Visualizing Time with Lines & Monthly Titles

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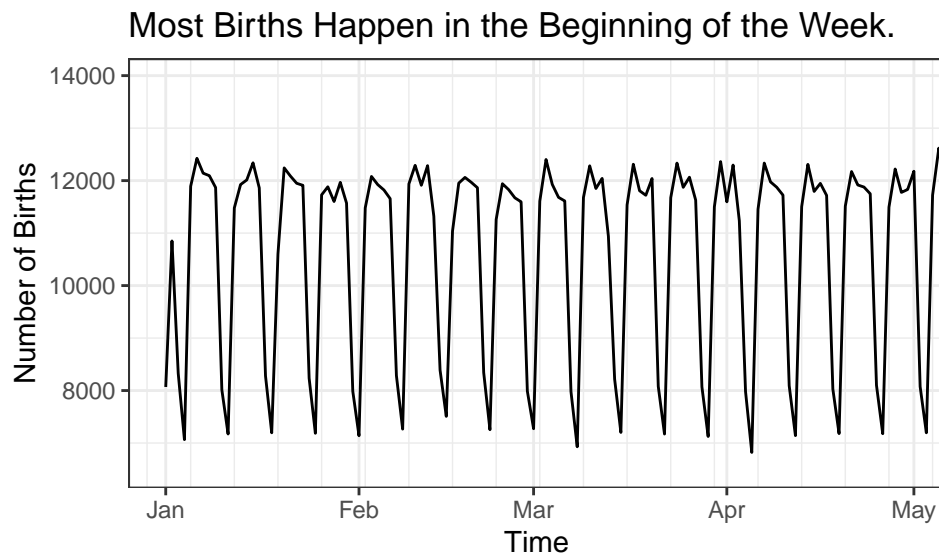
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Part 1: Simple Line Graph

```
data("Births2015")
head(Births2015)
```

```
##           date births wday year month day_of_year day_of_month day_of_week
## 1 2015-01-01   8068  Thu 2015     1           1            1           5
## 2 2015-01-02  10850  Fri 2015     1           2            2           6
## 3 2015-01-03   8328  Sat 2015     1           3            3           7
## 4 2015-01-04   7065  Sun 2015     1           4            4           1
## 5 2015-01-05  11892  Mon 2015     1           5            5           2
## 6 2015-01-06  12425  Tue 2015     1           6            6           3
```
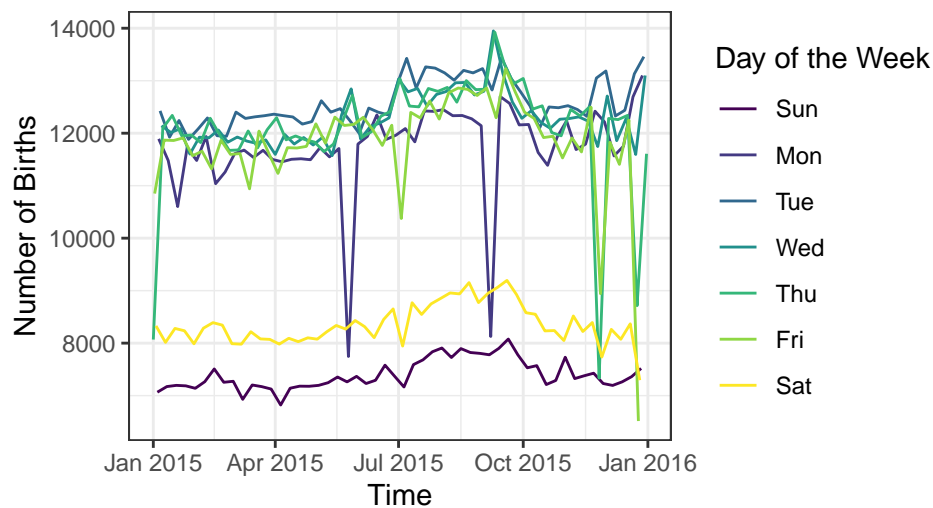
```
gf_line(births~date, data=Births2015) %>%
  gf_refine(coord_cartesian(xlim=c(as.Date("2015-01-01"), as.Date("2015-4-30")))) %>%
  gf_refine(scale_x_date(date_minor_breaks = "1 week")) %>% gf_labs(title="Most Births Happen in the Beg
```


Part 2: Multiple Lines - Line Graph

```
gf_line(births~date, data=Births2015, color=~wday) %>%
  gf_labs(title="Most Births Happen During the Week compared to Weekends.", x="Time",
    y="Number of Births",color="Day of the Week")
```

Most Births Happen During the Week compared to We

Part 3: Tile by Month

```r
# Added Shift Variable
Births2015.shift = subset(Births2015,day_of_month==1) %>%
  mutate(Shift = day_of_week - day_of_month) %>%
  select(month,Shift)

# Joined into new dataset
new.Births2015 = full_join(Births2015, Births2015.shift) %>%
  mutate(week_of_month = ceiling((day_of_month + Shift)/7))
```

```
## Joining, by = "month"
```

```r
head(new.Births2015)
```

```
##          date births wday year month day_of_year day_of_month day_of_week Shift
## 1 2015-01-01   8068  Thu 2015     1           1            1           5     4
## 2 2015-01-02  10850  Fri 2015     1           2            2           6     4
## 3 2015-01-03   8328  Sat 2015     1           3            3           7     4
## 4 2015-01-04   7065  Sun 2015     1           4            4           1     4
## 5 2015-01-05  11892  Mon 2015     1           5            5           2     4
## 6 2015-01-06  12425  Tue 2015     1           6            6           3     4
##   week_of_month
## 1             1
## 2             1
## 3             1
## 4             2
## 5             2
## 6             2
```

```r
# Change Theme
theme_set(theme_light())


gf_tile(week_of_month ~ wday | factor(month.abb[month],levels=month.abb), data=new.Births2015,
        fill = ~births, show.legend = FALSE) %>%
```

```
gf_refine(scale_y_reverse(),scale_fill_viridis(),
          scale_x_discrete(labels = function(x) abbreviate (x, minlength=1))) %>%
gf_theme(axis.text.y= element_blank(), axis.ticks.y = element_blank()) %>%
gf_labs(x="",y="",title="Most Births Happen on Weekdays", subtitle= "With the exception of US Holidays
```

Most Births Happen on Weekdays

With the exception of US Holidays