

20BCE1025_Abhishek_N_N_Experiment_8_Visualization using basic graphics

20BCE1025_Abhishek_N_N

2022-11-03

Use the newsurvey data obtained by cleaning 'na' values in survey data of MASS package to do the following:

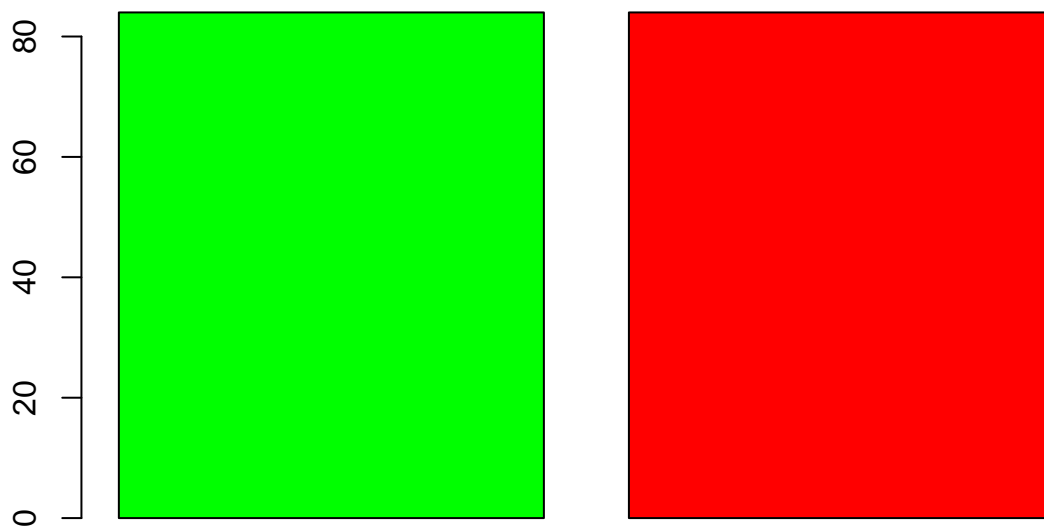
```
library("MASS")
cleansurvey=survey[complete.cases(survey),]
head(cleansurvey)
```

```
##      Sex Wr.Hnd NW.Hnd W.Hnd   Fold Pulse  Clap Exer Smoke Height      M.I
## 1 Female  18.5   18.0 Right R on L   92  Left Some Never 173.00  Metric
## 2  Male   19.5   20.5 Left  R on L  104  Left None Regul 177.80 Imperial
## 5  Male   20.0   20.0 Right Neither  35 Right Some Never 165.00  Metric
## 6 Female  18.0   17.7 Right L on R   64 Right Some Never 172.72 Imperial
## 7  Male   17.7   17.7 Right L on R   83 Right Freq Never 182.88 Imperial
## 8 Female  17.0   17.3 Right R on L   74 Right Freq Never 157.00  Metric
##      Age
## 1 18.250
## 2 17.583
## 5 23.667
## 6 21.000
## 7 18.833
## 8 35.833
```

1. Plot a bar graph for the number of male and female participants in the survey. Provide the titles as "Male and Female participants" and specify the colours for the bars.

```
x=c(sum(cleansurvey$Sex=="Male"),sum(cleansurvey$Sex=="Female"))
barplot(x,main="Male and Female Participants",col=c("green","red"))
```

