

# **Data Technologies**

## **R and HTML**

## **Background Reading**

---

Chapters 2 and 3 of “Introduction to Data Technologies”

The Web Design Group HTML 4 Reference

<http://htmlhelp.com/reference/html40/>

Eric Lecoutre, “The R2HTML Package”, R News, 3(3), pp. 33–36.

The Sweave manual

<http://www.ci.tuwien.ac.at/~leisch/Sweave/>

## R2HTML

---

The R2HTML package assists in the creation of HTML reports by generating HTML code from R objects.

```
library(R2HTML)
```

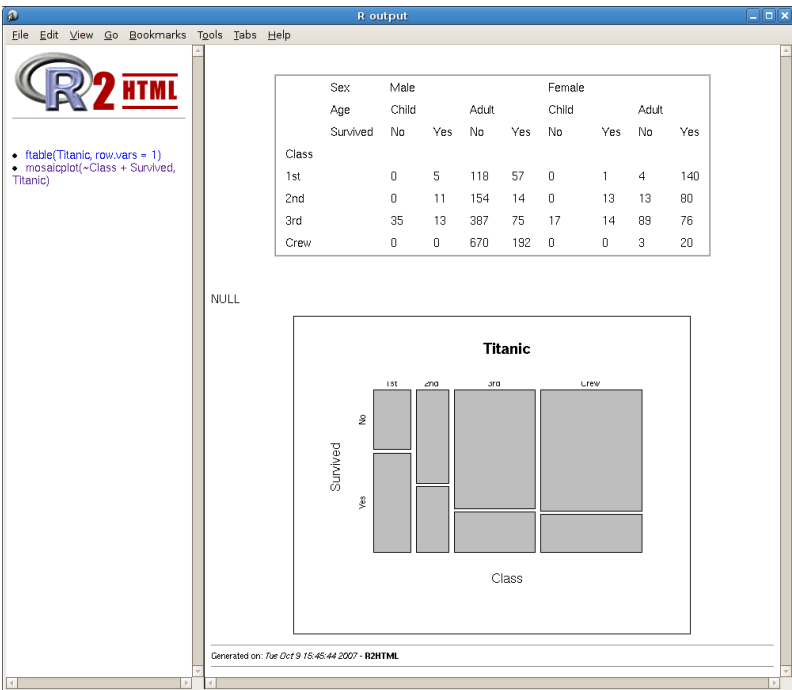
```
HTMLStart(outdir=".", filename="demoR2HTML")
```

```
fable(Titanic, row.vars=1)
```

```
mosaicplot(~ Class + Survived, Titanic)
```

```
HTMLplot(Height=400)
```

```
HTMLStop()
```



## R2HTML

---

The hard work is done by the `HTML()` generic function.

```
> HTML(ftable(Titanic, row.vars=1))
```

```
<p align= center >
```

```
<table cellpadding=0 border=1>
```

```
  <caption align=bottom class=captiondataframe>
```

```
  </caption>
```

```
  <tr><td>
```

```
    <table border=0 class=dataframe>
```

```
      <td class=cellinside>                </td>
```

```
      <td class=cellinside>Sex              </td>
```

```
      <td class=cellinside> Male           </td>
```

```
      <td class=cellinside>                </td>
```

```
  ...
```

## Sweave

---

Sweave is a tool that allows you to write a document, e.g., `report.Rnw`, with embedded R code.

The function `Sweave()` runs the code chunks and replaces them with the corresponding R output. The result can be a latex document called `report.tex` or, with the `R2HTML` package, an HTML document called `report.html` (or with the `odfWeave` package, an ODF document).

- Analysis code and report in one file.
- Output always up to date; always corresponds to the code.
- Reproducible research.

## Sweave

---

A file called `demoSweave.Rnw`.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transit
<html>
  <head>
    <title>A Minimal HTML Document</title>
  </head>
  <body>

<<>>=
summary(Titanic)

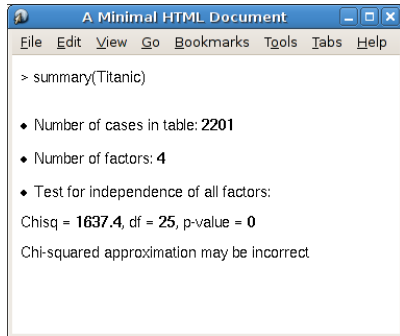
@
  </body>
</html>
```

## Sweave

---

This is processed by typing ...

```
> Sweave("demoSweave.Rnw", driver=RweaveHTML)
```





## Sweave

---

A file called demoSweave.html.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional
<html>
  <head>
    <title>A Minimal HTML Document</title>
  </head>
  <link rel=stylesheet type=text/css href=R2HTML.css><
  <!-- begin{Schunk} !-->
  <!-- begin{Sinput} !-->
  <p><xmp class=command>> summary(Titanic)</xmp></p>
  <!-- end{Sinput} !-->
  <br><li>Number of cases in table:<b> 2201 </b>
  <br><br><li>Number of factors:<b> 4 </b>
  <br><br><li>Test for independence of all factors:
  <br><p class='character'> Chisq = <b>1637.4</b>, df
```

## Sweave

---

- The R code can be hidden `echo=FALSE`
- If the code produces a plot, that can be automatically included `fig=TRUE`
- The result of the last expression in a code chunk is automatically formatted using `HTML()`, unless `results=html` or `results=hide`.

## R2HTML and Sweave

---

The HTML formatting produced by R2HTML is not always very nice. If you want to just show the normal printed format from R, use the following function:

```
printVerbatim <- function(x) {  
  tc <- textConnection("Routput", "w")  
  sink(tc)  
  print(x)  
  sink()  
  close(tc)  
  cat(Routput, file=.HTML.file, sep="\n")  
}
```