

# Package ‘decoder’

April 22, 2020

**Type** Package

**Title** Decode Coded Variables to Plain Text and the Other Way Around

**Version** 1.2.2

**Description** Main function `decode` is used to decode coded key values to plain text. Function `code` can be used to code plain text to code if there is a 1:1 relation between the two. The concept relies on 'keyvalue' objects used for translation. There are several 'keyvalue' objects included in the areas of geographical regional codes, administrative health care unit codes, diagnosis codes and more. It is also easy to extend the use by arbitrary code sets.

**License** GPL-2

**Depends** R (>= 2.10)

**Suggests** dplyr, DT, testthat, knitr, rmarkdown, tidyr

**VignetteBuilder** knitr

**Encoding** UTF-8

**URL** <https://www.bitbucket.com/cancercentrum/decoder>

**BugReports** <https://www.bitbucket.com/cancercentrum/decoder/issues>

**RoxygenNote** 7.1.0

**LazyData** TRUE

**Language** en-US, sv

**NeedsCompilation** no

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as.key	<i>Coerce to key or value in objects in a key-value pair</i>
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### Description

Functions to check if an object is a valid key or value in a keyvalue pair, or coerce it if possible.

### Usage

```
as.key(x)
```

```
is.key(x)
```

```
as.value(x)
```

```
is.value(x)
```

### Arguments

x                    a vector

### Value

as.value returns a value-object (currently the vector itself but with class "value"). as.key returns a key-object (building on value but with unique entries and as character).

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as.keyvalue.list	<i>Coerce a list to keyvalue object</i>
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### Description

x should be a list with properties described in section "Details".

### Usage

```
## S3 method for class 'list'  
as.keyvalue(x, ...)
```

### Arguments

x                    a list with properties described in the details section.  
...                  further arguments passed to [as.keyvalue](#).

**Details**

- All names of the list elements should be unique.
- All elements of the list should be named.
- All keys should be unique (a key should only be mapped to one value).
- All elements of the list should be atomic vectors.

**Value**

The function returns an object of class `keyvalue` (and `list`).

**See Also**

[as.keyvalue](#)

**Examples**

```
ex <- list(
  fruit = c("banana", "orange", "kiwi"),
  car    = c("SAAB", "Volvo", "taxi", "truck"),
  animal = c("elephant")
)
as.keyvalue(ex)
is.keyvalue(ex)
```

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atc

*Anatomical Therapeutic Chemical (ATC) Classification System codes*

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**Description**

Key-value codes for ATC from the Swedish Medical Products Agency (2020-04-07).

**Source**

<https://nsl.mpa.se/>

**See Also**

Other `key_value_data`: [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

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code *Decode codes to plain text (and vice versa)*

---

### Description

Translate coded values into meaningful plain text (or reversed).

### Usage

```
code(y, keyvalue, verbose = TRUE)

decode(x, ...)

## S3 method for class 'data.frame'
decode(x, ...)

## Default S3 method:
decode(x, keyvalue, extra_functions = NULL, exact = FALSE, ...)
```

### Arguments

y	value to be coded (to be matched against the value element) in a <a href="#">keyvalue</a> object.
keyvalue	either a name (as character string) of a package internal <a href="#">keyvalue</a> object, or a user defined keyvalue object (see <a href="#">as.keyvalue</a> ).
verbose	(only for code) can be set to FALSE to avoid a printed message to the console if an error occur (TRUE as default).
x	object to decode. Either a key vector to be matched against the key column in keyvalue, or a data.frame (see section <code>decode.data.frame</code> ). object.
...	ignored
extra_functions	is a list of functions (or names of functions as character vector) to be applied to the decoded data after decoding (see section "extra_functions" below).
exact	Should x have an exact match from the key? Default is FALSE. When FALSE, x might be transformed to fit the key (punctuation might be removed, upper case changed to lower case or vice versa and strings that are too long might be substringed). (code only accept exact matches.)