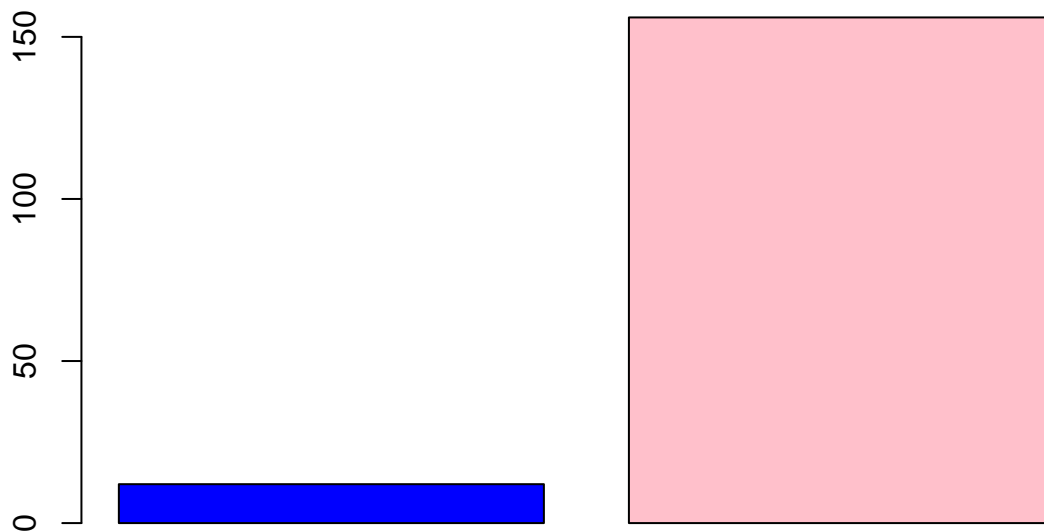
Male and Female Participants



2. Plot a bar graph for the number of left handers and right handers in the survey. Provide the title as “Left Handers and Right Hnaders” and specify the colours for the bars.

```
x=c(sum(cleansurvey$W.Hnd=="Left"),sum(cleansurvey$W.Hnd=="Right"))
barplot(x,main="Left and Right Handers",col=c("blue","pink"))
```

Left and Right Handers



3. Plot the distribution between male left handers and female left handers using bar chart. Provide the title as “Female Left Handers and Male Left Handers” and specify the colours for the bars.

```
library(dplyr)
```

```
##  
## Attaching package: 'dplyr'
```

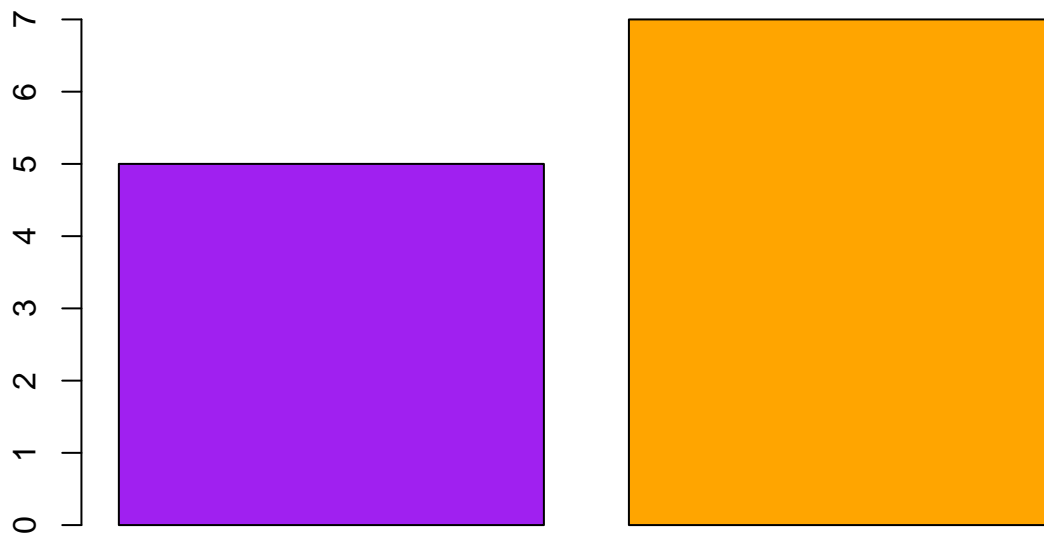
```
## The following object is masked from 'package:MASS':  
##  
##   select
```

```
## The following objects are masked from 'package:stats':  
##  
##   filter, lag
```

```
## The following objects are masked from 'package:base':  
##  
##   intersect, setdiff, setequal, union
```

```
x=filter(cleansurvey,Sex=="Female")  
y=filter(cleansurvey,Sex=="Male")  
x=c(sum(x$W.Hnd=="Left"),sum(y$W.Hnd=="Left"))  
barplot(x,main="Female Left and Male Left Handers",col=c("purple","orange"))
```

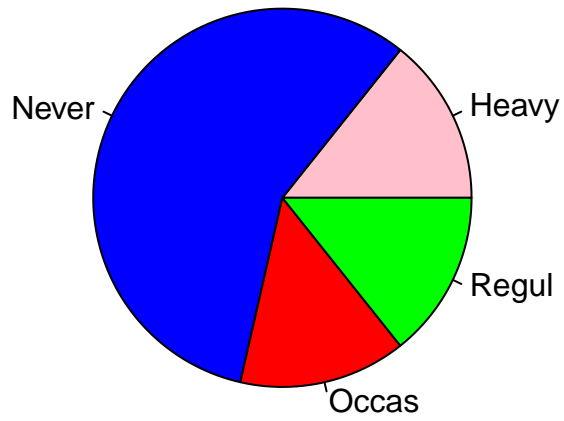
Female Left and Male Left Handers



4. Draw the distribution of smoking habits of male left handers using pie chart.

```
y=filter(cleansurvey,Sex=="Male")
y=filter(y,W.Hnd=="Left")
pie(table(y$Smoke),col = c("pink","blue","red","green"),main="Smoking Habits")
```

