Opdracht_6

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Reading in the file

```
data001 <- read.csv("JamesBond(1).csv")

data001$Date_Time <- as.POSIXct(data001$Date_Time, origin="1970-01-01")
```

counting meals bij callories intake greater than 0

```
meals <- nrow(data001[data001$Calorie_Intake>0, ])
```

filtering out every nan and sleeping from annotations

```
annotations_string <- paste(data001$Annotation, collapse = ";")
annotations_vector <- strsplit(annotations_string, ";")[[1]]
annotations_vector_filtered <- annotations_vector[!annotations_vector %in% grep(paste0(c("nan", "sleepi

factored_data <- factor(annotations_vector_filtered)
dingus <- as.data.frame(table(annotations_vector_filtered))
colnames(dingus) <- c("names", "Freq")
dingus
```

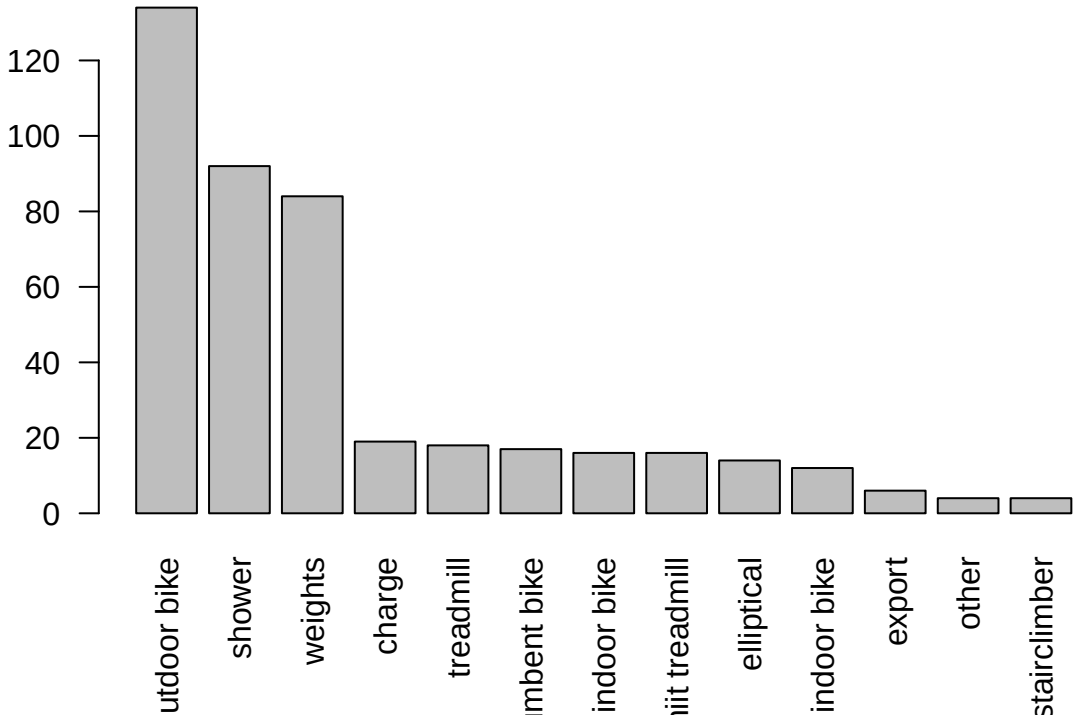
```
##                  names Freq
## 1               charge   19
## 2           elliptical   14
## 3               export    6
## 4     hiit indoor bike   16
## 5  hiit recumbent bike   17
## 6       hiit treadmill   16
## 7          indoor bike   12
## 8                other    4
## 9          outdoor bike  134
## 10              shower   92
## 11        stairclimber    4
## 12           treadmill   18
## 13             weights   84
```

Opdracht 5

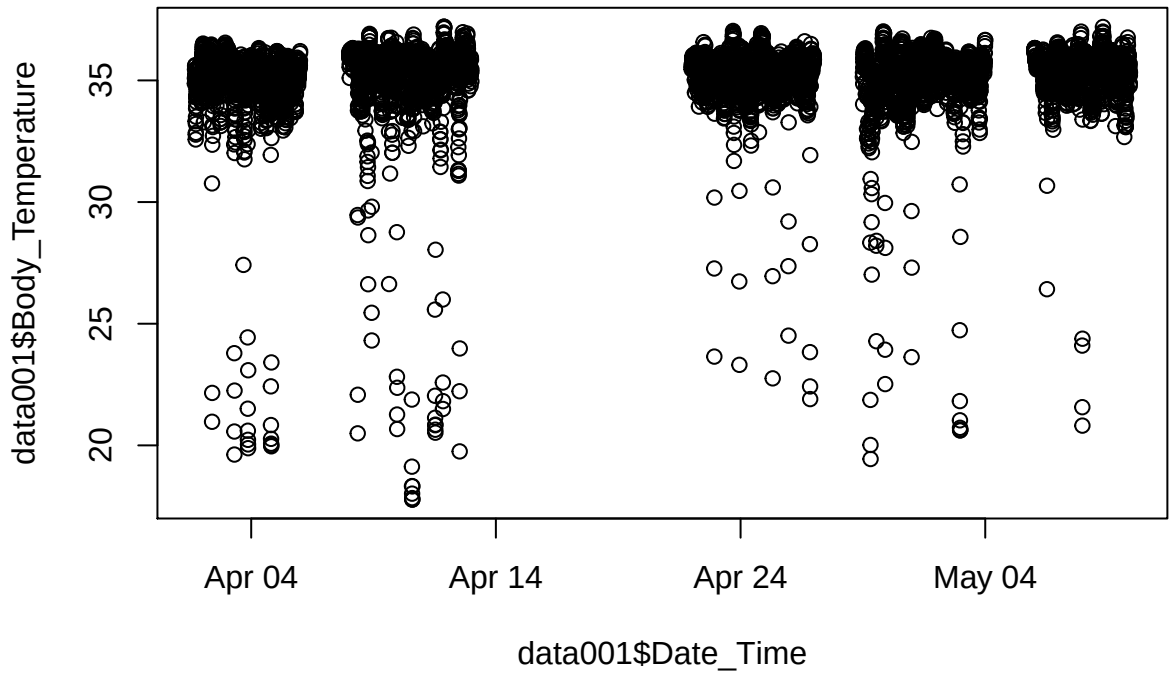
```
orderd_dingus <- dingus[order(-dingus$Freq),]
orderd_dingus
```

```
##                  names Freq
## 9         outdoor bike  134
## 10              shower   92
## 13             weights   84
## 1               charge   19
## 12           treadmill   18
## 5  hiit recumbent bike   17
## 4     hiit indoor bike   16
## 6       hiit treadmill   16
## 2           elliptical   14
## 7          indoor bike   12
## 3               export    6
## 8                other    4
## 11        stairclimber    4
```

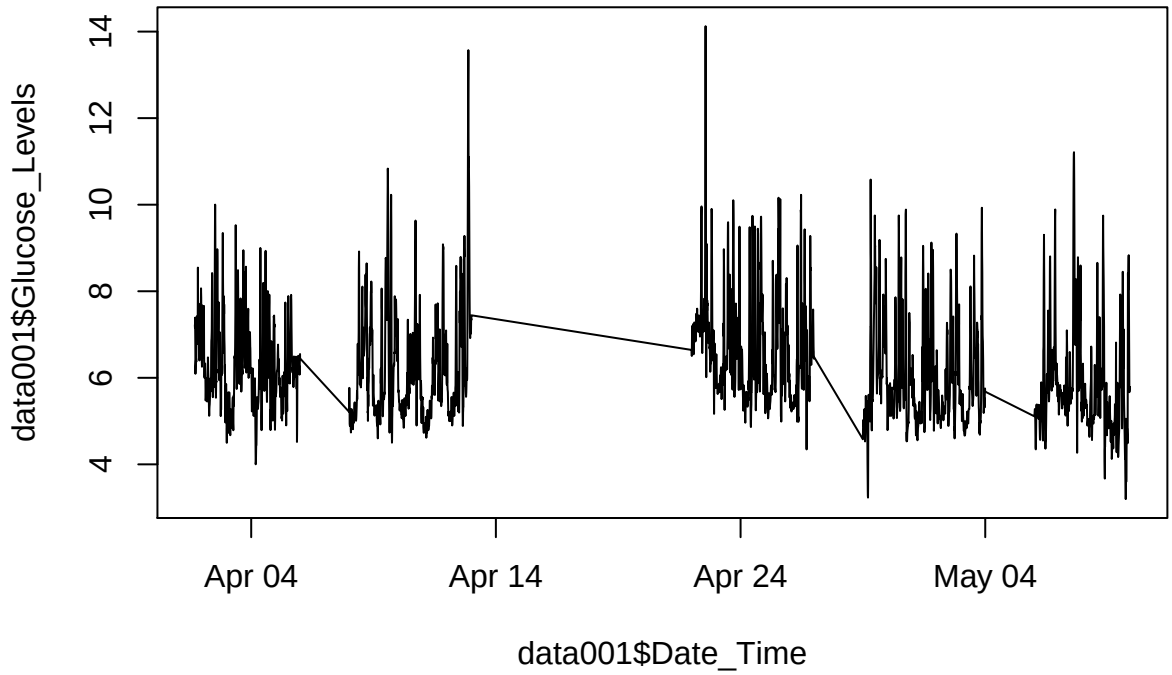
```
barplot(orderd_dingus$Freq, names.arg = orderd_dingus$names, las=2)
```




```
plot(data001$Date_Time, data001$Body_Temperature)
```




```
plot(data001$Date_Time, data001$Glucose_Levels, type = "l",)
```



###

opdracht 6

```
library(ggpubr)
```

```
## Loading required package: ggplot2
```

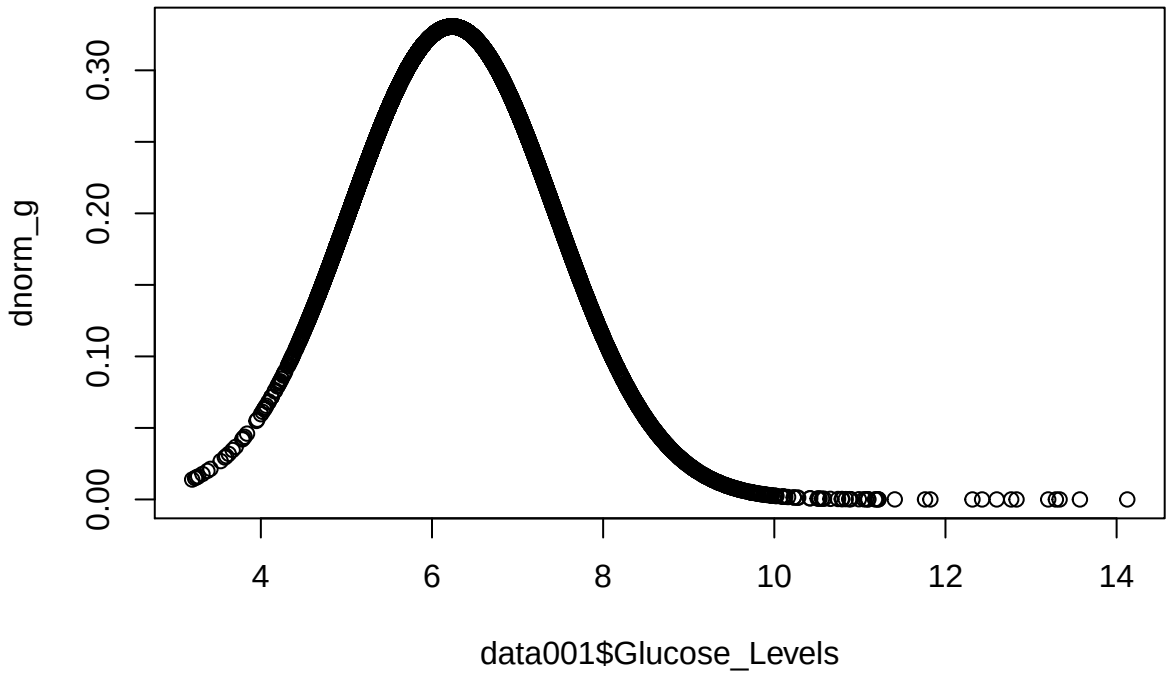
```
glucos_sd <- sd(data001$Glucose_Levels)

glucose_mean <- mean(data001$Glucose_Levels)

dnorm_g <- dnorm(data001$Glucose_Levels, glucose_mean, glucos_sd)
```

```r
pnorm_g <- pnorm(data001$Glucose_Levels, glucose_mean, glucos_sd)

ks.test(data001$Glucose_Levels, pnorm_g)
```

