

# Package ‘ready4’

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**Title** Develop and Use Modular Health Economic Models

**Version** 0.1.19

**Description** A template model module, tools to help find model modules derived from this template and a programming syntax to use these modules in health economic analyses. These elements are the foundation for a prototype software framework for developing living and transferable models and using those models in reproducible health economic analyses. The software framework is extended by other R libraries. For detailed documentation about the framework and how to use it visit <<https://www.ready4-dev.com/>>. For a background to the methodological issues that the framework is attempting to help solve, see Hamilton et al. (2024) <[doi:10.1007/s40273-024-01378-8](https://doi.org/10.1007/s40273-024-01378-8)>.

**License** GPL-3

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'imp\_fns.R' 'imp\_mthds.R' 'mthd\_authorSlot.R'  
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'mthd\_enhanceSlot.R' 'mthd\_exhibitSlot.R' 'mthd\_ingestSlot.R'  
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'mthd\_metamorphoseSlot.R' 'mthd\_procureSlot.R'  
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---

author                      *Author and save files*

---

### Description

author() is a method that authors and saves files.

### Usage

```
author(x, ...)
```

### Arguments

x	A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)
...	Additional arguments

**Value**

Either a model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance) of the same class as that supplied to the method or no return value (when called for side-effects only).

---

authorClasses	<i>Author and document classes</i>
---------------	------------------------------------

---

**Description**

authorClasses() is a method that authors and saves R package files for creating and documenting classes to describe the data structures of model modules.

**Usage**

```
authorClasses(x, ...)
```

**Arguments**

x	A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)
...	Additional arguments

**Value**

Either a model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance) of the same class as that supplied to the method or no return value (when called for side-effects only).

---

authorData	<i>Author and document datasets</i>
------------	-------------------------------------

---

**Description**

authorData() is a method that authors, documents and saves model module datasets.

**Usage**

```
authorData(x, ...)
```

**Arguments**

x	A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)
...	Additional arguments

**Value**

Either a model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance) of the same class as that supplied to the method or no return value (when called for side-effects only).

---

authorFunctions	<i>Author and document functions</i>
-----------------	--------------------------------------

---

**Description**

authorFunctions() is a method that authors and saves R package files necessary for creating and documenting functions that implement model module algorithms.

**Usage**

```
authorFunctions(x, ...)
```

**Arguments**

x	A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)
...	Additional arguments

**Value**

Either a model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance) of the same class as that supplied to the method or no return value (when called for side-effects only).

---

authorReport	<i>Author and save a report</i>
--------------	---------------------------------

---

**Description**

authorReport() is a method that authors and saves a report.

**Usage**

```
authorReport(x, ...)
```

**Arguments**

x	A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)
...	Additional arguments

**Value**

Either a model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance) of the same class as that supplied to the method or no return value (when called for side-effects only).

---

authorSlot	<i>Apply the author method to a model module slot</i>
------------	---

---

**Description**

authorSlot() is a convenience method that applies the author method to a specified slot of a model module.

authorSlot method applied to Ready4Module

**Usage**

```
authorSlot(x, slot_nm_1L_chr, ...)

## S4 method for signature 'Ready4Module'
authorSlot(x, slot_nm_1L_chr, ...)
```

**Arguments**

x	An object of class Ready4Module
slot_nm_1L_chr	Slot name (a length one character vector)
...	Additional arguments

**Value**

Either a model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method or no value (when called for side effects only).

Either a ready4 model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method or no value (when called for side effects only).

---

characterize	<i>Characterize model module data by generating (tabular) descriptive statistics</i>
--------------	--

---

**Description**

characterize() is a method that generates descriptive tabular summaries about data contained in a model module.

**Usage**

```
characterize(x, ...)
```

**Arguments**

x	A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)
...	Additional arguments

**Value**

A data.frame, tibble or other table based class.

---

characterizeSlot	<i>Apply the characterize method to a model module slot</i>
------------------	---

---

**Description**

characterizeSlot() is a convenience method that applies the characterize method to a specified slot of a model module.

characterizeSlot method applied to Ready4Module

**Usage**

```
characterizeSlot(x, slot_nm_1L_chr, ...)
```

```
## S4 method for signature 'Ready4Module'
characterizeSlot(x, slot_nm_1L_chr, ...)
```

**Arguments**

x	An object of class Ready4Module
slot_nm_1L_chr	Slot name (a length one character vector)
...	Additional arguments

**Value**

Either a model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method or a data.frame, tibble or other table class.

Either a ready4 model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method or a data.frame, tibble or other table class.

---

depict	<i>Depict (plot) features of model module data</i>
--------	--

---

**Description**

depict() is a method that plots features of data contained in a model module (or sub-module).

**Usage**

```
depict(x, ...)
```

**Arguments**

x	A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)
...	Additional arguments

**Value**

A ggplot, gg or other plot type class.

---

depictSlot	<i>Apply the depict method to a model module slot</i>
------------	---

---

**Description**

depictSlot() is a convenience method that applies the depict method to a specified slot of a model module.

depictSlot method applied to Ready4Module

**Usage**

```
depictSlot(x, slot_nm_1L_chr, ...)
```

```
## S4 method for signature 'Ready4Module'
depictSlot(x, slot_nm_1L_chr, ...)
```

**Arguments**

x                    An object of class Ready4Module  
slot\_nm\_1L\_chr   Slot name (a length one character vector)  
...                    Additional arguments

**Value**

Either a model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method or no value (when called for side effects only).

Either a ready4 model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method or no value (when called for side effects only).

---

enhance	<i>Enhance a model module by adding new elements</i>
---------	--

---

**Description**

enhance() is a method that adds new data fields (columns for tabular data, elements for arrays) and values to a model module by transforming it into a module of an inheriting class.

**Usage**

```
enhance(x, ...)
```

**Arguments**

x                    A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)  
...                    Additional arguments

**Value**

A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance) of the same class as that supplied to the method.

---

enhanceSlot	<i>Apply the enhance method to a model module slot</i>
-------------	--

---

### Description

enhanceSlot() is a convenience method that applies the enhance method to a specified slot a model module.

enhanceSlot method applied to Ready4Module

### Usage

```
enhanceSlot(x, slot_nm_1L_chr, ...)
```

```
## S4 method for signature 'Ready4Module'
enhanceSlot(x, slot_nm_1L_chr, ...)
```

### Arguments

x	An object of class Ready4Module
slot_nm_1L_chr	Slot name (a length one character vector)
...	Additional arguments

### Value

A model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method.

A ready4 model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method.

---

exhibit	<i>Exhibit features of model module data by printing them to the R console</i>
---------	--

---

### Description

exhibit() is a method that prints to console selected features of data contained in a model module.