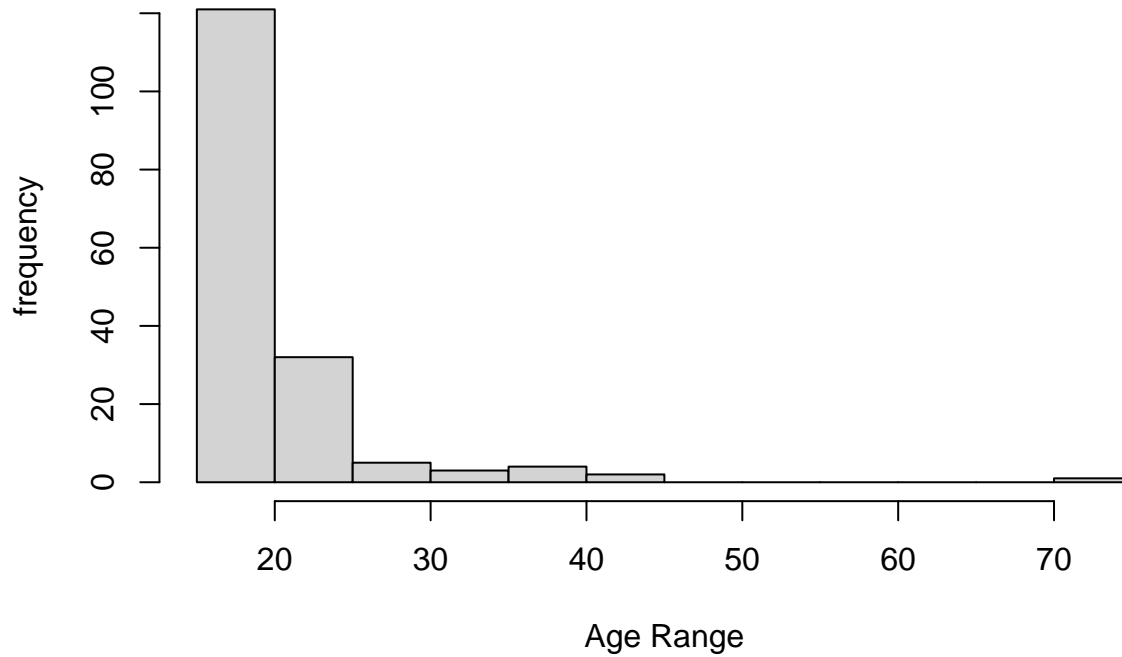
Smoking Habits



5. Draw the histogram of age distribution with the title as 'Age distribution' and xlabel as 'Age range' and ylabel as 'frequency'.

```
hist(cleansurvey$Age, main="Age distribution", xlab="Age Range", ylab="frequency")
```