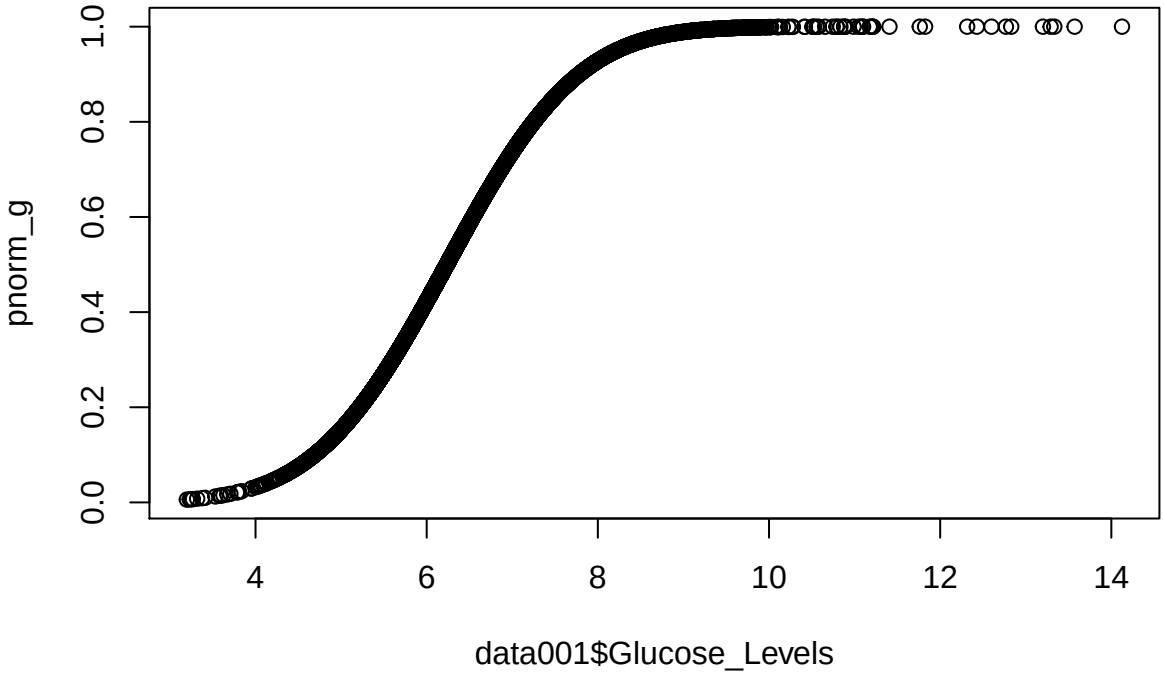
```
## Warning in ks.test(data001$Glucose_Levels, pnorm_g): p-value will be approximate
## in the presence of ties
```

```
##
##  Two-sample Kolmogorov-Smirnov test
##
## data:  data001$Glucose_Levels and pnorm_g
## D = 1, p-value < 2.2e-16
## alternative hypothesis: two-sided
```

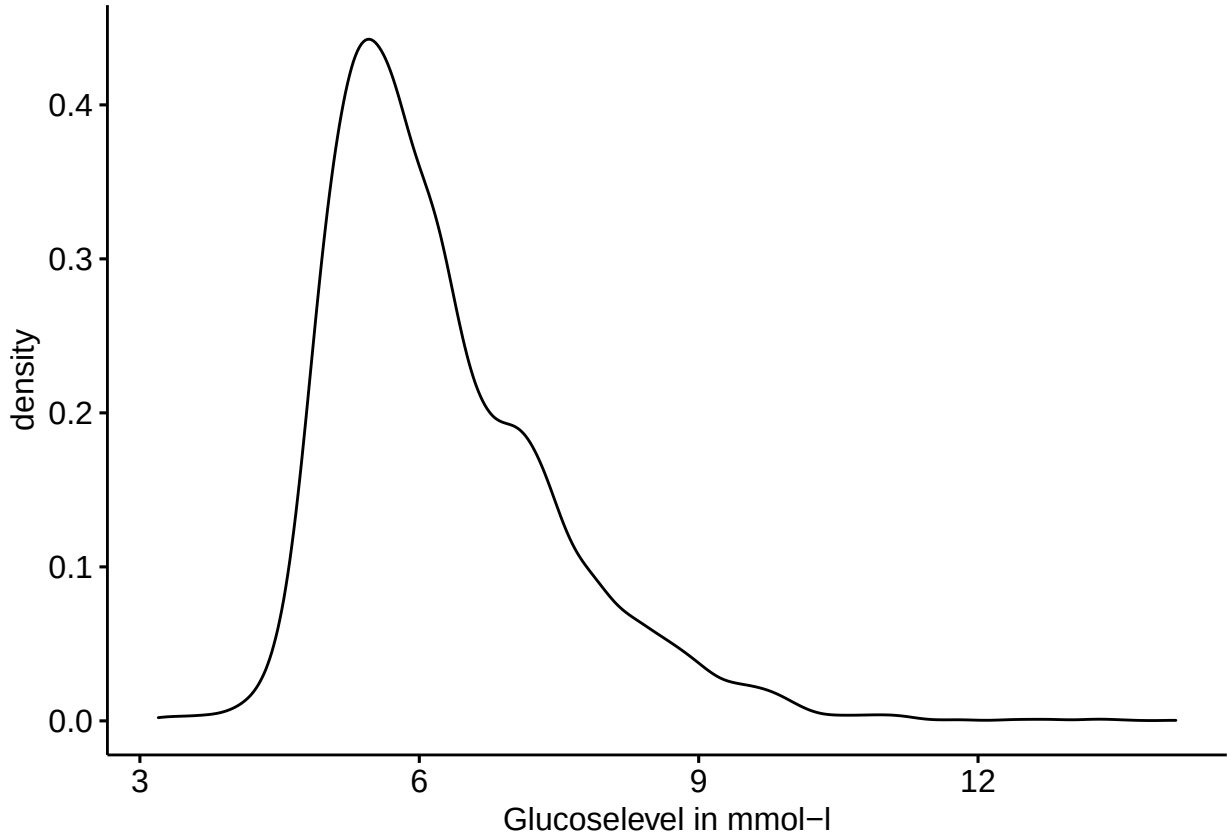
```r
plot(data001$Glucose_Levels, dnorm_g)
```



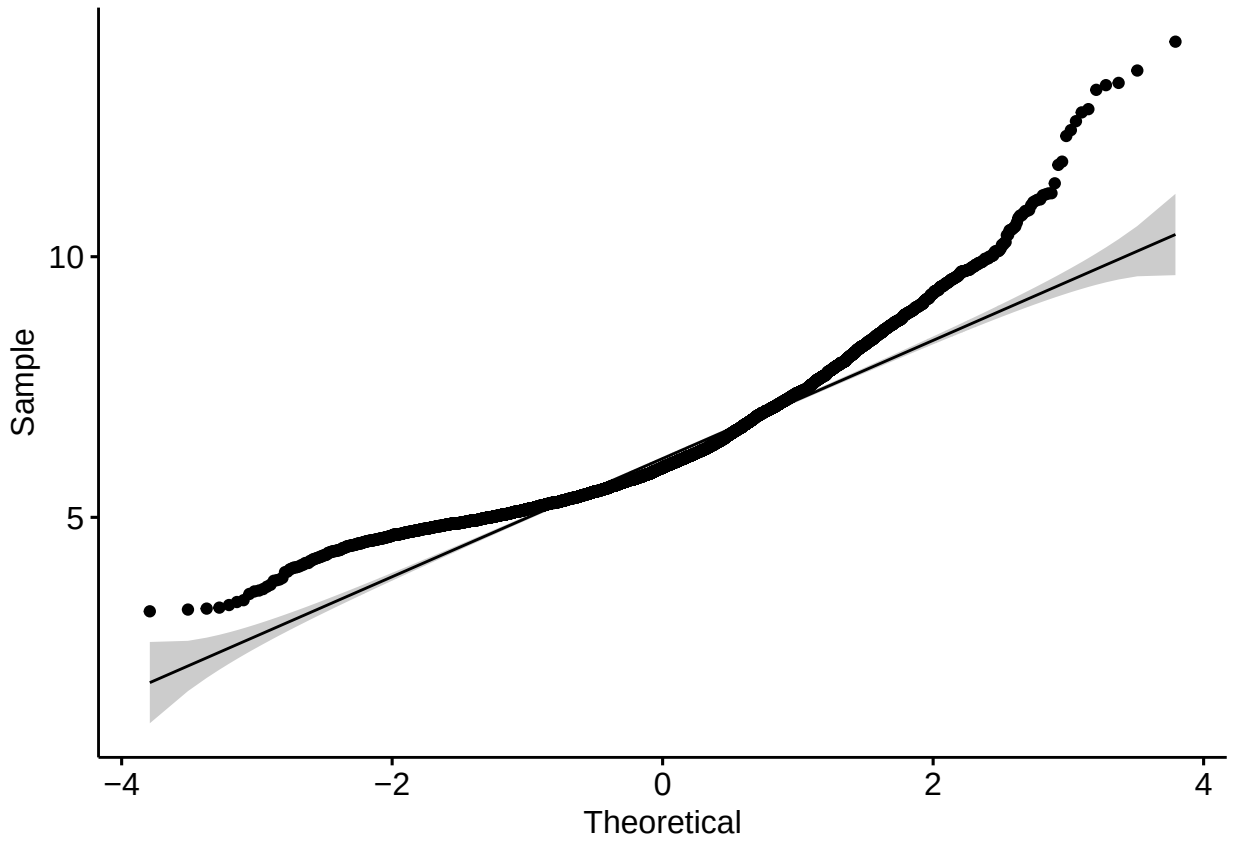

```r
plot(data001$Glucose_Levels, pnorm_g)
```



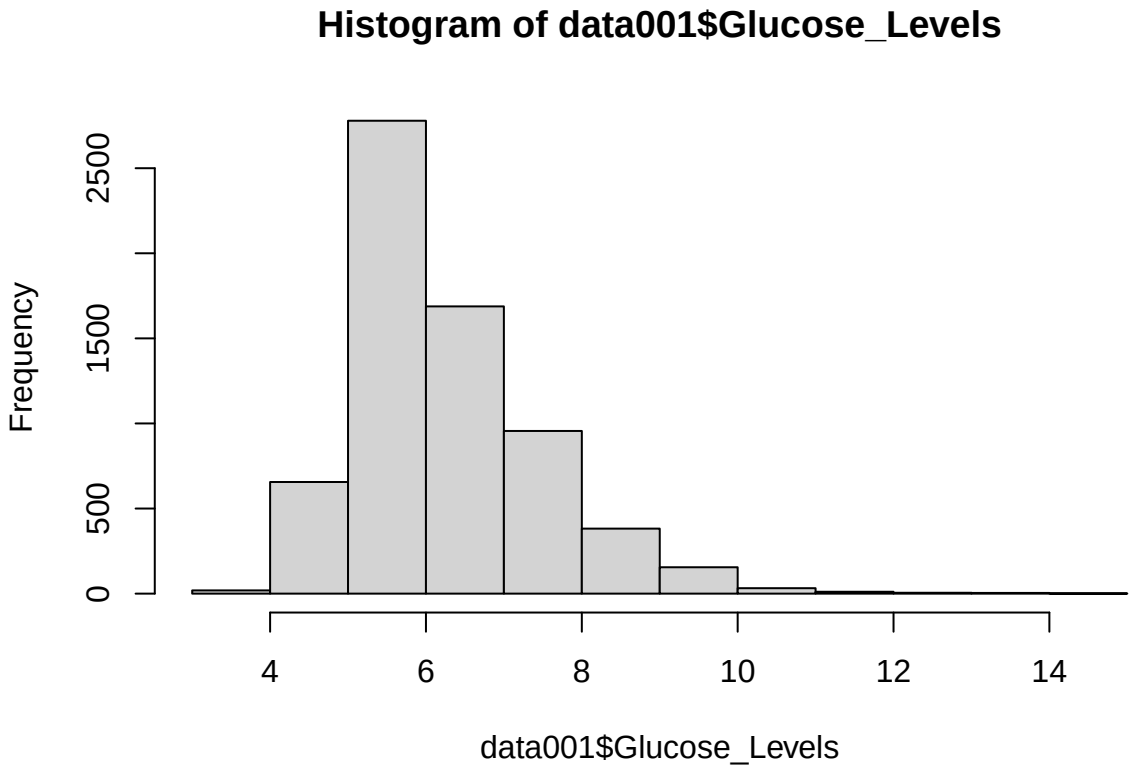

```
ggdensity(data001$Glucose_Levels, xlab = "Glucoselevel in mmol-l")
```




```
ggqqplot(data001$Glucose_Levels)
```



