

Package: sistec (via r-universe)

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Type Package

Title Tools to Analyze 'Sistec' Datasets

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Description The Brazilian system for diploma registration and validation on technical and superior courses are managing by 'Sistec' platform, see <<https://sistec.mec.gov.br/>>. This package provides tools for Brazilian institutions to update the student's registration and make data analysis about their situation, retention and drop out.

License GPL (>= 2)

LazyData true

URL <https://github.com/r-ifpe/sistec>

BugReports <https://github.com/r-ifpe/sistec/issues>

Depends R (>= 3.6)

Imports dplyr (>= 1.0), openxlsx, rlang, shiny, stringr, stats, tcltk, utils

RoxygenNote 7.1.1

Suggests testthat

Encoding UTF-8

Roxygen list(markdown = TRUE)

Repository <https://r-ifpe.r-universe.dev>

RemoteUrl <https://github.com/r-ifpe/sistec>

RemoteRef HEAD

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aria	<i>Aria web application</i>
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Description

This is the web application using the sistec package. It was created to ease the work using the package, but you can have the same results reading the files (`read_rfept()`), comparing the results with (`compare_sistec()`) and write the outputs (`write_output()`).

Usage

```
aria(
  max_file_size = 100,
  options_port = 8888,
  options_launch_browser = TRUE,
  version = "test",
  logs = TRUE
)

aria_server(version = "test", logs = TRUE)

aria_ui(version = "test")
```

Arguments

<code>max_file_size</code>	The maximum file size in megabytes.
<code>options_port</code>	The TCP port that the application should listen on, usually 8888.

options_launch_browser	If true, the system's default web browser will be launched automatically after the app is started.
version	Use "test" to run locally, "online" to run in the server or "desktop" to build the desktop version.
logs	Use FALSE if you don't want to retrieve the logs in your R session.

Value

A web application.

Examples

```
## Not run:
library(sistec)

# use this to run aria in your R environment
aria()

# use this if you want to run the aria in a server
ui <- aria_ui(version = "online")
server <- aria_server(version = "online")
shiny::shinyApp(ui, server)

## End(Not run)
```

aria_desktop_build *Build ARIA desktop version*

Description

Build the desktop version of ARIA automatically. You will need [innosetup](#) to build the executable. Only works in windows. See Details for more information.

Usage

```
aria_desktop_build(aria_folder = "", download_dependencies = TRUE)
```

Arguments

aria_folder The folder you want to create the executable.

download_dependencies Download all the dependencies: r-portable and packages needed to run the ARIA. Use FALSE if you already have the dependencies in the aria_folder.

Details

To create the executable correctly, follow these steps:

- Build the sistec package (in Rstudio, you use ctrl + shift + b)
- Create a folder
- Use `aria_desktop_build("your folder")`
- Install innosetup (if you don't have it installed yet)
- Double click the .iss file created in your folder and run it.

Value

Create the setup to build ARIA desktop in your specified folder.

Examples

```
## Not run:
aria_folder <- tempdir()
aria_desktop_build(aria_folder)

## End(Not run)
```

compare_sistec

Comparison between Sistec and a student registration dataset

Description

A generic function to compare and save the student situation. This function also shows inconsistencies in the datasets. You can pass the folder's file path or a data frame read by `sistec::read_*` functions. In most cases, there are no link between courses in Sistec and the academic registration. You can pass this relationship using `linked_courses` parameter or using ARIA estimation.

Usage

```
compare_sistec(sistec, rfept, linked_courses = NULL)
```

Arguments

<code>sistec</code>	The folder's path to Sistec files or the Sistec data frame read by <code>read_sistec()</code> function.
<code>rfept</code>	The folder's path to students reagristration datasets or a data frame read by <code>sistec::read_*</code> functions.
<code>linked_courses</code>	By default, the linked courses will be estimate using the data (ARIA estimation). You can specify those links loadind a .xlsx/csv file with linked courses between the rfept and sistec. The columns must be in this order: INICIO, CICLO, CURSO_SISTEC CURSO_RFEPT CAMPUS. The date in INICIO column must be in yyyy.period. Ex.: 2019.1 or 2019.2.

Value

A list of data frames.

Examples

```
# these datasets are not real. It is just for test purpose.

sistec <- read_sistec(system.file("extdata/examples/sistec",
                                package = "sistec"))

rfept <- read_rfept(system.file("extdata/examples/qacademico",
                                package = "sistec"))

compare_sistec(sistec, rfept)
```

pnp_critics	<i>Make the pnp critics from sistec files</i>
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Description

This function gives the pnp critics that can be retrieve using sistec information.

Usage

```
pnp_critics(students, ciclo)
```

Arguments

students	A sistec students data frame from read_sistec_student().
ciclo	A sistec ciclo data frame from read_ciclo().

Value

A list with the critics

read_ciclo	<i>Read ciclo files from sistec This function provides support to read ciclo files that can be extarct from sistec website.</i>
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Description

Read ciclo files from sistec

This function provides support to read ciclo files that can be extarct from sistec website.