### Usage

```
exhibit(x, ...)
```

### Arguments

x	A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)
...	Additional arguments

**Value**

A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance) of the same class as that supplied to the method or no return value (when called for side-effects only).

---

exhibitSlot	<i>Apply the exhibit method to a model module slot</i>
-------------	--

---

**Description**

exhibitSlot() is a convenience method that applies the exhibit method to a specified slot a model module.

exhibitSlot method applied to Ready4Module

**Usage**

```
exhibitSlot(x, slot_nm_1L_chr, ...)

## S4 method for signature 'Ready4Module'
exhibitSlot(x, slot_nm_1L_chr, ...)
```

**Arguments**

x	An object of class Ready4Module
slot_nm_1L_chr	Slot name (a length one character vector)
...	Additional arguments

**Value**

Either a model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method or no return value (when called purely for side effects).

Either a ready4 model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method or no return value (when called purely for side effects).

---

get\_from\_lup\_obj      *Get a value from a lookup table*

---

### Description

get\_from\_lup\_obj() retrieves from a lookup table (a data.frame) the values in a target column for cases where values in a second column match a specified value.

### Usage

```
get_from_lup_obj(  
  data_lookup_tb,  
  match_value_xx,  
  match_var_nm_1L_chr,  
  target_var_nm_1L_chr,  
  evaluate_1L_lgl = FALSE  
)
```

### Arguments

data\_lookup\_tb Data lookup (a tibble)  
match\_value\_xx Match value (an output object of multiple potential types)  
match\_var\_nm\_1L\_chr  
    Match variable name (a character vector of length one)  
target\_var\_nm\_1L\_chr  
    Target variable name (a character vector of length one)  
evaluate\_1L\_lgl  
    Evaluate (a logical vector of length one), Default: FALSE

### Value

Cell value (an output object of multiple potential types)

### Examples

```
lookup_tb <- tibble::tibble(Name = c("Sajid", "Siobhan"),  
                          Treat = c("Cake", "Chocolate"))  
get_from_lup_obj(lookup_tb, match_value_xx = "Siobhan",  
                  match_var_nm_1L_chr = "Name", target_var_nm_1L_chr = "Treat")  
get_from_lup_obj(lookup_tb, match_value_xx = "Cake",  
                  match_var_nm_1L_chr = "Treat", target_var_nm_1L_chr = "Name")
```

---

get_gracefully	<i>Get data from the internet with graceful failure</i>
----------------	---

---

### Description

get\_gracefully() attempts to retrieve objects from the internet but returns NULL and an informative message if there is no internet connection or the specified resource could not be found.

### Usage

```
get_gracefully(
  url_1L_chr,
  args_ls = NULL,
  fn = readRDS,
  not_chr_1L_lgl = NA_character_,
  tests_chr = character(0)
)
```

### Arguments

url_1L_chr	Url (a character vector of length one)
args_ls	Arguments (a list), Default: NULL
fn	Function (a function), Default: readRDS
not_chr_1L_lgl	Not character vector (a logical vector of length one), Default: 'NA'
tests_chr	Tests (a character vector), Default: character(0)

### Value

Object (an output object of multiple potential types)

### Examples

```
# Likely execution time greater than current CRAN limit.
get_gracefully(paste0("https://github.com/ready4-dev/ready4/",
  "releases/download/Documentation_0.0/ready4_badges_lup.RDS"))
get_gracefully("DOES NOT EXIST")
if(requireNamespace("dataverse", quietly = TRUE)) {
  get_gracefully("https://doi.org/10.7910/DVN/RIQTKK", fn = dataverse::dataset_files,
    args_ls = list(key = NULL, server = "dataverse.harvard.edu"))
  get_gracefully("https://doi.org/10.7910/DVN/RIQTKK", fn = dataverse::dataset_files,
    args_ls = list(key = NULL, server = "DOES_NOT_EXIST"))
  get_gracefully("DOES_NOT_EXIST", fn = dataverse::dataset_files,
    args_ls = list(key = NULL, server = "dataverse.harvard.edu"))
}
if (requireNamespace("gh", quietly = TRUE)) {
  get_gracefully("/orgs/ready4-dev/repos", fn = gh::gh, args_ls=list(type = "public"))
}
```

```

    get_gracefully("DOES_NOT_EXIST", fn = gh::gh, args_ls=list(type = "public"))
  }
  if(requireNamespace("piggyback", quietly = TRUE)) {
    get_gracefully(NULL, fn = piggyback::pb_download_url,
      args_ls = list(repo = "ready4-dev/ready4",
        tag = "Documentation_0.0",
        .token = ""))
    get_gracefully(NULL, fn = piggyback::pb_download_url,
      args_ls = list(repo = "DOES_NOT_EXIST",
        tag = "DOES_NOT_EXIST",
        .token = ""))
  }
  if(requireNamespace("rvest", quietly = TRUE)) {
    get_gracefully("https://ready4-dev.github.io/ready4/index.html", fn=rvest::read_html)
    get_gracefully("DOES_NOT_EXIST", fn=rvest::read_html)
  }

  if(requireNamespace("tidyRSS", quietly = TRUE)) {
    get_gracefully("https://github.com/ready4-dev/ready4/releases.atom",
      fn = tidyRSS::tidyfeed)
    get_gracefully("DOES_NOT_EXIST", fn = tidyRSS::tidyfeed)
  }

```

---

get_libraries_tb	<i>Get a table of ready4 libraries</i>
------------------	--

---

## Description

get\_libraries\_tb() retrieves a tabular summary of ready4 libraries that have been developed within a specified GitHub organisation.

## Usage

```

get_libraries_tb(
  gh_repo_1L_chr = "ready4-dev/ready4",
  gh_tag_1L_chr = "Documentation_0.0"
)

```

## Arguments

gh\_repo\_1L\_chr Github repository (a character vector of length one), Default: 'ready4-dev/ready4'  
 gh\_tag\_1L\_chr Github tag (a character vector of length one), Default: 'Documentation\_0.0'

## Value

Libraries (a tibble)

**Examples**

```
get_libraries_tb("ready4-dev/ready4")
```

---

get_methods	<i>Get the methods associated with a ready4 model module</i>
-------------	--

---

**Description**

get\_methods() retrieves the ready4 methods that are available for a specified ready4 model module.

**Usage**

```
get_methods(pkg_nm_1L_chr = "ready4", cls_nm_1L_chr = "Ready4Module")
```

**Arguments**

pkg\_nm\_1L\_chr Package name (a character vector of length one), Default: 'ready4'  
 cls\_nm\_1L\_chr Class name (a character vector of length one), Default: 'Ready4Module'

**Value**

Methods (a character vector)

**Examples**

```
get_methods()
```

---

get_methods_tb	<i>Get a table of methods associated with ready4 model modules</i>
----------------	--

---

**Description**

get\_methods\_tb() ingests 'methods\_tb.RDS' (a table of methods associated with ready4 model modules) from a specified GitHub repository release.