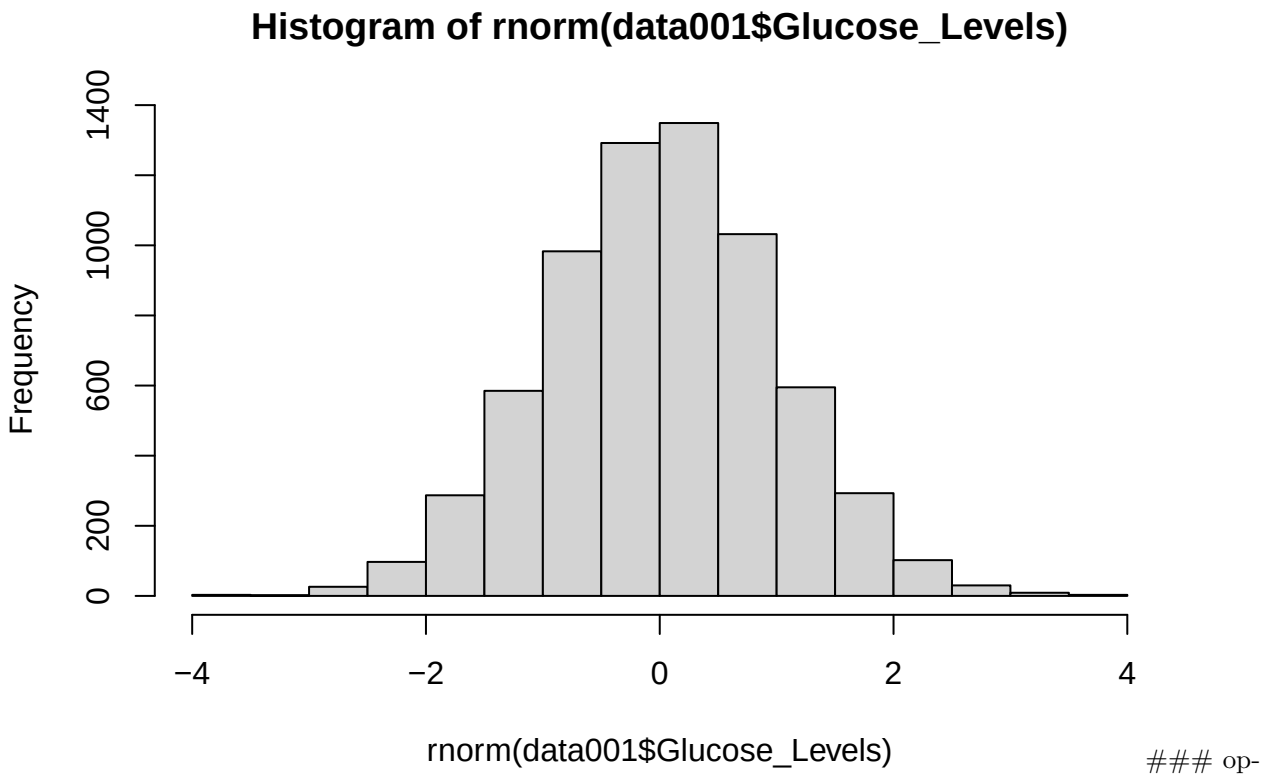

```
hist(data001$Glucose_Levels)
```



```
summary(data001$Glucose_Levels)
```

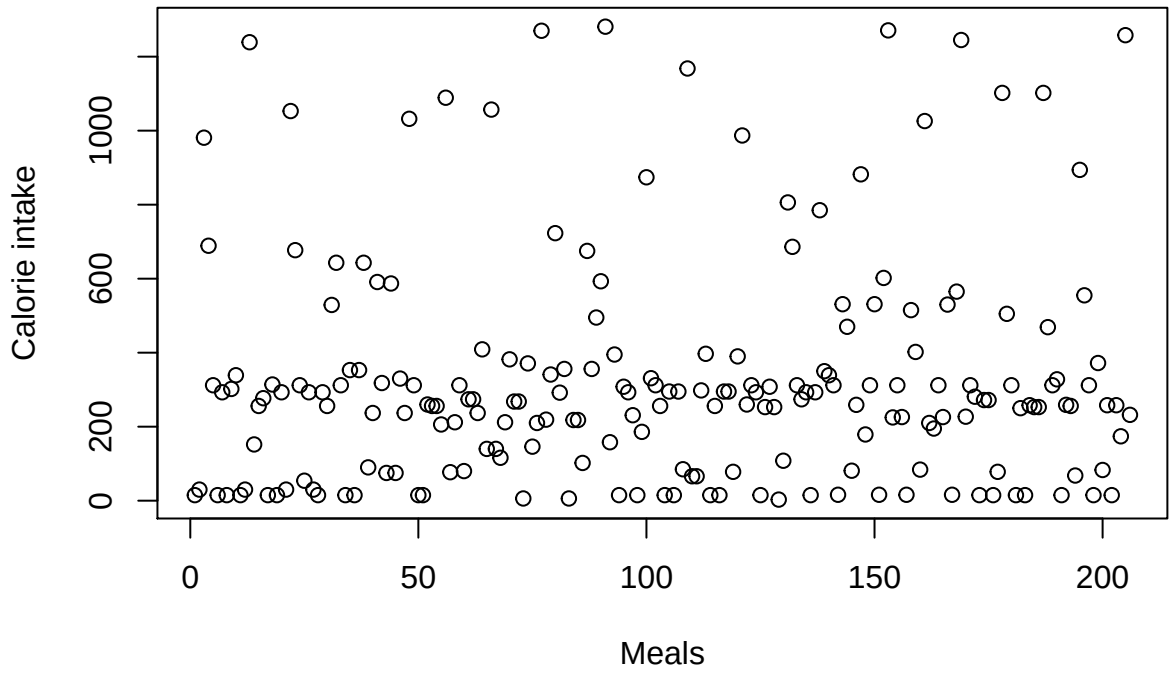
```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   3.198   5.363   5.950   6.235   6.892  14.125
```

```
hist(rnorm(data001$Glucose_Levels))
```



opdracht 7

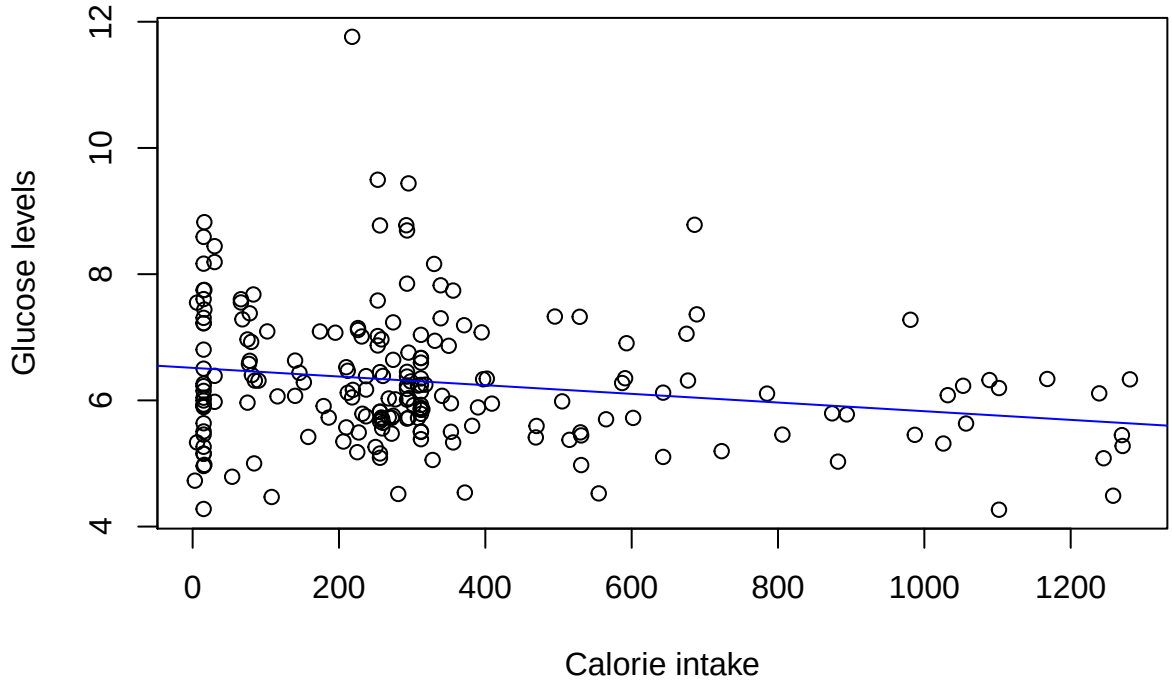
```
meals <- data001[!data001$Calorie_Intake %in% c(0),]
x_1 <- seq(1, nrow(meals), by=1)
plot(x_1, meals$Calorie_Intake, xlab="Meals", ylab="Calorie intake")
```



###

8

```
plot(meals$Calorie_Intake, meals$Glucose_Levels, xlab="Calorie intake", ylab="Glucose levels")
abline(lm(meals$Glucose_Levels~meals$Calorie_Intake), col="blue")
```



opdracht 9

```
library(dplyr)
```

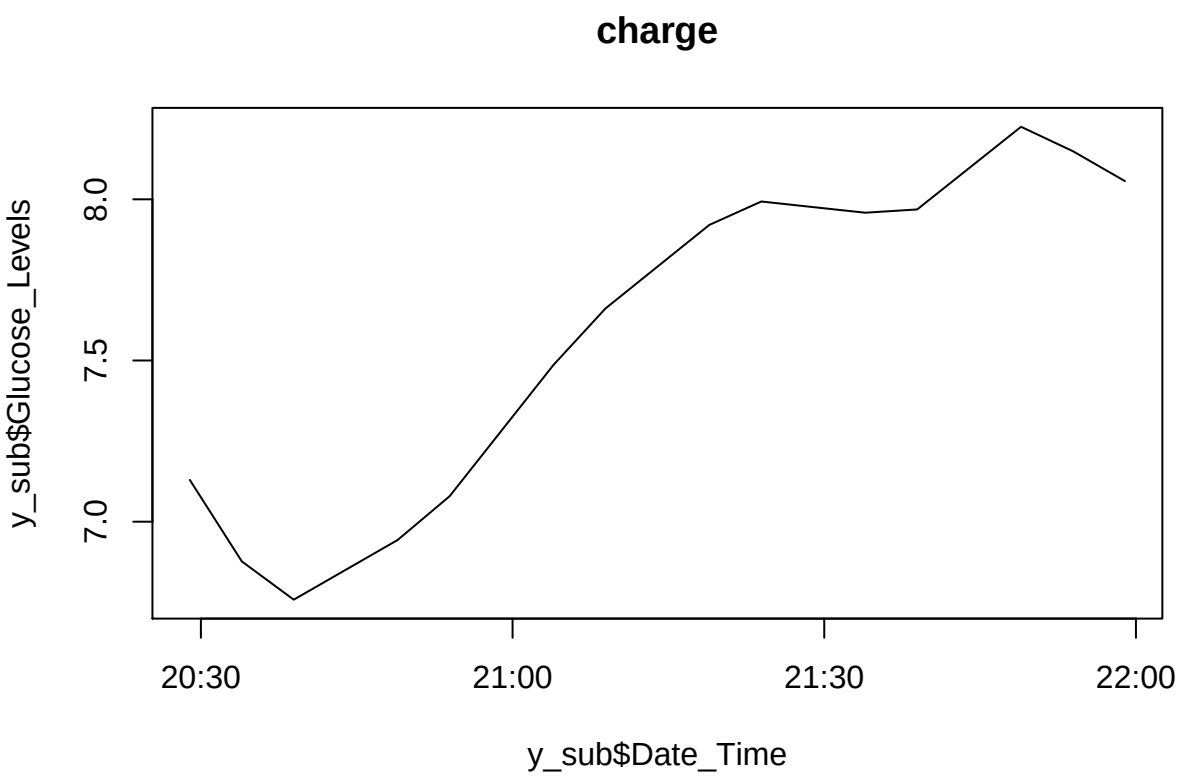
```
##
## Attaching package: 'dplyr'
```

