

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//RtmptGoOnm/eurostat/45
```

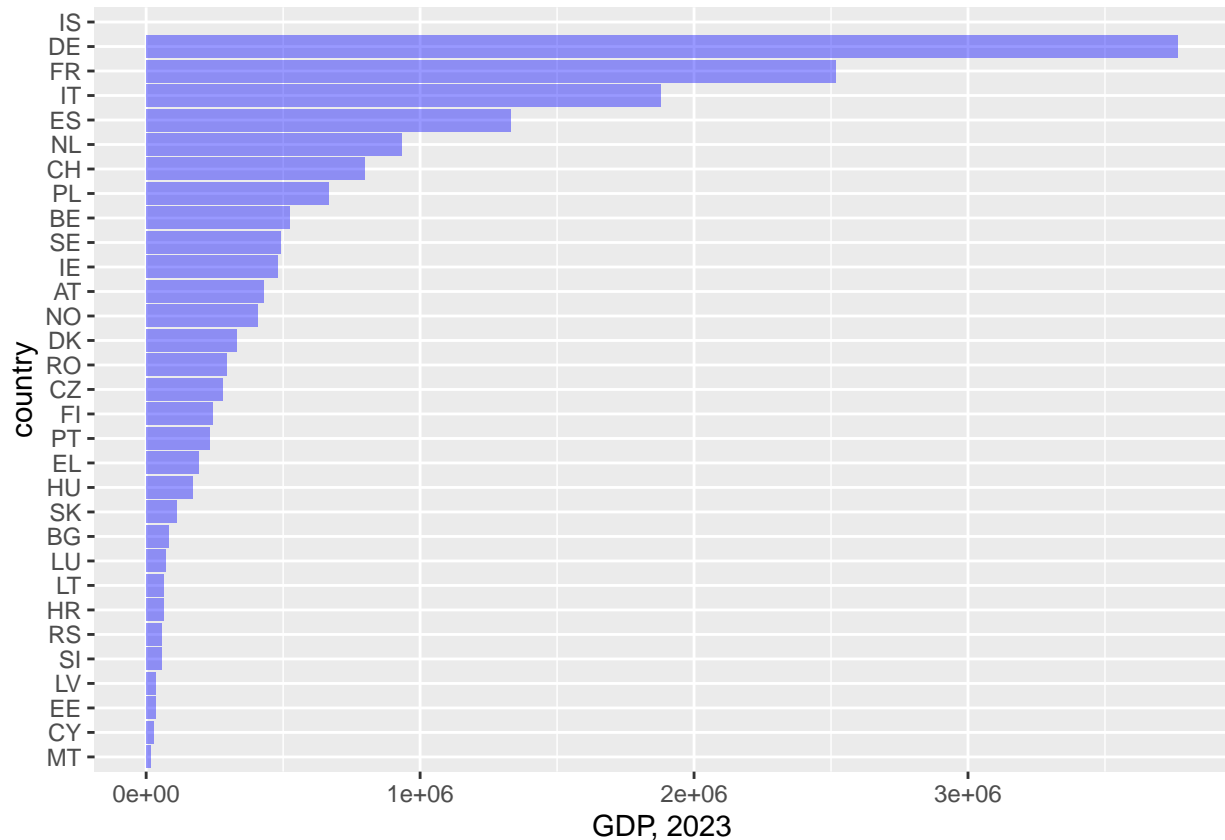
```
write_csv(gdp_df, file = "data/gdp.csv")
gdp_df_wide = dcast(gdp_df, geo + unit + TIME_PERIOD ~ na_item, value.var = "values")
gdp_df_wide = dplyr::rename(gdp_df_wide, GDP = "B1G", FCE = "P3", AIC = "P41", GCF = "P5G",
  EGS = "P6", EG = "P61", ES = "P62", IGS = "P7", IG = "P71", IS = "P72", CE = "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