**Usage**

```
get_methods_tb(
  gh_repo_1L_chr = "ready4-dev/ready4",
  gh_tag_1L_chr = "Documentation_0.0"
)
```

**Arguments**

gh\_repo\_1L\_chr Github repository (a character vector of length one), Default: 'ready4-dev/ready4'  
 gh\_tag\_1L\_chr Github tag (a character vector of length one), Default: 'Documentation\_0.0'

**Value**

Methods (a tibble)

**Examples**

```
get_methods_tb("ready4-dev/ready4")
```

---

get_modules_tb	<i>Get a table of ready4 model modules</i>
----------------	--

---

**Description**

get\_modules\_tb() ingests 'modules\_tb.RDS' (a table of ready4 model modules) from a specified GitHub repository release.

**Usage**

```
get_modules_tb(  
  gh_repo_1L_chr = "ready4-dev/ready4",  
  gh_tag_1L_chr = "Documentation_0.0"  
)
```

**Arguments**

gh\_repo\_1L\_chr Github repository (a character vector of length one), Default: 'ready4-dev/ready4'

gh\_tag\_1L\_chr Github tag (a character vector of length one), Default: 'Documentation\_0.0'

**Value**

Modules (a tibble)

**Examples**

```
get_modules_tb("ready4-dev/ready4")
```

---

ingest	<i>Ingest data</i>
--------	--------------------

---

**Description**

ingest() is a method that ingests data saved in external files into a model module or submodule.

**Usage**

```
ingest(x, ...)
```

**Arguments**

x	A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)
...	Additional arguments

**Value**

A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance).

---

ingestSlot	<i>Apply the ingest method to a model module slot</i>
------------	---

---

**Description**

ingestSlot() is a convenience method that applies the ingest method to a specified slot of a model module.

ingestSlot method applied to Ready4Module

**Usage**

```
ingestSlot(x, slot_nm_1L_chr, ...)
```

```
## S4 method for signature 'Ready4Module'
ingestSlot(x, slot_nm_1L_chr, ...)
```

**Arguments**

x	An object of class Ready4Module
slot_nm_1L_chr	Slot name (a length one character vector)
...	Additional arguments

**Value**

A model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method.

A ready4 model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method.

---

investigate	<i>Investigate solutions to an inverse problem</i>
-------------	--

---

**Description**

investigate() is a method that applies an algorithm to data contained in a model module in order to solve an inverse problem (ie, identify a statistical model that can generate approximations of that data).

**Usage**

```
investigate(x, ...)
```

**Arguments**

x	A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)
...	Additional arguments

**Value**

A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance).

---

investigateSlot	<i>Apply the investigate method to a model module slot</i>
-----------------	--

---

**Description**

investigateSlot() is a convenience method that applies the investigate method to a specified slot of a model module.

investigateSlot method applied to Ready4Module

**Usage**

```
investigateSlot(x, slot_nm_1L_chr, ...)
```

```
## S4 method for signature 'Ready4Module'
investigateSlot(x, slot_nm_1L_chr, ...)
```

**Arguments**

x                    An object of class Ready4Module  
slot\_nm\_1L\_chr   Slot name (a length one character vector)  
...                  Additional arguments

**Value**

A model module (an instance of a class that inherits from Ready4Module).

A ready4 model module (an instance of a class that inherits from Ready4Module).

---

make\_code\_releases\_tbl

*Make a tabular summary of release history of ready4 code libraries and executables*

---

**Description**

make\_code\_releases\_tbl() scrapes the details of a specified GitHub repository to generate a release history of ready libraries and executables. To work all repositories without any release need to be supplied using the 'exclude\_chr' argument.

**Usage**

```
make_code_releases_tbl(
  repo_type_1L_chr = c("Framework", "Module", "Package", "Program", "Subroutine",
    "Program_and_Subroutine"),
  as_kbl_1L_lgl = TRUE,
  brochure_repos_chr = character(0),
  exclude_chr = character(0),
  format_1L_chr = "%d-%b-%Y",
  framework_repos_chr = character(0),
  gh_repo_1L_chr = "ready4-dev/ready4",
  gh_tag_1L_chr = "Documentation_0.0",
  model_repos_chr = character(0),
  program_repos_chr = character(0),
  org_1L_chr = "ready4-dev",
  repos_chr = character(0),
  subroutine_repos_chr = character(0),
  tidy_desc_1L_lgl = TRUE,
  url_stub_1L_chr = "https://ready4-dev.github.io/",
  ...
)
```

**Arguments**

repo\_type\_1L\_chr  
     Repository type (a character vector of length one), Default: c("Framework",  
     "Module", "Package", "Program", "Subroutine", "Program\_and\_Subroutine")

as\_kbl\_1L\_lgl   As kable (a logical vector of length one), Default: TRUE

brochure\_repos\_chr  
     Brochure repositories (a character vector), Default: character(0)

exclude\_chr     Exclude (a character vector), Default: character(0)

format\_1L\_chr   Format (a character vector of length one), Default: '%d-%b-%Y'

framework\_repos\_chr  
     Framework repositories (a character vector), Default: character(0)

gh\_repo\_1L\_chr   Github repository (a character vector of length one), Default: 'ready4-dev/ready4'

gh\_tag\_1L\_chr    Github tag (a character vector of length one), Default: 'Documentation\_0.0'

model\_repos\_chr  
     Model repositories (a character vector), Default: character(0)

program\_repos\_chr  
     Program repositories (a character vector), Default: character(0)

org\_1L\_chr      Organisation (a character vector of length one), Default: 'ready4-dev'

repos\_chr       Repositories (a character vector), Default: character(0)

subroutine\_repos\_chr  
     Subroutine repositories (a character vector), Default: character(0)

tidy\_desc\_1L\_lgl  
     Tidy description (a logical vector of length one), Default: TRUE

url\_stub\_1L\_chr  
     Url stub (a character vector of length one), Default: 'https://ready4-dev.github.io/'

...             Additional arguments

**Value**

Releases (an output object of multiple potential types)

**Examples**

```

# Likely to take more than one minute to execute.
if(requireNamespace("tidyRSS", quietly = TRUE)) {
  make_code_releases_tbl("Framework",
    gh_repo_1L_chr = "ready4-dev/ready4")
  make_code_releases_tbl("Module",
    gh_repo_1L_chr = "ready4-dev/ready4")
  make_code_releases_tbl("Program",
    gh_repo_1L_chr = "ready4-dev/ready4")
  make_code_releases_tbl("Subroutine",
    gh_repo_1L_chr = "ready4-dev/ready4")
}

```

---

make_datasets_tb	<i>Make a tabular summary of ready4 model data collections</i>
------------------	--

---

### Description

make\_datasets\_tb() scrapes metadata from a specified Dataverse collection to create a summary table of its contents. The contents table can detail either subsidiary data collections or individual datasets from those subsidiary data collections.

