

## R Program To Create Plots For Breathing Rate

```
library(gdata)
library(xlsx)
path1 = "C:/Users/Devarsh Dani/Desktop/UH/Spring 2017/Statistical methods in research/HW1/Other
Study Data"
pdf("C:/Users/Devarsh Dani/Desktop/BreathingRate.pdf", height = 15, width = 15)
par(mfrow = c(7,2))
setwd(path1)
dir = grep("T???/??PD", list.dirs(), value = TRUE)
unlink(path1)
vectorForgraphx = NULL
vectorForgraphy = NULL
n=0
i=1
for(i in 1:length(dir)) {
  setwd(dir[i])
  fil = list.files(pattern = ".BR")
  if(identical(fil, character(0))) {
    setwd("../..")
    unlink(dir[i])
    next
  }
  reading = read.xlsx(fil, sheetIndex = 1,colIndex = 2:3)

  yvector = reading[, "Breathing.Rate"]
  xvector = reading[, "Time"]
  vectorForgraphx = append(vectorForgraphx, xvector)
  vectorForgraphy = append(vectorForgraphy, yvector)
  n = n+1
  setwd("../..")
  unlink(dir[i])
}

plot(vectorForgraphx[seq(1, length(vectorForgraphx), 1)], vectorForgraphy[seq(1,
length(vectorForgraphy), 1)], lty = 1, type = "l", xlab = "Time [in sec]", ylab = "Breathing Rate [in bpm]",
main = "\t\tUncleaned\nBreathing rate signal plotting for all PD")
legend("topright", legend = paste("n = ", n))

setwd(path1)
dir = grep("T???/??PD", list.dirs(), value = TRUE)
unlink(path1)
vectorForgraphx = NULL
vectorForgraphy = NULL
n=0
i=1
for(i in 1:length(dir)) {
  setwd(dir[i])
  fil = list.files(pattern = ".BR")
  if(identical(fil, character(0))) {
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setwd("../..")
unlink(dir[i])
next
}
reading = read.xlsx(fil, sheetIndex = 1,colIndex = 2:3)
invalidValue1 = which(reading$Breathing.Rate < 4)
invalidValue2 = which(reading$Breathing.Rate > 70)
if(length(invalidValue1) > 0 || length(invalidValue2) > 0) {
  setwd("../..")
  unlink(dir[i])
  next
}
yvector = reading[, "Breathing.Rate"]
xvector = reading[, "Time"]
vectorForgraphx = append(vectorForgraphx, xvector)
vectorForgraphy = append(vectorForgraphy, yvector)
n = n+1
setwd("../..")
unlink(dir[i])
}

plot(vectorForgraphx[seq(1, length(vectorForgraphx), 1)], vectorForgraphy[seq(1,
length(vectorForgraphy), 1)], lty = 1, type = "l", xlab = "Time [in sec]", ylab = "Breathing Rate [in bpm]",
main = "\t\tCleaned\nBreathing rate signal plotting for all PD")
legend("topright", legend = paste("n = ", n))
```

```
setwd(path1)
dir = grep("T???/??RD", list.dirs(), value = TRUE)
unlink(path1)
vectorForgraphx = NULL
vectorForgraphy = NULL
n=0
i=1
for(i in 1:length(dir)) {
  setwd(dir[i])
  fil = list.files(pattern = ".BR")
  if(identical(fil, character(0))) {
    setwd("../..")
    unlink(dir[i])
    next
  }
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setwd("../..")
unlink(dir[i])
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plot(vectorForgraphx[seq(1, length(vectorForgraphx), 1)], vectorForgraphy[seq(1,
length(vectorForgraphy), 1)], lty = 1, type = "l", xlab = "Time [in sec]", ylab = "Breathing Rate [in bpm]",
main = "Breathing rate signal plotting for all RD")
legend("topright", legend = paste("n = ", n))

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    unlink(dir[i])
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  invalidValue1 = which(reading$Breathing.Rate < 4)
  invalidValue2 = which(reading$Breathing.Rate > 70)
  if(length(invalidValue1) > 0 || length(invalidValue2) > 0) {
    setwd("../..")