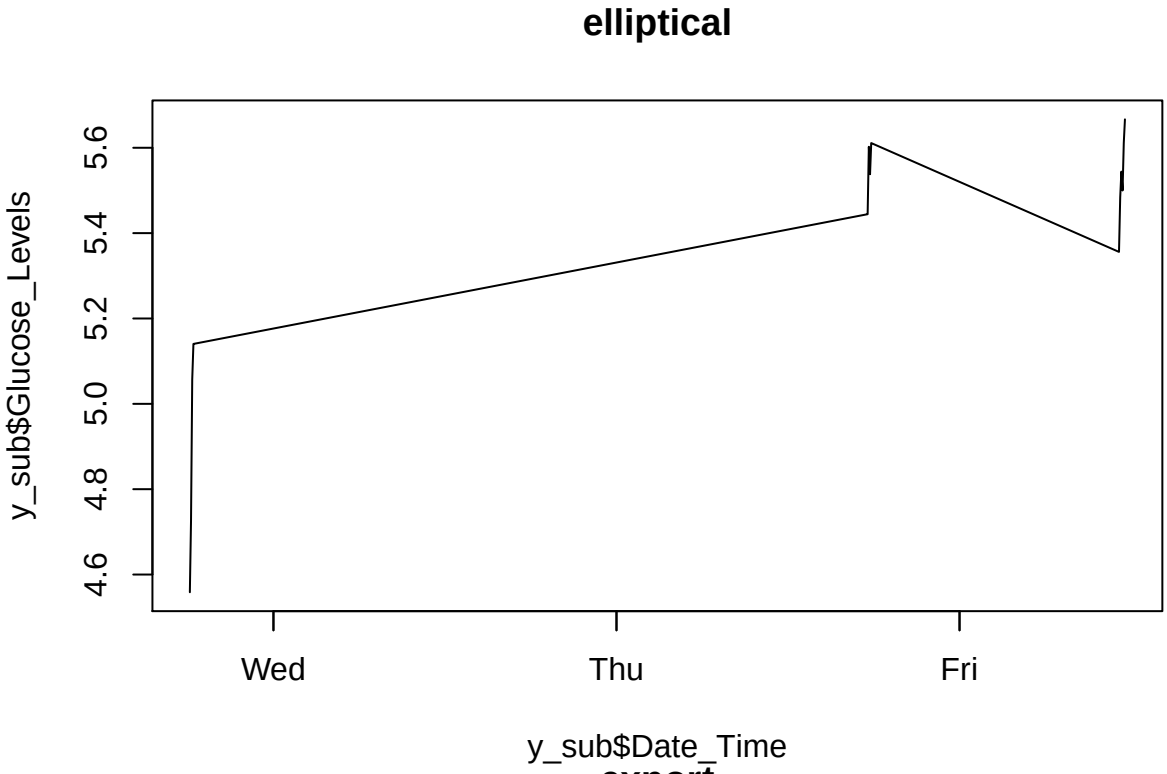
```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

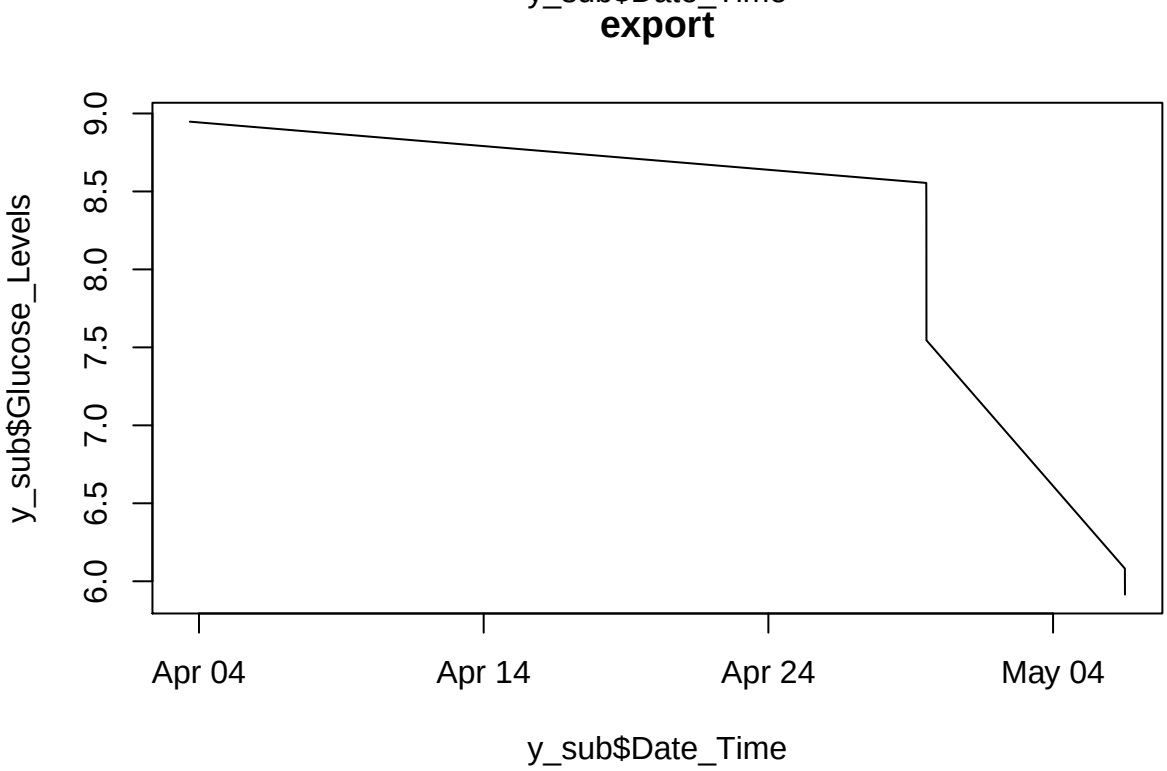
```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

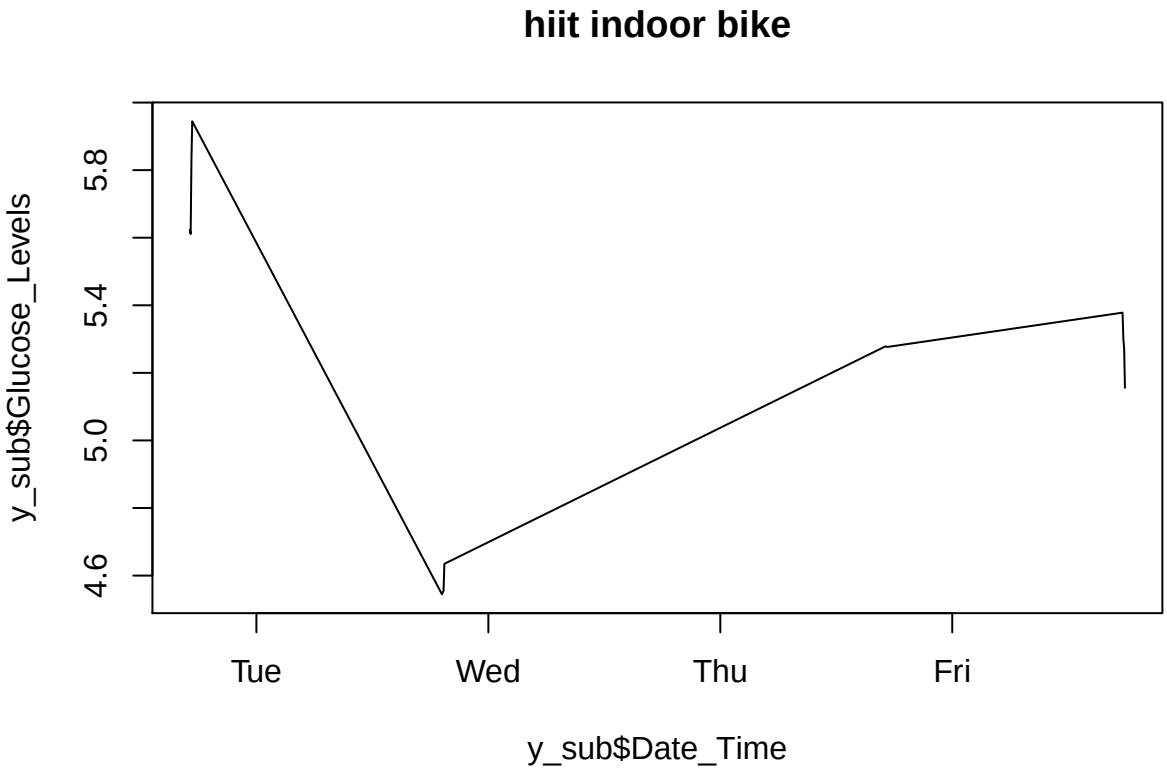
```
activiteiten <- dingus$names

filterd_datasubset <- data001 %>% filter(!grepl('nan|sleeping', Annotation))
```

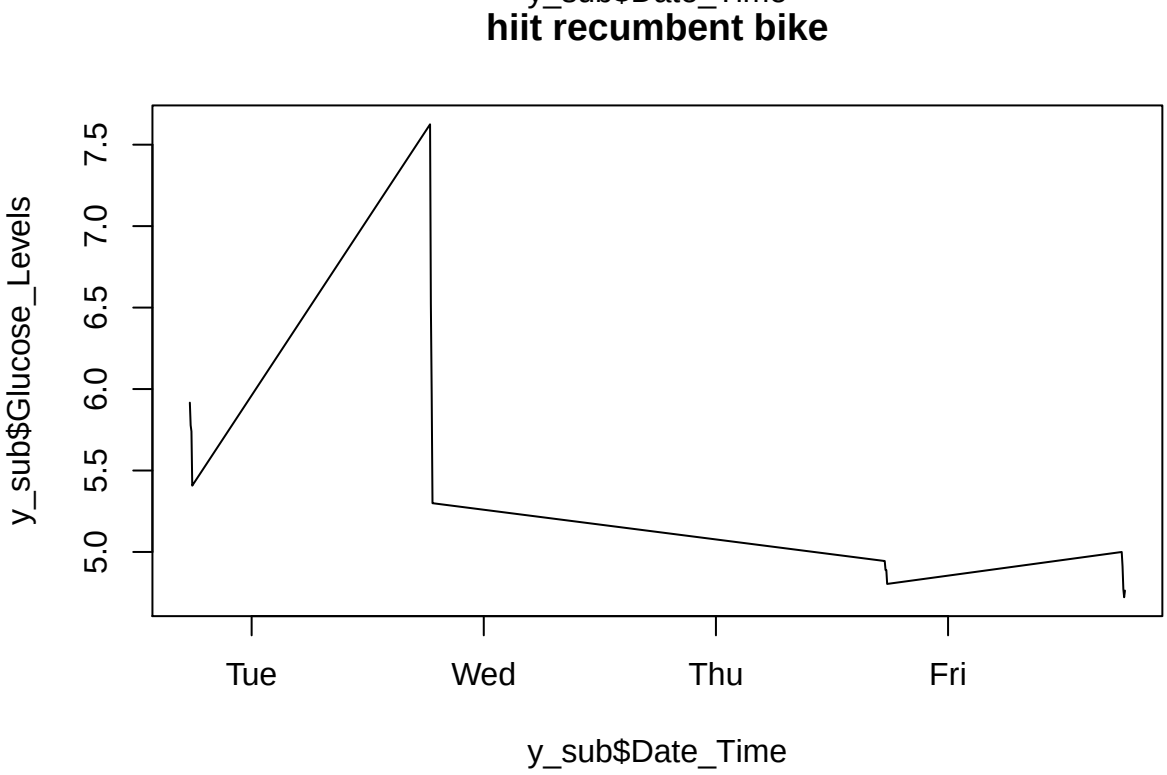
```
for (variable_ in activiteiten)
  {
  y_sub <- filterd_datasubset[ which(filterd_datasubset$Annotation == variable_),]
  plot(y_sub$Date_Time, y_sub$Glucose_Levels, main = variable_ , type = 'l')

  }
```