### Value

- For default S3 method: A vector of the same length as x but with all cells decoded (or coded) to plain text (or code) as character.
- For S3 method for class 'data.frame': Data.frame x is returned, possibly with some extra columns (names ending in '\_Beskrivning'), decoded from columns with names corresponding to attribute `standard_var_names` for keyvalue objects listed by `list_keyvalues()`.

## Vignette

See the vignette for a longer introduction to the package: `vignette("decoder")`

## decode.data.frame

If `x` is a `data.frame`, all column names of `x` are matched to attribute `standard_var_names` for all keyvalue objects in the package (see `list_keyvalues()`). If the column name is a standard name used for a coding, the corresponding keyvalue object is used to decode the column and to add an extra column to `x` with its original name with suffix `_Beskrivning`. This is done for all identified columns.

## extra\_functions

The relationship between the key and the value in a keyvalue object is either 1:1 or m:1. The mapping is straight forward for 1:1 but with m:1, different applications might require slightly different groupings of the keys. One solution is to have several versions of the `keyvalue` object. Another (which we prefer) is to use the same `keyvalue` object (if possible) but to call one or several extra function(s) to further process the result. These functions are either built in package functions that should be called by quoted names or user defined functions that can be called by either quoted or unquoted names (if available in the current environment). Note that the order of the functions could matter since they are called in turn (the output from the first function is passed as input to the second function etc).

Standard functions and how to use them:

To use with `sjukvardsomrade`:

`kungalv2Fyrbodal` The default classification used in `sjukvardsomrade` is to make Kungälv a region of its own. Use this function if Kungälv should be included in Fyrbodal. See example section below.

`kungalv2Storgoteborg` As `kungalv2Fyrbodal` but classifies Kungälv as a part of Storgoteborg.

`real_names` Give the area names with correct Swedish spelling (including spaces). This is not as default due to compatibility reasons and because names with spaces must be back-ticked when referred to.

To use with `region`

`short_region_names` Exclude the prefix 'Region' from the region names, hence 'Syd' instead of 'Region Syd' etcetera.

## Author(s)

Erik Bulow

## See Also

[keyvalue](#), [extra\\_functions](#)

## Examples

```
KON_VALUE <- sample(1:2, 20, replace = TRUE)
(kon <- decode(KON_VALUE, decoder::kon))
code(kon, decoder::kon)

# Get a sample of Snomed-codes (in the real world we obviously avoid this step) ...
snomed2 <- sample(decoder::snomed$key, 30, replace = TRUE)
# ... then decode them:
(snomed3 <- decode(snomed2, "snomed"))

# Health care regions can be defined in more than one way
# By default Kungälv define a region of its own:
set.seed(123456789)
healthcare_areas_west <- sample(unlist(decoder::sjukvardsomrade), 100, replace = TRUE)
(areas <- decode(healthcare_areas_west, "sjukvardsomrade"))
table(areas)

# But if we want Kungälv to be a part of Storgöteborg
# (which is common practice for example with lung cancer data):
(areas2 <- decode(healthcare_areas_west, "sjukvardsomrade", "kungälv2Storgöteborg"))
table(areas2)

# We can also combine several extra_functions if we for example
# also want the area names with correct Swedish spelling.
(areas3 <- decode(healthcare_areas_west, "sjukvardsomrade", c("kungälv2Storgöteborg", "real_names"))))

# The region names can be both with and without prefix:
regs <- sample(6, 10, replace = TRUE)
decode(regs, "region") # With prefix
decode(regs, "region", "short_region_names") # without prefix

# Note that only the first four digits of the LKF-code were used above?
# What if we use the full LKF-code?
lkfs <- sample(decoder::forsamling$key, 100, replace = TRUE)
decode(lkfs, "sjukvardsomrade")
# That work's just as fine when argument exact = FALSE (which it is by default).

# decode can also be used for data.frames with recognised column names
d <- data.frame(
  kon = sample(1:2, 10, replace = TRUE),
  sex = sample(1:2, 10, replace = TRUE),
  lkf = sample(decoder::hemort$key, 10, replace = TRUE)
)
decode(d)
```

**Description**

Key-value codes for the Swedish districts (introduced 2016-01-01).

