# KNITR, Hooks and Language Engines

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## Agenda

KNITR, Hooks and Language Engines

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Introduc

. . . .

Description

Hook Types

Creation of a Chunk

Using a Chunk Hook

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Language engines

Language engines Default available langua

C++ example

Question

Reference

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13

### Introduction

### Hooks

Description

Hook Types

Chunk Hooks

Creation of a Chunk Hook

Using a Chunk Hook

Plot using a Chunk Hook

### Language engines

Language engines

Default available languages

C++ example

### Questions

References



### Introduction

KNITR, Hooks and Language Engines

Raul Alejandro Buitrago Castellanos

#### Introduction

#### Hook:

Description

Hook Types

Creation of a Chunk He

Plot using a Chunk Hoo

#### Language engines

Language engines Default available languages

Questions

Reference

This conference is related with the use of Hooks and Language engines on KNITR.

Meeting, understanding, creating, and using the Chunk Hooks.

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### Introduction

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#### Introduction

#### Hook

Description Hook Types

Chunk Hooks

Creation of a Chunk Ho Using a Chunk Hook

Plot using a Chunk Hoo

#### Language engines

Language engines Default available language

Questions

Reference

This conference is related with the use of Hooks and Language engines on KNITR.

- Meeting, understanding, creating, and using the Chunk Hooks.
- ► Working with language engines.

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## Description

KNITR Hooks and Language Engines

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Description

The hooks are a way to increase the capability of KNITR, providing programming options and tools to customize the code execution.

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## **Hook Types**

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Introduction

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Description

Hook Types

Chunk Hoo

Using a Chunk Hook

Language engines

Language engines

C++ exampl

Question

Reference

The hooks are classified in two kinds according with the propose,

- Chunk Hooks Set of defined behaviors that can be included in the chunk expressions when are declared.
- 2. Output Hooks

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## **Hook Types**

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Introductio

....

Descriptio

Hook Types

Creation of a C

Using a Chunk Hook Plot using a Chunk Hoo

Language engines

Language engines

Con example

Question

Reference

The hooks are classified in two kinds according with the propose,

- 1. Chunk Hooks Set of defined behaviors that can be included in the chunk expressions when are declared.
- 2. Output Hooks

### Goal

Customize the project creating and using Chunk Hooks.

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## Description

KNITR, Hooks and Language Engines

Raul Alejandro Buitrago Castellanos

Introduction

Hooks

Descriptio

Chunk Hooks

Creation of a

Using a Chunk Hook

Language engines

Language engines

C . . evernele

Questions

Reference

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### Structure

- 1. begin,
- 2. options, and
- 3. envir (environment).



### Declaration

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Creation of a Chunk Hook

```
par(mar=c(1,1,1,1))
                if (before){
                 par(bg=options$plotColor)
                }else{
                 par (bg=NULL)
                return()
                              setup-customizePlot-hook.Rnw
informacion y las
```

<<setup-hooks-customizePlot, echo = TRUE>>=

knit\_hooks\$set(customizePlot = function(before, options,

options (java.parameters="-Xmx2048m") if (!"knitr" %in% installed.packages())

install.packages("knitr")

library (knitr)

envir) {

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## Using a Chunk Hook

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Introduction

```
Harden
```

Description

Hook Types

Creation of a Church Head

Using a Chunk Hook

Plot using a Chunk Hoo

#### Language engine

Language engines

C++ example

Questions

References

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informacion y las
comunicaciones, con enfasis
en ingenieria de software
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Francisco Jose de Caldas
Colombia
```

13

```
\begin{figure }[ht]
 \subfigure[Using the hook]{
 <<using-hook, customizePlot=TRUE, plotColor="yellow",</pre>
      include=TRUE, out.width="1.5in", echo=FALSE>>=
   plot (1:10)
\subfigure[Without using the hook]{
 <<without-hook, include=TRUE, out.width="1.5in", echo=</pre>
      FALSE>>=
   plot (1:10)
\end{figure}
```

invoke-customizePlot-hook.Rnw



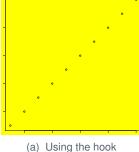
## Plot using a Chunk Hook

KNITR, Hooks and Language Engines

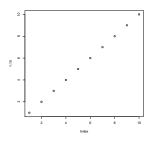
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Plot using a Chunk Hook

References







(b) Without using the hook

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## Description

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Introductio

.....

Description

Hook Type

Creation of a Chunk H

Using a Chunk Hook
Plot using a Chunk Hoo

Language engine

Language engines

Default available language

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Question

Reference:

- Until this moment the focus has been R, because it's one of the most popular tool to work with statistics, data mining, big data, machine learning, and others.
- ▶ But the reality is that R isn't the only one programming language used in reproducible research and KNITR provide us a set of available languages to integrate in the document.

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## Default available languages

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Introductio

miroduotic

Description

Hook Type

Chunk Hooks

Creation of a Chunk

Using a Chunk Hook

Plot using a Chunk Ho

Language engine

Language engines

Default available languages 10

. . . . . ,

Question

Reference

Language	Engine	Code argument
Python	python	-C
Ruby	ruby	-e
<i>g</i> awk	<i>g</i> awk	-e
sed	sed	-e
shell	sh/bash/zsh	-C
Perl	perl	-e
Haskell	haskell	-e
CoffeeScript	coffee	-e
Groovy	groovy	-e
Node.js	node	-e
Scala	scala	-e
SAS	sas	-SYSIN

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## C++ example

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### Introduction

#### Harden

Description

Hook Types

Chunk Hooks Creation of a Chunk Ho

Using a Chunk Hook

### Language engines

Language engines

C++ example (

#### Questions

References

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13

```
library(Rcpp) evalCpp("PI")
```

[1] 3.141593

```
cppFunction(" int fibCpp(int x) { if (x == 0 || x == 1)
return(x); return (fibCpp(x - 1)) + fibCpp(x - 2); }")
fibCpp(10)
```

[1] 55



## Questions

KNITR, Hooks and Language Engines

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Introduction

Description

Hook Type

Chunk Hooks

Creation of a Chunk I

Using a Chunk Hook

Plot using a Chunk Ho

Language engines

.anguage engines Default available languages

C++ exami

Questions

(12

References

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### References

KNITR, Hooks and Language Engines

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Introductio

.....

Description

Hook Types

Creation of a Chunk H

Plot using a Chunk Hoo

Language engine

Language engines

Detault available language

Question

References

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