>%
  filter(ChargeCode1 == "322340010A" | ChargeCode2 == "322340010A" | ChargeCode3 == "322340010A") %>%
  group_by(Year)%>%
  summarise(n=n(), FTP.Ratio = ceiling((n*.05)),
            one.day.cost = 156*FTP.Ratio,
            first.offense.max = (60*156)*FTP.Ratio)
```

```
## # A tibble: 4 x 5
##    Year     n FTP.Ratio one.day.cost first.offense.max
##   <dbl> <int>     <dbl>        <dbl>             <dbl>
## 1  2015    44         3          468             28080
## 2  2016    48         3          468             28080
## 3  2017    77         4          624             37440
## 4  2018    12         1          156              9360
```

All Second Time Offenders

```
# 32234002B -  DWLS/2ND OFFENSE

DWLS_Likely %>%
  filter(ChargeCode1 == "32234002B" | ChargeCode2 == "32234002B" | ChargeCode3 == "32234002B") %>%
  group_by(Year)%>%
  summarise(n=n(), FTP.Ratio = ceiling((n*.05)),
            one.day.cost = 156*FTP.Ratio,
            second.offense.max = (365*156)*FTP.Ratio)
```

```
## # A tibble: 4 x 5
##    Year     n FTP.Ratio one.day.cost second.offense.max
##   <dbl> <int>     <dbl>        <dbl>               <dbl>
## 1  2015    44         3          468              170820
## 2  2016    65         4          624              227760
## 3  2017    64         4          624              227760
## 4  2018    62         4          624              227760
```

All Subsequent Offenders

```
# 32234002C - DWLS/3RD & SUBS OFFN

DWLS_Likely %>%
  filter(ChargeCode1 == "32234002C" | ChargeCode2 == "32234002C" | ChargeCode3 == "32234002C") %>%
  group_by(Year)%>%
  summarise(n=n(), FTP.Ratio = ceiling((n*.05)),
            one.day.cost = 156*FTP.Ratio,
            ubsequent.offense.max = (1825*156)*FTP.Ratio)
```

```
## # A tibble: 4 x 5
##    Year     n FTP.Ratio one.day.cost ubsequent.offense.max
##   <dbl> <int>     <dbl>        <dbl>                 <dbl>
## 1  2015    52         3          468                854100
## 2  2016   116         6          936               1708200
## 3  2017   160         8         1248               2277600
## 4  2018   188        10         1560               2847000
```

Only Filtering on Financial Responsibility DWLS

```
# 32420101  - DWLS/FIN RESP/REFUSE
# 322340010B2 - DWLS/FIN SUSP/SUB V (subsequent violation)
# 322340010B1 - DWLS/FINANCIAL SUSP

fin_codes <- c("32420101","322340010B2", "322340010B1")

DWLS_Likely %>%
  filter(ChargeCode1 %in% fin_codes | ChargeCode2 %in% fin_codes | ChargeCode3 %in%
           fin_codes) %>%
```

```
  group_by(Year)%>%
  summarise(n=n(),FTP.Ratio = ceiling((n*.05)), one.day.cost = 156*FTP.Ratio,
            two.day.cost = (2*156)*FTP.Ratio,
            average.stay.= (32*156)*FTP.Ratio,
            first.offense.max = (60*156)*FTP.Ratio,
            second.offense.max = (365*156)*FTP.Ratio,
            subsequent.offense.max = (1825*156)*FTP.Ratio)
```

```
## # A tibble: 4 x 9
##    Year     n FTP.Ratio one.day.cost two.day.cost average.stay.
##   <dbl> <int>     <dbl>        <dbl>        <dbl>         <dbl>
## 1  2015    32         2          312          624          9984
## 2  2016    37         2          312          624          9984
## 3  2017    37         2          312          624          9984
## 4  2018    35         2          312          624          9984
## # ... with 3 more variables: first.offense.max <dbl>,
## #   second.offense.max <dbl>, subsequent.offense.max <dbl>
```