TP 3

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Importation des différentes bases de données

```
# Utilisation de la fonction read.csv pour les fichiers csv
income = read.csv("annual-growth-in-gni-per-capita.csv")
gender = read.csv("gender-inequality-index.csv")
pop = read.csv("population-growth-annual.csv")
```

Réalisation du premier graphique

Extraction des données du Niger, de l'Afrique de l'ouest et du Monde

```
# Données du Niger
library(dplyr)
```

```
## Warning: le package 'dplyr' a été compilé avec la version R 4.2.3
```

```
##
## Attachement du package : 'dplyr'
```

```
## Les objets suivants sont masqués depuis 'package:stats':
##
##     filter, lag
```

```
## Les objets suivants sont masqués depuis 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
Niger = income %>%
  filter(Region.Name == "Niger")

# Données Western Africa
WA = income %>%
  filter(Region.Name %in% c("Togo", "Benin", "Senegal", "Niger", "Mali", "Ghana",
                            "Nigeria", "Burkina Faso", "Guinea", "Guinea-Bissau",
                            "Sierra Leone", "Cabo Verde", "Gambia", "Côte d'Ivoire",
                            "Mauritania")) %>%
  group_by(Start.Year,End.Year) %>%
  summarise(Value = mean(Value))%>%
  mutate(Region.Name = "Western Africa",
         Region.Alpha.3.Code = "WE",
         Region.Alpha.2.Code = "WE",
         Unit = "%",
         Source = "World Bank")
```

```
## `summarise()` has grouped output by 'Start.Year'. You can override using the
## `.groups` argument.
```

```
# Données World
World = income %>%
  group_by(Start.Year,End.Year) %>%
  summarise(Value = mean(Value))%>%
  mutate(Region.Name = "World",
         Region.Alpha.3.Code = "W",
         Region.Alpha.2.Code = "W",
         Unit = "%",
         Source = "World Bank")
```

```
## `summarise()` has grouped output by 'Start.Year'. You can override using the
## `.groups` argument.
```

Combinaison de toutes les bases crées précédemment

```
Base_f = rbind(Niger,WA,World)
```

Création du graphique

```
library(ggplot2)
```

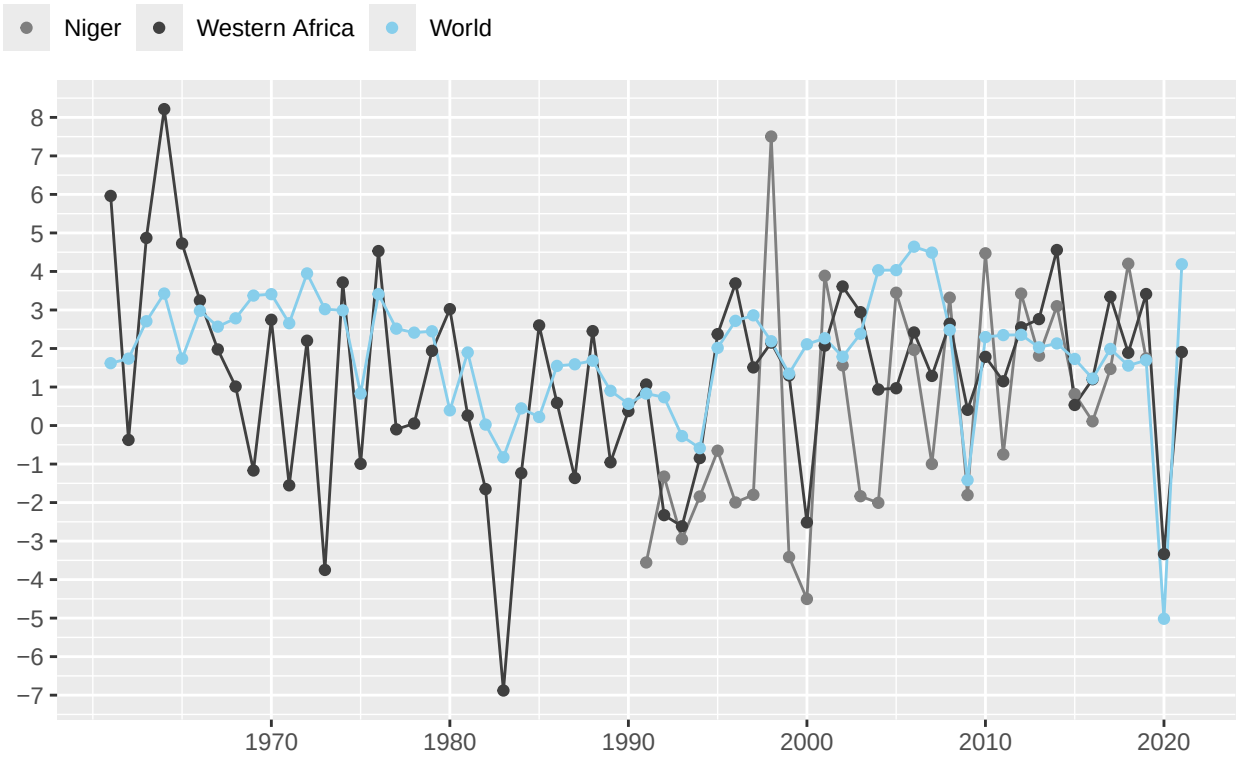
```
## Warning: le package 'ggplot2' a été compilé avec la version R 4.2.3
```

```
graphe_1 = ggplot(Base_f, aes(x = Start.Year, y = Value, color = Region.Name)) +
  geom_line(show.legend = NULL) + # Ajout de la couche ligne avec retrait de la ligne dans la légende
  geom_point() + # Ajout de la couche point
  scale_x_continuous(breaks = seq(1970, 2020, by = 10)) + # Echelle de l'axe x
  scale_y_continuous(breaks = seq(-7, 10, by = 1)) + # Echelle de l'axe y
  labs(title = "Figure : Income growth and distribution (Gini Index)",
       caption = "Source : World Bank", x = NULL, y = NULL) + # Ajout du titre, de la source
   scale_color_manual(name = NULL, values = c("grey50", "grey25", "#87CEEB")) + # Définition
  #manuelle des couleurs
  theme(legend.position = "top",# Positionner la légende en haut
        legend.margin = margin(l = -300), # Déplacer la légende à gauche
        plot.caption = element_text(hjust = 0))  # Aligner la source à gauche

graphe_1
```

```
## Warning: `show.legend` must be a logical vector.
```

