Adveq map application

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OVERVIEW

This document is a specification document.

GOALS

Within R and shiny framework , create a shiny application to display adveq global investments multiple and FMV on a global map per country or region.

1. Create adveq map package `adveqmap`(choose better busniess . This package is the business layer. Contains all data and computations financial functions and objects.
2. Create a shiny application: `adveqmapshiny` this the package viewer. Internally the shiny app uses `adveqmap` package.

Note that we isolate the busniess layer from view layer, this will :

- Better test and documentation. In fact, the workflow to test and document a package is clear but now way to do this for a shiny application (even if you can add comments to the code)
- The shiny application can be enhanced later to include many other packages.
- For advanced user , it is faster to have all busniess in a package ,no need to launch the shiny application.

SPECIFICATIONS

Adveq investment will be displayed in the map according to the *Investment multiple*. The latter can be defined as for each geography g

$$I^g_{multiple} = \frac{V^g_T}{C^g_T}$$

Where:

- g can be a country or a region.
- V^g_T is the sum of value over all the companies of the selected region:

$$V^g_T = \sum_{i \in Comp_g} v_i$$

- C^g_T is the sum of cost over all the companies of the selected region:

$$C^g_T = \sum_{i \in Comp_g} c_i$$

MILESTONES

We try here to give the details of future development. Development is divided in different milestone. Each milestone contains a set of R function/tasks to do. The list is not exhaustive or definitive.

M1 : `adveqmap` package

1. Init the package

- Prepare project as an R package
- Set github
- Init tests. All functions will be tested (`testthat`)
- Init documentation using documented (`roxygen`)

2. Load data

Data can be loaded from an Excel workbook:

```
db <- load_data(path,table,conn=NULL)
```

We can imagine that the data will be loaded later directly from a data base. For example from an `SQL server` data base

```
library(rsqlserver)
conn <- dbConnect()
db <- load_data(table,conn=conn)
```

the result `db` is a `data.table`

3. Clean data

- Clean data ,remove extra columns
- Format dates , format numbers
- Extract regions/sub regions

```
db <- clean_data(db)
```

4. Compute investment multiple

Compute busniess variable that will be used to color the map.

```
db <- invest_multiple(db)
```

5. Create the map

This the main function of the package. Create a colorplate map.

```
map <- get_map(db)
```

M2 `shiny` application

1. Init the shiny application

- Create application hierarchy
- Create user interface
- Set github

2. Integrate the map to the application

Essentially here we call `adveqmap` functions. Either to show data or map.

- Develop the server part

3. Add app options

- Add some filters

Some function here can be moved to `adveqmap` package once they are stable. The idea is to keep the shiny application as light as possible and with the minimum of business logic.

4. App deployment

- Deploy the application.
- Test functionalities within the server.