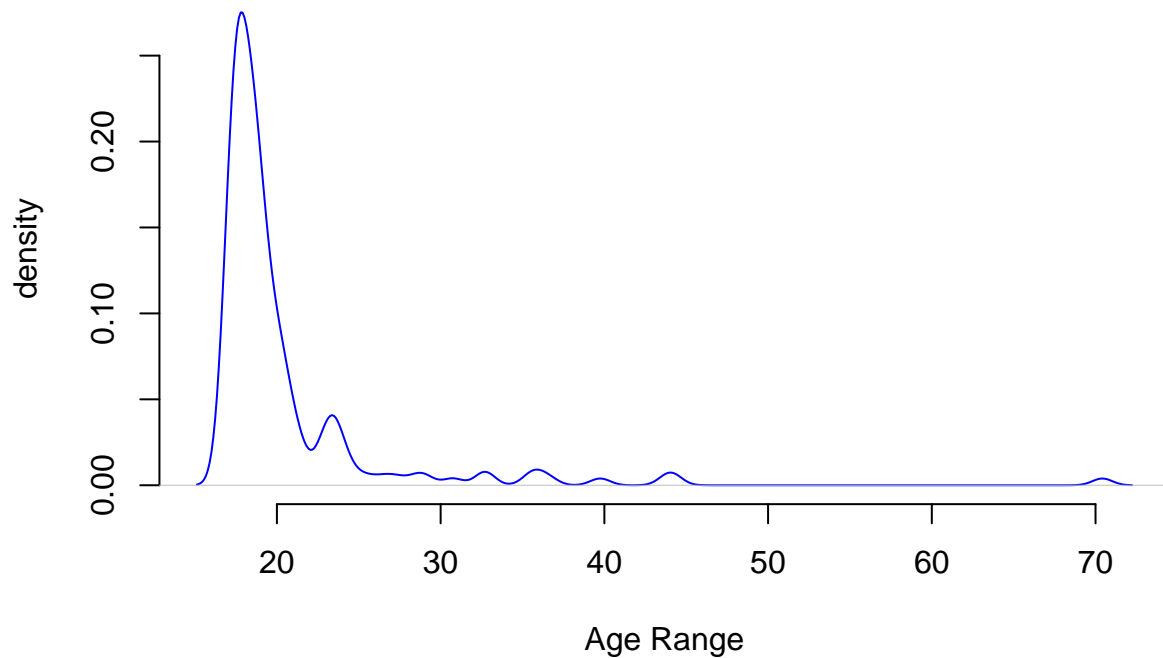
Age distribution



6. Plot the density distribution of age distribution with title as 'Age distribution' and xlabel as 'Age range' and ylabel as 'density'.

```
den <- density(cleansurvey$Age)
plot(den, frame = FALSE, col = "blue", main='Age Distribution', xlab="Age Range", ylab="density")
```

Age Distribution



7. Create a suitable grid for projecting the multiple charts obtained earlier

```
par(mfrow=c(2,3), mar=c(2,5,2,1), las=1, bty='n')

x=c(sum(cleansurvey$Sex=="Male"),sum(cleansurvey$Sex=="Female"))
barplot(x,main="Male and Female Participants",col=c("green","red"))

x=c(sum(cleansurvey$W.Hnd=="Left"),sum(cleansurvey$W.Hnd=="Right"))
barplot(x,main="Left and Right Handers",col=c("blue","pink"))

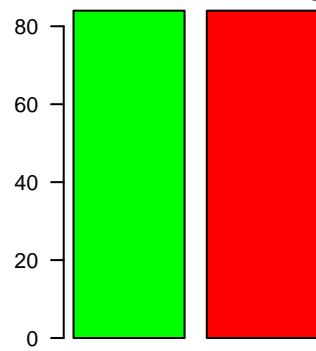
library(dplyr)
x=filter(cleansurvey,Sex=="Female")
y=filter(cleansurvey,Sex=="Male")
x=c(sum(x$W.Hnd=="Left"),sum(y$W.Hnd=="Left"))
barplot(x,main="Female Left and Male Left Handers",col=c("purple","orange"))

y=filter(cleansurvey,Sex=="Male")
y=filter(y,W.Hnd=="Left")
pie(table(y$Smoke),col = c("pink","blue","red","green"),main="Smoking Habits")

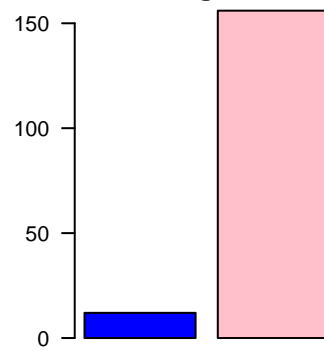
hist(cleansurvey$Age,main="Age distribution",xlab="Age Range",ylab="frequency")

den <- density(cleansurvey$Age)
plot(den, frame = FALSE, col = "blue",main='Age Distribution',xlab="Age Range",ylab="density")
```

