

Package ‘codestral’

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Title Chat and FIM with 'Codestral'

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Description Create an addin in 'Rstudio' to do fill-in-the-middle (FIM) and chat with latest Mis-tral AI models for coding, 'Codestral' and 'Codestral Mamba'. For more details about 'Mis-tral AI API': <<https://docs.mistral.ai/getting-started/quickstart/>> and <<https://docs.mistral.ai/api/>>. For more details about 'Code-stral' model: <<https://mistral.ai/news/codestral>>; about 'Codestral Mamba': <<https://mistral.ai/news/codestral-mamba>>.

Encoding UTF-8

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Imports dplyr, httr, jsonlite, magrittr, rstudioapi, stringr, utils

Depends R (>= 4.1)

LazyData true

Suggests knitr, rmarkdown, testthat (>= 3.0.0)

Config/testthat/edition 3

URL <https://urbs-dev.github.io/codestral/>

BugReports <https://github.com/urbs-dev/codestral/issues>

VignetteBuilder knitr

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NeedsCompilation no

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allow_detect_package *Allow codestral to detect package environment*

Description

Allow codestral to detect package environment

Usage

`allow_detect_package(x = TRUE)`

Arguments

`x` A boolean indicating that the user allows the detection of a package environment. Defaulted to TRUE.

Details

If set to TRUE, when codestral is used in a folder with a DESCRIPTION file, all R files in the current folder and its subfolders are included in the prompt.

Value

`0` invisible.

codestral

Fill in the middle with Codestral

Description

This function completes a given prompt using the Codestral API. It supports different models for fill-in-the-middle, chat with Codestral, and chat with Codestral Mamba. The function relies on environment variables for some parameters.

Usage

```
codestral(
  prompt,
  suffix = "",
  path = NULL,
  mistral_apikey = Sys.getenv(x = "R_MISTRAL_APIKEY"),
  codestral_apikey = Sys.getenv(x = "R_CODESTRAL_APIKEY"),
  fim_model = Sys.getenv(x = "R_CODESTRAL_FIM_MODEL"),
  chat_model = Sys.getenv(x = "R_CODESTRAL_CHAT_MODEL"),
  mamba_model = Sys.getenv(x = "R_MAMBA_CHAT_MODEL"),
  temperature = as.integer(Sys.getenv(x = "R_CODESTRAL_TEMPERATURE")),
  max_tokens_FIM = Sys.getenv(x = "R_CODESTRAL_MAX_TOKENS_FIM"),
  max_tokens_chat = Sys.getenv(x = "R_CODESTRAL_MAX_TOKENS_CHAT"),
  role_content = Sys.getenv(x = "R_CODESTRAL_ROLE_CONTENT")
)
```

Arguments

<code>prompt</code>	The prompt to complete.
<code>suffix</code>	The suffix to use. Defaults to an empty string.
<code>path</code>	The path to the current file. Defaults to <code>NULL</code> .
<code>mistral_apikey</code> , <code>codestral_apikey</code>	The API keys to use for accessing Codestral Mamba and Codestral. Default to the value of the <code>R_MISTRAL_APIKEY</code> , <code>R_CODESTRAL_APIKEY</code> environment variable. Note that the name of the variable <code>mistral_apikey</code> is purposely not mentioning Codestral Mamba because this key can be used for other Mistral AI models (except Codestral).
<code>fim_model</code>	The model to use for fill-in-the-middle. Defaults to the value of the <code>R_CODESTRAL_FIM_MODEL</code> environment variable.
<code>chat_model</code>	The model to use for chat with Codestral. Defaults to the value of the <code>R_CODESTRAL_CHAT_MODEL</code> environment variable.
<code>mamba_model</code>	The model to use for chat with Codestral Mamba. Defaults to the value of the <code>R_MAMBA_CHAT_MODEL</code> environment variable.
<code>temperature</code>	The temperature to use. Defaults to the value of the <code>R_CODESTRAL_TEMPERATURE</code> environment variable.

`max_tokens_FIM, max_tokens_chat`

Integers giving the maximum number of tokens to generate for FIM and chat.
Defaults to the value of the `R_CODESTRAL_MAX_TOKENS_FIM`, `R_CODESTRAL_MAX_TOKENS_CHAT` environment variables.

`role_content` The role content to use. Defaults to the value of the `R_CODESTRAL_ROLE_CONTENT` environment variable.

Value

A character string containing the completed text.

`codestral_init` *Initialize codestral*

Description

Create environment variables for operations FIM and chat.

