


# R: How to make multiple plots in a graph using unique IDs

Asked 1 year, 7 months ago   Modified 1 year, 7 months ago   Viewed 194 times    Part of [R Language Collective](#)

I have a dataframe `df` with 4 unique `UID` - `1001,1002,1003,1004`.

1 I want to write a `user-defined function` in R that does the following:

1. Plots `Turbidity` against `Time` for each unique `UID`. Turbidity values are the ones in the `Time_1`, `Time_2` and `Time_3` columns. For example, `UID = 1001` will have 4 plots in one graph

	Gen	Site	Type	UID	Time_1	Time_2	Time_3
1	M	FRX	L	1001	100.78	150.78	250.78
5	F	FRX	L	1001	149.02	208.07	308.07
9	M	FRX	R	1001	106.78	146.87	346.87
13	F	FRX	R	1001	129.02	229.28	329.28

2. Add a legend to each graph such as `M-L`, `F-L`, `M-R`, and `F-R` (from columns `Gen` and `Type`)
3. Add a title to each graph. For example- `UID:1001`
4. Export the graphs as pdf or jpeg or tiff pdf files - 4 graphs per page

```
# dataset
Gen <- c('M','M','M','M','F','F','F','F','M','M','M','M','F','F','F','F')
Site <- rep('FRX',length(gen))
Type <- c('L','L','L','L','L','L','L','L','R','R','R','R','R','R','R','R')
UID <-
c(1001,1002,1003,1004,1001,1002,1003,1004,1001,1002,1003,1004,1001,1002,1003,1004)
Time_1 <-
c(100.78,112.34,108.52,139.19,149.02,177.77,79.18,89.10,106.78,102.34,128.52,119.19,
Time_2 <-
c(150.78,162.34,188.53,197.69,208.07,217.76,229.48,139.51,146.87,182.54,189.57,199.57,
Time_3 <-
c(250.78,262.34,288.53,297.69,308.07,317.7,329.81,339.15,346.87,382.54,369.59,399.97,
df <- data.frame(Gen,Site,Type,UID,Time_1,Time_2,Time_3)
df
```

