Global Snapshot: Social, Environmental and Economic Issues

Introduction

What is the problem?

- **Food Security**
- **Climate Change**
- **Unemployment**
- **Poverty**
- **Migration**

Why is it worth further research?

- **Creates awareness**
- **Critical thinking about issues such as poverty, climate change and Malnourishment**

How could you solve this problem?

- **Reduce undernutrition in pre -schoolers**
- **Childhood immunization coverage**
- **Reduce, Recycle, Reuse**

Dataset

Data Source

Used World Bank and Gap minder data bases to collect the data for our analysis

World Bank Open Data | Data , Gapminder

Background

Selected important indicators from World Bank data base instead of combining different datasets from Gap minder.

Data Structure

Selected 61 social, economic, environmental and health indicators for 216 countries over a period of 60 years from 1960 to 2020

Data Transformation and Wrangling

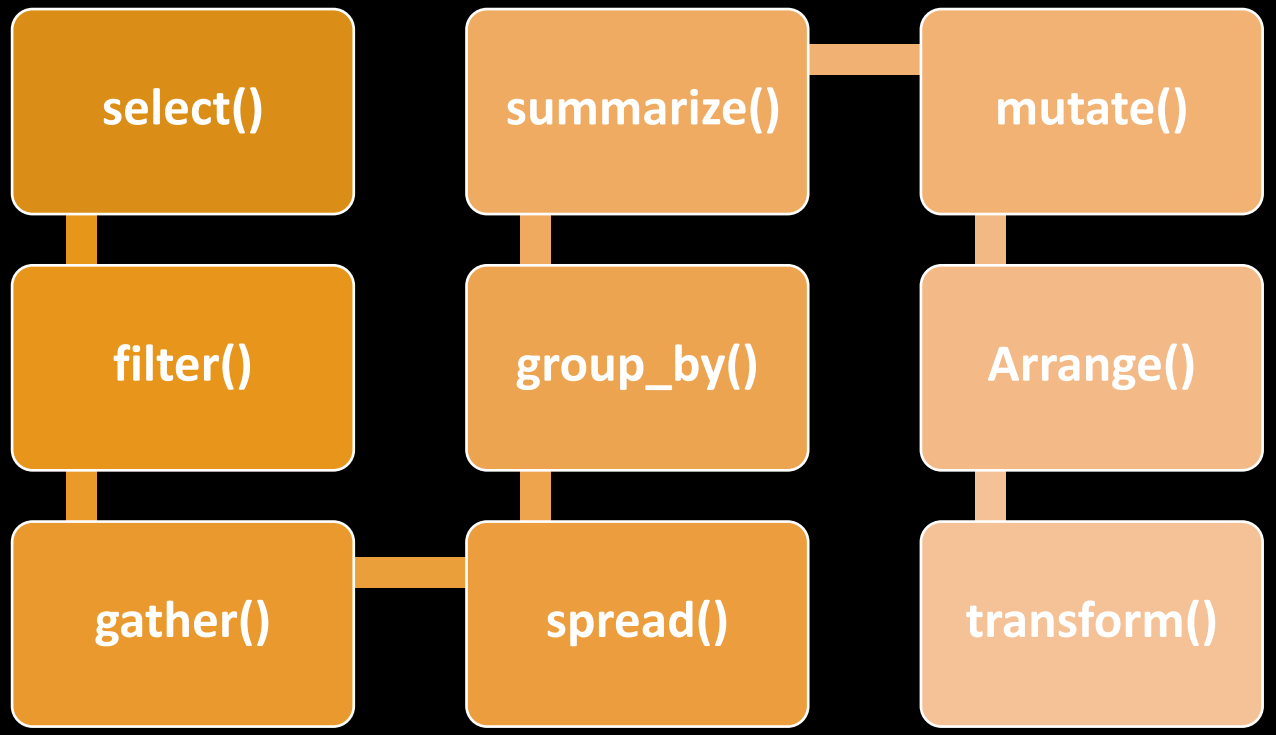
Data Import

- Extraction of economic and Social data
- Extract Continent data
- Merge Data

Data Cleaning

- Handling missing values
- Dropped unwanted column
- Correction of data type
- Dropped the duplicates