Figure : Income growth and distribution (Gini Index)



Source : World Bank

Réalisation du deuxième graphique

Extraction des données du Niger, de l'Afrique de l'ouest et du Monde

```
# Données du Niger
library(dplyr)
Niger2 = pop %>%
  filter(Region.Name == "Niger")

# Données Western Africa
WA2 = pop %>%
  filter(Region.Name %in% c("Togo", "Benin", "Senegal", "Niger", "Mali", "Ghana",
                            "Nigeria", "Burkina Faso", "Guinea", "Guinea-Bissau",
                            "Sierra Leone", "Cabo Verde", "Gambia", "Côte d'Ivoire",
                            "Mauritania")) %>%
  group_by(Start.Year,End.Year) %>%
  summarise(Value = mean(Value))%>%
  mutate(Region.Name = "Western Africa",
         Region.Alpha.3.Code = "WE",
         Region.Alpha.2.Code = "WE",
         Unit = "%",
         Source = "World Bank")
```

```
## `summarise()` has grouped output by 'Start.Year'. You can override using the
## `.groups` argument.
```

```r
# Données World
World2 = pop %>%
  group_by(Start.Year,End.Year) %>%
  summarise(Value = mean(Value))%>%
  mutate(Region.Name = "World",
         Region.Alpha.3.Code = "W",
         Region.Alpha.2.Code = "W",
         Unit = "%",
         Source = "World Bank")
```

```
## `summarise()` has grouped output by 'Start.Year'. You can override using the
## `.groups` argument.
```

Combinaison de toutes les bases crées précédemment

```r
Base_f2 = rbind(Niger2,WA2,World2)
```