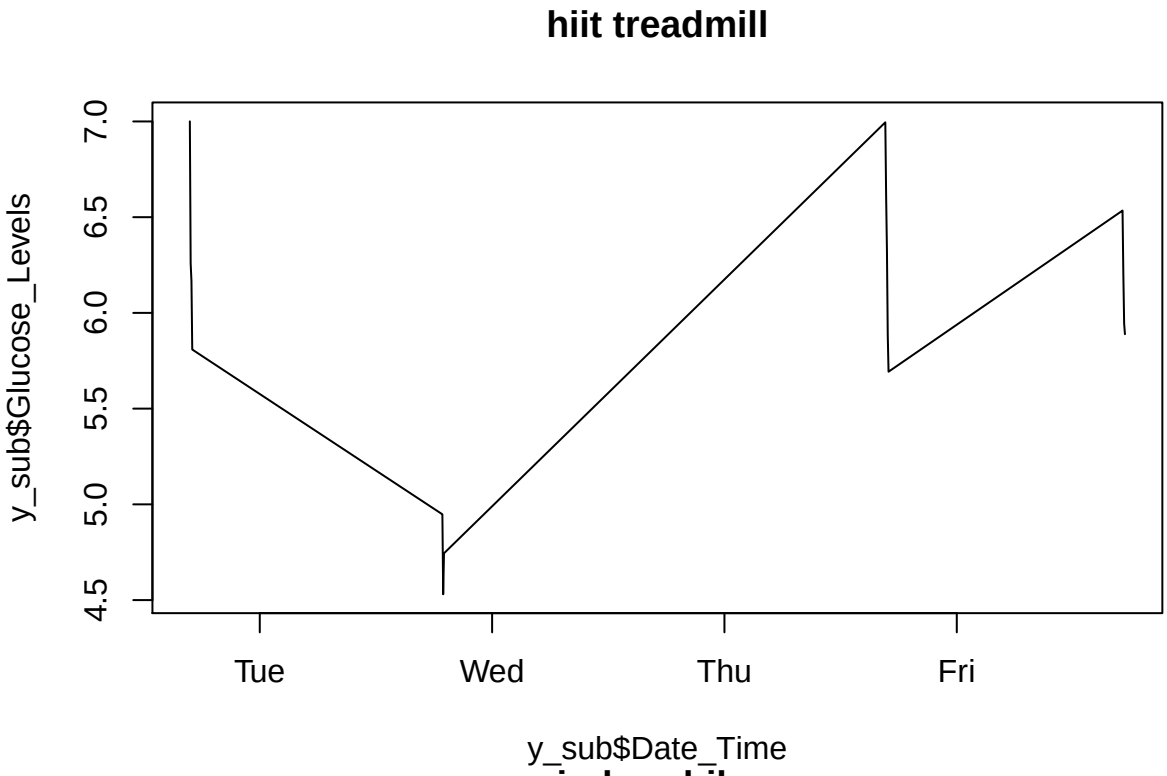


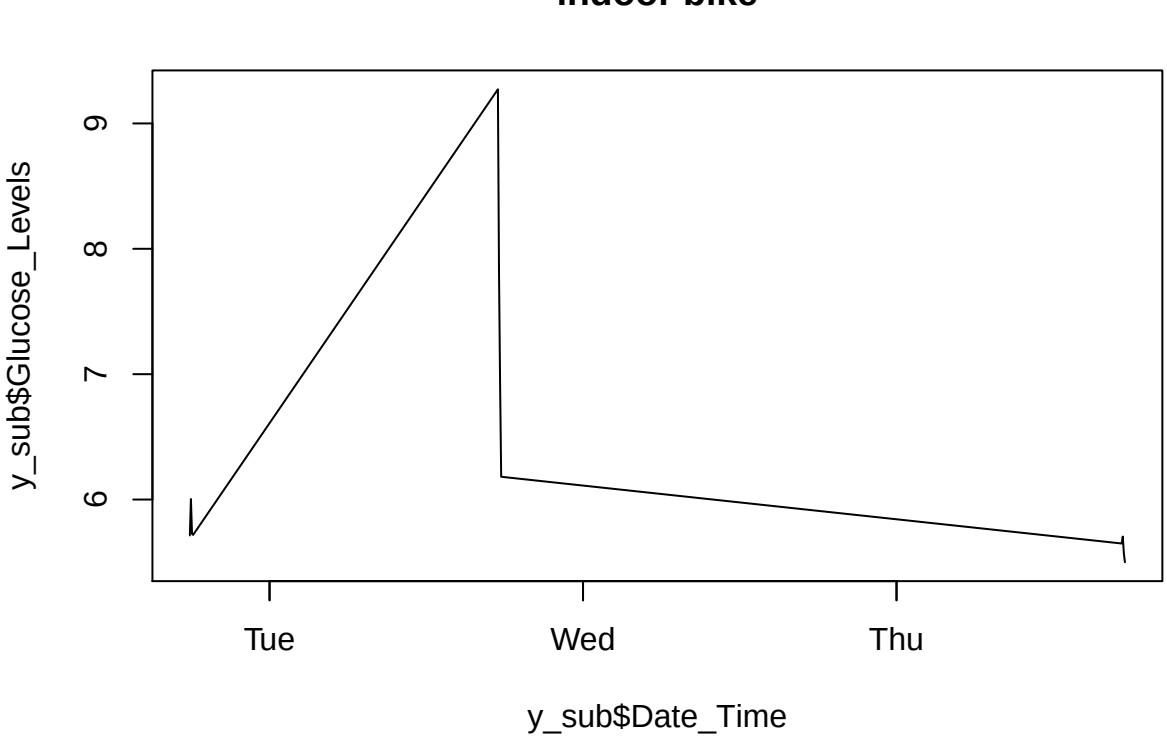

elliptical
y_sub$Glucose_Levels
4.6
4.8
5.0
5.2
5.4
5.6
Wed
Thu
Fri
y_sub$Date_Time

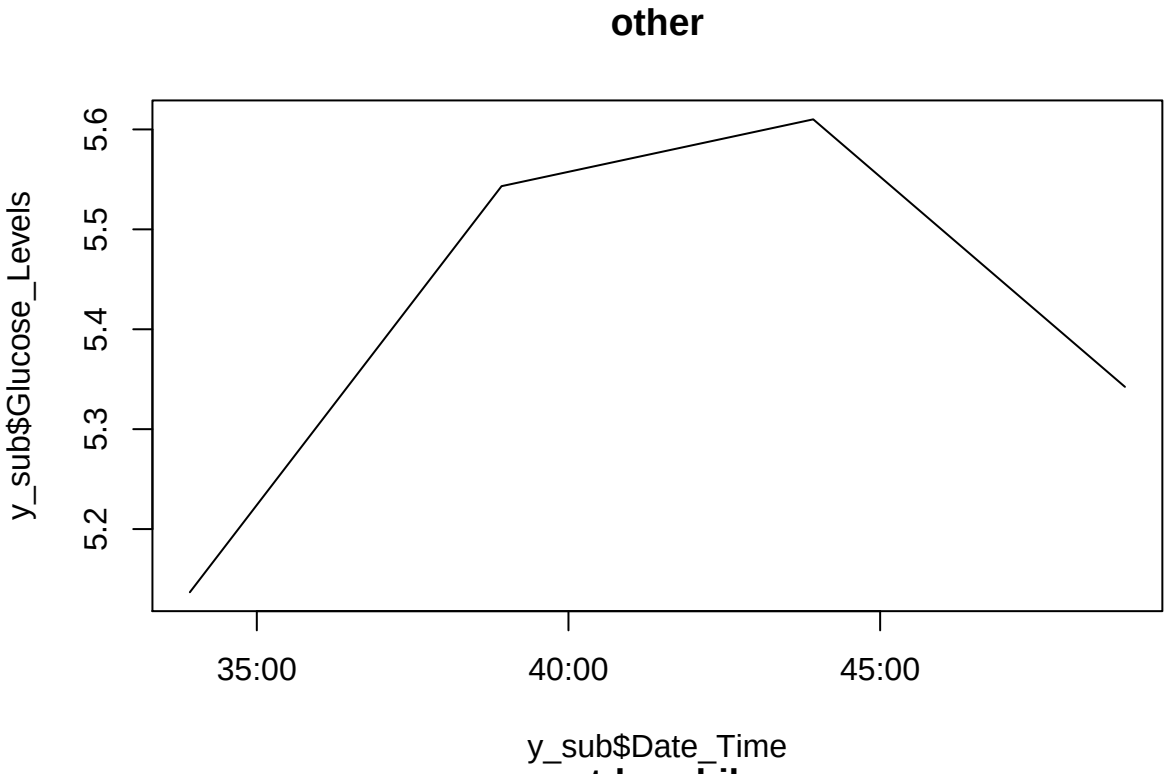

export
y_sub$Glucose_Levels
6.0
6.5
7.0
7.5
8.0
8.5
9.0
Apr 04
Apr 14
Apr 24
May 04
y_sub$Date_Time

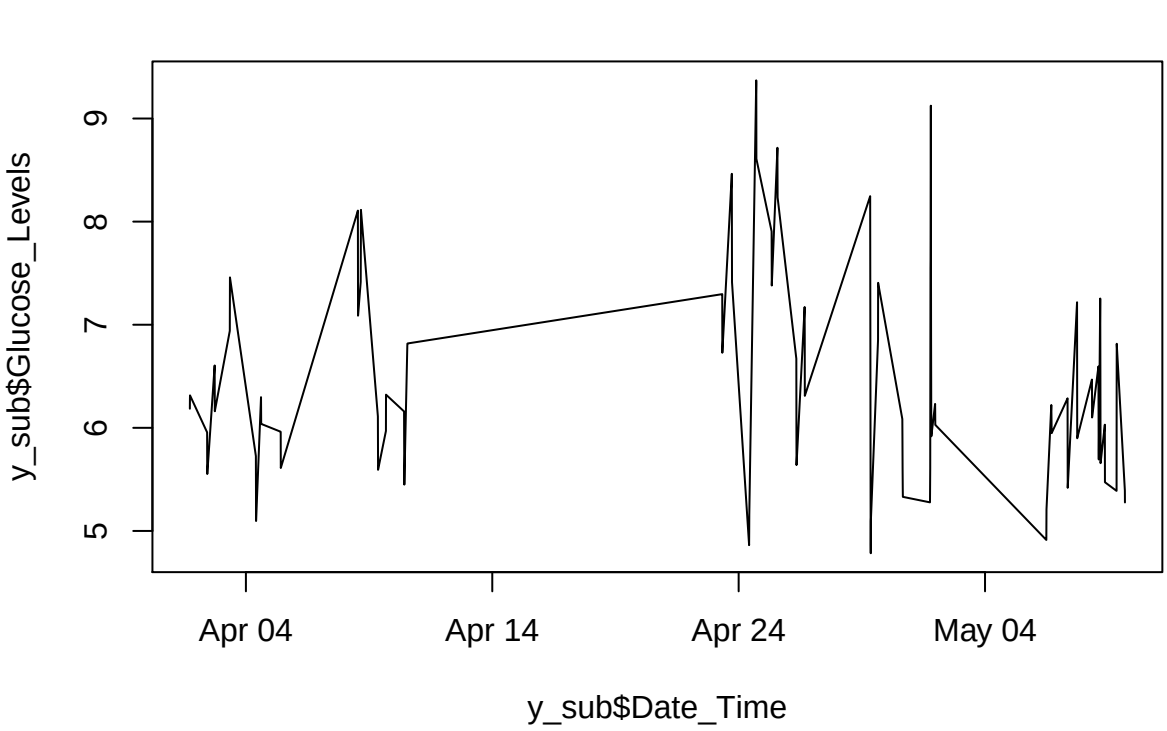

hiit indoor bike
y_sub$Glucose_Levels
4.6
5.0
5.4
5.8
Tue
Wed
Thu
Fri
y_sub$Date_Time

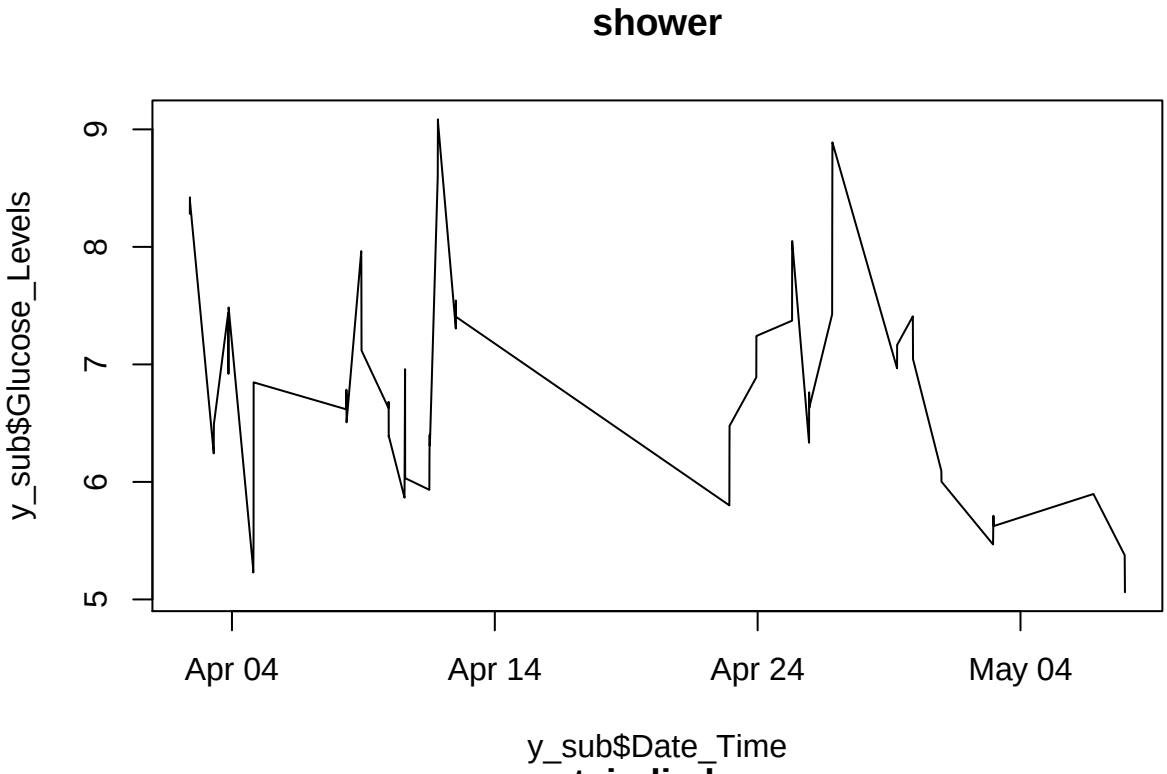

hiit recumbent bike
y_sub$Glucose_Levels
5.0
5.5
6.0
6.5
7.0
7.5
Tue
Wed
Thu
Fri
y_sub$Date_Time

