TLF-format data and metadata for time profile plot. Note “tidy” format of data.

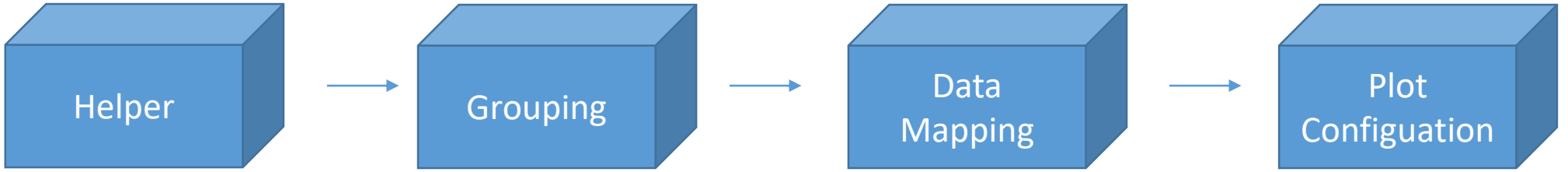
DATA

Time	IndividualID	Population	Gender	Age	Compound	Dose	Organ	Compartment	Simulated
0	1	European	M	7	Aspirin	6	VenousBlood	Plasma	2.1884257
0	2	European	F	5	Aspirin	6	VenousBlood	Plasma	5.4690838
0	3	Asian	M	8	Sugar	6	VenousBlood	Plasma	2.3813543
0	4	Asian	F	6	Aspirin	3	VenousBlood	Plasma	3.481893
1	1	European	M	7	Aspirin	6	VenousBlood	Plasma	5.472912
1	2	European	F	5	Aspirin	6	VenousBlood	Plasma	6.1427427
1	3	Asian	M	8	Sugar	6	VenousBlood	Plasma	5.8802518
1	4	Asian	F	6	Aspirin	3	VenousBlood	Plasma	7.5986653
2	1	European	M	7	Aspirin	6	VenousBlood	Plasma	12.347996
2	2	European	F	5	Aspirin	6	VenousBlood	Plasma	9.7028844
2	3	Asian	M	8	Sugar	6	VenousBlood	Plasma	9.1861839
2	4	Asian	F	6	Aspirin	3	VenousBlood	Plasma	18.658217

META-DATA

Time	Simulated
unit = "min"	**unit** = "ug/mL"
dimension ="time"	**dimension** ="concentration"

TLF main user-interfacing “entities”



Object for aggregating and performing summary calculations on data (mean, std…)

Object for specifying how to group data

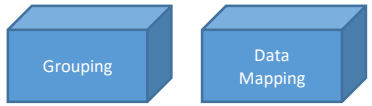
Object for extracting plot data from dataframe based on Grouping

Object for specifying plot look: labels, legends,axis…

Object for holding ggplot object

Aim: plot time profile for each individual. Identify each individual by color. Identify each individual's population by linetype

BUILD DATAMAPPING



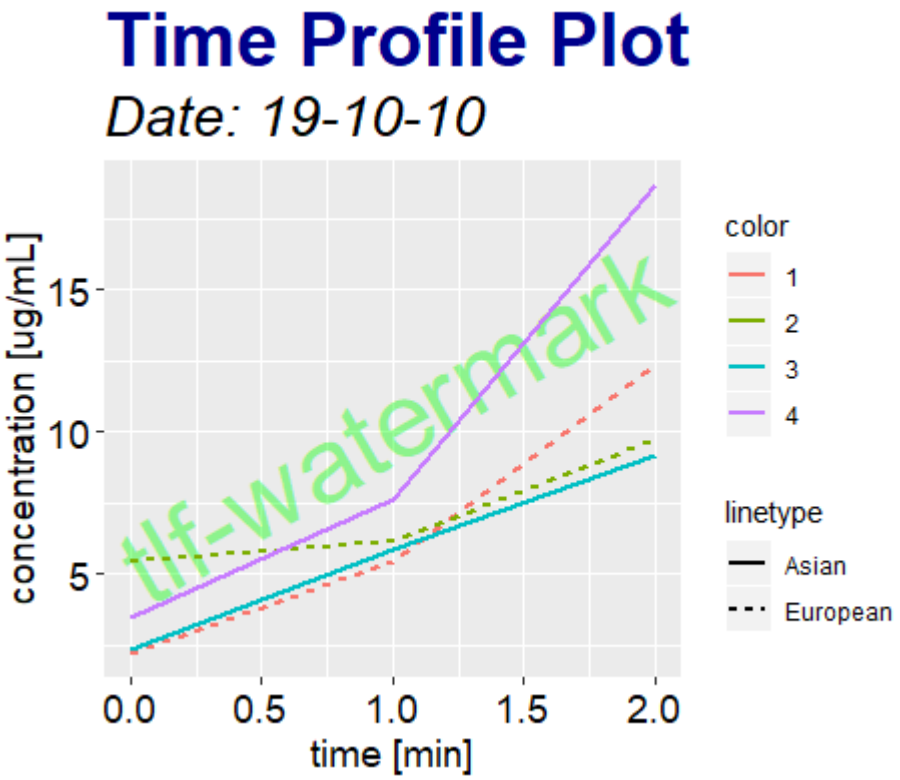

```
groups <- list(color = "IndividualID", linetype = "Population")
tpMapping <- TimeProfileDataMapping$new(x="Time", y="Simulated", groupings = groups)
```