Data Transformation and Wrangling



Algorithms/Functions

Animated Plot Function

```
plot_densityChart<- function(df,x,y,z,plot_title,xtitle,legend_title, ytitle){
  fig<- ggplot(df, aes(x = x, fill = factor(y))) +
    geom_density(alpha = 0.5) +
    scale_fill_brewer(palette = "Set2") +
    scale_x_log10()+
    transition_time(z) +
    labs(title = plot_title,
         x = xtitle,
         y = ytitle,
         fill = NULL)+
    guides(fill=guide_legend(title=legend_title))+
    theme(panel.grid.major.x = element_blank())+
    theme(panel.grid.minor = element_blank(),
          panel.grid.major = element_blank(),
          panel.background = element_blank(),
          plot.background = element_blank(),
          legend.background =element_blank())

  anim_save("outfile.gif", animate(fig,width=772,height=400,duration = 5,
                                   fps = 10,bg = 'transparent'))
  list(src = "outfile.gif", contentType = "image/gif")
}
```

Tab Creation Function

```
fluid_design5 <- function(id, x, y, z, t1, t2, t3) {
  fluidRow(div(
    id = id,
    column(width = 12,
           div(plotlyOutput(x), align = "center")),
    column(width = 6,
           imageOutput(y)),
    column(width = 6,
           plotlyOutput(z, width = "500px"))
  ))
}
```

Interactive Widgets /Front End

CSS/HTML

- Styling & Interactive Widgets
- Colored Statistic Boxes

Rotating Globe

- Hover to see Country
- Colored Regions

Animated Plot

- Dynamic data transition
- Self driven

Interactive Graphs

- Engaging and goes beyond traditional method
- Zooming, Scrolling, Hovering

Additional Design Features

Separate UI and Graph Plotting Source Code

- Functions for plots
- Reusable
- Scalable
- Easy to Maintain
- Easy to test new plots

HTML Div Show/Hide for Sections

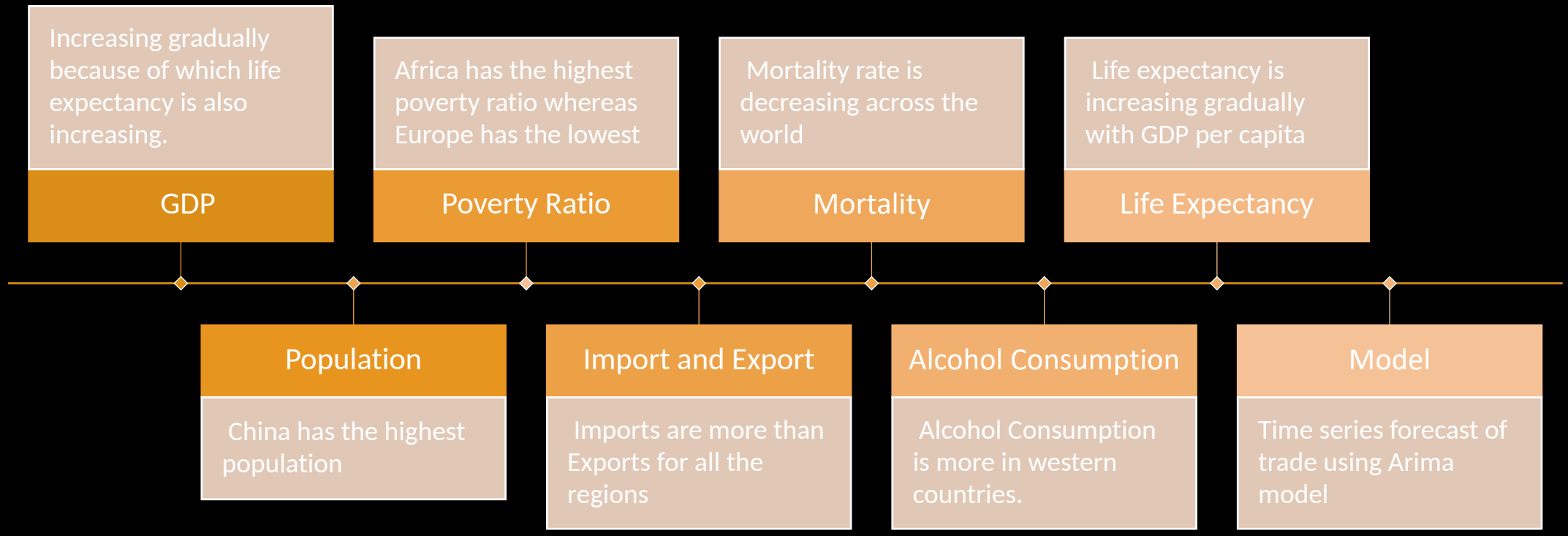
- Render at beginning and only show/hide on button click
- Faster

Reusable Layouts for Sections

- Function driven

Shiny Dashboard Demo

Conclusions



References

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