### Usage

```
make_datasets_tb(
  dv_nm_1L_chr = "ready4",
  dvs_tb = NULL,
  filter_cdns_ls = NULL,
  key_1L_chr = NULL,
  server_1L_chr = "dataverse.harvard.edu",
  toy_data_dv_1L_chr = "fakes",
  type_1L_chr = c("collections", "datasets"),
  what_1L_chr = "all"
)
```

### Arguments

dv_nm_1L_chr	Dataverse name (a character vector of length one), Default: 'ready4'
dvs_tb	Dataverses (a tibble), Default: NULL
filter_cdns_ls	Filter conditions (a list), Default: NULL
key_1L_chr	Key (a character vector of length one), Default: NULL
server_1L_chr	Server (a character vector of length one), Default: 'dataverse.harvard.edu'
toy_data_dv_1L_chr	Toy data dataverse (a character vector of length one), Default: 'fakes'
type_1L_chr	Type (a character vector of length one), Default: c("collections", "datasets")
what_1L_chr	What (a character vector of length one), Default: 'all'

### Value

Datasets (a tibble)

### Examples

```
# Likely to take more than one minute to execute.
make_datasets_tb("ready4")
dvs_tb <- get_datasets_tb("ready4-dev/ready4")
make_datasets_tb("ready4", dvs_tb = dvs_tb)
make_datasets_tb("ready4", dvs_tb = dvs_tb, what_1L_chr = "real")
make_datasets_tb("ready4", dvs_tb = dvs_tb, what_1L_chr = "fakes")
```

```

make_datasets_tb("ready4", dvs_tb = dvs_tb, type_1L_chr = "datasets")
make_datasets_tb("ready4", dvs_tb = dvs_tb, type_1L_chr = "datasets", what_1L_chr = "real")
make_datasets_tb("ready4", dvs_tb = dvs_tb, type_1L_chr = "datasets", what_1L_chr = "fakes")

```

---

make\_ds\_releases\_tbl *Make a tabular summary of release history of ready4 model data collections*

---

### Description

make\_ds\_releases\_tbl() scrapes metadata from Dataverse datasets for which a valid Digital Object Identifier (DOI) has been supplied to create a table summarising the entire release history of these datasets.

### Usage

```

make_ds_releases_tbl(
  ds_dois_chr,
  format_1L_chr = "%d-%b-%Y",
  key_1L_chr = NULL,
  server_1L_chr = "dataverse.harvard.edu",
  as_kbl_1L_lgl = TRUE,
  ...
)

```

### Arguments

ds_dois_chr	Dataset digital object identifiers (a character vector)
format_1L_chr	Format (a character vector of length one), Default: '%d-%b-%Y'
key_1L_chr	Key (a character vector of length one), Default: NULL
server_1L_chr	Server (a character vector of length one), Default: 'dataverse.harvard.edu'
as_kbl_1L_lgl	As kable (a logical vector of length one), Default: TRUE
...	Additional arguments

### Value

Dataset releases (an output object of multiple potential types)

### Examples

```
make_ds_releases_tbl("10.7910/DVN/RIQTKK", as_kbl_1L_lgl = FALSE)
```

---

make_methods_tb	<i>Make a tabular summary of methods associated with ready model modules</i>
-----------------	--

---

### Description

make\_methods\_tb() scrapes the documentation websites of all libraries of ready4 modules in a specified GitHub organisation and then creates a tabular summary of vignette examples of ready4 module methods.

### Usage

```
make_methods_tb(
  packages_tb = NULL,
  exclude_mthds_for_chr = NA_character_,
  framework_only_1L_lgl = TRUE,
  gh_repo_1L_chr = "ready4-dev/ready4",
  gh_tag_1L_chr = "Documentation_0.0",
  module_pkgs_chr = character(0),
  ns_var_nm_1L_chr = "pt_ns_chr",
  path_1L_chr = character(0),
  return_1L_chr = "all"
)
```

### Arguments

packages_tb	Packages (a tibble), Default: NULL
exclude_mthds_for_chr	Exclude methods for (a character vector), Default: 'NA'
framework_only_1L_lgl	Framework only (a logical vector of length one), Default: TRUE
gh_repo_1L_chr	Github repository (a character vector of length one), Default: 'ready4-dev/ready4'
gh_tag_1L_chr	Github tag (a character vector of length one), Default: 'Documentation_0.0'
module_pkgs_chr	Module packages (a character vector), Default: character(0)
ns_var_nm_1L_chr	Namespace variable name (a character vector of length one), Default: 'pt_ns_chr'
path_1L_chr	Path (a character vector of length one), Default: character(0)
return_1L_chr	Return (a character vector of length one), Default: 'all'

### Value

Methods (a tibble)

**Examples**

```
# Likely to take more than one minute to execute.
make_methods_tb(gh_repo_1L_chr = "ready4-dev/ready4")
```

---

make_modules_tb	<i>Make a tabular summary of ready4 model modules and sub-modules</i>
-----------------	---

---

**Description**

make\_modules\_tb() scrapes the documentation websites of all libraries of ready4 modules in a specified GitHub organisation and then creates a tabular summary of the modules included in those libraries and vignette examples of their use.

**Usage**

```
make_modules_tb(
  pkg_extensions_tb = NULL,
  cls_extensions_tb = NULL,
  gh_repo_1L_chr = "ready4-dev/ready4",
  gh_tag_1L_chr = "Documentation_0.0",
  module_pkgs_chr = character(0),
  include_1L_chr = "modules",
  ns_var_nm_1L_chr = "pt_ns_chr",
  url_stub_1L_chr = "https://ready4-dev.github.io/",
  what_chr = "all"
)
```

**Arguments**

pkg_extensions_tb	Package extensions (a tibble), Default: NULL
cls_extensions_tb	Class extensions (a tibble), Default: NULL
gh_repo_1L_chr	Github repository (a character vector of length one), Default: 'ready4-dev/ready4'
gh_tag_1L_chr	Github tag (a character vector of length one), Default: 'Documentation_0.0'
module_pkgs_chr	Module packages (a character vector), Default: character(0)
include_1L_chr	Include (a character vector of length one), Default: 'modules'
ns_var_nm_1L_chr	Namespace variable name (a character vector of length one), Default: 'pt_ns_chr'
url_stub_1L_chr	Url stub (a character vector of length one), Default: 'https://ready4-dev.github.io/'
what_chr	What (a character vector), Default: 'all'

**Value**

Modules (a tibble)

**Examples**

```
# Likely to take more than one minute to execute.
make_modules_tb(gh_repo_1L_chr = "ready4-dev/ready4")
```

---

make_programs_tbl	<i>Make a tabular summary of programs using ready4 model modules</i>
-------------------	--

---

**Description**

make\_programs\_tbl() scrapes the GitHub organisation and Zenodo community associated specified for a ready4 model implementation to create a tabular summary of programs and sub-routines associated with that implementation.

