uniPlot - a package to uniform and customize R graphics

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useR!
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uniPlot makes the work with graphical displays in R produced for reports less time intensive.
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**graphics**

- plots generated by the `graphics` package
- shows a scatter plot of Petal.Length vs. Petal.Width
- data points appear randomly distributed

**ggplot2**

- plots generated by the `ggplot2` package
- shows a scatter plot of Petal.Length vs. Petal.Width
- data points are more densely packed

**lattice**

- plots generated by the `lattice` package
- shows a scatter plot of Petal.Length vs. Petal.Width
- data points are spread out in a more organized manner

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Overall, uniPlot provides a way to enhance the visual appearance of plots generated by different packages in R.
- Used packages for data analysis: `graphics`, `ggplot2` and `lattice`

- Writing a report → formatting of graphical displays necessary
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> `par(pch = 16, las = 1, mar = c(4, 4, 3, 2), cex = 0.5)`

> `plot(iris$Petal.Width, iris$Petal.Length, main = 'graphics', xlab = 'Petal.Width', ylab = 'Petal.Length')`
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```r
> theme_set(theme_bw())

> qplot(Petal.Width, Petal.Length, data = iris, main = 'ggplot2', xlab = 'Petal.Width', ylab = 'Petal.Length')
  + facet_wrap(~ Species)
  + opts(axis.title.x = theme_text(vjust = 0), panel.border = theme_rect(colour = 'black'),
        strip.background = theme_rect(colour = "black", fill = 'black'), strip.text.x =
        theme_text(colour = 'white'))
```
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virginica
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```
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```r
> trellis.par.set(strip.background = list(col = gray(0.2)), add.text = list(col = 'white'))

> xyplot(Petal.Length ~ Petal.Width | Species, iris, main = 'lattice', xlab = 'Petal.Width', ylab = 'Petal.Length')
```
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Solutions

- use only one package
- use function ggplot2like package latticeExtra for ggplot2 and lattice
- adjust settings of packages graphics, ggplot2 and lattice
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Idea of uniPlot

1. Synchronize options over `graphics`, `ggplot2` and `lattice` by adjusting one of them.
2. Making these options `persistent` over one R session.
3. Reset option.

Simple usage!
Application

```
uniPlot(
  type = 'uniPlot',
  graphics = NULL,
  ggplot2 = NULL,
  lattice = NULL
)
```
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> uniPlot()

[Graphics showing scatter plots for Petal.Length vs Petal.Width for different species using graphics, lattice, and ggplot2 packages.]
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```r
> uniPlot(graphics = list(col.main = 'red'))
```

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**graphics**

- Plot showing Petal.Length vs Petal.Width for different species.

**lattice**

- Lattice plots for each species showing Petal.Length vs Petal.Width.

**ggplot2**

- GGplot2 plots for each species showing Petal.Length vs Petal.Width.
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```r
> uniPlot(graphics = list(pch = 16, reference.col = gray(0.8), tcl = (-0.5), col.main = 'black'), lattice = list(strip.background.col = "green3"))
```

![uniPlot graphics example](image1)

![uniPlot lattice example](image2)

![uniPlot ggplot2 example](image3)
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> uniPlot(type = 'before')  ## reset options
Open Points

- clean up code → gaps in alignment of options, lists in synchronizing
- creating styles / allowing themes
- color palettes
- show settings
Contact

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