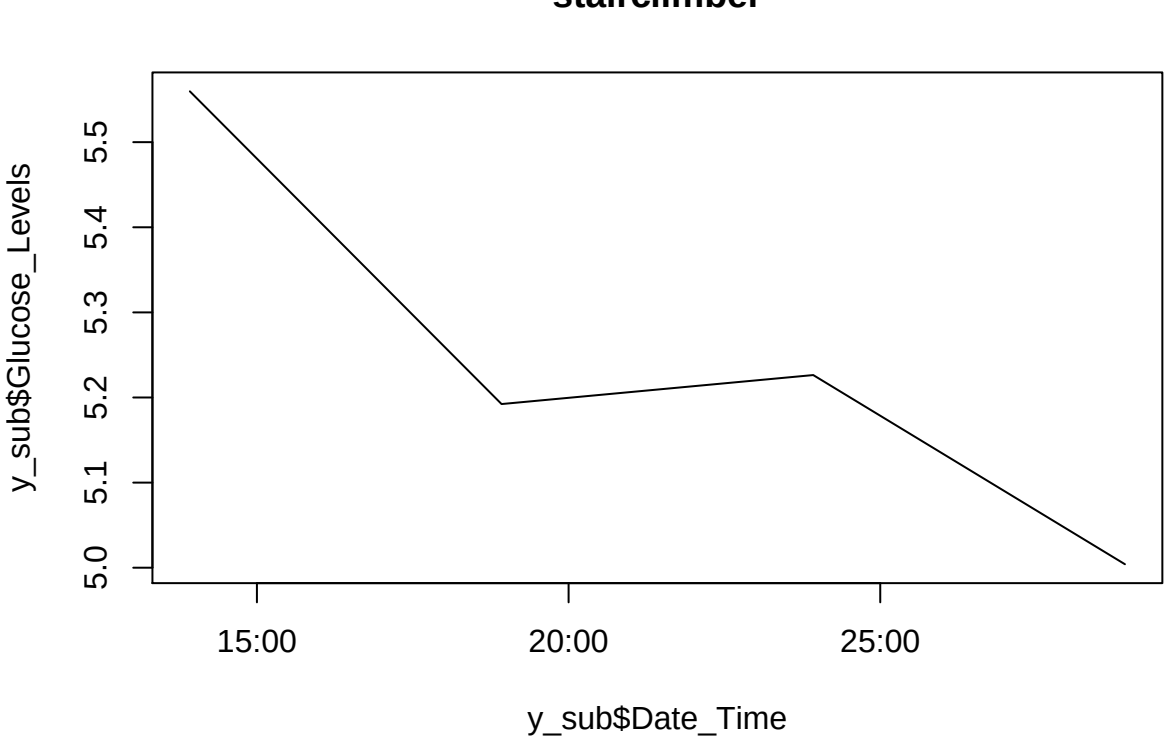

hiit treadmill
y_sub$Glucose_Levels
4.5
5.0
5.5
6.0
6.5
7.0
Tue
Wed
Thu
Fri
y_sub$Date_Time

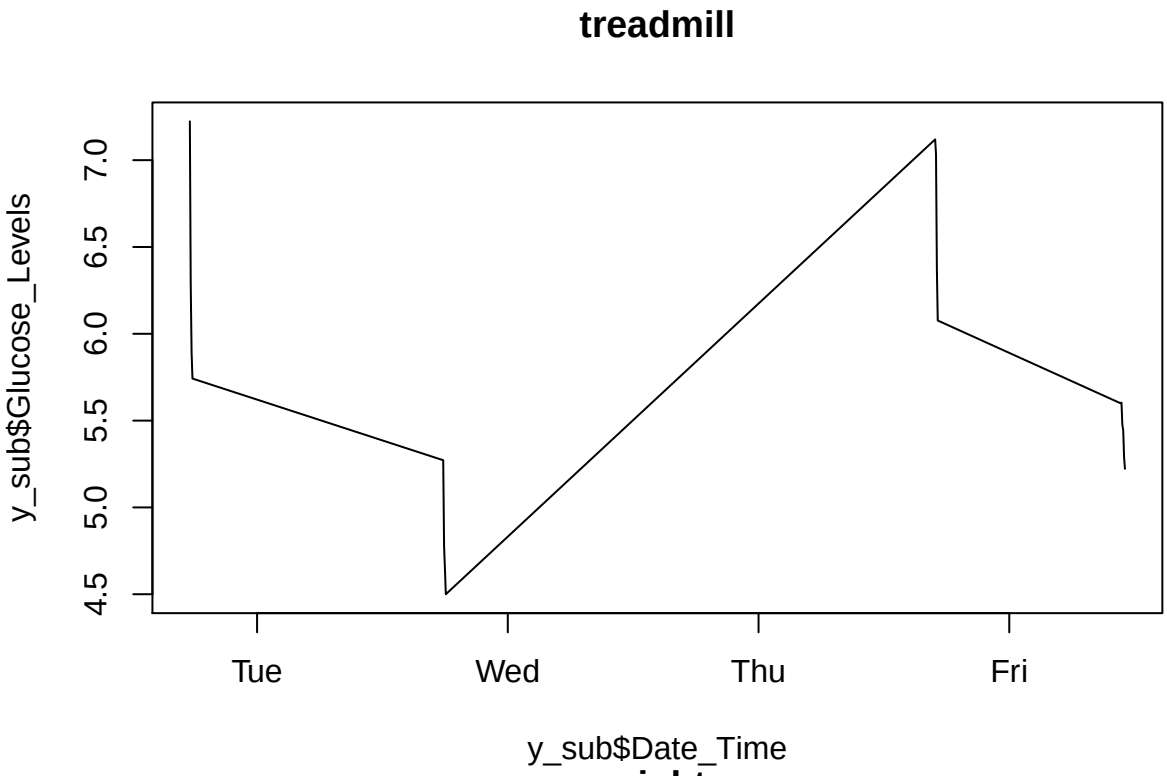

indoor bike
y_sub$Glucose_Levels
6
7
8
9
Tue
Wed
Thu
y_sub$Date_Time

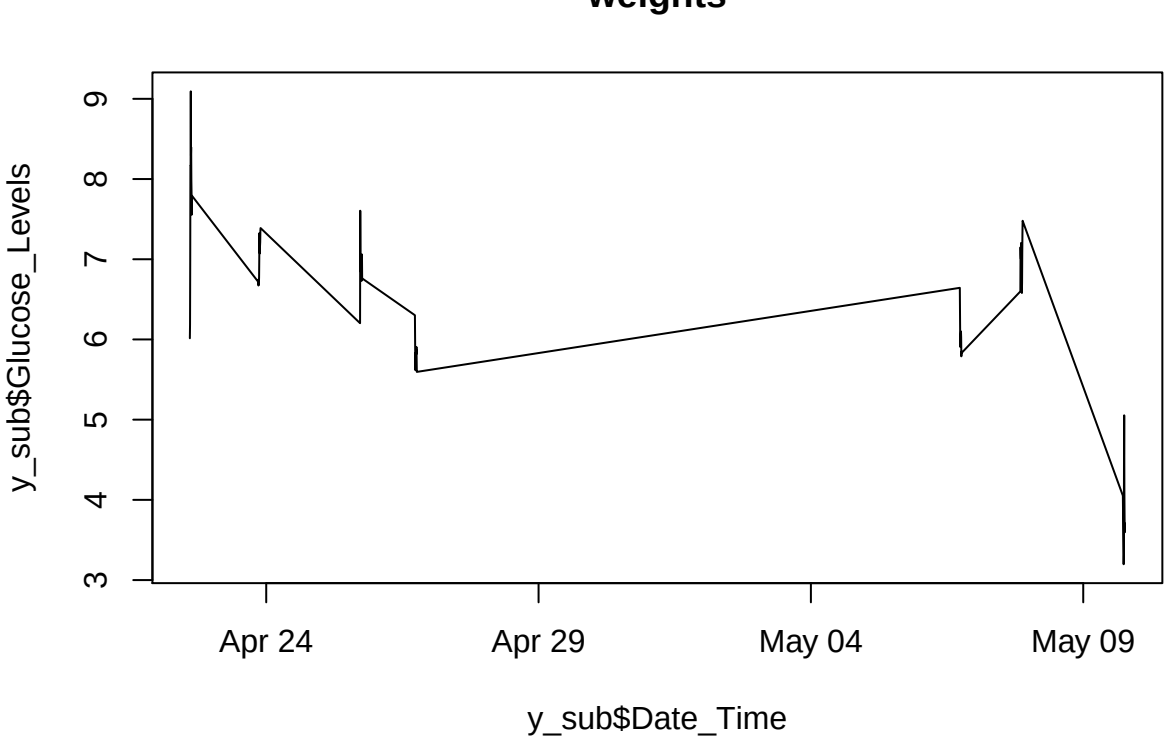

other
y_sub$Glucose_Levels
5.2
5.3
5.4
5.5
5.6
35:00
40:00
45:00
y_sub$Date_Time


outdoor bike
y_sub$Glucose_Levels
5
6
7
8
9
Apr 04
Apr 14
Apr 24
May 04
y_sub$Date_Time


shower
y_sub$Glucose_Levels
5
6
7
8
9
Apr 04
Apr 14
Apr 24
May 04
y_sub$Date_Time


stairclimber
y_sub$Glucose_Levels
5.0
5.1
5.2
5.3
5.4
5.5
15:00
20:00
25:00
y_sub$Date_Time





opdracht 10

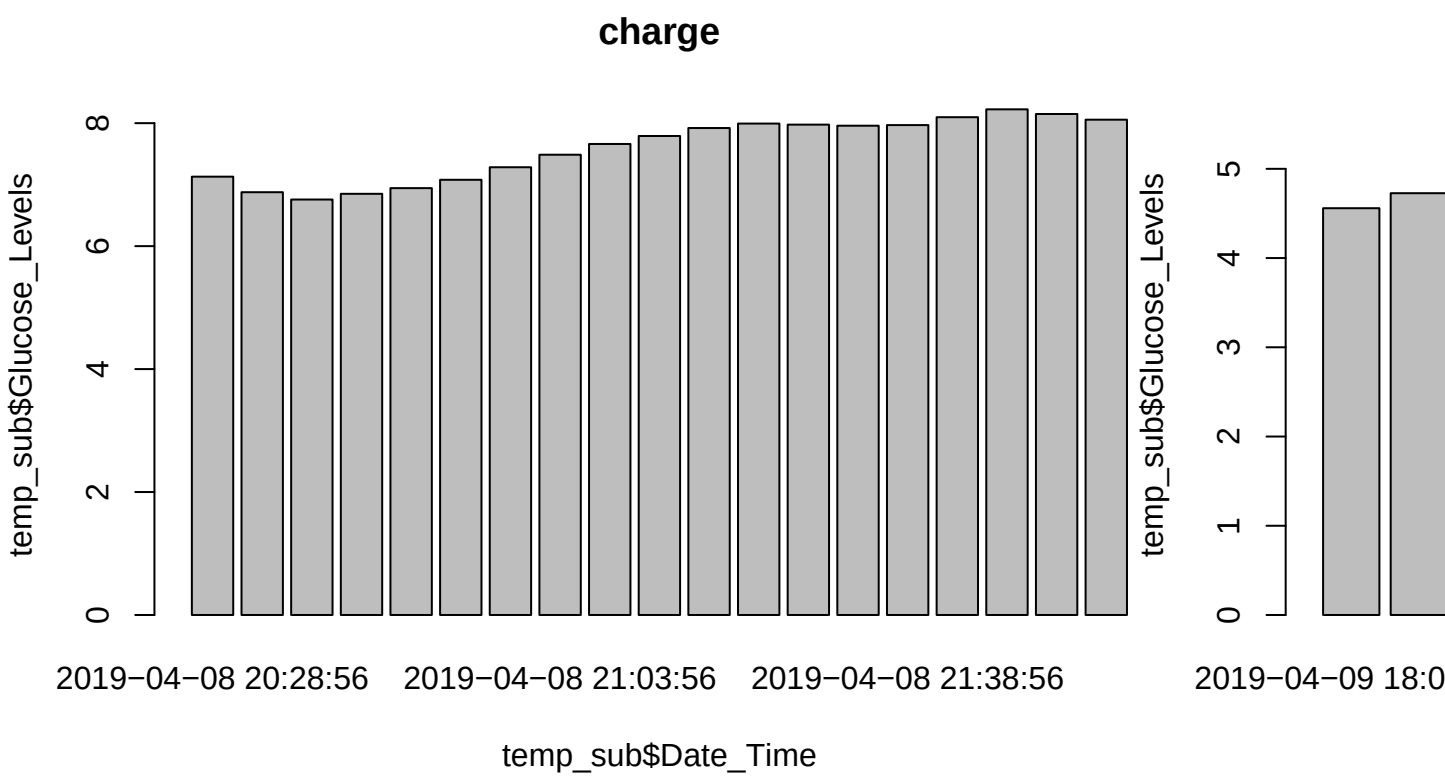
```
for (variable_ in activiteiten)
  {
  temp_sub <- filterd_datasubset[ which(filterd_datasubset$Annotation == variable_),]
```

