knitr: Starting From Reproducible Homework

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$$\text{knitr} = \text{knit} + \text{R}$$

$$\text{Sweave} = \text{S} + \text{weave}$$

my homework & solutions in past three years at Iowa State[1]

[1] e.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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(but do keep them away from Word)

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The value of π 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 π is 3.1416, and a Monte Carlo estimate is:

```
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