Usage

```
read_ciclo(path = "", start = NULL)
```

Arguments

path	The folder's path to ciclo files.
start	A character with the date to start the comparison. The default is the minimum value found in the data. The date has to be in this format: "yyyy.semester". Ex.: "2019.1" or "2019.2".

read_conecta	<i>Read Conecta files</i>
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Description

This function supports two kinds of schemas: from the api and the website. See Details if you need help to download the Conecta data.

Usage

```
read_conecta(path = "", start = NULL)
```

Arguments

path	The Conecta file's path.
start	A character with the date to start the comparison. The default is the minimum value found in the data. The date has to be in this format: "yyyy.semester". Ex.: "2019.1" or "2019.2".

Value

A data frame.

read_generic_rfep	<i>Read generic rfep files</i>
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Description

If your institute is not fully integrated with the package, you can transform your academic database into a generic layout and use read_rfep() normally. See Details to understand the requisites.

Usage

```
read_generic_rfep(path = "", start = NULL)
```

Arguments

path	The rfept file's path.
start	A character with the date to start the comparison. The default is the minimum value found in the data. The date has to be in this format: "yyyy.semester". Ex.: "2019.1" or "2019.2".

Details

To transform your database in a generic rfept layout, follow these requirements:

- Rename your columns to: NO_ALUNO, NU_CPF, CO_MATRICULA, NO_STATUS_MATRICULA, NO_CURSO, DT_INICIO_CURSO, NO_CAMPUS and NO_COTA;
- All variables should be inherited to string class;
- The CPF's should be in xxx.xxx.xxx-xx format;
- The beginning date should be in yyyy.s format. Ex.: 2020.1. Use 1 for first semester and 2 for second.
- Convert the student's status to valid name in Sistec, use: ABANDONO, EM_CURSO, CONCLUÍDA, DESLIGADO, INTEGRALIZADA, REPROVADA and TRANSF_EXT;
- Save your data in a single file in csv format separated by comma and use latin1 encoding. Semicolons separators and UTF-8 encoding are also available.

Value

A data frame.

Examples

```
# this dataset is not a real one. It is just for test purpose.
rfept <- read_generic_rfepth(system.file("extdata/examples/generic_rfepth",
  package = "sistec"
))

rfept
```

read_linked_courses *Read linked courses files*

Description

This function reads a .xlsx/.csv file with the linked courses between Sistec and the academic registration. The columns must be in this order: INICIO, CICLO, CURSO_SISTEC, CURSO_RFEPT and CAMPUS. The date in INICIO column must be in yyyy.period. Ex.: 2019.1 or 2019.2. .

Usage

```
read_linked_courses(path = "", format = "xlsx", encoding = "latin1")
```

Arguments

path	The linked courses file's path.
format	You can choose between <code>xlsx</code> or <code>csv</code> .
encoding	This function uses <code>latin1</code> by default but you can use <code>UTF-8</code> if needed.

Value

A data frame.

Examples

```
linked_courses <- read_linked_courses(system.file("extdata/examples/linked_courses",
                                                package = "sistec"), "csv")

linked_courses
```

read_qacademico *Read Qacademico files*

Description

This function supports two kinds of schemas: from the api and the website. See Details if you need help to download the Qacademico data.

Usage

```
read_qacademico(path = "", start = NULL)
```

Arguments

path	The Qacademico file's path.
start	A character with the date to start the comparison. The default is the minimum value found in the data. The date has to be in this format: "yyyy.semester". Ex.: "2019.1" or "2019.2".

Details

To download the student's data, go to your proper account on Qacademico and follow:

- "Relatorio de Alunos" -> "Listagem de Alunos" (choose year and period)
- Click on "visualizar"
- Using F10 shortcut and save in `.csv` format
- Rename the including year and period (example2020_1.csv)

Be sure that your data has the variables: "Matricula", "Nome", "Situacao Matricula", "Curso", "Cpf", "Instituicao", "Per. Letivo Inicial" and "Cota".

Value

A data frame.

Examples

```
# this dataset is not a real one. It is just for test purpose.
qacademico <- read_qacademico(system.file("extdata/examples/qacademico",
  package = "sistec"
))

qacademico
```

read_rfept	<i>Identify and read academic registration</i>
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Description

The read_rfept() is a wrapper around read_qacademico() and read_sigaa(). Now you just need to specify the folder path and read_rfept() identifies if it is a qacademico or sigaa file and then read it.

Usage

```
read_rfept(path = "", start = NULL)
```

Arguments

path	The folder's path to Qacademico, Sigaa, Conecta or Suap files.
start	A character with the date to start the comparison. The default is the minimum value found in the data. The date has to be in this format: "yyyy.semester". Ex.: "2019.1" or "2019.2".

Details

By now, this function only supports qacademico and sigaa-sc.

Value

A data frame.

