library(dplyr)

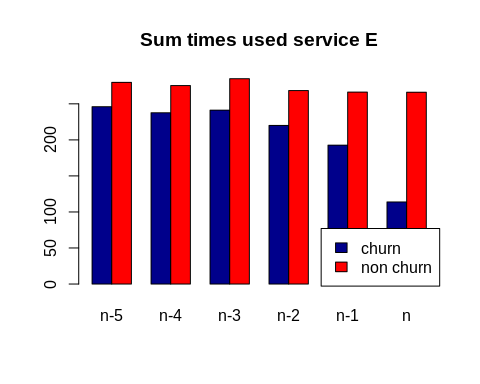
##   
## Attaching package: 'dplyr'

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

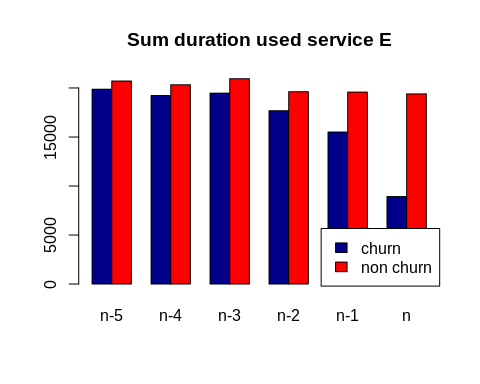
## The following objects are masked from 'package:base':  
##   
## intersect, setdiff, setequal, union

dataServiceE = read.csv("E.csv")

churn <- c(mean(dataServiceE[dataServiceE$churn==1,]$sum\_E..\_times\_tn\_5),  
 mean(dataServiceE[dataServiceE$churn==1,]$sum\_E..\_times\_tn\_4),  
 mean(dataServiceE[dataServiceE$churn==1,]$sum\_E..\_times\_tn\_3),  
 mean(dataServiceE[dataServiceE$churn==1,]$sum\_E..\_times\_tn\_2),  
 mean(dataServiceE[dataServiceE$churn==1,]$sum\_E..\_times\_tn\_1),  
 mean(dataServiceE[dataServiceE$churn==1,]$sum\_E..\_times\_tn))  
non\_churn <- c(mean(dataServiceE[dataServiceE$churn==0,]$sum\_E..\_times\_tn\_5),  
 mean(dataServiceE[dataServiceE$churn==0,]$sum\_E..\_times\_tn\_4),  
 mean(dataServiceE[dataServiceE$churn==0,]$sum\_E..\_times\_tn\_3),  
 mean(dataServiceE[dataServiceE$churn==0,]$sum\_E..\_times\_tn\_2),  
 mean(dataServiceE[dataServiceE$churn==0,]$sum\_E..\_times\_tn\_1),  
 mean(dataServiceE[dataServiceE$churn==0,]$sum\_E..\_times\_tn))  
months = c("n-5", "n-4", "n-3", "n-2", "n-1", "n")  
data = data.frame(months, churn, non\_churn)  
mydf = t(data[-1])  
colnames(mydf) <- data[, 1]  
barplot(mydf, beside = TRUE, main = "Sum times used service E", col=c('darkblue', 'red'))  
legend("bottomright", legend = c('churn', "non churn"), fill=c('darkblue', 'red'))



churn <- c(mean(dataServiceE[dataServiceE$churn==1,]$sum\_E..\_duration\_tn\_5),  
 mean(dataServiceE[dataServiceE$churn==1,]$sum\_E..\_duration\_tn\_4),  
 mean(dataServiceE[dataServiceE$churn==1,]$sum\_E..\_duration\_tn\_3),  
 mean(dataServiceE[dataServiceE$churn==1,]$sum\_E..\_duration\_tn\_2),  
 mean(dataServiceE[dataServiceE$churn==1,]$sum\_E..\_duration\_tn\_1),  
 mean(dataServiceE[dataServiceE$churn==1,]$sum\_E..\_duration\_tn))  
non\_churn <- c(mean(dataServiceE[dataServiceE$churn==0,]$sum\_E..\_duration\_tn\_5),  
 mean(dataServiceE[dataServiceE$churn==0,]$sum\_E..\_duration\_tn\_4),  
 mean(dataServiceE[dataServiceE$churn==0,]$sum\_E..\_duration\_tn\_3),  
 mean(dataServiceE[dataServiceE$churn==0,]$sum\_E..\_duration\_tn\_2),  
 mean(dataServiceE[dataServiceE$churn==0,]$sum\_E..\_duration\_tn\_1),  
 mean(dataServiceE[dataServiceE$churn==0,]$sum\_E..\_duration\_tn))  
months = c("n-5", "n-4", "n-3", "n-2", "n-1", "n")  
data = data.frame(months, churn, non\_churn)  
mydf = t(data[-1])  
colnames(mydf) <- data[, 1]  
barplot(mydf, beside = TRUE, main = "Sum duration used service E", col=c('darkblue', 'red'))  
legend("bottomright", legend = c('churn', "non churn"), fill=c('darkblue', 'red'))



churn <- c(mean(dataServiceE[dataServiceE$churn==1,]$sum\_E.\_charge\_tn\_5),  
 mean(dataServiceE[dataServiceE$churn==1,]$sum\_E.\_charge\_tn\_4),  
 mean(dataServiceE[dataServiceE$churn==1,]$sum\_E.\_charge\_tn\_3),  
 mean(dataServiceE[dataServiceE$churn==1,]$sum\_E.\_charge\_tn\_2),  
 mean(dataServiceE[dataServiceE$churn==1,]$sum\_E.\_charge\_tn\_1),  
 mean(dataServiceE[dataServiceE$churn==1,]$sum\_E.\_charge\_tn))  
non\_churn <- c(mean(dataServiceE[dataServiceE$churn==0,]$sum\_E.\_charge\_tn\_5),  
 mean(dataServiceE[dataServiceE$churn==0,]$sum\_E.\_charge\_tn\_4),  
 mean(dataServiceE[dataServiceE$churn==0,]$sum\_E.\_charge\_tn\_3),  
 mean(dataServiceE[dataServiceE$churn==0,]$sum\_E.\_charge\_tn\_2),  
 mean(dataServiceE[dataServiceE$churn==0,]$sum\_E.\_charge\_tn\_1),  
 mean(dataServiceE[dataServiceE$churn==0,]$sum\_E.\_charge\_tn))  
months = c("n-5", "n-4", "n-3", "n-2", "n-1", "n")  
data = data.frame(months, churn, non\_churn)  
mydf = t(data[-1])  
colnames(mydf) <- data[, 1]  
barplot(mydf, beside = TRUE, main = "Sum charge used service E", col=c('darkblue', 'red'))  
legend("bottomright", legend = c('churn', "non churn"), fill=c('darkblue', 'red'))