    unlink(dir[i])
    next
  }
  yvector = reading[, "Breathing.Rate"]
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  vectorForgraphx = append(vectorForgraphx, xvector)
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  n = n+1
  setwd("../..")
  unlink(dir[i])
}

plot(vectorForgraphx[seq(1, length(vectorForgraphx), 1)], vectorForgraphy[seq(1,
length(vectorForgraphy), 1)], lty = 1, type = "l", xlab = "Time [in sec]", ylab = "Breathing Rate [in bpm]",
main = "Breathing rate signal plotting for all RD")
legend("topright", legend = paste("n = ", n))

setwd(path1)
```

## R Program To Create Plots For Breathing Rate

```
dir = grep("T???/??ND", list.dirs(), value = TRUE)
unlink(path1)
vectorForgraphx = NULL
vectorForgraphy = NULL
n=0
i=1
for(i in 1:length(dir)) {
  setwd(dir[i])
  fil = list.files(pattern = ".BR")
  if(identical(fil, character(0))) {
    setwd("../..")
    unlink(dir[i])
    next
  }
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  yvector = reading[, "Breathing.Rate"]
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  n = n+1
  setwd("../..")
  unlink(dir[i])
}

plot(vectorForgraphx[seq(1, length(vectorForgraphx), 1)], vectorForgraphy[seq(1,
length(vectorForgraphy), 1)], lty = 1, type = "l", xlab = "Time [in sec]", ylab = "Breathing Rate [in bpm]",
main = "Breathing rate signal plotting for all ND")
legend("topright",legend = paste("n = ",n))

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i=1
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  fil = list.files(pattern = ".BR")
  if(identical(fil, character(0))) {
    setwd("../..")
    unlink(dir[i])
    next
  }
  reading = read.xlsx(fil, sheetIndex = 1,colIndex = 2:3)
  invalidValue1 = which(reading$Breathing.Rate < 4)
  invalidValue2 = which(reading$Breathing.Rate > 70)
  if(length(invalidValue1) > 0 || length(invalidValue2) > 0) {
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setwd("../..")
unlink(dir[i])
next
}
yvector = reading[, "Breathing.Rate"]
xvector = reading[, "Time"]
vectorForgraphx = append(vectorForgraphx, xvector)
vectorForgraphy = append(vectorForgraphy, yvector)
n = n+1
setwd("../..")
unlink(dir[i])
}

plot(vectorForgraphx[seq(1, length(vectorForgraphx), 1)], vectorForgraphy[seq(1,
length(vectorForgraphy), 1)], lty = 1, type = "l", xlab = "Time [in sec]", ylab = "Breathing Rate [in bpm]",
main = "Breathing rate signal plotting for all ND")
legend("topright", legend = paste("n = ", n))

setwd(path1)
dir = grep("T???/??CD", list.dirs(), value = TRUE)
unlink(path1)
vectorForgraphx = NULL
vectorForgraphy = NULL
n=0
i=1
for(i in 1:length(dir)) {
  setwd(dir[i])
  fil = list.files(pattern = ".BR")
  if(identical(fil, character(0))) {
    setwd("../..")
    unlink(dir[i])
    next
  }
  reading = read.xlsx(fil, sheetIndex = 1, colIndex = 2:3)
  yvector = reading[, "Breathing.Rate"]
  xvector = reading[, "Time"]
  vectorForgraphx = append(vectorForgraphx, xvector)
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  n = n+1
  setwd("../..")
  unlink(dir[i])
}

plot(vectorForgraphx[seq(1, length(vectorForgraphx), 1)], vectorForgraphy[seq(1,
length(vectorForgraphy), 1)], lty = 1, type = "l", xlab = "Time [in sec]", ylab = "Breathing Rate [in bpm]",
main = "Breathing rate signal plotting for all CD")
legend("topright", legend = paste("n = ", n))
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setwd(path1)
dir = grep("T???/??CD", list.dirs(), value = TRUE)
unlink(path1)
vectorForgraphx = NULL
vectorForgraphy = NULL
n=0
i=1
for(i in 1:length(dir)) {
  setwd(dir[i])
  fil = list.files(pattern = ".BR")
  if(identical(fil, character(0))) {
    setwd("../..")
