R Script

Assignment 6.2: Histogram, Boxplot, Bullet Chart, Parallel Coordinate

DSC640

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In [35]:
```
library(ggplot2)
library(readxl)
library(scales)
library(plyr)
library(dplyr)
library(ggrepel)
library(reshape2)
```

In [7]:
```
birthrates <- read.csv('birth-rate.csv')
head(birthrates)
```

Country	X1960	X1961	X1962	X1963	X1964	X1965	X1966	X1967	X1968	...	X1999	X2000	X2001	X2002	
Aruba	36.40000	35.179	33.863	32.459	30.994	29.51300	28.069	26.721	25.518	...	15.02400	14.5280	14.04100	13.57900	13
Afghanistan	52.20100	52.206	52.208	52.204	52.192	52.16800	52.130	52.076	52.006	...	51.22900	50.9030	50.48600	49.98400	49
Angola	54.43200	54.394	54.317	54.199	54.040	53.83600	53.585	53.296	52.984	...	48.66200	48.3550	48.00500	47.54500	46
Albania	40.88600	40.312	39.604	38.792	37.913	37.00800	36.112	35.245	34.421	...	17.71300	16.8500	16.08100	15.44400	14
Netherlands Antilles	32.32100	30.987	29.618	28.229	26.849	25.51800	24.280	23.173	22.230	...	15.80900	15.4120	15.09600	14.82400	14
Arab World	47.61122	NA	NA	NA	NA	46.57288	NA	NA	NA	...	29.07314	28.6828	28.30524	27.96244	27

R - Histogram

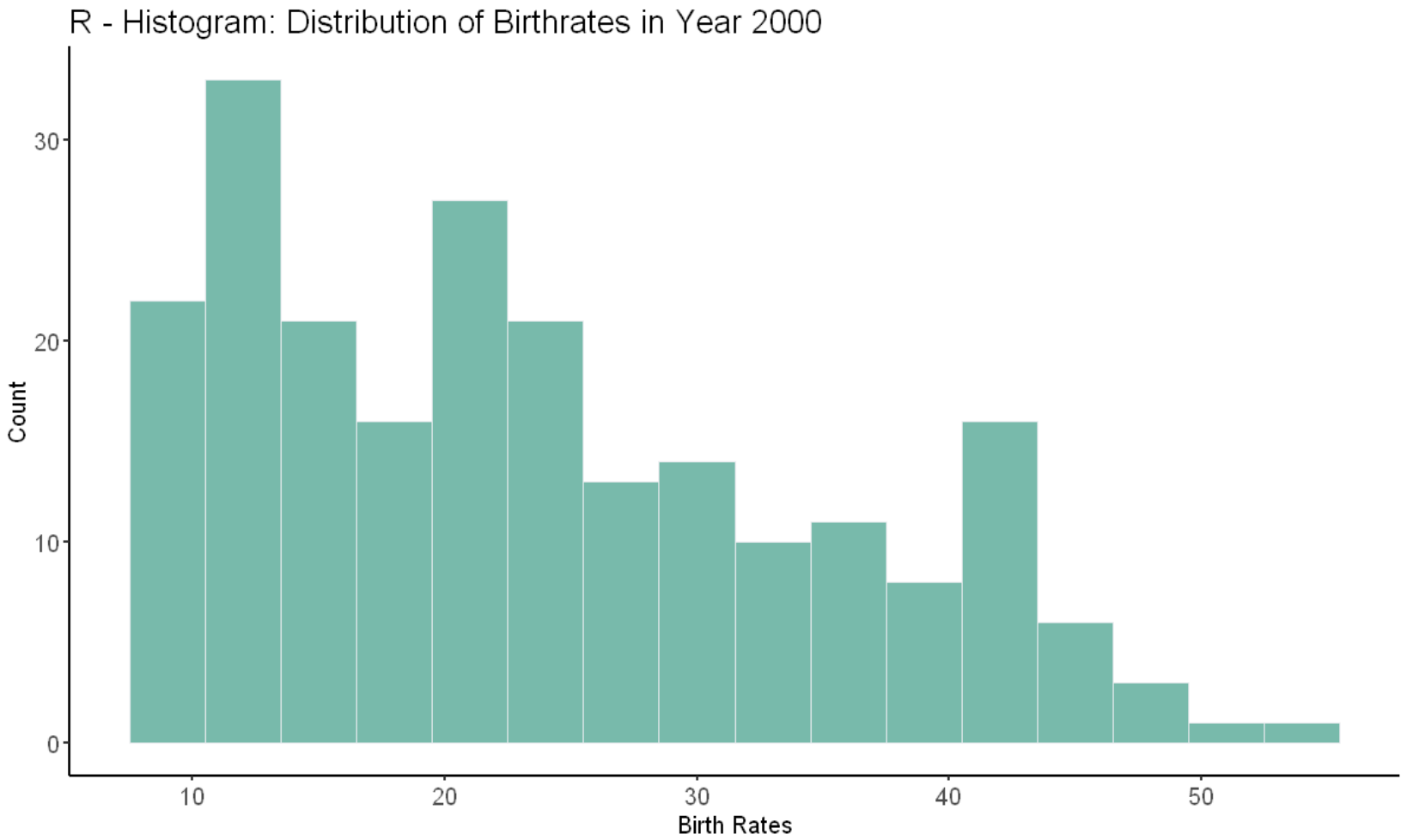
In [21]:

```
options(repr.plot.width =10, repr.plot.height =6)

# plot
p <- birthrates %>%
  ggplot( aes(x=X2000)) +
    geom_histogram( binwidth=3, fill="#69b3a2", color="#e9ecef", alpha=0.9) +
    ggtitle("Bin size = 30")
p + theme_classic() +
  theme(text = element_text(family="sans",size =12, color="black"), element_line(size = .6),
        plot.title = element_text(size = 16), axis.text.x = element_text(size=12),
        axis.text.y = element_text(size=12))+
ylab("Count") +
xlab("Birth Rates") +
  ggtitle("R - Histogram: Distribution of Birthrates in Year 2000")