Création du graphique

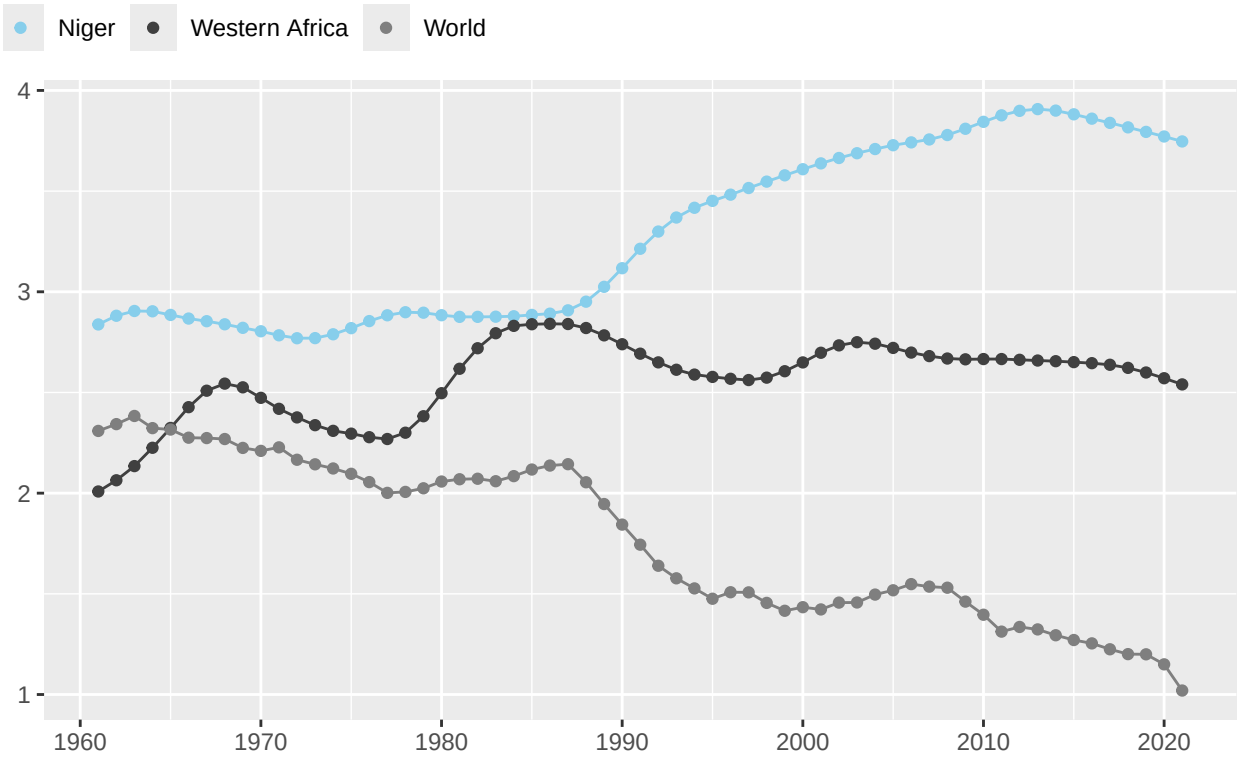
```r
library(ggplot2)

graphe_2 = ggplot(Base_f2, aes(x = Start.Year, y = Value, color = Region.Name)) +
  geom_line(show.legend = NULL) +
  geom_point() +
  scale_x_continuous(breaks = seq(1960, 2020, by = 10)) +
  scale_y_continuous(breaks = seq(1, 4, by = 1)) +
  labs(title = "Figure : Annual population growth (%)",
       caption = "Source : World Bank", x = NULL, y = NULL) +
   scale_color_manual(name = NULL, values = c("#87CEEB", "grey25","grey50")) +
  theme(legend.position = "top",# Positionner la légende en haut
        legend.margin = margin(l = -300), # Déplacer la légende à gauche
        plot.caption = element_text(hjust = 0))  # Aligner la source à gauche

graphe_2
```

```
## Warning: `show.legend` must be a logical vector.
```

Figure : Annual population growth (%)



Source : World Bank

Réalisation du troisième graphique

Extraction des données du Niger, de l'Afrique de l'ouest et du Monde

```
# Données du Niger
library(dplyr)
Niger3 = gender %>%
  filter(Region.Name == "Niger")

# Données Western Africa
WA3 = gender %>%
  filter(Region.Name %in% c("Togo", "Benin", "Senegal", "Niger", "Mali", "Ghana",
                            "Nigeria", "Burkina Faso", "Guinea", "Guinea-Bissau",
                            "Sierra Leone", "Cabo Verde", "Gambia", "Côte d'Ivoire",
                            "Mauritania")) %>%
  group_by(Start.Year,End.Year) %>%
  summarise(Value = mean(Value))%>%
  mutate(Region.Name = "Western Africa",
         Region.Alpha.3.Code = "WE",
         Region.Alpha.2.Code = "WE",
         Unit = "%",
         Source = "World Bank")
```

```
## `summarise()` has grouped output by 'Start.Year'. You can override using the
## `.groups` argument.
```

```r
# Données World
World3 = gender %>%
  group_by(Start.Year,End.Year) %>%
  summarise(Value = mean(Value))%>%
  mutate(Region.Name = "World",
         Region.Alpha.3.Code = "W",
         Region.Alpha.2.Code = "W",
         Unit = "%",
         Source = "World Bank")
```

```
## `summarise()` has grouped output by 'Start.Year'. You can override using the
## `.groups` argument.
```

Combinaison de toutes les bases crées précédemment

```r
Base_f3 = rbind(Niger3,WA3,World3)
```