**Usage**

```
make_programs_tbl(
  what_1L_chr = c("Program", "Subroutine", "Program_and_Subroutine"),
  as_kbl_1L_lgl = FALSE,
  exclude_chr = character(0),
  format_1L_chr = "%d-%b-%Y",
  gh_repo_1L_chr = "ready4-dev/ready4",
  gh_tag_1L_chr = "Documentation_0.0",
  tidy_desc_1L_lgl = TRUE,
  url_stub_1L_chr = "https://ready4-dev.github.io/",
  zenodo_1L_chr = "ready4",
  ...
)
```

**Arguments**

what_1L_chr	What (a character vector of length one), Default: c("Program", "Subroutine", "Program_and_Subroutine")
as_kbl_1L_lgl	As kable (a logical vector of length one), Default: FALSE
exclude_chr	Exclude (a character vector), Default: character(0)
format_1L_chr	Format (a character vector of length one), Default: '%d-%b-%Y'
gh_repo_1L_chr	Github repository (a character vector of length one), Default: 'ready4-dev/ready4'
gh_tag_1L_chr	Github tag (a character vector of length one), Default: 'Documentation_0.0'
tidy_desc_1L_lgl	Tidy description (a logical vector of length one), Default: TRUE

```

url_stub_1L_chr      Url stub (a character vector of length one), Default: 'https://ready4-dev.github.io/'
zenodo_1L_chr       Zenodo (a character vector of length one), Default: 'ready4'
...                 Additional arguments

```

**Value**

Programs (an output object of multiple potential types)

**See Also**

[zen4R : ZenodoManager\(\)](#)

**Examples**

```

# Likely to take more than one minute to execute.
if(requireNamespace("zen4R", quietly = TRUE)) {
  make_programs_tbl("Program",
                   gh_repo_1L_chr = "ready4-dev/ready4")
  make_programs_tbl("Subroutine",
                   gh_repo_1L_chr = "ready4-dev/ready4")
}

```

---

manufacture

*Manufacture a new object*

---

**Description**

manufacture() is a method that used data contained in a model module or submodule to create a new object (other than a model module).

**Usage**

```
manufacture(x, ...)
```

**Arguments**

```

x                 A model module (an instance of a class that inherits from Ready4Module) or
                  submodule (any S3 class instance)
...              Additional arguments

```

**Value**

An object other than a model module (an instance of a class that inherits from Ready4Module).

---

manufactureSlot	<i>Apply the manufacture method to a model module slot</i>
-----------------	--

---

**Description**

manufactureSlot() is a convenience method that applies the manufacture method to a specified slot of a model module.

manufactureSlot method applied to Ready4Module

**Usage**

```
manufactureSlot(x, slot_nm_1L_chr, ...)
```

```
## S4 method for signature 'Ready4Module'
manufactureSlot(x, slot_nm_1L_chr, ...)
```

**Arguments**

x	An object of class Ready4Module
slot_nm_1L_chr	Slot name (a length one character vector)
...	Additional arguments

**Value**

An object that is not the the same class as that supplied to the method.

An object that is not the the same class as that supplied to the method.

---

metamorphose	<i>Metamorphose a model module to a model module of a different (non-inheriting) class</i>
--------------	--

---

**Description**

metamorphose() is a method that transforms a model module into a model module of a different (non-inheriting) class.

**Usage**

```
metamorphose(x, ...)
```

**Arguments**

x	A model module (an instance of a class that inherits from Ready4Module)
...	Additional arguments

**Value**

A model module (an instance of a class that inherits from Ready4Module) of a different class to that supplied to the method.

---

metamorphoseSlot	<i>Apply the metamorphose method to a model module slot</i>
------------------	---

---

**Description**

metamorphoseSlot() is a convenience method that applies the metamorphose method to a specified slot of a model module.

metamorphoseSlot method applied to Ready4Module

**Usage**

```
metamorphoseSlot(x, slot_nm_1L_chr, ...)
```

```
## S4 method for signature 'Ready4Module'
metamorphoseSlot(x, slot_nm_1L_chr, ...)
```

**Arguments**

x	An object of class Ready4Module
slot_nm_1L_chr	Slot name (a length one character vector)
...	Additional arguments

**Value**

A model module (an instance of a class that inherits from Ready4Module).

A ready4 model module (an instance of a class that inherits from Ready4Module).

---

print_data	<i>Print a table of ready4 model data collections</i>
------------	---

---

**Description**

print\_data() formats the output of either get\_datasts\_tb() or make\_datasts\_tb() as HTML. The type of output can be customised to display Dataverse data collections or Dataverse datasets. Similarly output can be restricted to real or toy datasets.

**Usage**

```
print_data(
  datasets_tb,
  by_dv_1L_lgl = FALSE,
  filter_cdns_ls = NULL,
  root_1L_chr = "https://dataverse.harvard.edu/dataverse/",
  scroll_height_1L_chr = character(0),
  scroll_width_1L_chr = character(0),
  toy_data_dv_1L_chr = "fakes",
  what_1L_chr = "all",
  ...
)
```

**Arguments**

datasets_tb	Datasets (a tibble)
by_dv_1L_lgl	By dataverse (a logical vector of length one), Default: FALSE
filter_cdns_ls	Filter conditions (a list), Default: NULL
root_1L_chr	Root (a character vector of length one), Default: 'https://dataverse.harvard.edu/dataverse/'
scroll_height_1L_chr	Scroll height (a character vector of length one), Default: character(0)
scroll_width_1L_chr	Scroll width (a character vector of length one), Default: character(0)
toy_data_dv_1L_chr	Toy data dataverse (a character vector of length one), Default: 'fakes'
what_1L_chr	What (a character vector of length one), Default: 'all'
...	Additional arguments

**Value**

Datasets (a kable)

**Examples**

```
datasets_tb <- get_datasets_tb("ready4-dev/ready4")
print_data(datasets_tb, by_dv_1L_lgl = TRUE)
print_data(datasets_tb, what_1L_chr = "real")
print_data(datasets_tb, what_1L_chr = "fakes")
```

---

print\_methods

---

*Print a table of methods associated with ready4 model modules*


---

### Description

print\_methods() formats the output of either get\_methods\_tb() or make\_methods\_tb() as HTML.

