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Creation of a generic IHM embedding data processing analysis for physics experimenters developed with R, rjava, shiny, htmlwidgets and plotly tools

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Abstract

An important aspect in data processing is the capability to use R for an interactive data visualization. The place where interactions are the most frequent is in a web page. And Javascript is powerful for adding behavior to a web page. To use it, all you need to do is to put the code in a HTML document and tell the browser that it is Javascript. The principal bridge between these two tools is the htmlwidgets package. In JAVA programming, JavaFX framework provides us a WebView component that can be used as an embedded web browser in a JavaFX application. This component handles most of the work of web browsing, for example in own concern, rendering the HTML content. Another advantage of embedding a web browser in the JAVA HMI is to offer the possibility to insert shiny applications and hence gaining a more complete control on the interactivity. The poster describes the structure of the computer application developed to facilitate the sharing of analysis tools of the experimentalists working on the CABRI nuclear experimental pulse reactor at the CEA/Cadarache. The software development has been realised in order to enable each experimentalist to integrate their own contributions without concerted efforts in term of HMI and OOP programming. The experimentalists only have to tweak the R scripts outside the application and edit parameters files for their HMI incorporation.

Keywords: Design Pattern, rjava, JAVAFX, WebView, htmlwidgets, shiny

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