BUILD PLOT CONFIGURATION


```
useTheme(tlfTheme)
tpConfig <- TimeProfilePlotConfiguration$new(data=timeProfileDataFrame,
                                             metaData = timeProfileMetaData,
                                             dataMapping=tpMapping)
```

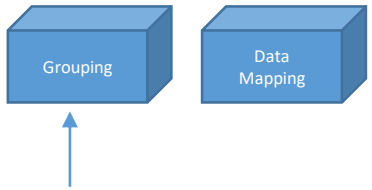
BUILD PLOT


```
plotObj <- plotTimeProfile(data=timeProfileDataFrame,
                           metaData = timeProfileMetaData,
                           dataMapping = tpMapping,
                           plotConfiguration = tpConfig)
```



Aim: use a dataframe to build grouping. Plot time profile for each individual. Identify each individual by color. Set legend captions according to grouping dataframe.

BUILD DATAMAPPING



Dataframe for grouping:

IndividualID	PatientName
1	Paul
2	John
3	George
4	Ringo

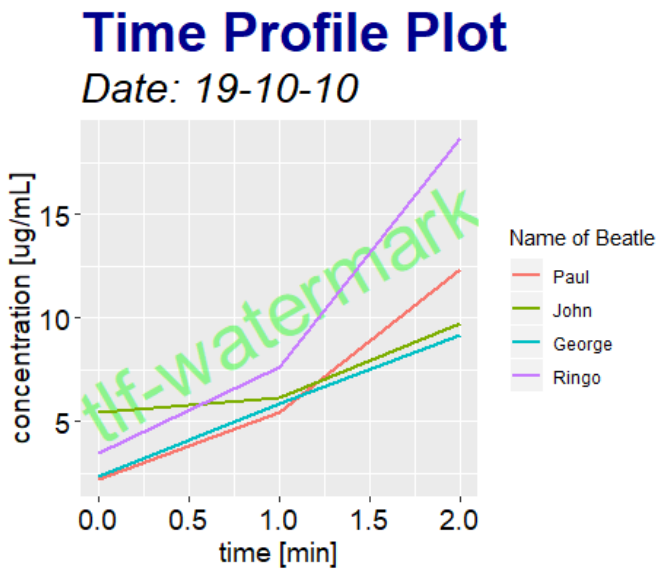
```
groupingIndividualsDf <- data.frame("IndividualID" = c(1,2,3,4),
                                    "PatientName" = c("Paul", "John", "George", "Ringo"))

individualGrouping = Grouping$new(groupingName = "color" ,
                                  groupingDataFrame = groupingIndividualsDf ,
                                  groupingLegendTitle = "Name of Beatle" )

groups <- list(color = individualGrouping)
tpMapping <- TimeProfileDataMapping$new(x="Time", y="Simulated", groupings = groups)
```

BUILD PLOT CONFIGURATION


```
useTheme(tlfTheme)
tpConfig <- TimeProfilePlotConfiguration$new(data=timeProfileDataFrame,
                                             metaData = timeProfileMetaData,
                                             dataMapping=tpMapping)
```

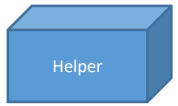


BUILD PLOT


```
plotObj <- plotTimeProfile(data=timeProfileDataFrame,
                           metaData = timeProfileMetaData,
                           dataMapping = tpMapping,
                           plotConfiguration = tpConfig)
```

Aim: build a summary of the data composed of means for each population at each time point. Plot time profile of mean for each population. Identify each population by color

BUILD DATA SUMMARY

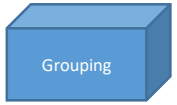


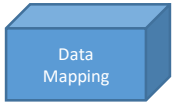

```
hlp <- TimeProfileHelper$new(data = timeProfileDataFrame,
                             timeColumnName = "Time",
                             groupingColumnNames = c("Population"),
                             valuesColumnNames = "Simulated",
                             aggregationFunctionsVector = mean
                             aggregationFunctionNames =  "SimulatedMean" )
```

hlp$dfHelper

Time	Population	SimulatedMean
0	Asian	2.931624
1	Asian	6.739459
2	Asian	13.9222
0	European	3.828755
1	European	5.807827
2	European	11.02544

BUILD DATAMAPPING






```
groups <- list(color = "Population")

tpMapping <- TimeProfileDataMapping$new(x="Time", y=c("SimulatedMean"), groupings = groups)
```

BUILD PLOT CONFIGURATION


```
useTheme(tlfTheme)
tpConfig <- TimeProfilePlotConfiguration$new(data=hlp$dfHelper,
                                             metaData = timeProfileMetaData,
                                             dataMapping=tpMapping)
```

BUILD PLOT


```
plotObj <- plotTimeProfile(data=hlp$dfHelper,
                           dataMapping = tpMapping,
                           plotConfiguration = tpConfig)
```