R architecture topics

Topics:

# Time-series representation and manipulation

blabla

# Operations on algorithms

blabla

# How to organize complex Shiny apps: manage the state

blabla

# Shiny: dynamic UI

Different types of dynamism

* Fixed number of elements. This UIs can be dynamic in 2 ways
  1. The content of the UI can change
  2. The UI elements can be hidden or shown dynamically (making it look like there is a varying number of UI elements)
* Dynamic number of input elements.
* Dynamic number of output elements. Example: select input: select a number. Creates n times a control group with plots. Note that often you can get the same functionality by having a select input and only one group of control of a fixed number of types of controls. That way

Different levels of dynamism

* Level 0. Static UI: just show something constant: example   
  <p>Hello</p>
* Level 1. Show something that depends on parameters. Example: slider you can choose your name. Texte shows Hello: your name
* Level 2. Show different UI elements according to parameters. Example: select input 2 choices: sex, name. Sex one shows a radio input with 2 radio buttons M and F, name shows text input: your name. They also have a constant text
* Level 3. Show different UI elements that depends on parameters. The UI elements themselves have parameters that can affect what they show. Example: same as before but now when you enter the age the sex: You are <your sex>. When you enter your name: Hi <your name>

Solutions

* Level 0. Pure HTML in the UI.R file is great for that
* Level 1. renderText in the server is great for a reactive text
* Level 2. Can use renderUI or can use conditionalPanels. I feel conditional panels are better here because they show better the structure of the code: each case is unrelated and has its own existence: we show one or the other according to some condition.
* Level 3.
  1. First solution. Have all the dynamic things in the server.R file