Création du graphique

```r
library(ggplot2)
library(ggpp)
```

```
## Warning: le package 'ggpp' a été compilé avec la version R 4.2.3
```

```
## Registered S3 methods overwritten by 'ggpp':
##   method                  from
##   heightDetails.titleGrob ggplot2
##   widthDetails.titleGrob  ggplot2
```

```
##
## Attachement du package : 'ggpp'
```

```
## L'objet suivant est masqué depuis 'package:ggplot2':
##
##     annotate
```

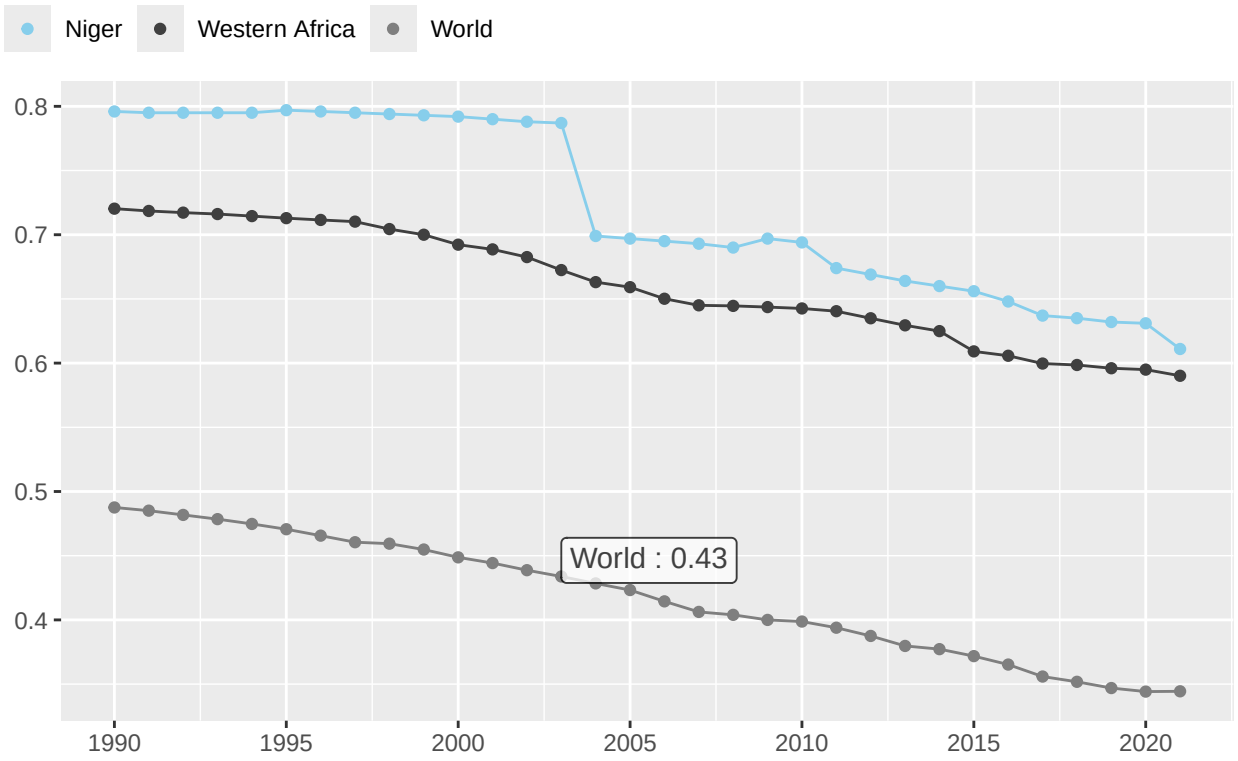
```r
specific_value <- subset(Base_f3, Start.Year == 2003 & Region.Name == "World")


graphe_3 = ggplot(Base_f3, aes(x = Start.Year, y = Value, color = Region.Name)) +
  geom_line(show.legend = NULL) +
  geom_point() +
  geom_label_s(data = specific_value,
               aes(label = paste("World :", format(Value, digits = 2))), x = 2003, y = specific_value$Va
  scale_x_continuous(breaks = seq(1960, 2020, by = 5)) +
  scale_y_continuous(breaks = seq(0.2, 0.9, by = 0.1)) +
  labs(title = "Figure : Gender inequality index",
       caption = "Source : World Bank", x = NULL, y = NULL) +
   scale_color_manual(name = NULL, values = c("#87CEEB", "grey25","grey50")) +
  theme(legend.position = "top",# Positionner la légende en haut
        legend.margin = margin(l = -300), # Déplacer la légende à gauche
        plot.caption = element_text(hjust = 0))  # Aligner la source à gauche

graphe_3
```

```
## Warning: `show.legend` must be a logical vector.
```

Figure : Gender inequality index



Source : World Bank