Answers 4 - More on advanced graphics

Osama Mahmoud

Getting started

We aim to practice on how to use `theme` and `facet` concepts in `ggplot2`, we'll use the same plots created in the previous practical session on `advanced graphics`.

Firstly, We should load the `ggplot2`

```
library("ggplot2")
```

Next, we load the `movies` data set

```
# Details of the movies dataset can be displayed by:
library(ggplot2movies)
data(movies, package="ggplot2movies")
?movies
```

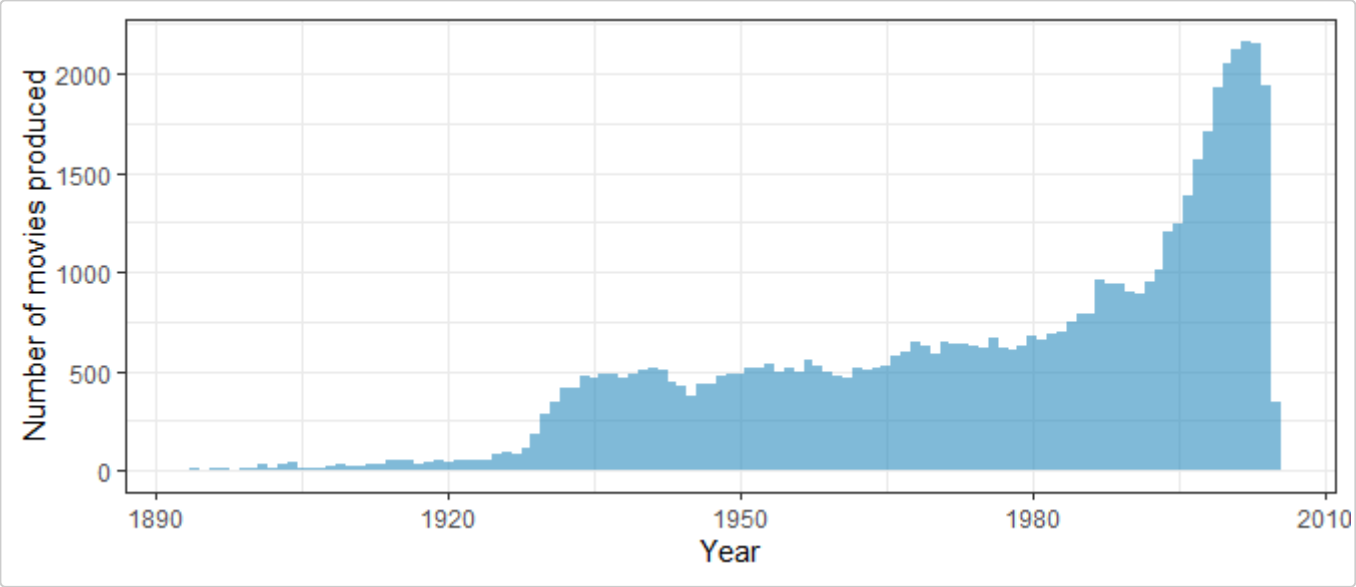
When loading in data, it's a good idea to check some basic characteristics:

```
head(movies)
```

1. What is the number of movies produced per year? Use the black-and-white theme with this plot. Can you notice changes when you compare your answers, with and without the requested theme?

