

MSDS7333-Real Time Location Systems

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Load Data

```
processLine = function(x)
{
  tokens = strsplit(x, "[;=,]")[[1]]
  if (length(tokens) == 10)
    return(NULL)
  tmp = matrix(tokens[- (1:10)], ncol = 4, byrow = TRUE)
  cbind(matrix(tokens[c(2, 4, 6:8, 10)], nrow(tmp), 6, byrow = TRUE), tmp)
}

lines = txt[substr(txt, 1, 1) != "#"]
options(error = recover, warn = 1)
tmp = lapply(lines, processLine)
offline = as.data.frame(do.call("rbind", tmp), stringsAsFactors = FALSE)

names(offline) = c("time", "scanMac", "posX", "posY", "posZ",
                  "orientation", "mac", "signal",
                  "channel", "type")

numVars = c("time", "posX", "posY", "posZ",
            "orientation", "signal")
```

Structure of the Data

```
str(offline)
```

```
## 'data.frame':   1181628 obs. of  10 variables:
## $ time          : chr  "1139643118358" "1139643118358" "1139643118358" "1139643118358" ...
```

```
## $ scanMac      : chr "00:02:2D:21:0F:33" "00:02:2D:21:0F:33" "00:02:2D:21:0F:33" "00:02:2D:21:0F:33"
## $ posX         : chr "0.0" "0.0" "0.0" "0.0" ...
## $ posY         : chr "0.0" "0.0" "0.0" "0.0" ...
## $ posZ         : chr "0.0" "0.0" "0.0" "0.0" ...
## $ orientation: chr "0.0" "0.0" "0.0" "0.0" ...
## $ mac          : chr "00:14:bf:b1:97:8a" "00:14:bf:b1:97:90" "00:0f:a3:39:e1:c0" "00:14:bf:b1:97:8d"
## $ signal       : chr "-38" "-56" "-53" "-65" ...
## $ channel      : chr "2437000000" "2427000000" "2462000000" "2442000000" ...
## $ type         : chr "3" "3" "3" "3" ...
```

Summary

```
##      time          scanMac          posX          posY
## Length:1181628 Length:1181628 Length:1181628 Length:1181628
## Class :character Class :character Class :character Class :character
## Mode  :character Mode  :character Mode  :character Mode  :character
##      posZ          orientation          mac          signal
## Length:1181628 Length:1181628 Length:1181628 Length:1181628
## Class :character Class :character Class :character Class :character
## Mode  :character Mode  :character Mode  :character Mode  :character
##      channel          type
## Length:1181628 Length:1181628
## Class :character Class :character
## Mode  :character Mode  :character
```

```
offline %>% count(mac) %>% arrange(n)
```

```
##      mac      n
## 1 02:0a:3d:06:94:88 1
## 2 02:42:1c:4e:b5:c0 1
## 3 02:4f:99:43:30:cd 1
## 4 00:e0:63:82:8b:a9 103
## 5 00:30:bd:f8:7f:c5 301
## 6 00:04:0e:5c:23:fc 418
## 7 02:5c:e0:50:49:de 6997
## 8 02:b7:00:bb:a9:35 7602
## 9 02:37:fd:3b:54:b5 8732
## 10 00:0f:a3:39:e2:10 19162
## 11 02:2e:58:22:f1:ac 25112
## 12 00:0f:a3:39:e0:4b 43508
## 13 02:64:fb:68:52:e6 50852
## 14 02:00:42:55:31:00 103887
## 15 00:14:bf:b1:97:81 120339
## 16 00:14:bf:b1:97:8d 121325
## 17 00:14:bf:b1:97:90 122315
## 18 00:14:bf:3b:c7:c6 126529
## 19 00:14:bf:b1:97:8a 132962
## 20 00:0f:a3:39:dd:cd 145619
## 21 00:0f:a3:39:e1:c0 145862
```