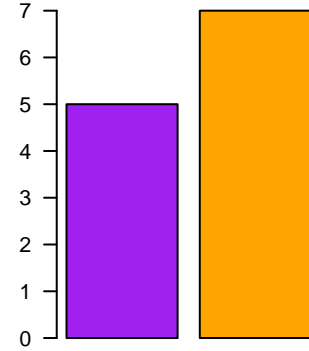
Male and Female Participar



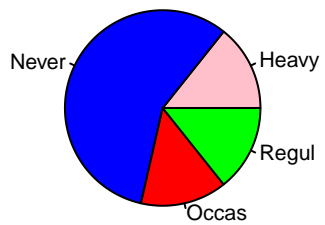
Left and Right Handers



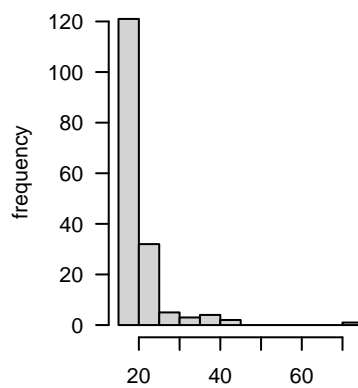
Female Left and Male Left Har



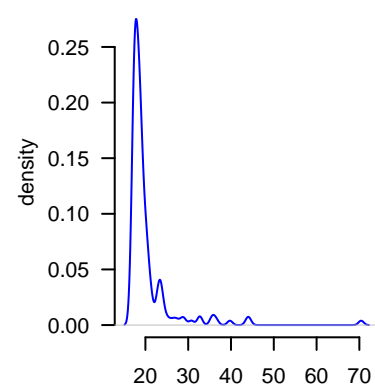
Smoking Habits



Age distribution

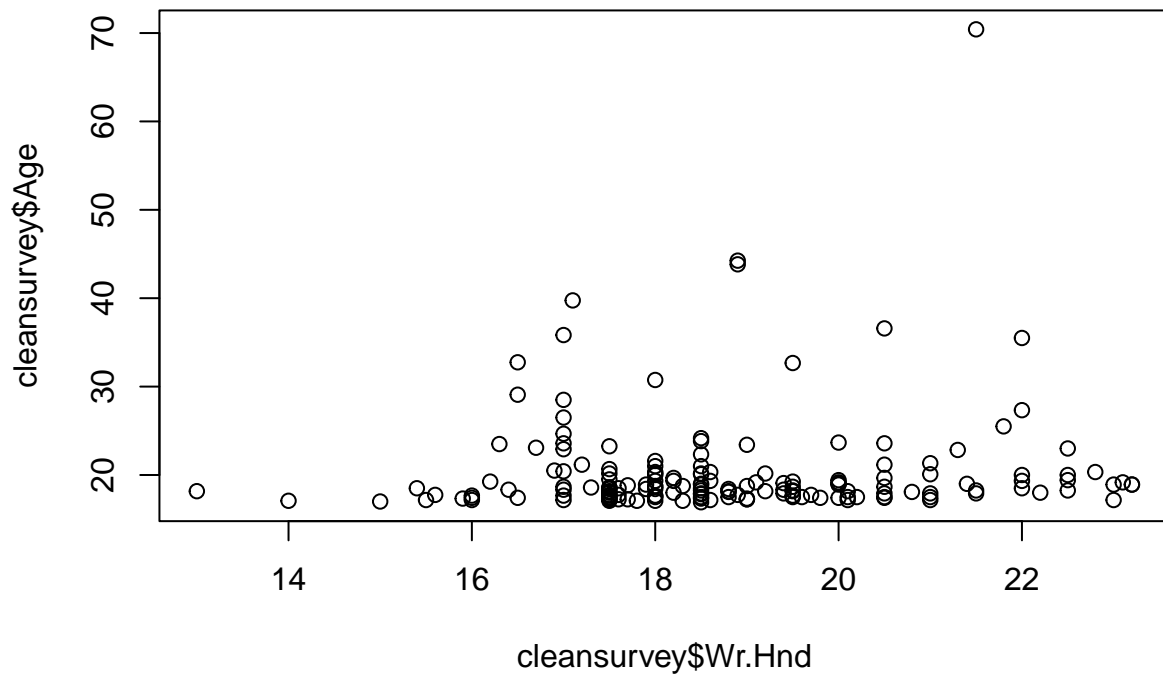


Age Distribution



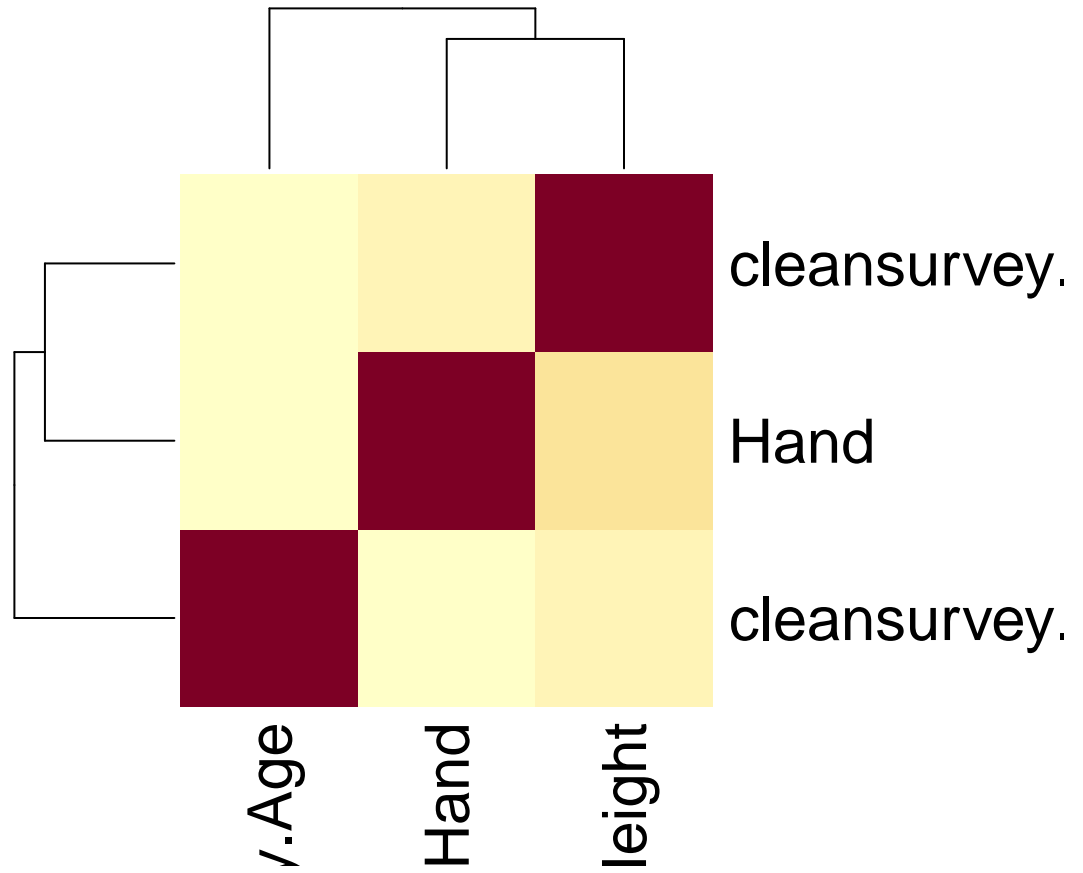
8. Reveal the relationship between the age and writing hand span using scatter plot

```
plot(cleansurvey$Wr.Hnd,cleansurvey$Age)
```

