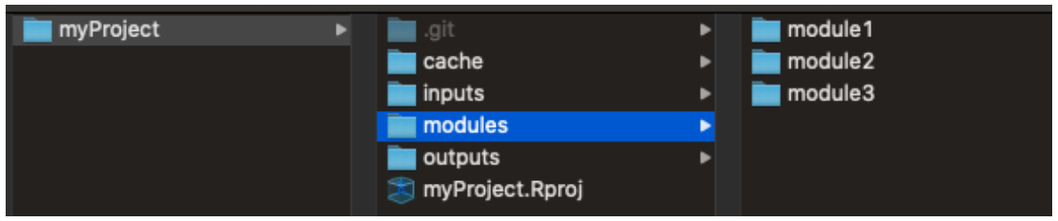
Simulation modelling in SpaDES : : CHEAT SHEET

Project setup

1. PROJECT DIRECTORY STRUCTURE



2. GET OR CREATE MODULES

```
downloadModule("module4", path = "modules")

copyModule("module4", "module5", "modules", open = TRUE)

newModule("module6", path = "modules")
```

3. WORKSPACE SETUP

```
setPaths(
  cachePath = "cache",
  inputPath = "inputs",
  modulePath = "modules",
  outputPath = "outputs"
)
```

use relative paths

Running simulations

```
mySim <- simInit(…)
```
initialize a simulation

```
mySimOut <- spades(Copy(mySim), …)
```
run single simulation

```
myExpt <- experiment(mySim, …)
```
multiple simulations (in parallel)

```
restartSpades()
```
if something goes wrong

Accessing the simList

Accessor	Description
`globals`	global (i.e., non-module-specific) parameters
`params, P`	module-specific parameters
`inputs, outputs`	module input and output objects
`ls.objects, ls,str, obj`	list objects stored in the simList environment
`paths, cachePath, modulePath, inputPath, outputPath, dataPath`	simulation paths
`times, end, start, time`	simulation times
`events, current, completed`	simulation events
`modules`	modules in use
`packages`	simulation and module package dependencies
`depends`	simulation module dependencies (advanced)
`envir`	the simList environment (advanced)

Module Examples

```
system.file("sampleModules", package = "SpaDES.core")

getOption("spades.modulesRepo")
```

Module Development

1. METADATA

2. DEFINE AND SCHEDULE EVENTS

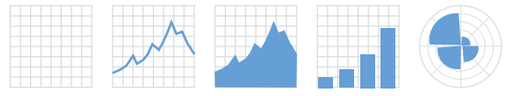
```
scheduleEvent(sim, time(sim) + 10, "module5",
              "myEvent", .normal())

scheduleConditionalEvent(sim, …)
```

3. DEFAULT OBJECTS CREATED IN `.inputObjects`

PLOTTING (WITHIN MODULE)

```
Plot()
clearPlot()
rePlot()
newPlot()
dev()
```
fast, modular plotting

change plot device



PLOTTING (SIMULATION-LEVEL)

```
moduleDiagram(mySim, …)

objectDiagram(mySim, …)

eventDiagram(mySim, …)
```

Simulation caching

```
mySimOut <- Cache(spades(mySim), …)

showCache()

keepCache()
```

Package options

```
?SpaDES.core
```