

# Package ‘ssrch’

October 24, 2025

**Title** a simple search engine

**Description** Demonstrate tokenization and a search gadget for collections of CSV files.

**Version** 1.25.0

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**Suggests** knitr, testthat, rmarkdown, BiocStyle

**Depends** R (>= 3.6), methods

**Imports** shiny, DT, utils

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**License** Artistic-2.0

**LazyLoad** yes

**LazyData** yes

**biocViews** Infrastructure

**VignetteBuilder** knitr

**RoxygenNote** 6.1.1

**Encoding** UTF-8

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|           |                                                                                  |
|-----------|----------------------------------------------------------------------------------|
| ctxsearch | <i>ssrch demo with metadata documents from 68 cancer transcriptomics studies</i> |
|-----------|----------------------------------------------------------------------------------|

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Description

ssrch demo with metadata documents from 68 cancer transcriptomics studies

Usage

ctxsearch()

Value

Simply starts an app.

Note

The metadata were derived by extracting sample.attributes fields from a search with [github.com/seandavi/SRAdbV2](https://github.com/seandavi/SRAdbV2). The sample.attributes content varies between studies and sometimes between experiments within studies. The field sets were unified with the sampleAtts function of [github.com/vjcitn/HumanTranscriptomeCompendium](https://github.com/vjcitn/HumanTranscriptomeCompendium). After unification records were stacked and CSVs were written.

Examples

```
if (interactive()) {
  oask = options()$example.ask
  options(example.ask=FALSE)
  try(ctxsearch2())
  options(example.ask=oask)
}
```

---

|        |                               |
|--------|-------------------------------|
| DocSet | <i>constructor for DocSet</i> |
|--------|-------------------------------|

---

## Description

constructor for DocSet

## Usage

```
DocSet(kw2docs = new.env(hash = TRUE), docs2recs = new.env(hash =  
  TRUE), docs2kw = new.env(hash = TRUE), titles = character(),  
  urls = character(), doc_retriever = function(...) NULL)
```

## Arguments

|               |                                                                                        |
|---------------|----------------------------------------------------------------------------------------|
| kw2docs       | an environment mapping keywords to documents                                           |
| docs2recs     | an environment mapping document identifiers to records                                 |
| docs2kw       | an environment mapping documents to keywords                                           |
| titles        | a named character vector with titles; names are document identifiers                   |
| urls          | a named character vector with document-associated URLs; names are document identifiers |
| doc_retriever | a function that, given a document identifier, will produce the document                |

## Value

instance of DocSet

## Note

Titles must be bound in post-hoc. `parseDoc` produces data including parsed titles but does not bind the title into the resulting object.

## Examples

```
getClass("DocSet")
```

---

|              |                                                                                |
|--------------|--------------------------------------------------------------------------------|
| DocSet-class | <i>Container for simple documents with arbitrary numbers/shapes of records</i> |
|--------------|--------------------------------------------------------------------------------|

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### Description

Container for simple documents with arbitrary numbers/shapes of records  
utilities for srch

### Usage

```
kw2docs(sdata)

docs2kw(sdata)

docs2recs(sdata)

searchDocs(string, obj, ...)

retrieve_doc(x, obj, ...)
```

### Arguments

|        |                                  |
|--------|----------------------------------|
| sdata  | instance of srchData class       |
| string | character(1) query string        |
| obj    | instance of DocSet class         |
| ...    | passed to base::grep             |
| x      | character(1) document identifier |

### Value

an environment  
an environment  
an environment  
a data.frame with tokens queried (hits) and associated document ids (docs)  
result of calling obj@doc\_retriever on arguments x, ...

### Examples

```
getClass("DocSet")
```

---

|                 |                                                             |
|-----------------|-------------------------------------------------------------|
| docset_cancer68 | <i>DocSet instance with metadata from 68 cancer studies</i> |
|-----------------|-------------------------------------------------------------|

---

**Description**

DocSet instance with metadata from 68 cancer studies

**Usage**

```
docset_cancer68
```

**Format**

S4 class DocSet defined in ssrch

---

|                  |                                                   |
|------------------|---------------------------------------------------|
| docset_searchapp | <i>interactive app for ssrch DocSet instances</i> |
|------------------|---------------------------------------------------|

---

**Description**

interactive app for ssrch DocSet instances

**Usage**

```
docset_searchapp(docset, se = NULL, sefilter = function(se, ...) se)
```

**Arguments**

|          |                                                                                                                             |
|----------|-----------------------------------------------------------------------------------------------------------------------------|
| docset   | an instance of DocSet                                                                                                       |
| se       | (defaults to NULL) an instance of SummarizedExperiment; samples will be filtered by selection method prescribed in sefilter |
| sefilter | a function accepting (se, ...) and returning a SummarizedExperiment                                                         |

**Value**

Returns list of data.frames of metadata on studies requested. Can provide a SummarizedExperiment download when 'se' is non-null, but this is not yet returned to the session.