    unlink(dir[i])
    next
  }
  reading = read.xlsx(fil, sheetIndex = 1,colIndex = 2:3)
  invalidValue1 = which(reading$Breathing.Rate < 4)
  invalidValue2 = which(reading$Breathing.Rate > 70)
  if(length(invalidValue1) > 0 || length(invalidValue2) > 0) {
    setwd("../..")
    unlink(dir[i])
    next
  }
  yvector = reading[, "Breathing.Rate"]
  xvector = reading[, "Time"]
  vectorForgraphx = append(vectorForgraphx, xvector)
  vectorForgraphy = append(vectorForgraphy, yvector)
  n = n+1
  setwd("../..")
  unlink(dir[i])
}

plot(vectorForgraphx[seq(1, length(vectorForgraphx), 1)], vectorForgraphy[seq(1,
length(vectorForgraphy), 1)], lty = 1, type = "l", xlab = "Time [in sec]", ylab = "Breathing Rate [in bpm]",
main = "Breathing rate signal plotting for all CD")
legend("topright", legend = paste("n = ", n))
```

```
setwd(path1)
dir = grep("T???/??ED", list.dirs(), value = TRUE)
unlink(path1)
vectorForgraphx = NULL
vectorForgraphy = NULL
n=0
i=1
for(i in 1:length(dir)) {
  setwd(dir[i])
  fil = list.files(pattern = ".BR")
```

## R Program To Create Plots For Breathing Rate

```
if(identical(fil, character(0))) {
  setwd("../..")
  unlink(dir[i])
  next
}
reading = read.xlsx(fil, sheetIndex = 1, colIndex = 2:3)
yvector = reading[, "Breathing.Rate"]
xvector = reading[, "Time"]
vectorForgraphx = append(vectorForgraphx, xvector)
vectorForgraphy = append(vectorForgraphy, yvector)
n = n+1
setwd("../..")
unlink(dir[i])
}

plot(vectorForgraphx[seq(1, length(vectorForgraphx), 1)], vectorForgraphy[seq(1,
length(vectorForgraphy), 1)], lty = 1, type = "l", xlab = "Time [in sec]", ylab = "Breathing Rate [in bpm]",
main = "Breathing rate signal plotting for all ED")
legend("topright", legend = paste("n = ", n))

setwd(path1)
dir = grep("T???/??ED", list.dirs(), value = TRUE)
unlink(path1)
vectorForgraphx = NULL
vectorForgraphy = NULL
n=0
i=1
for(i in 1:length(dir)) {
  setwd(dir[i])
  fil = list.files(pattern = ".BR")
  if(identical(fil, character(0))) {
    setwd("../..")
    unlink(dir[i])
    next
  }
  reading = read.xlsx(fil, sheetIndex = 1, colIndex = 2:3)
  invalidValue1 = which(reading$Breathing.Rate < 4)
  invalidValue2 = which(reading$Breathing.Rate > 70)
  if(length(invalidValue1) > 0 || length(invalidValue2) > 0) {
    setwd("../..")
    unlink(dir[i])
    next
  }
  yvector = reading[, "Breathing.Rate"]
  xvector = reading[, "Time"]
  vectorForgraphx = append(vectorForgraphx, xvector)
  vectorForgraphy = append(vectorForgraphy, yvector)
  n = n+1
}
```

## R Program To Create Plots For Breathing Rate

```
setwd("../..")
unlink(dir[i])
}
```

```
plot(vectorForgraphx[seq(1, length(vectorForgraphx), 1)], vectorForgraphy[seq(1,
length(vectorForgraphy), 1)], lty = 1, type = "l", xlab = "Time [in sec]", ylab = "Breathing Rate [in bpm]",
main = "Breathing rate signal plotting for all ED")
legend("topright", legend = paste("n = ", n))
```

```
setwd(path1)
dir = grep("T???/??MD", list.dirs(), value = TRUE)
unlink(path1)
vectorForgraphx = NULL
vectorForgraphy = NULL
n=0
i=1
for(i in 1:length(dir)) {
  setwd(dir[i])
  fil = list.files(pattern = ".BR")
  if(identical(fil, character(0))) {
    setwd("../..")