### Usage

```
print_methods(
  methods_tb = NULL,
  exclude_mthds_for_chr = NA_character_,
  gh_repo_1L_chr = "ready4-dev/ready4",
  gh_tag_1L_chr = "Documentation_0.0",
  methods_chr = NULL,
  module_pkgs_chr = character(0),
  ns_var_nm_1L_chr = "pt_ns_chr",
  path_1L_chr = character(0),
  packages_tb = NULL,
  return_1L_chr = "all",
  scroll_height_1L_chr = character(0),
  scroll_width_1L_chr = character(0),
  ...
)
```

### Arguments

methods_tb	Methods (a tibble), Default: NULL
exclude_mthds_for_chr	Exclude methods for (a character vector), Default: 'NA'
gh_repo_1L_chr	Github repository (a character vector of length one), Default: 'ready4-dev/ready4'
gh_tag_1L_chr	Github tag (a character vector of length one), Default: 'Documentation_0.0'
methods_chr	Methods (a character vector), Default: NULL
module_pkgs_chr	Module packages (a character vector), Default: character(0)
ns_var_nm_1L_chr	Namespace variable name (a character vector of length one), Default: 'pt_ns_chr'
path_1L_chr	Path (a character vector of length one), Default: character(0)
packages_tb	Packages (a tibble), Default: NULL
return_1L_chr	Return (a character vector of length one), Default: 'all'
scroll_height_1L_chr	Scroll height (a character vector of length one), Default: character(0)
scroll_width_1L_chr	Scroll width (a character vector of length one), Default: character(0)
...	Additional arguments

**Value**

Methods (a kable)

**Examples**

```
methods_tb <- get_methods_tb("ready4-dev/ready4")
print_methods(methods_tb)
print_methods(methods_tb, return_1L_chr = "core")
print_methods(methods_tb, return_1L_chr = "slot")
print_methods(methods_tb, return_1L_chr = "extended")
```

---

print_modules	<i>Print a table of ready4 model modules</i>
---------------	--

---

**Description**

print\_modules() formats the output of either get\_modules\_tb() or make\_modules\_tb() as HTML.

**Usage**

```
print_modules(
  modules_tb,
  scroll_height_1L_chr = character(0),
  scroll_width_1L_chr = character(0),
  what_1L_chr = "All",
  ...
)
```

**Arguments**

modules_tb	Modules (a tibble)
scroll_height_1L_chr	Scroll height (a character vector of length one), Default: character(0)
scroll_width_1L_chr	Scroll width (a character vector of length one), Default: character(0)
what_1L_chr	What (a character vector of length one), Default: 'All'
...	Additional arguments

**Value**

Modules (a kable)

**Examples**

```
modules_tb <- get_modules_tb("ready4-dev/ready4")
# Print sub-modules
print_modules(modules_tb, what_1L_chr = "S3")
# Print full-modules
print_modules(modules_tb, what_1L_chr = "S4")
```

---

print_packages	<i>Print a table of ready4 libraries</i>
----------------	--

---

## Description

print\_packages() formats the output of get\_libraries\_tb() as HTML.

## Usage

```
print_packages(
  pkg_extensions_tb = NULL,
  gh_repo_1L_chr = "ready4-dev/ready4",
  gh_tag_1L_chr = "Documentation_0.0",
  include_1L_chr = "modules",
  module_pkgs_chr = character(0),
  ns_var_nm_1L_chr = "pt_ns_chr",
  project_badges_url_1L_chr = "https://img.shields.io/badge/ready4",
  reference_var_nm_1L_chr = "Reference",
  scroll_height_1L_chr = character(0),
  scroll_width_1L_chr = character(0),
  sections_chr = character(0),
  url_stub_1L_chr = "https://ready4-dev.github.io/",
  vignette_var_nm_1L_chr = "Vignettes",
  vignette_url_var_nm_1L_chr = "Vignettes_URLs",
  what_chr = "all",
  ...
)
```

## Arguments

pkg_extensions_tb	Package extensions (a tibble), Default: NULL
gh_repo_1L_chr	Github repository (a character vector of length one), Default: 'ready4-dev/ready4'
gh_tag_1L_chr	Github tag (a character vector of length one), Default: 'Documentation_0.0'
include_1L_chr	Include (a character vector of length one), Default: 'modules'
module_pkgs_chr	Module packages (a character vector), Default: character(0)
ns_var_nm_1L_chr	Namespace variable name (a character vector of length one), Default: 'pt_ns_chr'
project_badges_url_1L_chr	Project badges url (a character vector of length one), Default: 'https://img.shields.io/badge/ready4'
reference_var_nm_1L_chr	Reference variable name (a character vector of length one), Default: 'Reference'
scroll_height_1L_chr	Scroll height (a character vector of length one), Default: character(0)

```

scroll_width_1L_chr
    Scroll width (a character vector of length one), Default: character(0)
sections_chr      Sections (a character vector), Default: character(0)
url_stub_1L_chr   Url stub (a character vector of length one), Default: 'https://ready4-dev.github.io/'
vignette_var_nm_1L_chr
    Vignette variable name (a character vector of length one), Default: 'Vignettes'
vignette_url_var_nm_1L_chr
    Vignette url variable name (a character vector of length one), Default: 'Vignettes_URLs'
what_chr          What (a character vector), Default: 'all'
...              Additional arguments

```

**Value**

Package extensions (a kable)

**Examples**

```

# Method 1
libraries_tb <- get_libraries_tb(gh_repo_1L_chr = "ready4-dev/ready4")
## Print framework libraries
update_libraries_tb(libraries_tb,
                    url_stub_1L_chr = "https://ready4-dev.github.io/",
                    include_1L_chr = "framework") %>%
  print_packages()
## Print module libraries
update_libraries_tb(libraries_tb,
                    url_stub_1L_chr = "https://ready4-dev.github.io/",
                    include_1L_chr = "modules") %>%
  print_packages()
# Method 2
## Print framework libraries
print_packages(gh_repo_1L_chr = "ready4-dev/ready4",
               include_1L_chr = "framework")
## Print module libraries
print_packages(gh_repo_1L_chr = "ready4-dev/ready4",
               include_1L_chr = "modules")

```

---

```
procure
```

---

*Procure data from a model module*

---

**Description**

`procure()` is a "getter" method that retrieves data contained within a model module or sub-module.

**Usage**

```
procure(x, ...)
```

**Arguments**

x                    A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)

...                  Additional arguments

**Value**

An object of the same class as that supplied to the method or of one of the same classes that constitute the input object's slots or elements.

---

procureSlot	<i>Procure (get) data from a slot</i>
-------------	---------------------------------------

---

**Description**

procureSlot() is a "getter" method that, depending on input arguments, retrieves either data contained in a specified model module slot (the default behaviour) or the value returned by applying the procure method to the specified slot.

procureSlot method applied to Ready4Module

**Usage**

```
procureSlot(x, slot_nm_1L_chr, ...)
```

```
## S4 method for signature 'Ready4Module'
```

```
procureSlot(x, slot_nm_1L_chr, use_procure_mthd_1L_lgl = FALSE, ...)
```

**Arguments**

x                    An object of class Ready4Module

slot\_nm\_1L\_chr    Slot name (a length one character vector)

...                  Additional arguments

use\_procure\_mthd\_1L\_lgl  
                    Use procure method (a length one logical vector)

**Value**

A model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method or an instance of a class contained in that Ready4Module's slots.