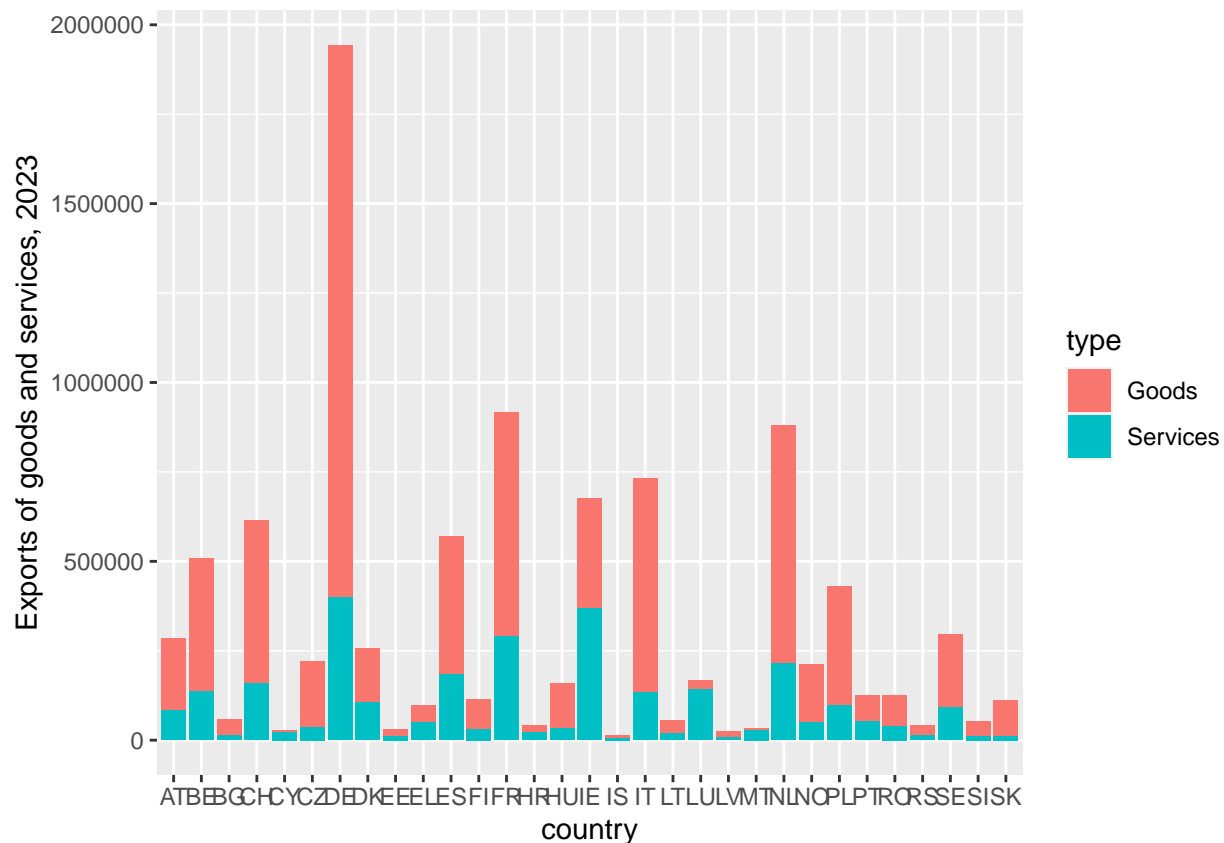
```
df1 = gdp_df_wide[(gdp_df_wide$TIME_PERIOD == "2023-01-01") & !(gdp_df_wide$geo %in%
c("EU27_2020", "EU28", "EU15", "EA", "EA12", "EA19", "EA20")) & (gdp_df_wide$unit ==
"CP_MEUR"), ]
ggplot(data = df1, mapping = aes(x = reorder(x = geo, X = GDP, FUN = "identity"),
y = GDP)) + geom_bar(stat = "identity",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

Warning: Removed 1 rows containing missing values (‘position_stack()’).



Stacked bar plot of Exports of goods and services

```
df2 = 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$unit ==
"CP_MEUR"), c("geo", "EG", "ES")]
df2 = melt(df2, id.vars = "geo")
colnames(df2)[2] = "type"
levels(df2$type)[which(levels(df2$type) == "EG")] = "Goods"
levels(df2$type)[which(levels(df2$type) == "ES")] = "Services"
ggplot(data = df2, mapping = aes(x = geo, y = value, fill = type)) + geom_bar(stat = "identity") +
labs(x = "country", y = "Exports of goods and services, 2023")
```



plot of Compensation of employees

```
df3 = gdp_df_wide[(gdp_df_wide$TIME_PERIOD >= "2000-01-01") & (gdp_df_wide$geo %in%
c("FR", "NL", "SE", "UK")) & (gdp_df_wide$unit == "CP_MNAC"), ]
ggplot(data = df3, mapping = aes(x = TIME_PERIOD, y = CE, color = geo, linetype = geo)) +
  geom_line() + theme_classic() + scale_color_manual(values = c("red", "blue",
"black", "brown")) + labs(x = "Time", y = "", title = "Compensation of employees",
subtitle = "4 countries:France Netherlands Sweden United Kingdom") + guides(color = guide_legend
linetype = guide_legend(title = "country"))
```

Compensation of employees

4 countries: France Netherlands Sweden United Kingdom