Examples

```
# these datasets are not a real ones. It is just for test purpose.

qacademico <- read_rfept(system.file("extdata/examples/qacademico", package = "sistec"))

sigaa <- read_rfept(system.file("extdata/examples/sigaa", package = "sistec"))
```

```

class(qacademico)
class(sigaa)

# example selecting the period
qacademico_2019_2 <- read_rfept(system.file("extdata/examples/qacademico", package = "sistec"),
                              start = "2019.2")

class(qacademico_2019_2)

```

read_sigaa

Read Sigaa files

Description

This function reads partial and complete Sigaa datasets. These two formats can perform the comparison, but the partial doesn't have information about "Campus" and "Cota". See Details if you need help where to download the Sigaa data.

Usage

```
read_sigaa(path = "", start = NULL)
```

Arguments

path	The Sigaa file's path.
start	A character with the date to start the comparison. The default is the minimum value found in the data. The date has to be in this format: "yyyy.semester". Ex.: "2019.1" or "2019.2".

Details

To download the partial Sigaa's data, go to your proper account on Sigaa and follow:

- Access the panel "Consultas" inside Sigaa module.
- Generate the report "Consulta geral discentes".
- Select the check box "Trazer informações em forma de relatório" e "Gerar csv".
- Select the filter "Campus" and other filters you desire.
- Click on "Buscar" and download the file.

Be sure that your data has the variables: "Matricula", "Nome", "Status", "Curso" and "CPF".

For the complete dataset, you have to download directly from the Sigaa database. Be sure that your data has the variables: "Matricula", "Nome", "Situacao Matricula", "Curso", "Cpf", "Instituicao", "ano_ingresso", "semestre_ingresso" and "Cota".

Value

A data frame.

Examples

```
# this dataset is not a real one. It is just for test purpose.
sigaa <- read_sigaa(system.file("extdata/examples/sigaa",
                               package = "sistec"))

sigaa
```

read_sistec	<i>Read sistec files</i>
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Description

The package provides support if your data comes from [setec](#) or [web](#). You just need to pass the folder's path where are your files. See Details if you need help to download the data from Sistec.

Usage

```
read_sistec(path = "", start = NULL)
```

Arguments

path	The sistec folder's path.
start	A character with the date to start the comparison. The default is the minimum value found in the data. The date has to be in this format: "yyyy.semester". Ex.: "2019.1" or "2019.2".

Details

You can download the Sistec's student registration using your proper account on Sistec. Be sure that your data has these variables:

- On setec: "Nome Aluno", "Numero Cpf", "Co Ciclo Matricula", "Situacao Matricula", "No Curso", "Dt Data Inicio" and "Unidade Ensino".
- On web: "NO_ALUNO", "NU_CPF", "CO_CICLO_MATRICULA", "NO_STATUS_MATRICULA", "NO_CICLO_MATRICULA", "DT_DATA_INICIO" and "CO_UNIDADE_ENSINO".

Tip: To take every student for your institution/campus using web, search by student name and use " ".

Value

A data frame.

Examples

```
# this dataset is not a real one. It is just for test purpose.
sistec <- read_sistec(system.file("extdata/examples/sistec",
  package = "sistec"
))

sistec

# example selecting the period
sistec_2019_2 <- read_sistec(
  system.file("extdata/examples/sistec", package = "sistec"),
  start = "2019.2"
)

sistec_2019_2
```

read_sistec_students *Read students This function provides support to read sistec students files that can be extarct from sistec website.*

Description

Read students

This function provides support to read sistec students files that can be extarct from sistec website.

Usage

```
read_sistec_students(path = "", start = NULL)
```

Arguments

path	The folder's path to students files.
start	A character with the date to start the comparison. The default is the minimum value found in the data. The date has to be in this format: "yyyy.semester". Ex.: "2019.1" or "2019.2".

read_suap *Read Suap files*

Description

This function supports two kinds of schemas: from the api and the website. See Details if you need help to download the Suap data.

Usage

```
read_suap(path = "", start = NULL)
```

Arguments

path The Suap file's path.

start A character with the date to start the comparison. The default is the minimum value found in the data. The date has to be in this format: "yyyy.semester". Ex.: "2019.1" or "2019.2".

Details

For Suap datasets follow these steps:

- "Modulo Ensino" -> "Relatorio" -> "Listagem de Alunos";
- In "Filtros de Pesquisa":
 - Select the campus;
 - In "exibicao" mark the options: Ano de Ingresso, CPF,Data de Matricula, Descricao do Curso, Forma de Ingresso and Situacao no Curso;
 - Cliqk on "pesquisar".

Save your file in CSV format.

Value

A data frame.

<code>write_output</code>	<i>Save the comparison results</i>
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Description

You can use this function to save the results separated by campus. The results will be saved in .xlsx format.

Usage

```
write_output(x, output_path = NULL, output_folder_name = "ARIA")
```

Arguments

x A list returned by `compare_sistec()`.

output_path The folder where you want to save the results.

output_folder_name The folder's name you want to save the results.

Value

None.

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