R plots

```
In [1]:  # install.packages("reshape2")
```

```
In [2]:  library('magrittr')
         library("reshape2")
         source("BulletGraph.R", local=TRUE)
```

```
In [3]:  birthrate <- read.csv('ex6-2/birth-rate.csv')
         crime <- read.csv('ex6-2/crimeratesbystate-formatted.csv')
         education <- read.csv('ex6-2/education.csv')
```

```
In [4]:  colnames(birthrate)
```

'Country' · 'X1960' · 'X1961' · 'X1962' · 'X1963' · 'X1964' · 'X1965' · 'X1966' · 'X1967' · 'X1968' · 'X1969' · 'X1970' · 'X1971' · 'X1972' · 'X1973' · 'X1974' · 'X1975' · 'X1976' · 'X1977' · 'X1978' · 'X1979' · 'X1980' · 'X1981' · 'X1982' · 'X1983' · 'X1984' · 'X1985' · 'X1986' · 'X1987' · 'X1988' · 'X1989' · 'X1990' · 'X1991' · 'X1992' · 'X1993' · 'X1994' · 'X1995' · 'X1996' · 'X1997' · 'X1998' · 'X1999' · 'X2000' · 'X2001' · 'X2002' · 'X2003' · 'X2004' · 'X2005' · 'X2006' · 'X2007' · 'X2008'

```
In [5]:  colnames(birthrate) <- gsub("X", "", colnames(birthrate))

         # check column names
         colnames(birthrate)
```

'Country' · '1960' · '1961' · '1962' · '1963' · '1964' · '1965' · '1966' · '1967' · '1968' · '1969' · '1970' · '1971' · '1972' · '1973' · '1974' · '1975' · '1976' · '1977' · '1978' · '1979' · '1980' · '1981' · '1982' · '1983' · '1984' · '1985' · '1986' · '1987' · '1988' · '1989' · '1990' · '1991' · '1992' · '1993' · '1994' · '1995' · '1996' · '1997' · '1998' · '1999' · '2000' · '2001' · '2002' · '2003' · '2004' · '2005' · '2006' · '2007' · '2008'
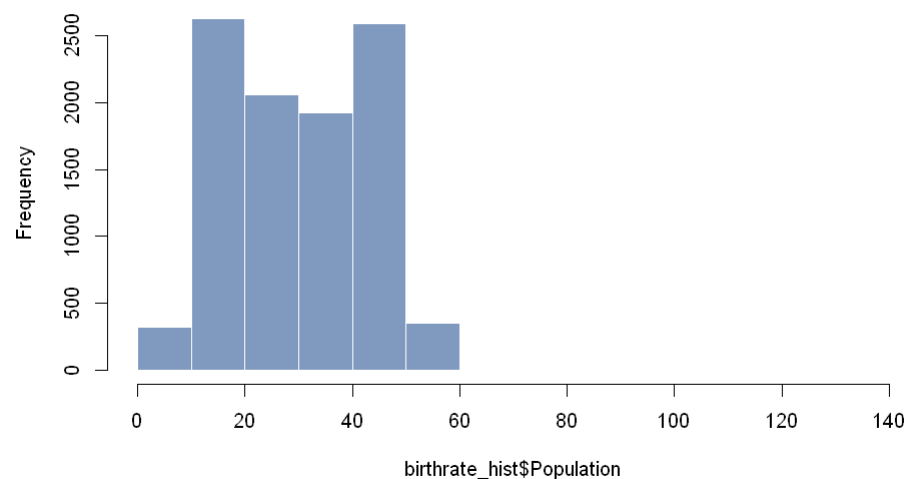
R-Histogram

```
In [6]:  options(repr.plot.width = 8, repr.plot.height = 5)
```

```r
birthrate_hist <- reshape2::melt(birthrate, id=c("Country")) %>%
  dplyr::mutate("Country" = as.character(Country),
                "Year" = as.character(variable),
                "Population" = value,
                "Population_int" = ceiling(value)) %>%
  dplyr::select(c("Country","Year","Population", "Population_int"))

hist(birthrate_hist$Population, col=rgb(0,0.2,0.5,0.5) , border=F , main="")
```
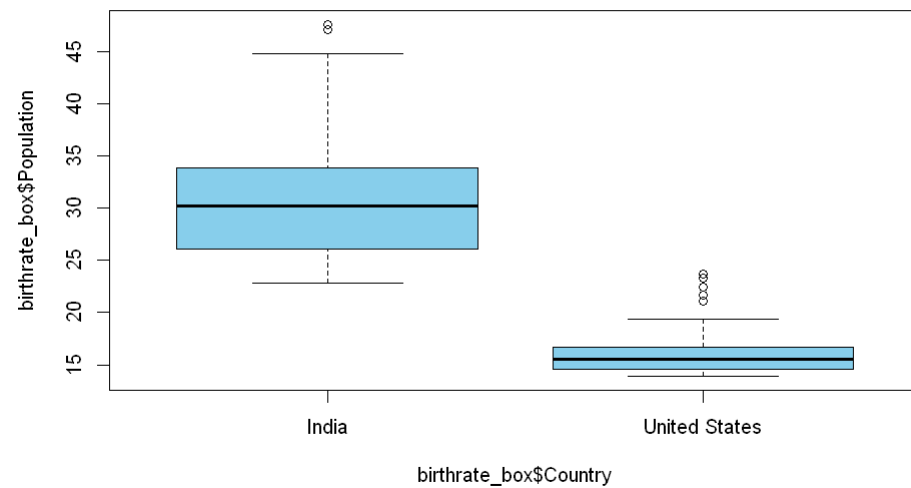