```

```
Warning message:
"Removed 11 rows containing non-finite values (stat_bin)."
```



R - Bubble Chart

In [33]:

```
1 dt <-birthrates %>%
2             filter(Country %in% c('India', 'Pakistan', 'Bangladesh', 'Nepal', 'Bhutan', 'Maldives', 'Afg
```

In [40]:

```
dt2 <- melt(dt)
head(dt2)
```

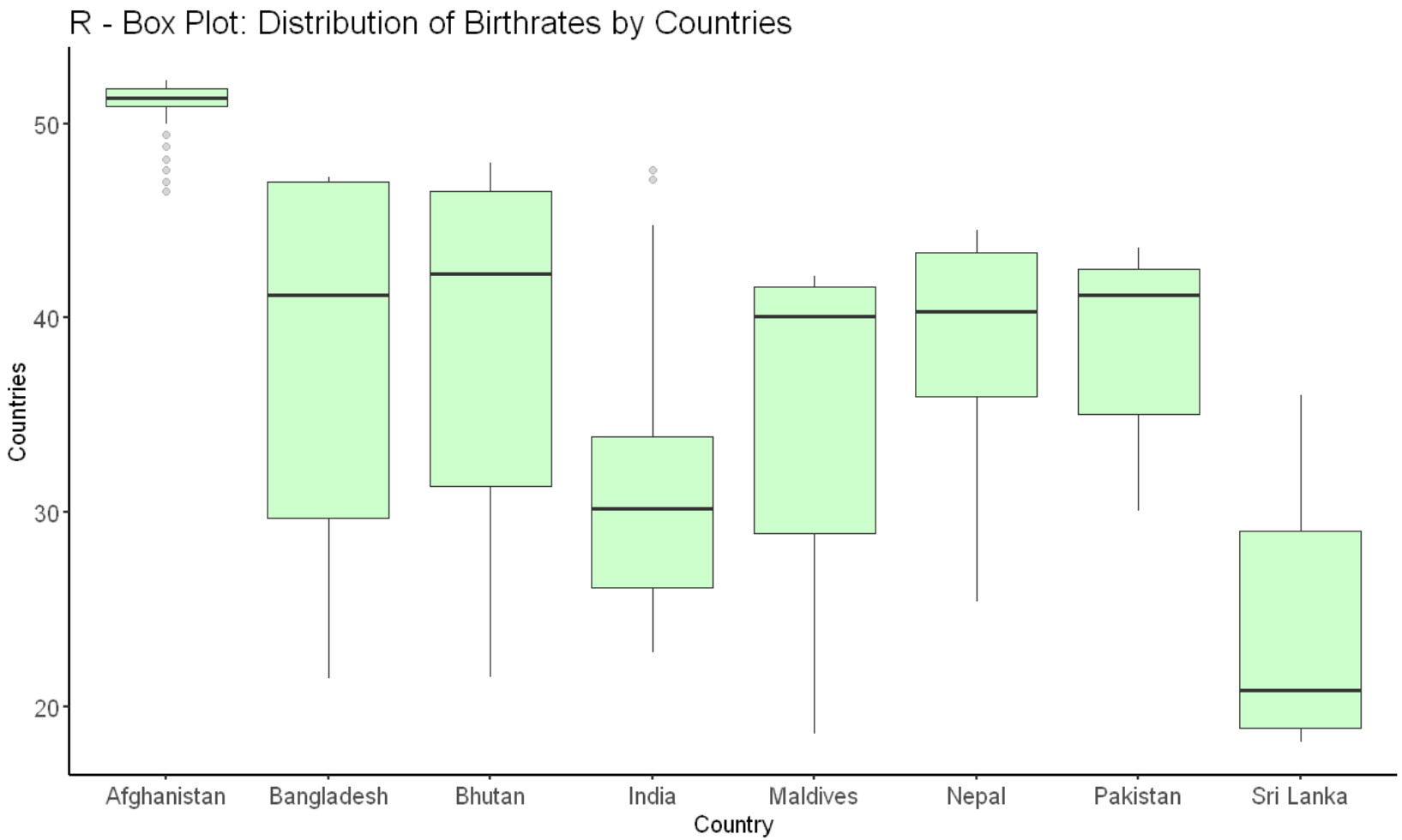
```
Using Country as id variables
```

Country	variable	value
Afghanistan	X1960	52.201
Bangladesh	X1960	47.258
Bhutan	X1960	47.945
India	X1960	47.580
Sri Lanka	X1960	36.046
Maldives	X1960	41.741

In [51]:

```
ggplot(dt2, aes(x=Country, y=value)) +
    geom_boxplot(fill='green', alpha=.2) +
theme_classic() +
  theme(text = element_text(family="sans",size =12, color="black"), element_line(size = .6),
        plot.title = element_text(size = 16), axis.text.x = element_text(size=12),
        axis.text.y = element_text(size=12))+
ylab("BirthRates") +
ylab("Countries") +
ggtitle("R - Box Plot: Distribution of Birthrates by Countries")
```

```
Warning message:
"Removed 36 rows containing non-finite values (stat_boxplot)."
```



R - Density Plot

In [54]:
```
dt3 <-dt2 %>%
            filter(variable %in% c('X1990', 'X2000'))
```