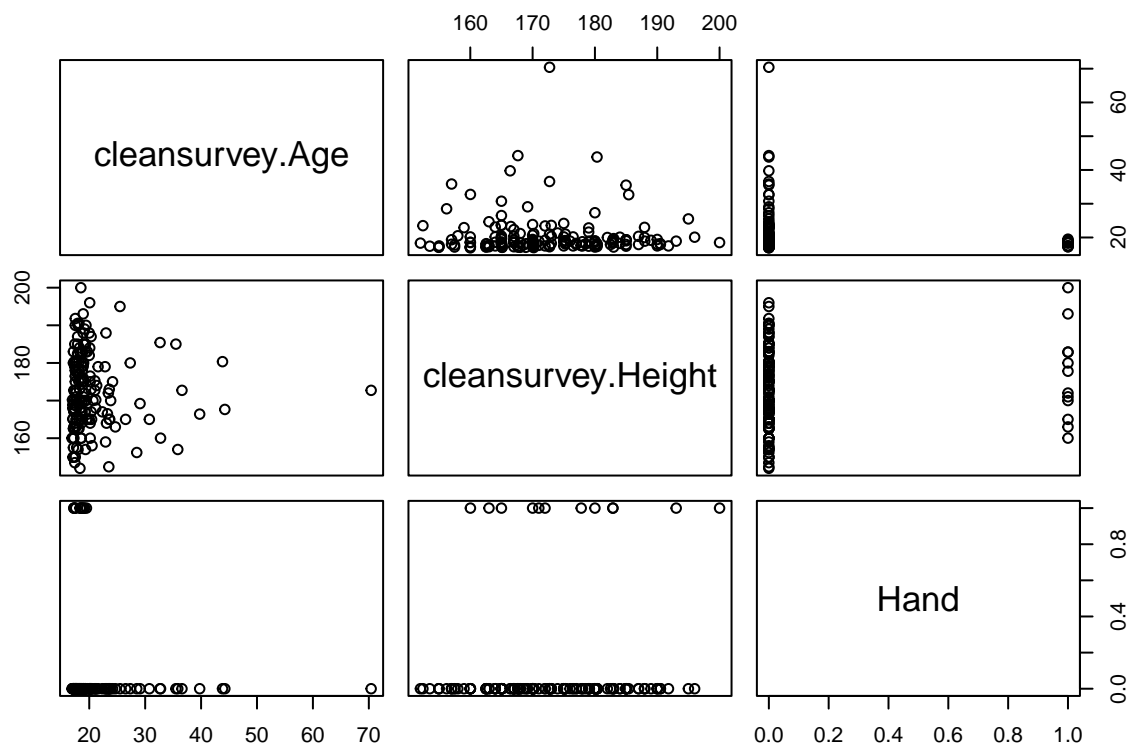



9. Plot the relationship between age, height and writing hand span in a single chart.

```
Hand = cleansurvey$W.Hnd=='Left'
df=data.frame(cleansurvey$Age,cleansurvey$Height,Hand)
corr= cor(df)
heatmap(corr)
```