My attempt

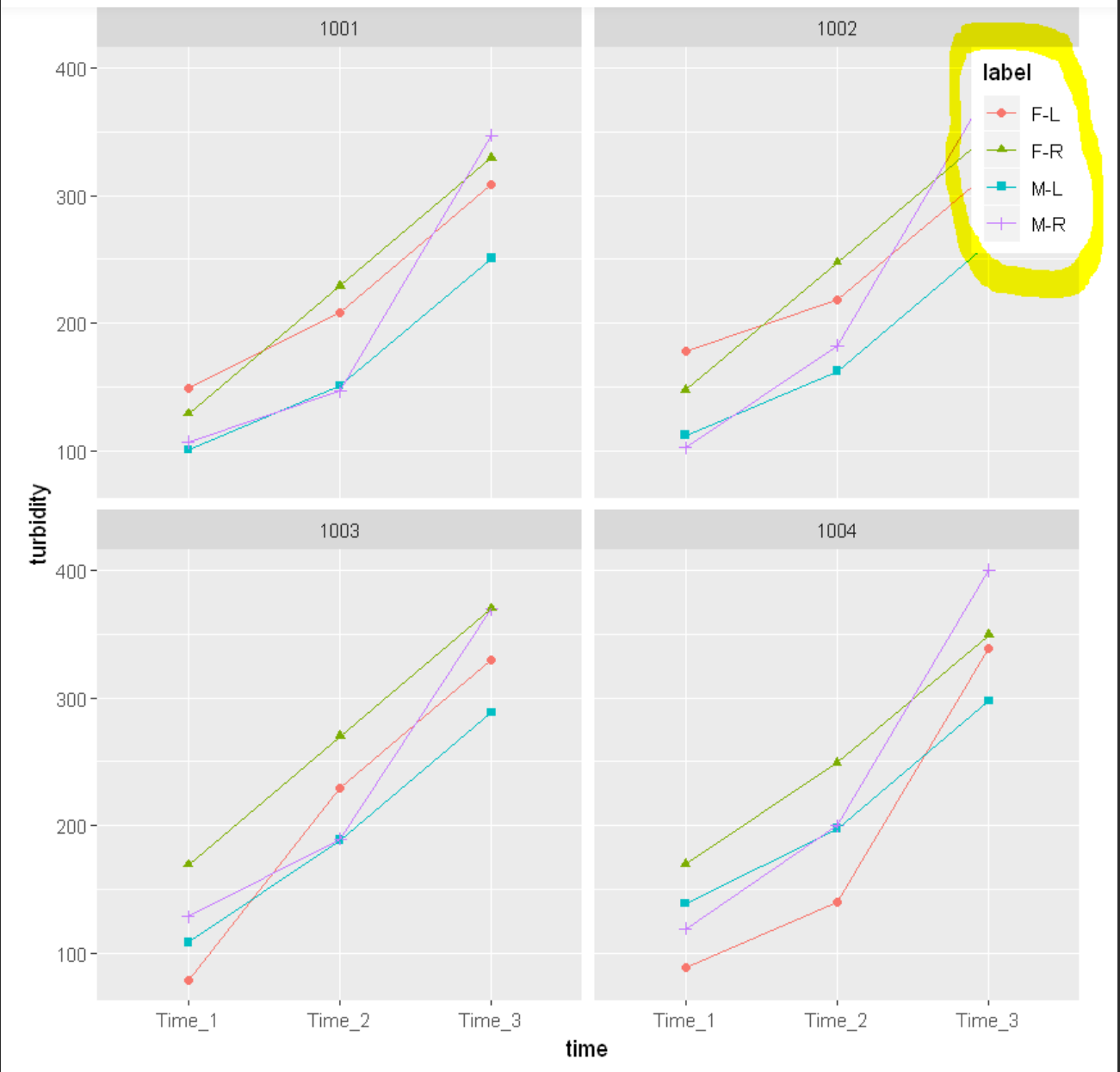
```
library(ggplot2)
library(tidyr)

# See below for my thoughts/attempt- I am open to other R libraries and
approaches
```

```
graphplotter <-function(x){  
  # 1. Convert from wide to long  
  data_long <- gather(df, time, turbidity, Time_1:Time_3, factor_key=TRUE)  
  data_long  
  #2. plot for each unique UID- 1001 to 1004 and add legend  
  basic <- ggplot(data_long, aes(time, turbidity, shape=Tree)) + geom_point() +  
  geom_line()  
  basic + theme(  
    legend.position = c(.95, .95),  
    legend.justification = c("right", "top"),  
    legend.box.just = "right",  
    legend.margin = margin(6, 6, 6, 6))  
  #3. add title  
  print(basic+ labs( title= "UID: 1001, Turbidity against time", y="turbidity",  
x = "Time in hours"))  
  #4. export as pdf  
  pdf("turbidity-time.pdf")  
  par(mfrow = c(2, 2)) ## set the layout to be 2 by 2  
  sapply(1:4, function(i) plot(basic[,i]))  
  dev.off()  
}
```

I want all four graphs to look something like this (ignore the circumference and age, should be turbidity and time).

Thanks



R r pdf ggplot2 tidyr

Share Edit Follow Flag

edited Sep 14, 2021 at 5:25

asked Sep 14, 2021 at 1:09



nasa313

266 ● 1 ● 12

1 Answer

Sorted by:

Highest score (default)