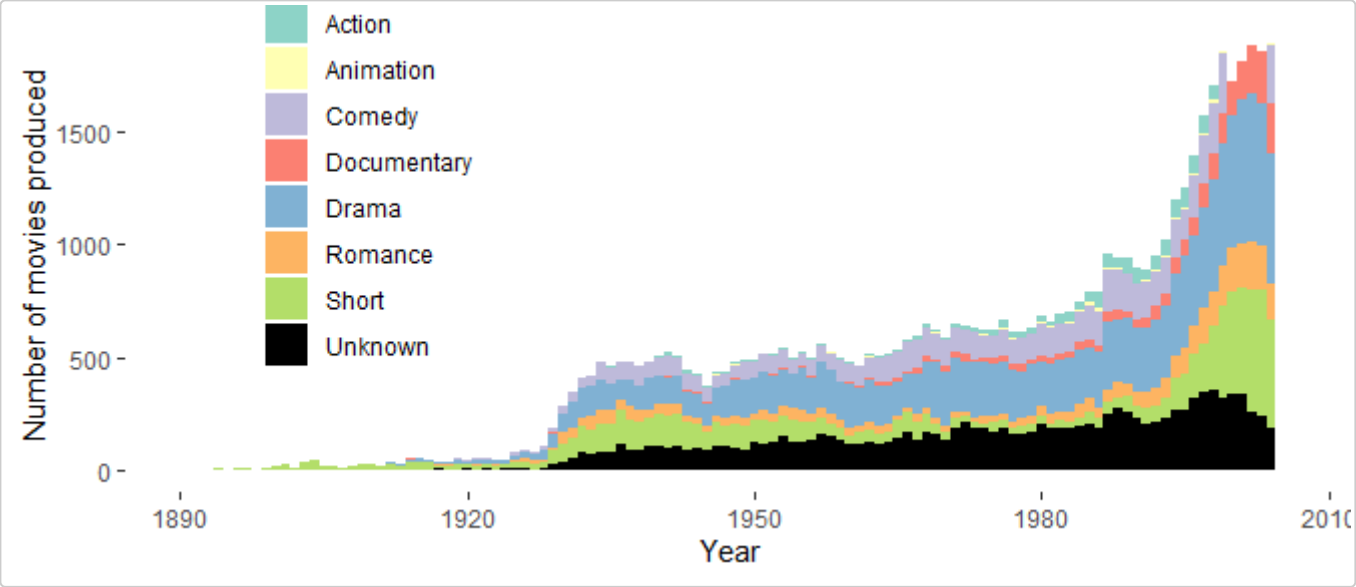
```
g = ggplot(data=movies, aes(x=year))
g1 = g + geom_histogram(binwidth = 1, fill="#2b8cbe", alpha=0.6) +
  xlab("Year") + ylab("Number of movies produced") + theme_bw()
```

```
g1
```



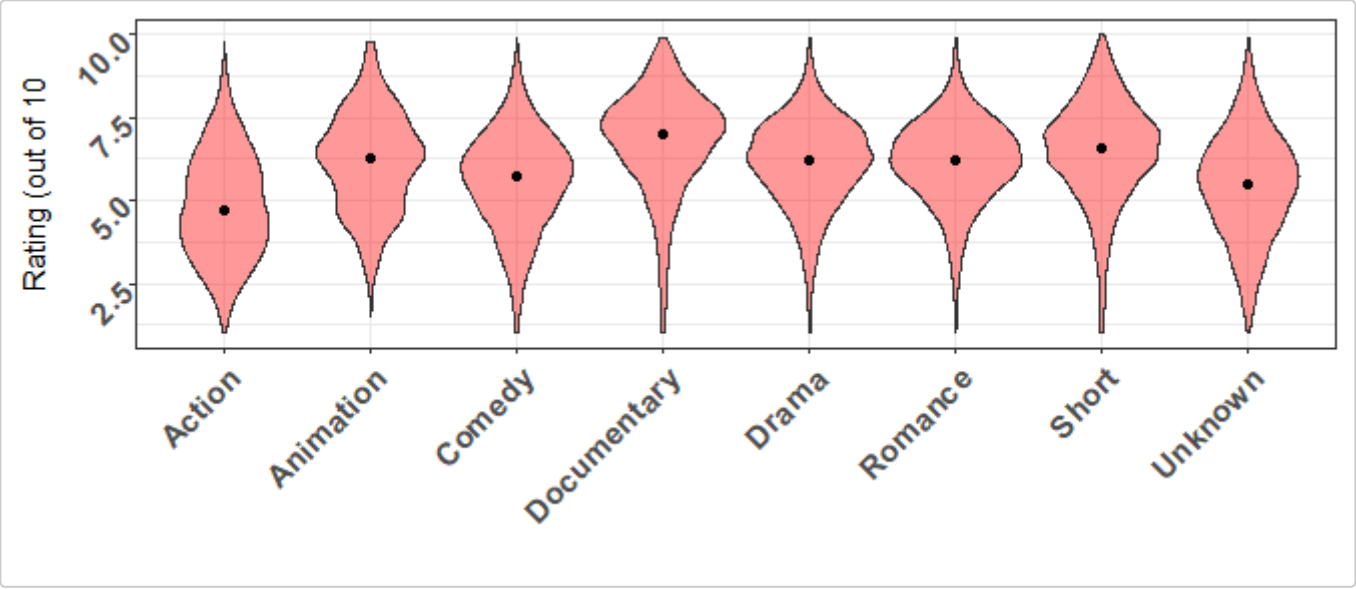
2. What is the number of movies produced per year per genre (action, animation ect)? Use the black-and-white theme customised to: relocate legend position; remove legend background (if any); remove panel.grid; etc. (if you wish)

```
# TIP: You need first to create a genre variable:
genre <- rep(0, nrow(movies))
for(i in 18:24)
{
  genre[movies[,i]==1] <- names(movies)[i]
}; genre[genre==0] <- "Unknown"
movies$Genre <- genre


clr <- c('#8dd3c7','#ffffb3','#bebada','#fb8072','#80b1d3','#fdb462','#b3de69', '#000000')

ggplot(movies, aes(x=year, fill=Genre)) + geom_histogram(binwidth=1) + scale_fill_manual(values =
clr) +
  xlab("Year") + ylab("Number of movies produced") + ylim(0,1900) + xlim(1890,2005) +
  theme_bw() +
  theme(
    legend.position = c(0.2,0.7),
    legend.background = element_blank(),
    legend.key        = element_blank(),
    panel.background  = element_blank(),
    strip.background  = element_blank(),
    panel.border      = element_blank(),
    plot.background   = element_blank(),
    axis.line         = element_blank(),
    panel.grid = element_blank()
  )
```