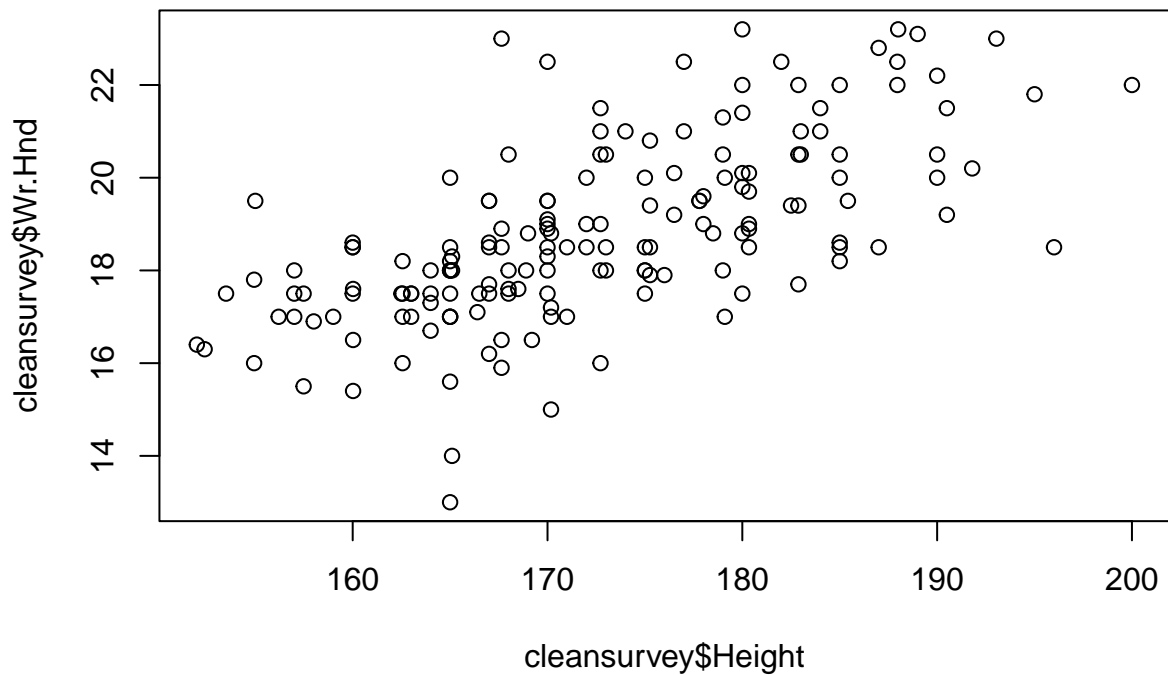


```
pairs(df)
```



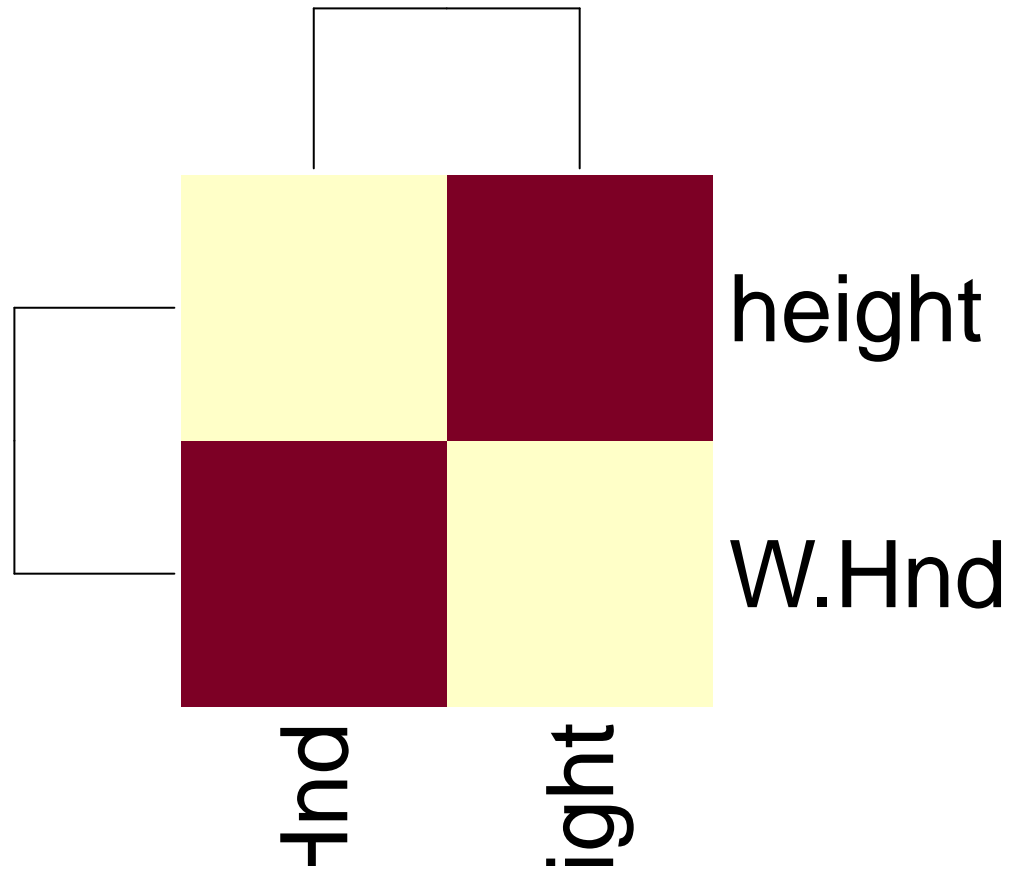
10. Plot the relationship between height and writing hand span

```
plot(cleansurvey$Height,cleansurvey$Wr.Hnd)
```