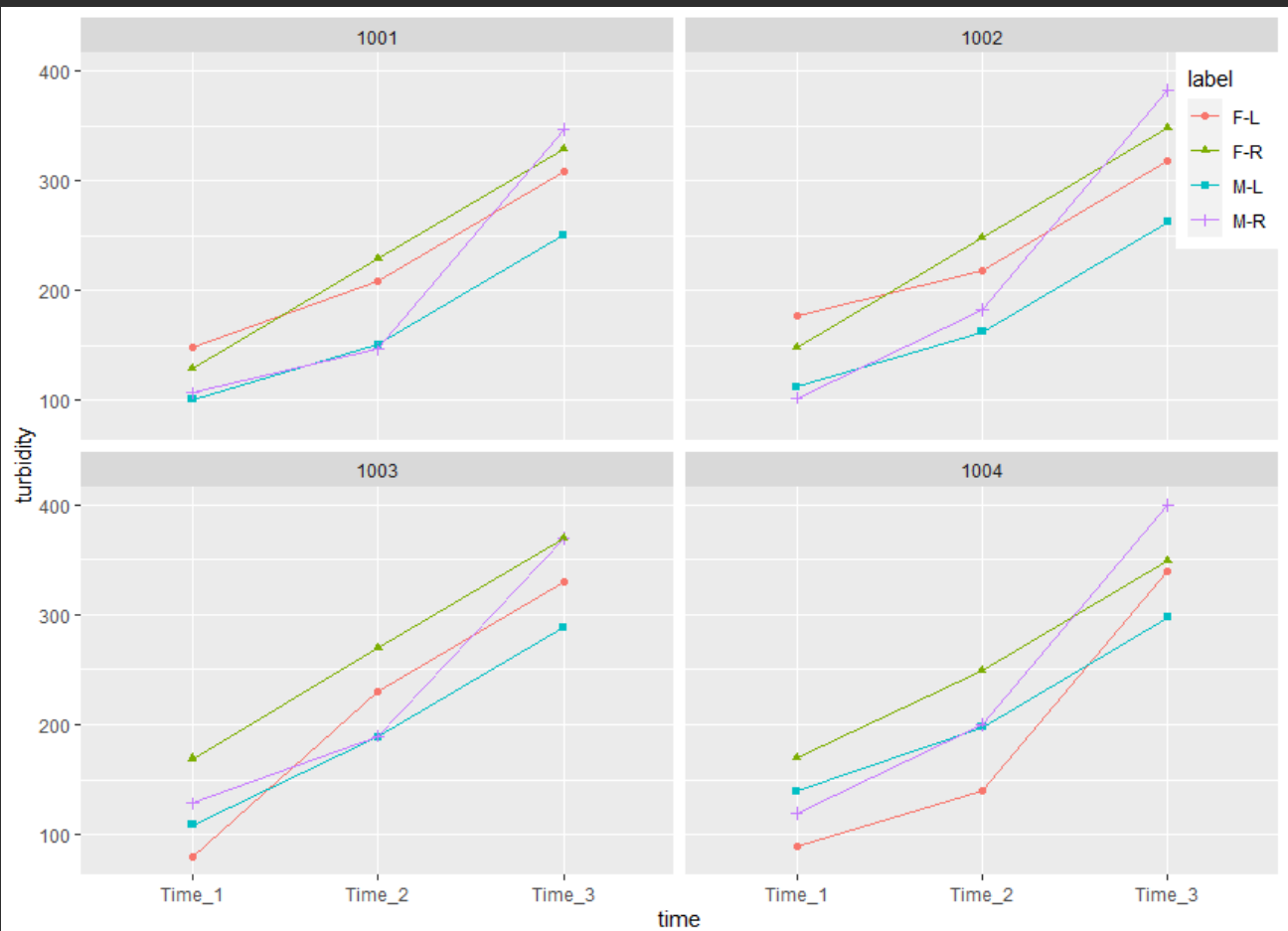


I use `facet_wrap`

2

```
graphplotter <-function(x){
  x %>%
    gather(., time, turbidity, Time_1:Time_3, factor_key=TRUE) %>%
    mutate(label = (paste0(Gen, "-", Type))) %>%
    #group_by(UID) %>%
    ggplot(aes(color = label)) + geom_point(aes(time, turbidity, shape = label,
    group = label)) +
    geom_line(aes(time, turbidity, group = label)) + facet_wrap(~UID) + theme(
      legend.position = c(1, 1),
      legend.justification = c("right", "top"),
      legend.box.just = "right",
      legend.margin = margin(1, 1, 1, 1),
      legend.text = element_text(size = 7))
}

graphplotter(df)
```



Share Edit Follow Flag

edited Sep 14, 2021 at 5:34

answered Sep 14, 2021 at 1:22



Park

14.6k ● 6 ● 9 ● 29

▲ @Park..This looks very good (thanks a bunch!), how can I make `F-L`, **F-R**, **M-L** and **M-R** plots have 4 different colors? – [nasa313](#) Sep 14, 2021 at 5:11 ✎

▲ @nasa313 colors for points or lines? I edit code for both of them – [Park](#) Sep 14, 2021 at 5:13 ✎

▲ This is exactly what I want(Thanks a lot.) one last thing, in the `1002` graph the label/legend is blocking the tip of the plots (I just uploaded the image of the graph in the original question). Can we move the label/legend outside of the graph or just make it smaller? – [nasa313](#) Sep 14, 2021 at 5:29

▲ @nasa313 I edit my code, changing `legend.margin` and add `legend.text`. You may change those options and `legend.position` to change location of legend – [Park](#) Sep 14, 2021 at 5:35