In [59]:
```
dt4<-transform(dt3,width=ifelse(variable=="X1990",.8,.4))
```

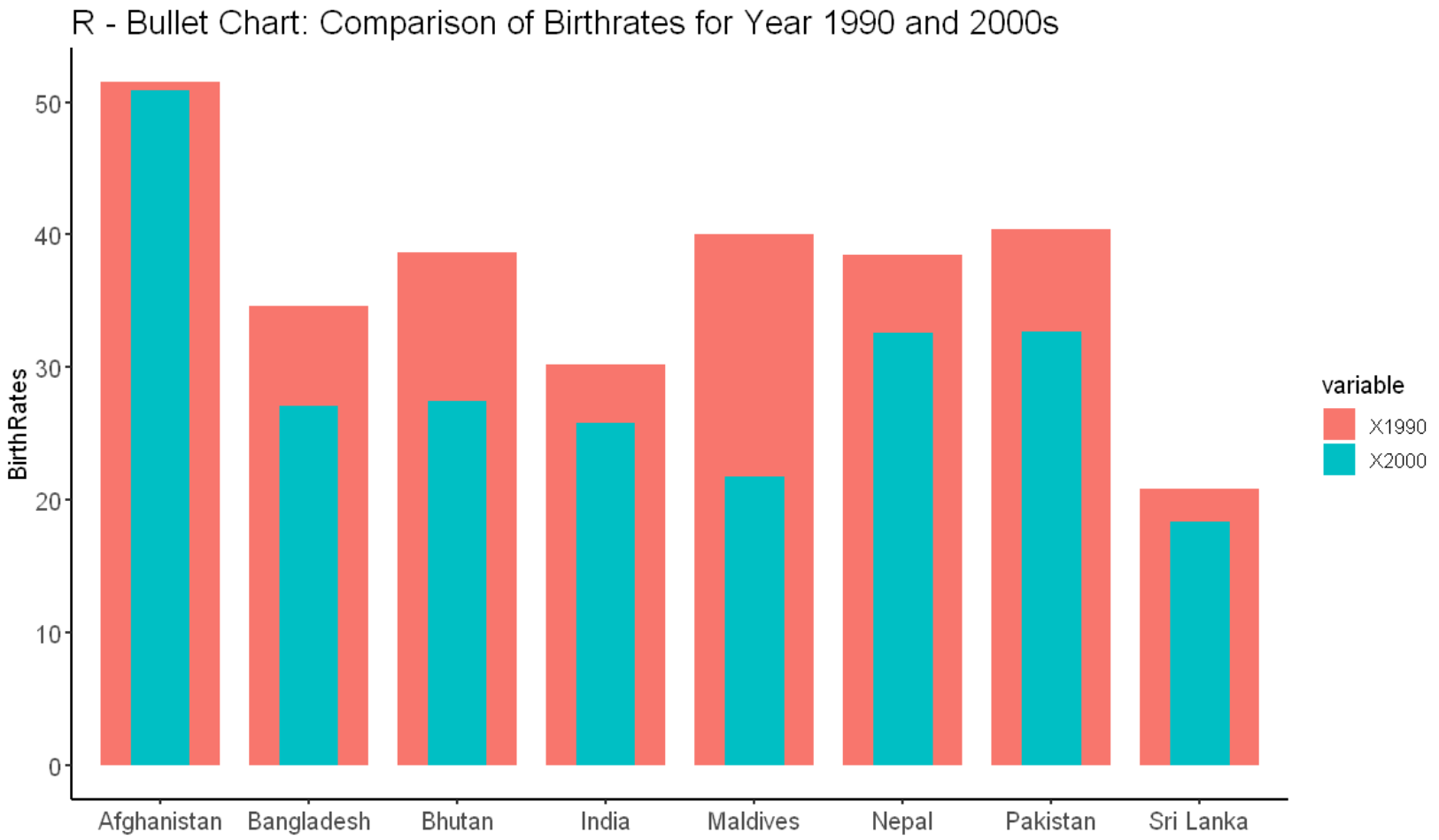
In [68]:

```
gg <- ggplot(dt4)
gg <- gg + geom_bar(aes(Country, value, fill=variable), width=dt4$width, stat="identity")
gg <- gg + xlab("") + ylab("")+
theme_classic() +
  theme(text = element_text(family="sans",size =12, color="black"), element_line(size = .6),
        plot.title = element_text(size = 16), axis.text.x = element_text(size=12),
        axis.text.y = element_text(size=12))+
ylab("BirthRates") +
ggtitle("R - Bullet Chart: Comparison of Birthrates for Year 1990 and 2000s")


print(gg)

```

```
Warning message:
"position_stack requires non-overlapping x intervals"
```



