

# WorkGroup1

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```
library(eurostat)
library(dtplyr)
library(readr)
library(reshape2)
library(tidyr)
```

```
##
## Attaching package: 'tidyr'
```

```
## The following object is masked from 'package:reshape2':
##
## smiths
```

```
library(ggplot2)
```

```
gdp_df = get_eurostat("nama_10_gdp")
```

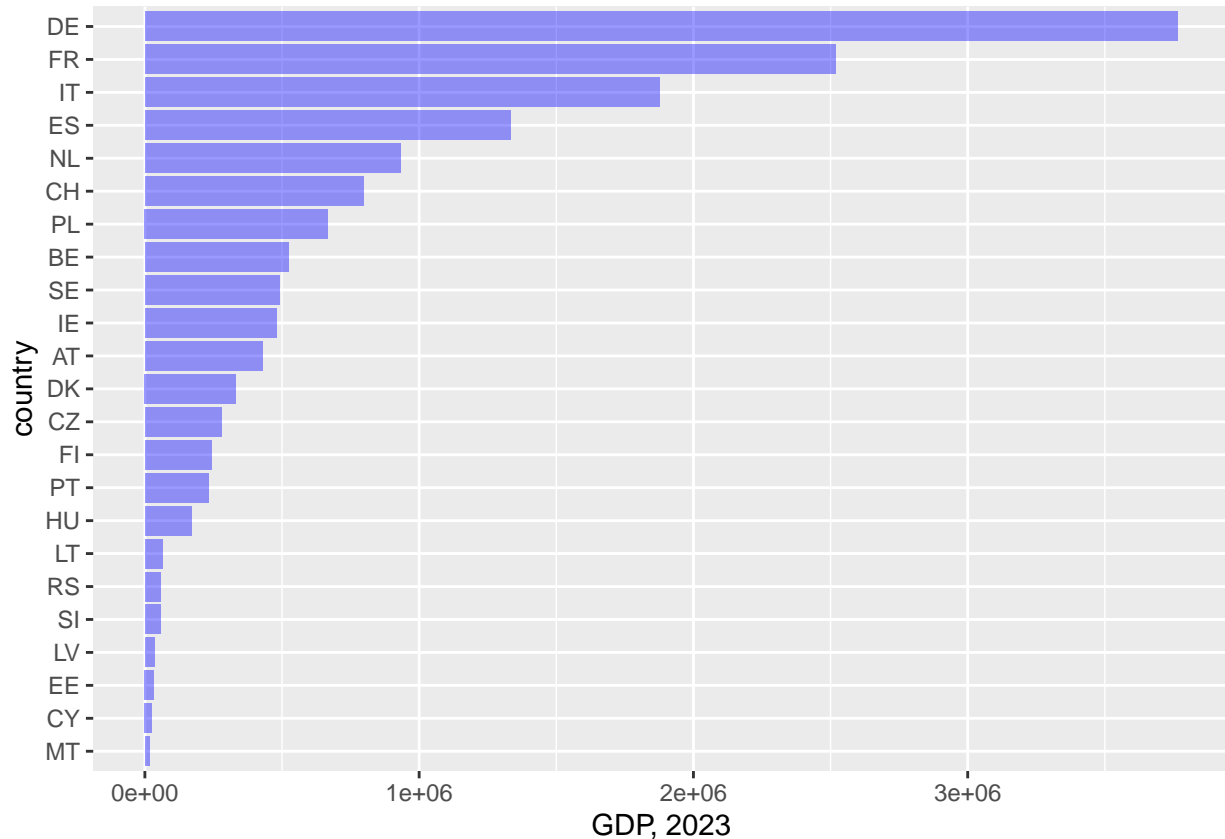
```
## Table nama_10_gdp cached at /var/folders/gr/pvlmwtm53992tb6kk5vm_q180000gp/T//RtmptzJ7XZ/eurostat/2f
```

```
write_csv(gdp_df, file = "data/gdp.csv")
gdp_df_wide = dcast(gdp_df, geo + unit + TIME_PERIOD ~ na_item, value.var = "values")
gdp_df_wide = dplyr::rename(gdp_df_wide, GDP = "B1G", FCE = "P3", AIC = "P41", GCF = "P5G",
  EGS = "P6", EG = "P61", ES = "P62", IGS = "P7", IG = "P71", IS = "P72", CE = "D1",
  TPI = "D2")
gdp_df_wide = gdp_df_wide[, c("geo", "unit", "TIME_PERIOD", "GDP", "FCE", "AIC",
  "GCF", "EGS", "EG", "ES", "IGS", "IG", "IS", "CE", "TPI")]
write_csv(gdp_df_wide, file = "data/gdp_wide.csv")
# GDP=value added,gross;FCE=Final consumption expenditure;AIC=Actual individual
# consumption;GCF=Gross capital formation;EGS=Exports of goods and
# services;EG=Exports of goods;ES=Exports of services;IGS=Imports of goods and
# services;IG=Imports of goods;IS=Imports of services;CE=Compensation of
# employees;TPI=Taxes on production and imports
```