R-Box plot

In [7]:
```r
birthrate_box <- birthrate_hist %>%
  dplyr::filter(Country %in% c("United States", "India"))

boxplot(birthrate_box$Population ~ birthrate_box$Country , col="skyblue")
```
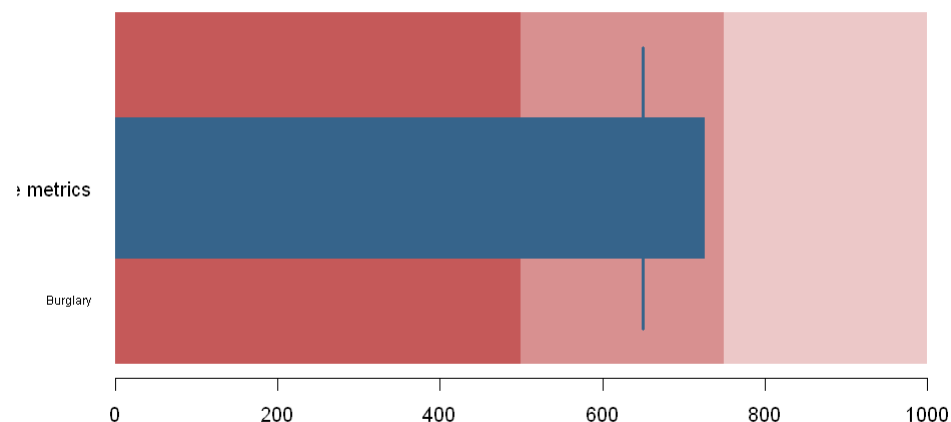
R-Bullet graph

In [8]:
```r
crime_bullet <- crime %>%
  dplyr::filter(stringr::str_trim(state, "both") == "United States") %>%
  dplyr::select(c(state, burglary))
bulletgraph(x=crime_bullet$burglary,ref=650,limits=c(0,500,750,1000),
            name= "USA Crime metrics",subname="Burglary",
            col="steelblue4",shades="firebrick")
```
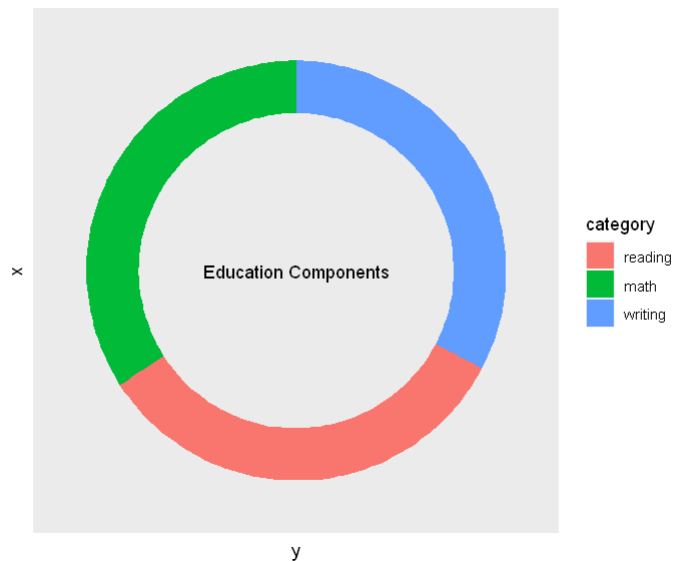
R-Donut chart

```
In [9]:   education_donut <- education %>%
            dplyr::filter(stringr::str_trim(state, "both") == "United States") %>%
            reshape2::melt(id=c("state")) %>%
            dplyr::rename("category" = variable) %>%
            dplyr::filter(category %in% c("reading","math","writing")) %>%
            dplyr::select(-state)

          # add addition columns, needed for drawing with geom_rect
          education_donut$fraction = education_donut$value / sum(education_donut$value)
          education_donut = education_donut[order(education_donut$fraction), ]
          education_donut$ymax = cumsum(education_donut$fraction)
          education_donut$ymin = c(0, head(education_donut$ymax, n=-1))

          # make the plot
          ggplot2::ggplot(education_donut, ggplot2::aes(fill=category, ymax=ymax, ymin=ymin, xmax=4, xmin=3)) +
            ggplot2::geom_rect() +
            ggplot2::coord_polar(theta="y") +
            ggplot2::xlim(c(0, 4)) +
            ggplot2::theme(panel.grid=ggplot2::element_blank()) +
            ggplot2::theme(axis.text=ggplot2::element_blank()) +
            ggplot2::theme(axis.ticks=ggplot2::element_blank()) +
```

```
ggplot2::annotate("text", x = 0, y = 0, label = "Education Components") +
ggplot2::labs(title="")
```


R-Pie chart

In [10]:
```
# pie chart
slices <- education_donut$value
lbls <- education_donut$category
pie(slices, labels = lbls, main="Education Components")
```

Education Components