Usage

```
codestral_init(
  mistral_apikey = Sys.getenv(x = "R_MISTRAL_APIKEY"),
  codestral_apikey = Sys.getenv(x = "R_CODESTRAL_APIKEY"),
  fim_model = "codestral-latest",
  chat_model = "codestral-latest",
  mamba_model = "open-codestral-mamba",
  temperature = 0,
  max_tokens_FIM = 100,
  max_tokens_chat = "",
  role_content = NULL
)
```

Arguments

`mistral_apikey, codestral_apikey`

The API keys to use for accessing Codestral Mamba and Codestral. Default to the value of the `R_MISTRAL_APIKEY`, `R_CODESTRAL_APIKEY` environment variable. Note that the name of the variable `mistral_apikey` is purposely not mentioning Codestral Mamba because this key can be used for other Mistral AI models (except Codestral).

`fim_model` A string giving the model to use for FIM.

`chat_model` A string giving the model to use for Codestral chat.

`mamba_model` A string giving the model to use for Codestral Mamba chat.

`temperature` An integer giving the temperature to use.

`max_tokens_FIM, max_tokens_chat`

Integers giving the maximum number of tokens to generate for each of these operations.

role_content A role to assign to the system. Default is "You write programs in R language only. You adopt a proper coding approach by strictly naming all the functions' parameters when calling any function with named parameters even when calling nested functions, by being straightforward in your answers."

Details

The most important parameters here are the ..._apikey parameters without which the Mistral AI API can not be used.

To start with, beginners may keep default values for other parameters. It seems sound to use the latest models of each type. However with time, the user may be willing to customize `temperature`, `max_tokens_FIM`, `max_tokens_chat` and `role_content` for his/her own needs.

This function creates the following environment variables using `Sys.setenv()`:

- `R_MISTRAL_APIKEY`
- `R_CODESTRAL_APIKEY`
- `R_CODESTRAL_FIM_MODEL`
- `R_CODESTRAL_CHAT_MODEL`
- `R_CODESTRAL_MAMBA_MODEL`
- `R_CODESTRAL_TEMPERATURE`
- `R_CODESTRAL_MAX_TOKENS_FIM`
- `R_CODESTRAL_MAX_TOKENS_CHAT`
- `R_CODESTRAL_DEBUG`
- `R_CODESTRAL_DETECT_PACKAGE`
- `R_CODESTRAL_ROLE_CONTENT`

Value

Invisible 0.

compile_dialog *Analyses a prompt to re-buid the dialog*

Description

Analyses a prompt to re-buid the dialog

Usage

`compile_dialog(prompt)`

Arguments

prompt The prompt to analyse. A vector of strings.

Value

A list with the chatter (Codestral or Codestral Mamba) and the dialog in a data.frame with columns role and content.

complete_current_script

Fill in the middle or complete

Description

This function splits the current script into two parts: the part before the cursor and the part after the cursor.

Usage

complete_current_script()

Value

A character vector containing the two parts of the script.

debug_mode

Set debug mode

Description

Set debug mode

Usage

debug_mode(debug = TRUE)

Arguments

debug A logical value. If TRUE, the debug mode is activated.

Details

When the debug mode is activated, the function codestral() will print the request body and the response body.

Value

Invisible 0.

detect_package	<i>Detect whether the working directory is that of a package</i>
----------------	--

Description

Detect whether the working directory is that of a package

Usage

```
detect_package()
```

Value

TRUE if the working directory is that of a package, FALSE otherwise

ENDPOINTS	<i>Endpoints for the Codestral API.</i>
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Description

Endpoints for the Codestral API.

Usage

```
ENDPOINTS
```

Format

A named list with elements chat and completion.

include_file	<i>Read and include files in a prompt</i>
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Description

Read and include files in a prompt

Usage

```
include_file(prompt, anyFile)
```

Arguments

prompt	A vector of strings.
anyFile	A boolean of the same length of prompt indicating that an instruction "ff:" has been detected in a string.

Details

If anyFile[i] is TRUE then the sequence of characters following the instruction "ff:" in prompt[i] is read until the next space or the end of the string. This extracted string is assumed to be a file name. This file is looked for in the current working directory or any of its sub-directories. Once detected, the file is read with `readLines()` and this content is inserted in prompt between prompt[i-1] and prompt[i+1]. Note that prompt[i] is therefore deleted.

The result is returned.

Value

A vector of strings containing prompt augmented by the files referred to in the original prompt.

`include_package_files` *Include package files in the prompt*

Description

This function includes R files from a package in the prompt when a package is detected. It handles the inclusion of file contents and path-specific exclusions.

Usage

```
include_package_files(prompt, path)
```

Arguments

prompt	The current prompt to which package files should be added.
path	Current file path to exclude from the included files.

Value

The modified prompt with package file contents included.

<code>insert_addin</code>	<i>Insert the model's answer</i>
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Description

This function inserts a Codestral FIM into the current script.

Usage

```
insert_addin()
```

Value

`0` (invisible).

<code>inventory_Rfiles</code>	<i>Inventory R files in the current directory</i>
-------------------------------	---

Description

This function returns a data frame with the file names and paths of all R files in the current directory.

Usage

```
inventory_Rfiles()
```

Value

A data frame with the file names and paths of all R files in the current directory.

Examples

```
inventory_Rfiles()
```

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