

# Package ‘codestral’

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**Title** Chat and FIM with 'Codestral'

**Version** 0.0.2

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

**Encoding** UTF-8

**RoxygenNote** 7.3.3

**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

**License** MIT + file LICENSE

**NeedsCompilation** no

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allow\_detect\_package *Allow codestral to detect package environment*

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### 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.
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### 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

∅ 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

prompt	The prompt to complete.
suffix	The suffix to use. Defaults to an empty string.
path	The path to the current file. Defaults to NULL.
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 <code>mistra_apikey</code> is purposely not mentioning Codestral Mamba because this key can be use for other Mistral AI models (except Codestral).
fim_model	The model to use for fill-in-the-middle. Defaults to the value of the R_CODESTRAL_FIM_MODEL environment variable.
chat_model	The model to use for chat with Codestral. Defaults to the value of the R_CODESTRAL_CHAT_MODEL environment variable.
mamba_model	The model to use for chat with Codestral Mamba. Defaults to the value of the R_MAMBA_CHAT_MODEL environment variable.
temperature	The temperature to use. Defaults to the value of the R_CODESTRAL_TEMPERATURE 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	<i>Initialize codestral</i>
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---

**Description**

Create environment variables for operating 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 mistra_apikey is purposely not mentioning Codestral Mamba because this key can be use 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  $\emptyset$ .

---

<code>compile_dialog</code>	<i>Analyses a prompt to re-build the dialog</i>
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---

### Description

Analyses a prompt to re-build 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  $\emptyset$ .

---

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

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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>
--------------	---

---

**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.

---

insert_addin	<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**

∅ (invisible).

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

**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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