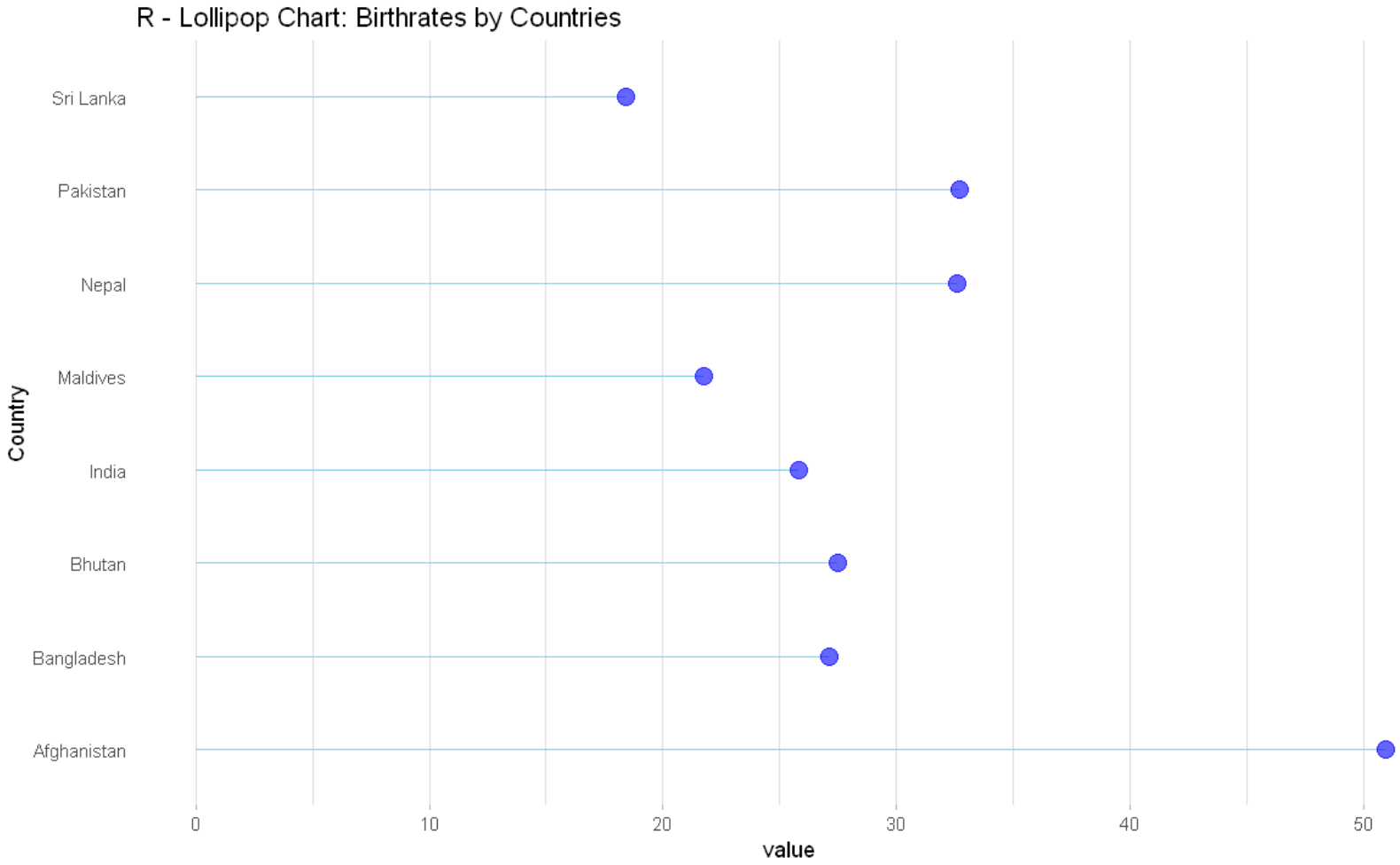
R - Lolliop Chart

In [65]:

```
1 dt5 <-dt3 %>%
2             filter(variable %in% c('X2000'))
```

In [69]:

```
# Horizontal version
ggplot(dt5, aes(Country, y=value)) +
  geom_segment( aes(x=Country, xend=Country, y=0, yend=value), color="skyblue") +
  geom_point( color="blue", size=4, alpha=0.6) +
  theme_light() +
  coord_flip() +
  theme(
    panel.grid.major.y = element_blank(),
    panel.border = element_blank(),
    axis.ticks.y = element_blank()
  )+
ggtitle("R - Lollipop Chart: Birthrates by Countries")
```



In [ ]:

```
1
```