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1.1 Download de pacotes

1.1.1 Fixando Repositório

Fix repository from Brazil

```
r = getOption("repos")  # hard code the BR repo for CRAN
r["CRAN"] = "https://vps.fmvz.usp.br/CRAN/" # usp repository
options(repos = r)
## rm(r)
```

1.1.2 Instalando pacotes

```
install.packages(c("tidyverse","janitor","glmnet","ggthemes","patchwork"))
```

```
  library(tidyverse)
  library(janitor)
#  library(glmnet)
  library(ggthemes)
  library(patchwork)
```

```
heart_data <- readr::read_csv("~/PP/MonitoriaEstatistica/data/csv/infarto_logistica.csv") %>% janitor::clean_names(
```

```
heart_data[1:10,]
```

```
set.seed(1234)

trein <- sample(1:nrow(heart_data), round(0.8 * nrow(heart_data), digits = 0))
test <- setdiff(1:nrow(heart_data), train)

heart_data_train_x <- model.matrix(object = morte ~ ., data = heart_data[train, ])[, -1]
heart_data_train_y <- factor(heart_data[train, "morte"])

success_rates <- vector(mode = "double", length = 3)
names(success_rates) <- c("lasso", "ridge", "logistic")
```

```r
glm_heart_model <- glm(formula = morte ~ ., data = heart_data[train, ], family = "binomial")
```

```r
glm_heart_predict <- predict(object = glm_heart_model, newdata = heart_data[test, ], type = "response")

glm_heart_classes <- ifelse(glm_heart_predict > 0.5, 1, 0)


success_rates["logistic"] <- round(mean(ifelse(glm_heart_classes == heart_data[test, "morte"], 1, 0)), digits = 2)

success_rates["logistic"]

table(glm_heart_classes, heart_data[test, "morte"])
```

- **logistic**: 0.85

$\text{glm}_{\text{heart classes}}$	0	1
0	38	4
1	5	13

```r
summary(heart_data)
```