knitr: Starting From Reproducible Homework

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ICERM, 12/12/12
knitr = knit + R

Sweave = S + weave
my homework & solutions in past three years at Iowa State

¹e.g. https://github.com/yihui/stat579/downloads
I love \LaTeX{} more than anyone else, but do not tie users to \LaTeX{}
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# Markdown

## Markdown

**Markdown**

- Markdown
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The value of \( \pi \) is `r pi`, and a Monte Carlo estimate is:

```r
est_pi = function(n) {
  x = runif(n, -1, 1)
  y = runif(n, -1, 1)
  4 * mean(x^2 + y^2 <= 1)
}
est_pi(10000)
```
```
The value of $\pi$ is 3.1416, and a Monte Carlo estimate is:

```r
est_pi = function(n) {
  x = runif(n, -1, 1)
  y = runif(n, -1, 1)
  4 * mean(x^2 + y^2 <= 1)
}
est_pi(5000)

## [1] 3.128
```
reproducible homework (happier students, happier professors)
evidence that we underestimated the power and imagination of students: http://www.rpubs.com
written in R, but not for R only (bash scripts, C++, ...)
If reproducible homework comes, can reproducible research be far behind?
IN CODE WE TRUST