**Note**

The handling of SummarizedExperiments by this app is specialized. The 'sefilter' for the cancer example would be 'function(se, y) se[,which(se\$study\_accession will be called with 'y' bound to the study accession numbers selected in the app.

**Examples**

```
if (interactive()) {  
  oask = options()$example.ask  
  options(example.ask=FALSE)  
  n1 = try(docset_searchapp(ssrch::docset_cancer68))  
  str(n1)  
  options(example.ask=oask)  
}
```

---

ds\_can1009b

*DocSet instance with metadata from 1009 cancer studies*

---

**Description**

DocSet instance with metadata from 1009 cancer studies

**Usage**

```
ds_can1009b()
```

**Format**

S4 class DocSet defined in ssrch

**Value**

DocSet instance

**Note**

This is part of a sequence of datasets assessing how far we can go with environments of keywords. Annotation for 43000 samples is indexed here.

**Examples**

```
ds_can1009b()
```

---

|          |                                                       |
|----------|-------------------------------------------------------|
| parseDoc | <i>parse a document and place content in a DocSet</i> |
|----------|-------------------------------------------------------|

---

## Description

parse a document and place content in a DocSet

## Usage

```
parseDoc(csv, DocSetInstance = new("DocSet"), doctitle = NA_character_,
  docabst = NA_character_, rec_id_field = "experiment.accession",
  exclude_fields = c("study.accession"),
  substrings_to_omit = c("http://purl.obolibrary.org/obo/"),
  patterns_to_kill = "...-..-..|.*...,...",
  token_fixups = list(c("t'", "t'"), c(":$", "")), max_tok_nchar = 25,
  min_tok_nchar = 4, cleanFields = list("..*id$", ".name$", "_name$",
  "checksum", "isolate", "filename", "^ID$", "barcode", "Sample.Name"))
```

## Arguments

|                    |                                                                                                                                                                                      |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| csv                | a character(1) CSV file path                                                                                                                                                         |
| DocSetInstance     | if missing, DocSet is initialized in this function, otherwise the instance is updated with new content                                                                               |
| doctitle           | character(1) document title                                                                                                                                                          |
| docabst            | character(1) a string: the document abstract                                                                                                                                         |
| rec_id_field       | character(1) field in CSV identifying records                                                                                                                                        |
| exclude_fields     | character vector of fields to ignore while parsing                                                                                                                                   |
| substrings_to_omit | character vector of strings to remove from candidate keywords via gsub                                                                                                               |
| patterns_to_kill   | character(1) regexp that identifies tokens to be omitted from keyword set                                                                                                            |
| token_fixups       | a list of character(2) vectors that will be                                                                                                                                          |
| max_tok_nchar      | numeric(1) defaults to 25, tokens with more characters will be truncated to this length and suffixed with ellipsis                                                                   |
| min_tok_nchar      | numeric(1) defaults to 4, tokens shorter than this are not in index used with gsub() to repair irregularities. For example 'c("t'", "t'")' will transform 'Burkitt's' to 'Burkitt's' |
| cleanFields        | list of regular expressions identifying fields to ignore                                                                                                                             |

## Value

instance of DocSet

**Note**

The expected use case has ‘DocSetInstance’ being updated in a loop. Sharing of environments across multiple DocSetInstances can occur and unexpected behaviors may ensue. Note also that many of the parameter defaults to parseDoc are for the use case of processing SRA metadata.

**Examples**

```
myob = ssrch::docset_cancer68
td = tempdir()
alld = ls(docs2kw(myob))
r1 = retrieve_doc(alld[1], myob)
expo = write.csv(r1, paste0(td, "/expo.csv"))
pd = parseDoc(paste0(td, "/expo.csv"), doctitle=ssrch::titles68[alld[1]],
  docabst="qwerty")
pd
searchDocs("quer", pd) # query will fail
searchDocs("qwer", pd) # should succeed
```

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|                  |                                                             |
|------------------|-------------------------------------------------------------|
| study_publ_dates | <i>publication dates for 6000 SRA transcriptome studies</i> |
|------------------|-------------------------------------------------------------|

---

**Description**

publication dates for 6000 SRA transcriptome studies

**Usage**

```
study_publ_dates
```

**Format**

```
data.frame
```

---

|          |                                     |
|----------|-------------------------------------|
| titles68 | <i>titles for 68 cancer studies</i> |
|----------|-------------------------------------|

---

**Description**

titles for 68 cancer studies

**Usage**

```
titles68
```

**Format**

```
character vector
```



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|        |                                                    |
|--------|----------------------------------------------------|
| urls68 | <i>pubmed URLs for subset of 68 cancer studies</i> |
|--------|----------------------------------------------------|

---

**Description**

pubmed URLs for subset of 68 cancer studies

**Usage**

urls68

**Format**

character vector

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