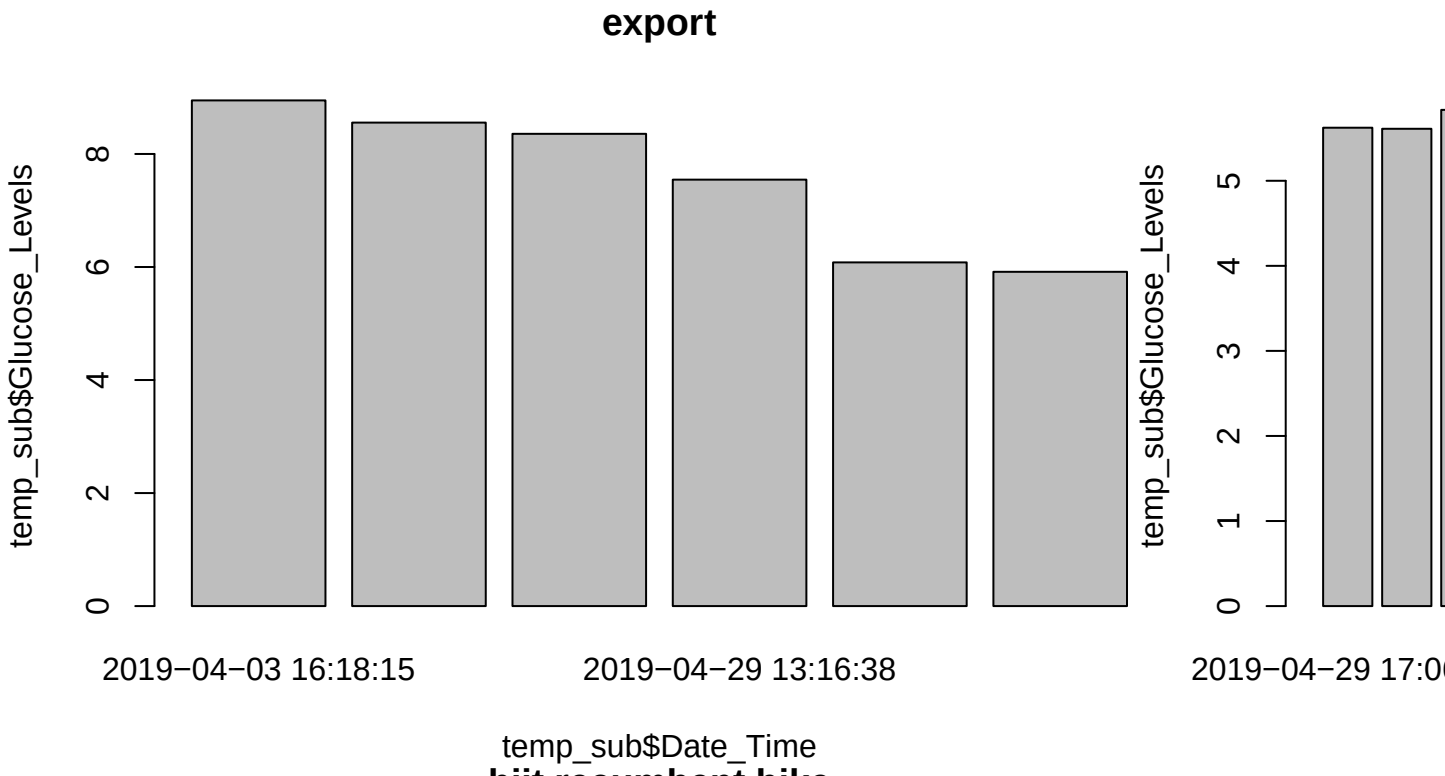
```
  temp_var_2 <- sum(temp_sub$Calorie_Intake)

  print(c(variable_, temp_var_2))

  }
```

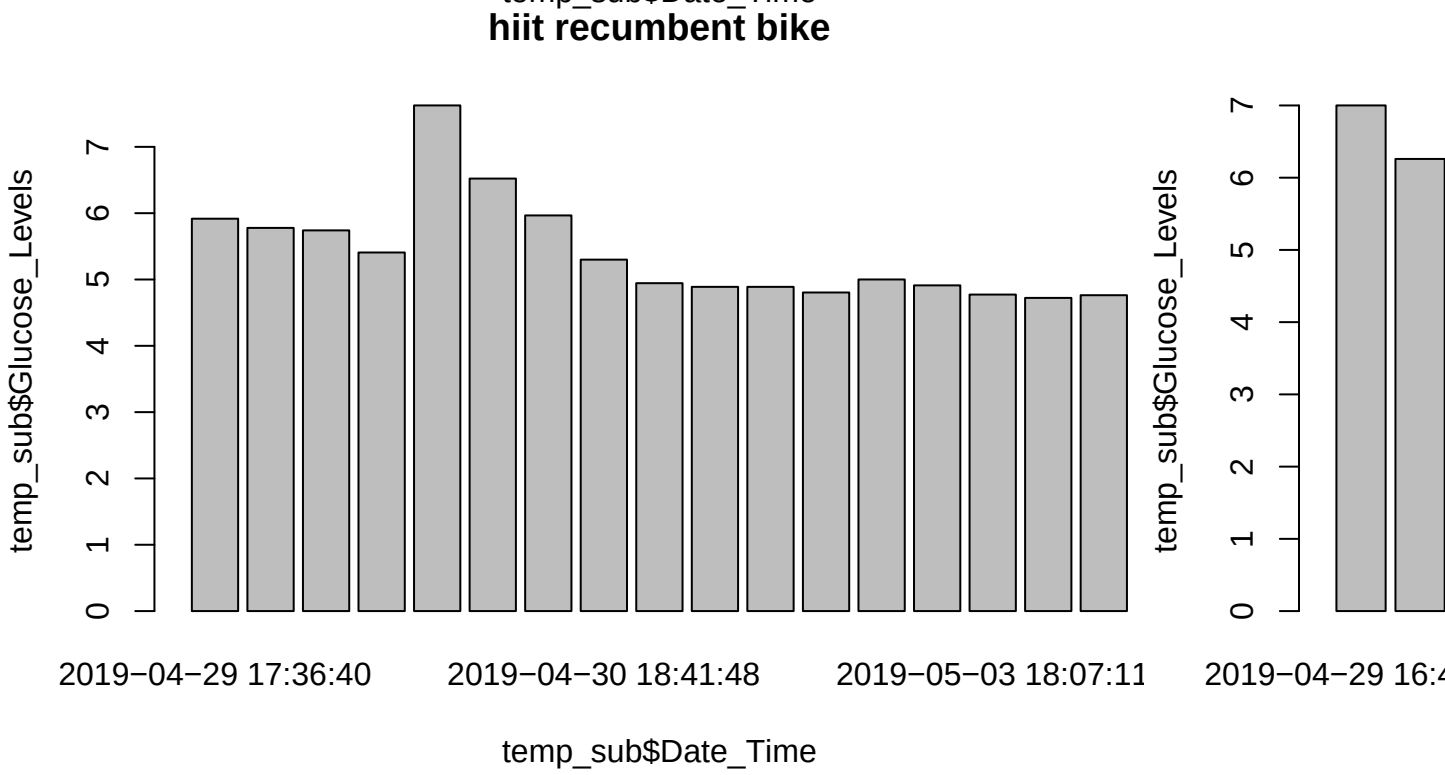
```
## [1] "charge" "0"
## [1] "elliptical" "0"
## [1] "export" "15"
## [1] "hiit indoor bike" "0"
## [1] "hiit recumbent bike" "0"
## [1] "hiit treadmill" "0"
## [1] "indoor bike" "0"
## [1] "other" "0"
## [1] "outdoor bike" "1271"
## [1] "shower" "0"
## [1] "stairclimber" "0"
## [1] "treadmill" "0"
## [1] "weights" "0"
```

