Embedding Shiny Apps in R Markdown documents

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Shiny and R Markdown provide two versatile platforms for generating reports from *R*. Shiny creates reactive web apps that allow users to explore a data set and initiate analysis in an interactive fashion. R markdown creates attractive static reports that are fully reproducible; they can be automatically regenerated whenever *R* code or data changes. R markdown achieves this by combining *markdown* (an easy-to-write plain text format) with embedded *R* code chunks that are run so their output can be included in the final document.

But can R markdown be extended further — can a user use it to embed live Shiny apps into an *R* report? If so, the results would be remarkable. Not only could *R* users augment their reports with live content in the form of Shiny Apps, but they could also include things that are less obviously Shiny apps, such as interactive **ggvis** plots.

However, this approach is fraught with challenges. These range from the simple to the subtle — How can multiple Shiny apps be included in a single web document? How should the resulting documents be deployed? How can we let users know they have a dynamic document? How can **knitr** convert an R Markdown file that contains a Shiny app into an *HTML* file? How should Shiny apps respond to the *CSS* files of a R Markdown document? And, how can multiple Shiny apps be managed in the same *R* session without unintended side effects?

This talk will describe RStudio's progress at solving these issues and explain how *R* users can embed Shiny apps in their own R Markdown reports.