

# Lesson-2—25.04.2023.R

bramu

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```
library(readxl)
```

```
## Warning: Paket 'readxl' wurde unter R Version 4.2.3 erstellt
```

```
data_gdp <- read_excel("data_gdp.xlsx",
                      sheet = "data", skip = 2)

countries <- c("France", "Germany", "Italy", "Spain")
cols <- c("blue", "red", "green", "orange")

plot(NULL,
     xlim = c(1960, 2022),
     ylim = c(0, 4000),
     main = "Gross domestic product, 1960-2022",
     xlab = "Year",
     ylab = "Mrd. Euro")

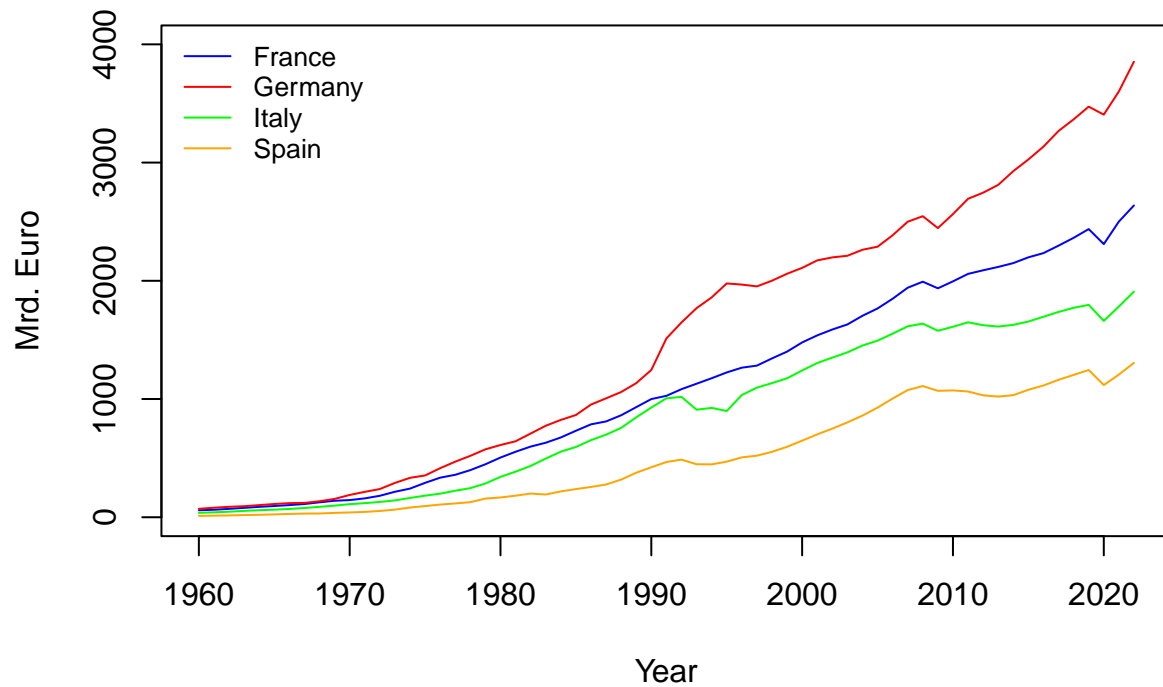
for (c in 1:length(countries)) {

  lines(x = data_gdp$year[data_gdp$country == countries[c]],
        y = data_gdp$value[data_gdp$country == countries[c]],
        type = "l",
        col = cols[c])

}

legend("topleft",
     legend = countries,
     col = cols,
     lty = 1,
     lwd = 1,
     bty = "n",
     cex = 0.8)
```

## Gross domestic product, 1960–2022



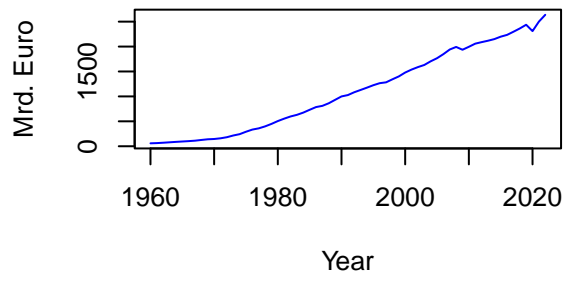
```
par(mfrow = c(2, 2))

for (i in 1:length(countries)) {

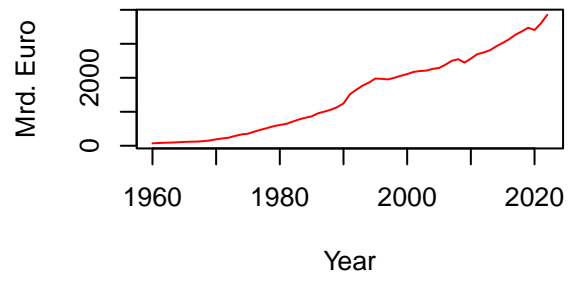
  plot(NULL,
        xlim = c(1960, 2022),
        ylim = c(min(data_gdp$value[data_gdp$country == countries[i]]),
                  max(data_gdp$value[data_gdp$country == countries[i]])),
        main = countries[i],
        xlab = "Year",
        ylab = "Mrd. Euro")

  lines(x = data_gdp$year[data_gdp$country == countries[i]],
        y = data_gdp$value[data_gdp$country == countries[i]],
        type = "l",
        col = cols[i])
}
```

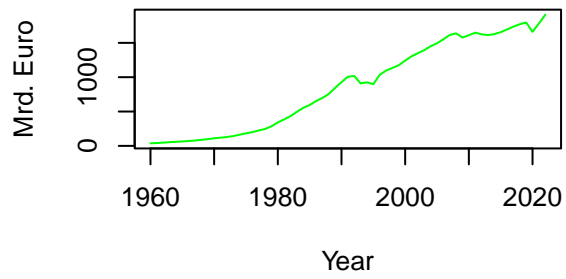
**France**



**Germany**



**Italy**



**Spain**