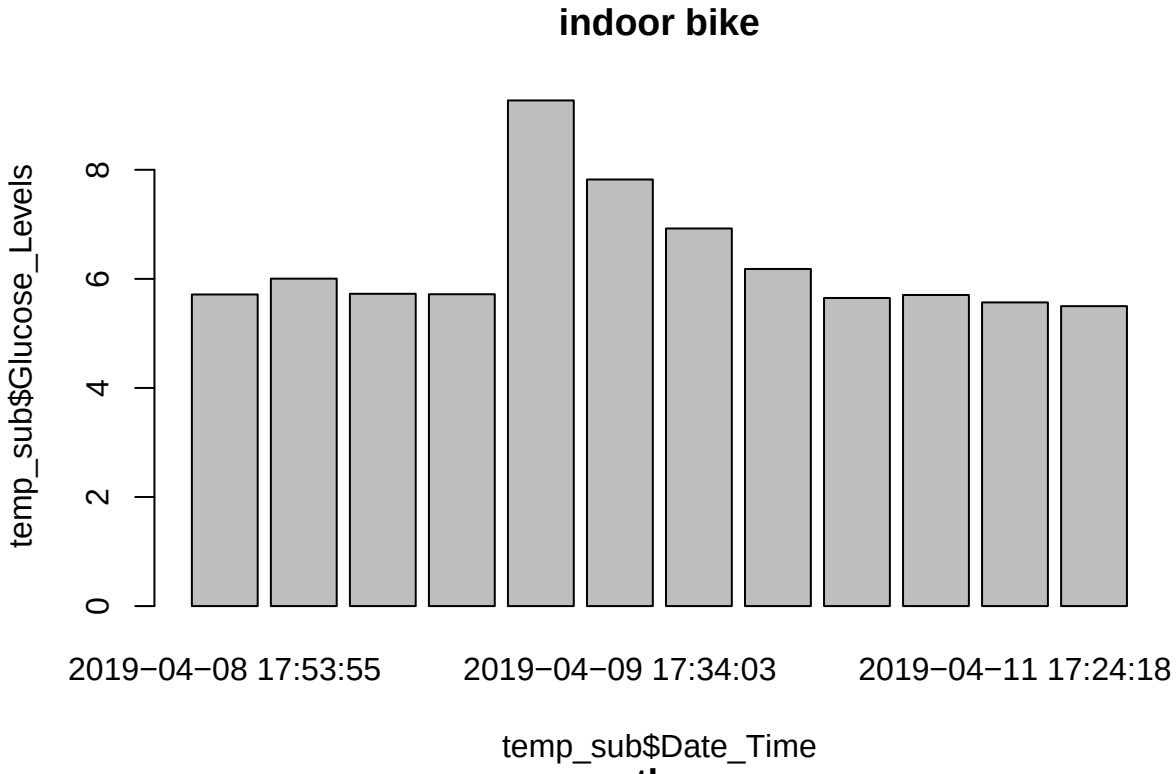
opdracht 11 zelfde als met 9

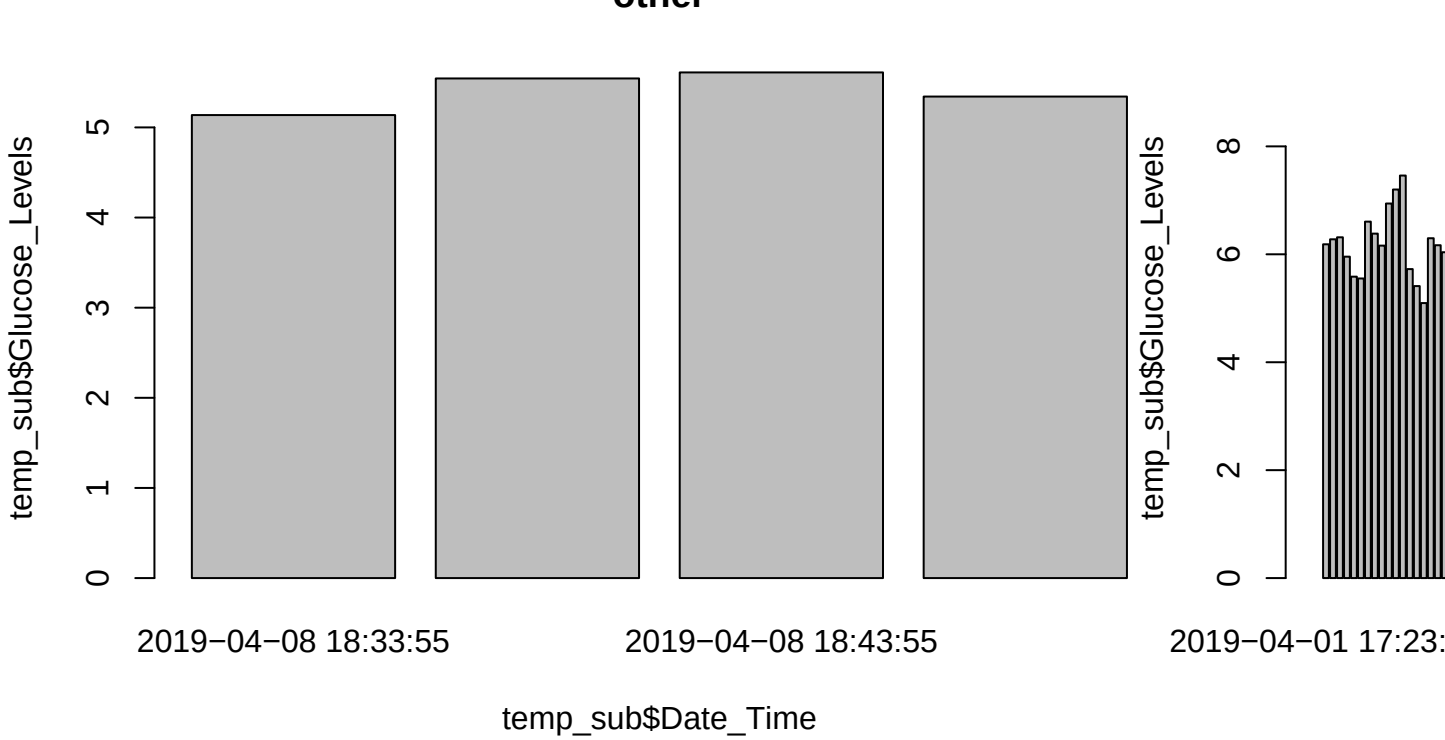
```
for (variable_ in activiteiten)
  {
  temp_sub <- filterd_datasubset[ which(filterd_datasubset$Annotation == variable_),]
  barplot(temp_sub$Glucose_Levels~temp_sub$Date_Time, main = variable_)

  }
```

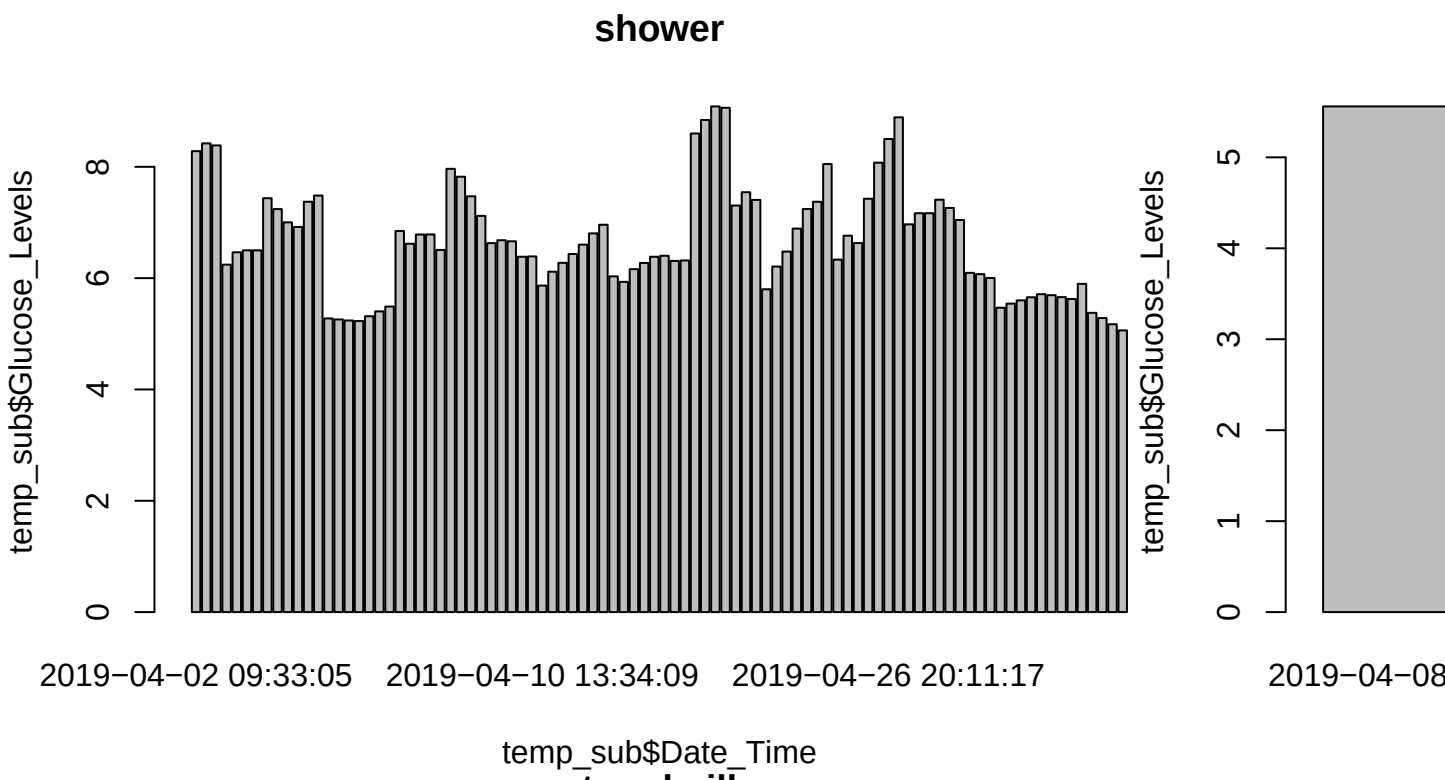


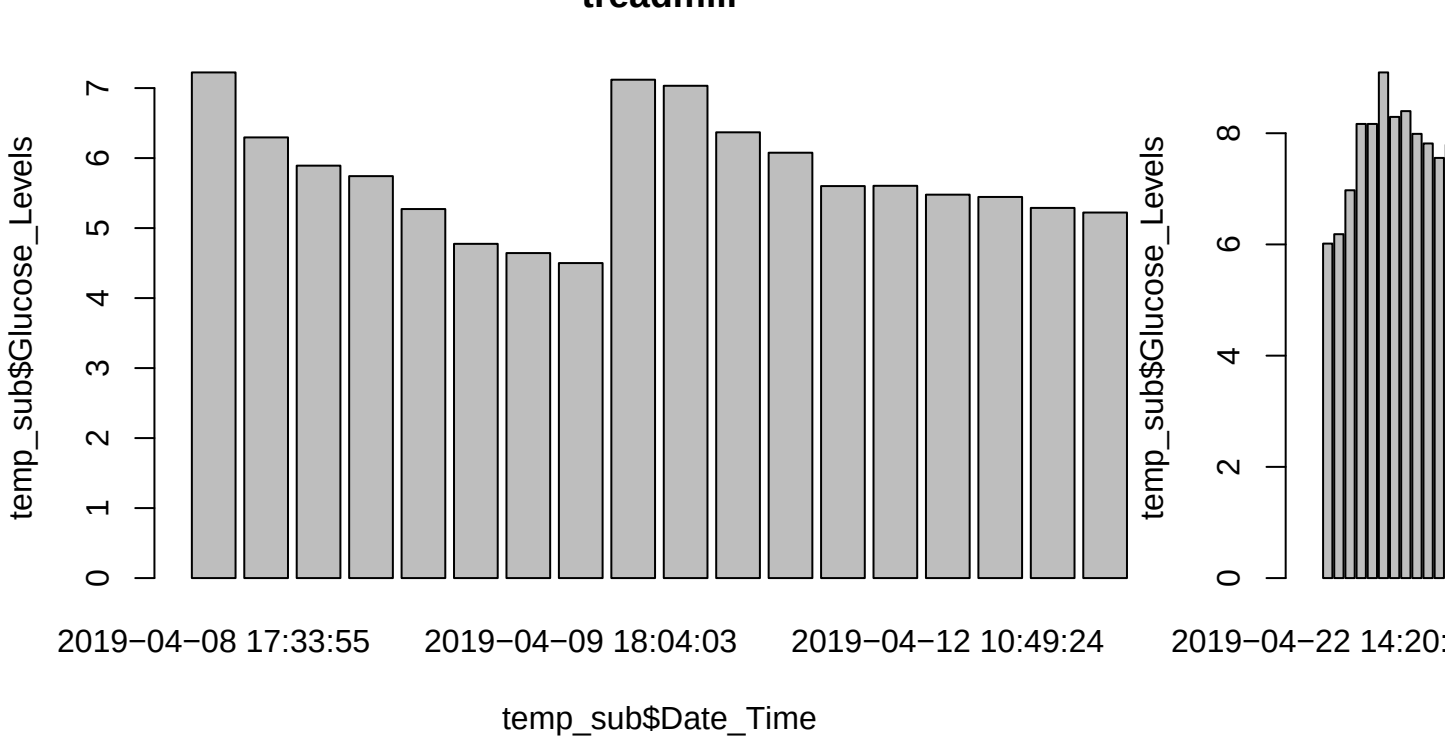

export
temp_sub$Glucose_Levels
0
2
4
6
8
2019−04−03 16:18:15
2019−04−29 13:16:38
temp_sub$Date_Time


hiit recumbent bike
temp_sub$Glucose_Levels
0
1
2
3
4
5
6
7
2019−04−29 17:36:40
2019−04−30 18:41:48
2019−05−03 18:07:11
temp_sub$Date_Time


indoor bike
temp_sub$Glucose_Levels
0
2
4
6
8
2019−04−08 17:53:55
2019−04−09 17:34:03
2019−04−11 17:24:18
temp_sub$Date_Time


other
temp_sub$Glucose_Levels
0
1
2
3
4
5
2019−04−08 18:33:55
2019−04−08 18:43:55
temp_sub$Date_Time
temp_sub$Glucose_Levels
0
2
4
6
8
2019−04−01 17:23:





opdracht 12

```
for (variable_ in activiteiten)
  {
  temp_sub <- filterd_datasubset[ which(filterd_datasubset$Annotation == variable_),]
```

```
  temp_var_1 <- summarise(temp_sub, Average = mean(Glucose_Levels, na.rm = T))

  print(c(variable_, temp_var_1))

  }
```

```
## [[1]]
## [1] "charge"
##
## $Average
## [1] 7.589593
##
## [[1]]
## [1] "elliptical"
##
## $Average
## [1] 5.345702
##
## [[1]]
## [1] "export"
##
## $Average
## [1] 7.566641
##
## [[1]]
## [1] "hiit indoor bike"
##
## $Average
## [1] 5.219614
##
## [[1]]
## [1] "hiit recumbent bike"
##
## $Average
## [1] 5.40871
##
## [[1]]
## [1] "hiit treadmill"
##
## $Average
## [1] 5.970588
##
## [[1]]
## [1] "indoor bike"
##
## $Average
## [1] 6.315334
##
## [[1]]
## [1] "other"
##
## $Average
## [1] 5.408114
##
```

```
## [[1]]
## [1] "outdoor bike"
##
## $Average
## [1] 6.458693
##
## [[1]]
## [1] "shower"
##
## $Average
## [1] 6.678488
##
## [[1]]
## [1] "stairclimber"
##
## $Average
## [1] 5.245612
##
## [[1]]
## [1] "treadmill"
##
## $Average
## [1] 5.754103
##
## [[1]]
## [1] "weights"
##
## $Average
## [1] 6.354931
```

er is geen significant verschill in bloedsuiker te zien in de activieteiten.