    unlink(dir[i])
    next
  }
  reading = read.xlsx(fil, sheetIndex = 1, colIndex = 2:3)
  yvector = reading[, "Breathing.Rate"]
  xvector = reading[, "Time"]
  vectorForgraphx = append(vectorForgraphx, xvector)
  vectorForgraphy = append(vectorForgraphy, yvector)
  n = n+1
  setwd("../..")
  unlink(dir[i])
}
```

```
plot(vectorForgraphx[seq(1, length(vectorForgraphx), 1)], vectorForgraphy[seq(1,
length(vectorForgraphy), 1)], lty = 1, type = "l", xlab = "Time [in sec]", ylab = "Breathing Rate [in bpm]",
main = "Breathing rate signal plotting for all MD")
legend("topright", legend = paste("n = ", n))
```

```
setwd(path1)
dir = grep("T???/??MD", list.dirs(), value = TRUE)
unlink(path1)
vectorForgraphx = NULL
vectorForgraphy = NULL
n=0
i=1
for(i in 1:length(dir)) {
```



## R Program To Create Plots For Breathing Rate

```
setwd(dir[i])
fil = list.files(pattern = ".BR")
if(identical(fil, character(0))) {
  setwd("../..")
  unlink(dir[i])
  next
}
reading = read.xlsx(fil, sheetIndex = 1,colIndex = 2:3)
invalidValue1 = which(reading$Breathing.Rate < 4)
invalidValue2 = which(reading$Breathing.Rate > 70)
if(length(invalidValue1) > 0 || length(invalidValue2) > 0) {
  setwd("../..")
  unlink(dir[i])
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}
yvector = reading[, "Breathing.Rate"]
xvector = reading[, "Time"]
vectorForgraphx = append(vectorForgraphx, xvector)
vectorForgraphy = append(vectorForgraphy, yvector)
n = n+1
setwd("../..")
unlink(dir[i])
}

plot(vectorForgraphx[seq(1, length(vectorForgraphx), 1)], vectorForgraphy[seq(1,
length(vectorForgraphy), 1)], lty = 1, type = "l", xlab = "Time [in sec]", ylab = "Breathing Rate [in bpm]",
main = "Breathing rate signal plotting for all MD")
legend("topright", legend = paste("n = ", n))

setwd(path1)
dir = grep("T??/?FD", list.dirs(), value = TRUE)
unlink(path1)
vectorForgraphx = NULL
vectorForgraphy = NULL
n=0
i=1
for(i in 1:length(dir)) {
  setwd(dir[i])
  fil = list.files(pattern = ".BR")
  if(identical(fil, character(0))) {
    setwd("../..")
    unlink(dir[i])
    next
  }
  reading = read.xlsx(fil, sheetIndex = 1,colIndex = 2:3)
  yvector = reading[, "Breathing.Rate"]
  xvector = reading[, "Time"]
  vectorForgraphx = append(vectorForgraphx, xvector)
```

## R Program To Create Plots For Breathing Rate

```
vectorForgraphy = append(vectorForgraphy, yvector)
n = n+1
setwd("../..")
unlink(dir[i])
}

plot(vectorForgraphx[seq(1, length(vectorForgraphx), 1)], vectorForgraphy[seq(1,
length(vectorForgraphy), 1)], lty = 1, type = "l", xlab = "Time [in sec]", ylab = "Breathing Rate [in bpm]",
main = "Breathing rate signal plotting for all FD")
legend("topright", legend = paste("n = ", n))

setwd(path1)
dir = grep("T???/??FD", list.dirs(), value = TRUE)
unlink(path1)
vectorForgraphx = NULL
vectorForgraphy = NULL
n=0
i=1
for(i in 1:length(dir)) {
  setwd(dir[i])
  fil = list.files(pattern = ".BR")
  if(identical(fil, character(0))) {
    setwd("../..")
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  yvector = reading[, "Breathing.Rate"]
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  vectorForgraphx = append(vectorForgraphx, xvector)
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}

plot(vectorForgraphx[seq(1, length(vectorForgraphx), 1)], vectorForgraphy[seq(1,
length(vectorForgraphy), 1)], lty = 1, type = "l", xlab = "Time [in sec]", ylab = "Breathing Rate [in bpm]",
main = "Breathing rate signal plotting for all FD")
legend("topright", legend = paste("n = ", n))
dev.off()
```