Advanced R: practical 2

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1 S3 objects

1. Following the cohort example in the notes, suppose we want to create method called `mean`.
   - List all the S3 methods associated with the `mean` function.
   - Examine the source code of `mean.default`.
   - What are the arguments of `mean.default`?
   - Create a function called `mean.cohort` that returns a vector containing the mean weight and mean height.[1]
2. Let's now make a similar function for the standard deviation
   - Look at the arguments of the standard `sd` function.
   - Create an function call `sd.cohort` that returns a vector containing the weight and height standard deviation.[2]
   - Create a default `sd` function. Look at `cor.default` in the notes for a hint.

[1] Ensure that you can pass in the standard `mean` arguments, i.e. `na.rm`.

[2] Ensure that you can pass in the standard `sd` arguments, i.e. `na.rm`.

2 S4 objects

I've intentionally mirrored the functions from section 1 of this practical to highlight the differences.

1. Following the cohort example in the notes, suppose we want to make a generic for the `mean` function.
   - Using the `isGeneric` function, determine if the `mean` function is an S4 generic. If not, use `setGeneric` to create an S4 generic.
   - Using `setMethod`, create a `mean` method for the `Cohort` class.[3]
2. Repeat the above steps for the `sd` function.

[3] Be careful to match the arguments.

Solutions

Solutions are contained within the course package

```
library("nclRadvanced")
vignette("solutions2", package = "nclRadvanced")
```