A ready4 model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method or an instance of a class contained in that Ready4Module's slots.

**Examples**

```
X <- Ready4Module()
procureSlot(X, "dissemination_1L_chr")
```

---

prognosticate	<i>Prognosticate (make predictions) by solving a forward problem</i>
---------------	--

---

**Description**

prognosticate() is a method that applies an algorithm to data contained in a model module to solve a forward problem (i.e., use simulation and statistical methods to make predictions).

**Usage**

```
prognosticate(x, ...)
```

**Arguments**

x	A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)
...	Additional arguments

**Value**

A model module (an instance of a class that inherits from Ready4Module).

---

prognosticateSlot	<i>Apply the prognosticate method to a model module slot</i>
-------------------	--

---

**Description**

prognosticateSlot() is a convenience method that applies the prognosticate method to a specified slot of a model module.

prognosticateSlot method applied to Ready4Module

**Usage**

```
prognosticateSlot(x, slot_nm_1L_chr, ...)
```

```
## S4 method for signature 'Ready4Module'
prognosticateSlot(x, slot_nm_1L_chr, ...)
```

**Arguments**

x                    An object of class Ready4Module  
slot\_nm\_1L\_chr    Slot name (a length one character vector)  
...                    Additional arguments

**Value**

A model module (an instance of a class that inherits from Ready4Module).

A ready4 model module (an instance of a class that inherits from Ready4Module).

---

ratify	<i>Ratify that input or output data meet validity criteria</i>
--------	--

---

**Description**

ratify() is a method that validates that a model module or submodule conforms to specified internal consistency criteria, potentially updating the invalid values in the model module so that these criteria are met.

**Usage**

```
ratify(x, ...)
```

**Arguments**

x                    A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)  
...                    Additional arguments

**Value**

A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance) of the same class as that supplied to the method.

---

ratifySlot	<i>Apply the ratify method to a model module slot</i>
------------	---

---

**Description**

ratifySlot() is a convenience method that applies the ratify method to a specified slot of a model module.

ratifySlot method applied to Ready4Module

**Usage**

```
ratifySlot(x, slot_nm_1L_chr, ...)
```

```
## S4 method for signature 'Ready4Module'
ratifySlot(x, slot_nm_1L_chr, ...)
```

**Arguments**

x                    An object of class Ready4Module  
slot\_nm\_1L\_chr    Slot name (a length one character vector)  
...                    Additional arguments

**Value**

A model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method.

A ready4 model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method.

---

Ready4Module-class	<i>Ready4Module</i>
--------------------	---------------------

---

**Description**

A module of the ready4 representational system.

**Slots**

dissemination\_1L\_chr    Dissemination (a character vector of length one)

---

Ready4Private-class    *Ready4Private*

---

### Description

A module of the ready4 representational system that contains data not intended for public dissemination.

### Slots

dissemination\_1L\_chr Dissemination (a character vector of length one)

---

Ready4Project-class    *Ready4Project*

---

### Description

A module of the ready4 framework that contains details of a modelling project.

### Slots

badges\_url\_1L\_chr Badges URL (a character vector of length one)  
 dv\_nm\_1L\_chr Dataverse name (a character vector of length one)  
 dissemination\_1L\_chr Dissemination (a character vector of length one)  
 dv\_root\_1L\_chr Dataverse root (a character vector of length one)  
 dv\_server\_1L\_chr Dataverse server (a character vector of length one)  
 dv\_toy\_data\_1L\_chr Dataverse toy dataset name (a character vector of length one)  
 dvs\_tb Dataverses (a tibble)  
 extensions\_tb Extensions (a tibble)  
 filter\_cdns\_ls Filter conditions (a list)  
 gh\_org\_1L\_chr Github organisation (a character vector of length one)  
 gh\_repo\_1L\_chr Github repo (a character vector of length one)  
 gh\_repos\_brochure\_chr Github brochure websites (a character vector)  
 gh\_repos\_exclude\_chr Github repositories to exclude from GitHub organisation (a character vector)  
 gh\_repos\_framework\_chr Github repositories from GitHub organisation that contain framework libraries (a character vector)  
 gh\_repos\_model\_chr Github repositories from GitHub organisation that contain model libraries (a character vector)  
 gh\_repos\_programs\_chr Github repositories from GitHub organisation that contain programs (a character vector)

gh\_repos\_subroutines\_chr Github repositories from GitHub organisation that contain subroutines (a character vector)  
 gh\_tag\_1L\_chr Github release tag (a character vector of length one)  
 gh\_url\_stub\_1L\_chr Github URL stub (a character vector of length one)  
 libraries\_chr Library names (a character vector)  
 libraries\_tb Library dataset (a tibble)  
 methods\_tb Methods dataset (a tibble)  
 modules\_tb Modules dataset (a tibble)  
 sections\_chr Model section names (a character vector)  
 url\_for\_prj\_1L\_chr URL for project (a character vector of length one)  
 zenodo\_1L\_chr Zenodo repository (a character vector of length one)  
 dissemination\_1L\_chr Dissemination policy (a character vector of length one)

---

Ready4Public-class	<i>Ready4Public</i>
--------------------	---------------------

---

### Description

A virtual class denoting a module of the ready4 representational system that is suitable for public dissemination in its current form.

### Slots

dissemination\_1L\_chr Dissemination (a character vector of length one)

---

reckon	<i>Reckon (calculate) a value</i>
--------	-----------------------------------

---

### Description

reckon() is a method that performs a calculation using data contained in a model module (or submodule).

### Usage

```
reckon(x, ...)
```

### Arguments

x	A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)
...	Additional arguments

### Value

A numeric class.

---

reckonSlot	<i>Apply the reckon method to a model module slot</i>
------------	---

---

### Description

reckonSlot() is a convenience method that applies the reckon method to a specified slot of a model module.

reckonSlot method applied to Ready4Module

### Usage

```
reckonSlot(x, slot_nm_1L_chr, ...)
```

```
## S4 method for signature 'Ready4Module'
reckonSlot(x, slot_nm_1L_chr, ...)
```

### Arguments

x	An object of class Ready4Module
slot_nm_1L_chr	Slot name (a length one character vector)
...	Additional arguments

### Value

A numeric class.

A numeric class.

---

renew	<i>Renew (update) values</i>
-------	------------------------------

---

### Description

renew() is a "setter" method that updates values of selected data contained in a model module or sub-module.

### Usage

```
renew(x, ...)
```

### Arguments

x	A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)
...	Additional arguments

**Value**

A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance) of the same class as that supplied to the method.