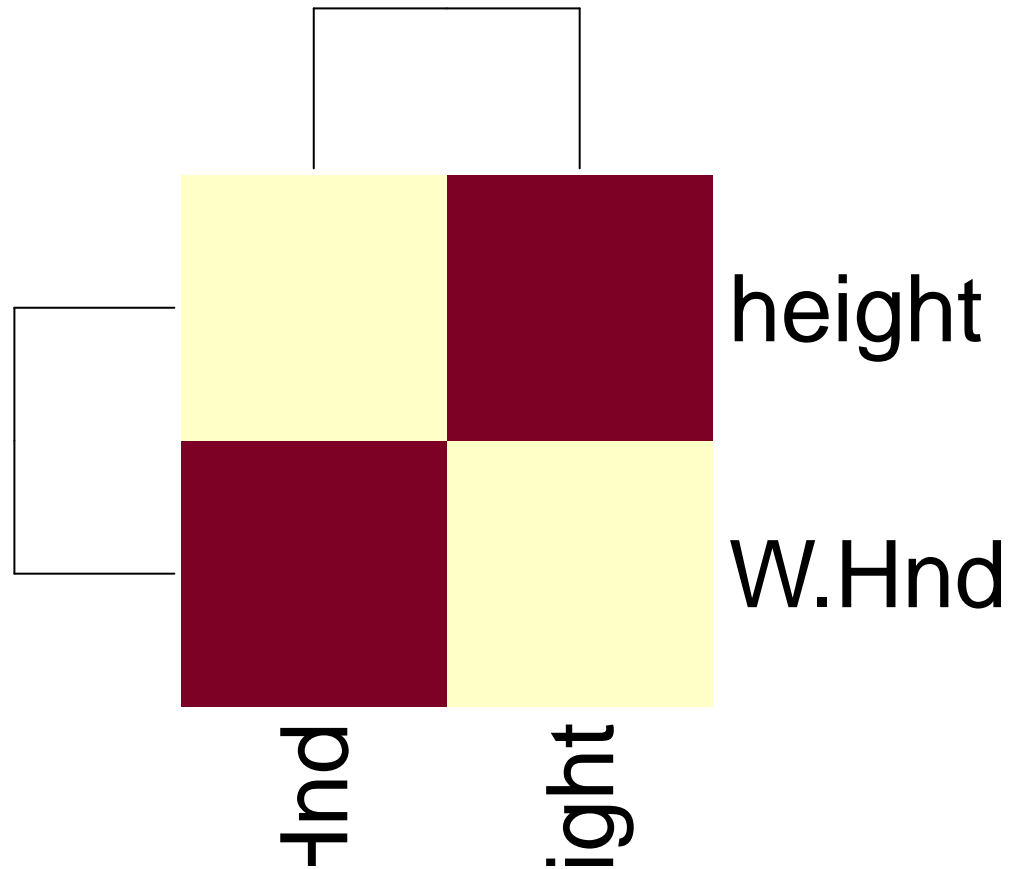


11. Plot the relationship between height and writing hand span based on gender and left and right handers.

```
maleData = cleansurvey%>%filter(Sex=='Male')
femaleData = cleansurvey%>%filter(Sex=='Female')
maleHnd = cleansurvey$W.Hnd=="Left"
femaleHnd = cleansurvey$W.Hnd=="Left"
corrMale= cor(data.frame(W.Hnd=maleHnd, height=maleData$Height))
corrFemale= cor(data.frame(W.Hnd=femaleHnd, height=femaleData$Height))
heatmap(corrMale)
```



```
heatmap(corrFemale)
```



12. Draw the boxplot for pulse rate to analyse the five summary statistics. Provide appropriate title and label

```
n<-summary(cleansurvey$Pulse)
boxplot(n,main="Box Plot of Pulse Rate", ylab="pulse rate")
```

Box Plot of Pulse Rate