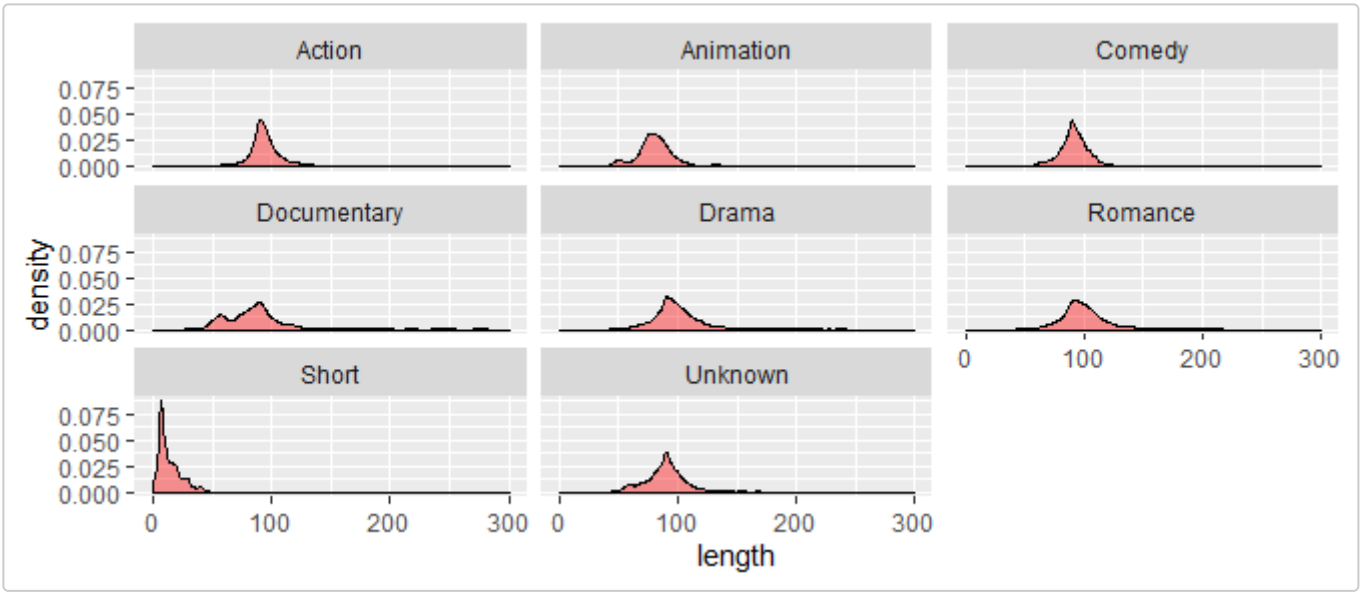
3. Is there a difference on rating depending on genre? Use the black-and-white theme customised to get the `axis.text`: `bold`, of `12` font size; with an angle of `45`; with horizontal justification to right (`hjust = 1`)

```
ggplot(movies, aes(x=factor(Genre), y=rating)) + xlab("") + ylab("Rating (out of 10") +
  geom_violin(fill="red", alpha=0.4) +
  stat_summary(fun.y = median, geom='point') +
  theme_bw() +
  theme(axis.text=element_text(face='bold', size = 12, angle = 45, hjust = 1))
```



4. Does the length of the movie change per genre? (you may use `facet_wrap`)

```
ggplot(movies, aes(x=length)) +
  geom_density(fill="red", alpha=0.4) +
  xlim(0,300) + facet_wrap(~ Genre)
```


Action
Animation
Comedy
Documentary
Drama
Romance
Short
Unknown
density
0.075
0.050
0.025
0.000
0
100
200
300
length