---

renewSlot	<i>Renew (set) the values of data in a module slot</i>
-----------	--

---

**Description**

renewSlot() is a "setter" method that renews (sets) the value of a specified model module slot with either the value returned by applying the renew method to that slot (the default behaviour) or a supplied new value.

renewSlot method applied to Ready4Module

**Usage**

```
renewSlot(x, slot_nm_1L_chr, new_val_xx = "use_renew_mthd", ...)
```

```
## S4 method for signature 'Ready4Module'
renewSlot(x, slot_nm_1L_chr, new_val_xx = "use_renew_mthd", ...)
```

**Arguments**

x	An object of class Ready4Module
slot_nm_1L_chr	Slot name (a length one character vector)
new_val_xx	New value (slot dependent object type), Default 'use_renew_mthd'
...	Additional arguments

**Value**

A model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method.

A ready4 model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method.

**Examples**

```
X <- Ready4Module()
X <- renewSlot(X, "dissemination_1L_chr", new_val_xx = "Some new text.")
```

---

share	<i>Share data via an online repository</i>
-------	--

---

**Description**

share() is a method that uploads data contained in a model module to an online repository. If requested, the method will also publish the updated repository.

**Usage**

```
share(x, ...)
```

**Arguments**

x	A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance)
...	Additional arguments

**Value**

A model module (an instance of a class that inherits from Ready4Module) or submodule (any S3 class instance) of the same class as that supplied to the method or no return value (when called for side-effects only).

---

shareSlot	<i>Apply the share method to a model module slot</i>
-----------	--

---

**Description**

shareSlot() is a convenience method that applies the share method to a specified slot of a model module.

shareSlot method applied to Ready4Module

**Usage**

```
shareSlot(x, slot_nm_1L_chr, ...)
```

```
## S4 method for signature 'Ready4Module'
shareSlot(x, slot_nm_1L_chr, ...)
```

**Arguments**

x	An object of class Ready4Module
slot_nm_1L_chr	Slot name (a length one character vector)
...	Additional arguments

**Value**

Either a model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method or no value (when called purely for side effects).

Either a ready4 model module (an instance of a class that inherits from Ready4Module) of the same class as that supplied to the method or no value (when called purely for side effects).

---

write_to_copy_rmds	<i>Write a local copy of RMD or Rmarkdown files</i>
--------------------	---

---

**Description**

write\_to\_copy\_rmds() is used to copy template RMD or Rmarkdown files to specified sub-directories of a model documentation website. These template copies can then be manually edited before being rendered with write\_to\_render\_post().

**Usage**

```
write_to_copy_rmds(
  dir_path_1L_chr,
  fl_nm_1L_chr,
  consent_1L_chr = "",
  rmds_dir_1L_chr = "R/RMD Templates",
  consent_indcs_int = 1L,
  options_chr = c("Y", "N"),
  return_1L_lgl = FALSE
)
```

**Arguments**

dir_path_1L_chr	Directory path (a character vector of length one)
fl_nm_1L_chr	File name (a character vector of length one)
consent_1L_chr	Consent (a character vector of length one), Default: ""
rmds_dir_1L_chr	R Markdowns directory (a character vector of length one), Default: 'R/RMD Templates'
consent_indcs_int	Consent indices (an integer vector), Default: 1
options_chr	Options (a character vector), Default: c("Y", "N")
return_1L_lgl	Return (a logical vector of length one), Default: FALSE

**Value**

No return value, called for side effects.

**Examples**

```
write_to_copy_rmds(dir_path_1L_chr = tempdir(),
                  fl_nm_1L_chr = "RMDs",
                  rmds_dir_1L_chr = system.file("MD_RMDs",
                                                package = "ready4"))
```

---

write\_to\_render\_post *Write ready4 model documentation website page from an RMD or Rmarkdown file*

---

**Description**

write\_to\_render\_post() is designed for help overcome practical challenges of rendering RMD or Rmarkdown files to Markdown output in a modelling project's Hugo Docsy documentation website. You must have 'hugodown' installed for this function to work.

**Usage**

```
write_to_render_post(
  included_dirs_chr,
  path_to_main_dir_1L_chr,
  consent_1L_chr = "",
  consent_indcs_int = 1L,
  is_rmd_1L_lgl = TRUE,
  options_chr = c("Y", "N")
)
```

**Arguments**

included\_dirs\_chr  
Included directories (a character vector)

path\_to\_main\_dir\_1L\_chr  
Path to main directory (a character vector of length one)

consent\_1L\_chr  
Consent (a character vector of length one), Default: ""

consent\_indcs\_int  
Consent indices (an integer vector), Default: 1

is\_rmd\_1L\_lgl  
Is Markdown (a logical vector of length one), Default: TRUE

options\_chr  
Options (a character vector), Default: c("Y", "N")

**Value**

No return value, called for side effects.

**See Also**

[rmarkdown::render\(\)](#)

## Examples

```
# Note, In addition to rmarkdown, the non CRAN package "hugodown" is also required.
if(requireNamespace("rmarkdown", quietly = TRUE)) {
# Example 1 - RMD files
#
# Copy template RMD files
write_to_copy_rmds(dir_path_1L_chr = tempdir(),
                  fl_nm_1L_chr = "RMDs",
                  rmds_dir_1L_chr = system.file("MD_RMDs",
                                                package = "ready4"))
# Typically you would now edit these templates before proceeding.
# Render post from RMD files.
write_to_render_post("RMDs", path_to_main_dir_1L_chr = tempdir())
#
# Example 2 - Rmarkdown file
#
# Copy template Rmarkdown file
write_to_copy_rmds(dir_path_1L_chr = tempdir(),
                  fl_nm_1L_chr = "Rmarkdown",
                  rmds_dir_1L_chr = system.file("MD_Rmarkdown",
                                                package = "ready4"))
# Typically you would now edit these templates before proceeding.
# Render post from RMD files.
write_to_render_post("Rmarkdown",
                    path_to_main_dir_1L_chr = tempdir(),
                    is_rmd_1L_lgl = F)
}
```

---

write\_ws

*Write ready4 software development local directories*

---

## Description

write\_ws() creates a standardised directory structure as a local development environment for modelling projects developed with the ready4 framework.

## Usage

```
write_ws(
  path_1L_chr,
  consent_1L_chr = "",
  consent_indcs_int = 1L,
  options_chr = c("Y", "N")
)
```

**Arguments**

path\_1L\_chr      Path (a character vector of length one)  
consent\_1L\_chr   Consent (a character vector of length one), Default: ""  
consent\_indcs\_int  
                  Consent indices (an integer vector), Default: 1  
options\_chr      Options (a character vector), Default: c("Y", "N")

**Value**

No return value, called for side effects.

**Examples**

```
write_ws(tempdir())
```

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