Reproducible Research
WORKFLOW

Data → Analysis → Report
Data Analysis

\begin{itemize}
\item Analysis
\item iQTL
\item Analysis
\item iQTL
\item Analysis
\item iQTL
\end{itemize}

\textbf{Round 2 (Cheng data)}

Benjamin Pitts
July 4, 2011
• Language for statistical computing
• Open Source
• Large Community
• Packages for almost any application ... CRAN
• Sophisticated graphics
x = rnorm(1000)
y = x + rnorm(1000)
plot(x, y)
SIMPLE EXAMPLES

```r
x = rnorm(1000)
y = rnorm(1000)
plot(x, y)
fit = lm(y ~ x)
abline(fit, col='red')
```
• Literate Programming
• Add R to LaTeX
In this example we embed parts of the examples from the \texttt{kruskal.test} help page into a \LaTeX{} document:

\begin{verbatim}
data(airquality)
library(stats)
kruskal.test(Ozone ~ Month, data = airquality)
\end{verbatim}

which shows that the location parameter of the Ozone distribution varies significantly from month to month. Finally we include a boxplot of the data:

\begin{verbatim}
<<fig=TRUE,echo=FALSE>>=
boxplot(Ozone ~ Month, data = airquality)
\end{verbatim}
In this example we embed parts of the examples from the \texttt{kruskal.test} help page into a \LaTeX{} document:

\begin{Schunk}
\begin{Sinput}
> data(airquality)
> library(stats)
> kruskal.test(Ozone ~ Month, data = airquality)
\end{Sinput}
\begin{Soutput}
Kruskal-Wallis rank sum test

data:  Ozone by Month
Kruskal-Wallis chi-squared = 29.2666, df = 4, p-value = 6.901e-06
\end{Soutput}
\end{Schunk}

which shows that the location parameter of the Ozone distribution varies significantly from month to month. Finally we include a boxplot of the data:

\begin{center}
\includegraphics{example-1-002}
\end{center}
Sweave Example 1

Friedrich Leisch

May 15, 2008

In this example we embed parts of the examples from the \texttt{kruskal.test} help page into a \LaTeX{} document:

\begin{verbatim}
> data(airquality)
> library(ctest)
> kruskal.test(Ozone ~ Month, data = airquality)

Kruskal-Wallis rank sum test

data:  Ozone by Month
Kruskal-Wallis chi-squared = 29.2666, df = 4, p-value = 6.901e-06
\end{verbatim}

which shows that the location parameter of the Ozone distribution varies significantly from month to month. Finally we include a boxplot of the data:

\centering
\includegraphics[width=0.8\textwidth]{boxplot.png}

Sweave Example 1

Friedrich Leisch
May 15, 2008

In this example we embed parts of the examples from the \texttt{kruskal.test} help page into a \LaTeX{} document:

\begin{verbatim}
> data(airquality)
> library(cdist)
> kruskal.test(Ozone ~ Month, data = airquality)
\end{verbatim}

Kruskal-Wallis rank sum test

data: Ozone by Month
Kruskal-Wallis chi-squared = 29.2666, df = 4, p-value = 6.901e-06

which shows that the location parameter of the Ozone distribution varies significantly from month to month. Finally we include a boxplot of the data:
Results are provided as

- PDF-Report for quick overview
R-PROJECT.ORG
ADDITIONAL LINKS

- Manuals/Tutorials
  - Homepage, manuals and download (CRAN)
  - Introduction
  - Wiki

- Sweave manual and homepage
  - Example

- Other presentations (in German)
  - Lindermeir, Uni Augsburg, 2010
  - Ziegenhagen, Dante 2010