```
gdp_df_wide = read_csv("data/gdp_wide.csv")
gdp_df_wide$TIME_PERIOD = as.Date(gdp_df_wide$TIME_PERIOD)
```

Bar plot of GDP,2023

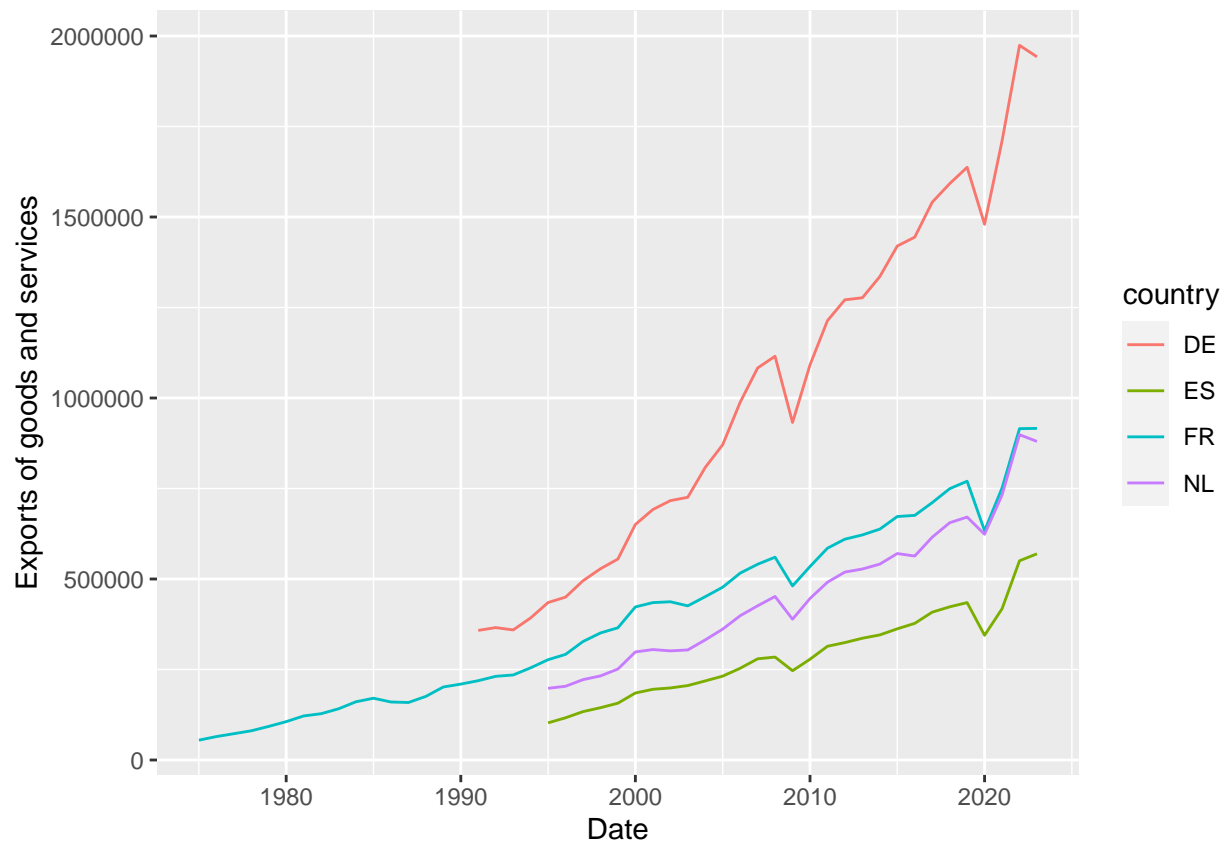
```
df1 = gdp_df_wide[(gdp_df_wide$TIME_PERIOD == "2023-01-01") & !(gdp_df_wide$geo %in%
c("EU27_2020", "EU28", "EU15", "EA", "EA12", "EA19", "EA20")) & (gdp_df_wide$unit ==
"CP_MEUR"), ]
ggplot(data = df1, mapping = aes(x = reorder(x = geo, X = GDP, FUN = "identity"),
y = GDP)) + geom_bar(stat = "identity", fill = "blue", alpha = 0.4) + labs(x = "country",
y = "GDP, 2023") + coord_flip()
```



## plot of Exports of goods and services

```
# ggplot(data = df1, mapping = aes(x = reorder(x = geo, X = EGS, FUN =
# 'identity'), y = GDP)) + geom_bar(stat = 'identity', fill = 'blue', alpha =
# 0.4) + labs(x = 'country', y = 'GDP, 2023') + coord_flip()
df2 = gdp_df_wide[gdp_df_wide$geo %in% c("NL", "DE", "ES", "FR") & (gdp_df_wide$unit ==
"CP_MEUR"), ]
ggplot(data = df2, mapping = aes(x = TIME_PERIOD, y = EGS, group = geo, color = geo)) +
geom_line() + labs(x = "Date", y = "Exports of goods and services") + guides(color = guide_legend(t
```

## Warning: Removed 16 rows containing missing values ('geom\_line()').



## plot of Compensation of employees

```
gdp_df = read.csv("data/gdp_wide.csv")
gdp_df_c4 = gdp_df[gdp_df$geo %in% c("FR", "NL", "SE", "UK"), ]
gdp_c4 = gdp_df_c4[gdp_df_c4$unit == "CP_MNAC", ]
gdp_c4$TIME_PERIOD = as.Date(gdp_c4$TIME_PERIOD)
gdp_c4$Country = gdp_c4$geo
theme_set(theme_classic())
ggplot(data = gdp_c4, mapping = aes(x = TIME_PERIOD, y = CE, group = Country, color = Country,
  linetype = Country)) + geom_line() + scale_x_date(labels = scales::date_format("%Y")) +
  scale_color_manual(values = c("red", "blue", "black", "brown")) + labs(x = "Time",
  y = "", title = "Compensation of employees", subtitle = "4 countries:France Netherlands Sweden U
```

## Warning: Removed 20 rows containing missing values ('geom\_line()').

## Compensation of employees

4 countries: France Netherlands Sweden United Kingdom