**Source**

<https://www.scb.se/hitta-statistik/regional-statistik-och-kartor/regionala-indelningar/distrikt/>

**See Also**

Other key\_value\_data: [atc](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

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extra\_functions

*Extra functions to apply to decoded variables using decode*

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**Description**

See section "extra\_functions" at the [decode](#) help page!

**Usage**

kungalv2Storgoteborg(x)

kungalv2Fyrbodal(x)

real\_names(x)

short\_region\_names(x)

**Arguments**

x                    The decoded variable to be further processed. This argument should not be set by the user. It is used only internally by the function from which it is called.



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figo	<i>FIGO-stadium</i>
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**Description**

Key-value codes for FIGO-stadium (Tumorstadium enl FIGO, sep 2003). Data from Rockan (Rocen).

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

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forsamling	<i>Swedish parish codes</i>
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**Description**

Key-value codes for the Swedish parishes (forsamlingar). All six digits in the LKF code.

**Source**

<https://www.scb.se/hitta-statistik/regional-statistik-och-kartor/regionala-indelningar/lan-och-kommuner/>

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

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hemort	<i>hemort and hemort2 codes (geographical codes)</i>
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### Description

Both hemort and hemort2 combines regional codes for lan, kommun and forsamling. hemort is the official (but rather old) code used within RCC. hemort2 is an updated version combining [lan](#), [kommun](#) and [forsamling](#)

### See Also

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

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hsn	<i>HSN code (Hälso- och sjukvårdsnämnd)</i>
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### Description

Key-value codes for the HSN:s in VGR valid from 2015. Based on municipality codes ([kommun](#)). Data from 2014-12-17.

### Details

Categorization:

**Norra** Lysekil, Munkedal, Orust, Sotenäs, Strömstad, Tanum, Bengtsfors, Dals-Ed, Färgelanda, Mellerud, Åmål, Trollhättan, Uddevalla och Vänersborg

**Västra** Lilla Edet, Ale, Kungälv, Stenungsund, Tjörn, Öckerö, Härryda, Mölndal, Partille, Lerum och Alingsås

**Södra** Herrljunga, Vårgårda, Bollebygd, Borås, Mark, Svenljunga, Tranemo och Ulricehamn

**Göteborg** Göteborg

**Östra** Essunga, Falköping, Grästorps, Götene, Lidköping, Skara, Vara, Gullspång, Hjo, Karlsborg, Mariestad, Skövde, Tibro, Tidaholm och Töreboda

### See Also

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

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icd10cm	<i>ICD-10-CM code</i>
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**Description**

Key-value codes for ICD-10-CM 2020. Note that key codes are given without dots, i e C569, not C56.9.

**Source**

[ftp://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Publications/ICD10CM/2020/](ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/ICD10CM/2020/)

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

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icd10se	<i>ICD-10-SE code</i>
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**Description**

Key-value codes for ICD-10-SE 2020 (Swedish version). Note that key codes are given without dots, i e C569, not C56.9.

**Source**

<https://www.socialstyrelsen.se/utveckla-verksamhet/e-halsa/klassificering-och-koder/kodtextfiler/>

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

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icd7	<i>ICD-7</i>
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**Description**

Key-value codes for ICD-7. Data from Rockan (Rocen).

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

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icd7_grov	<i>ICD-7 Grov</i>
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**Description**

Key-value codes for just the first three digits of the ICDO-7 code. This gives broader grouping.

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

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icd9	<i>ICD-9</i>
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**Description**

Key-value codes for ICD-9. Data from Rockan (Rocen).

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

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icd9cmd	<i>ICD-9-CM diagnosis and procedure codes</i>
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**Description**

Key-value codes for ICD-9-CM diagnostics (icd9cmd) and procedure (icd9cmp) codes (version 32).

**Source**

<https://www.cms.gov/Medicare/Coding/ICD9ProviderDiagnosticCodes/codes>

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

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icdo	<i>ICD-O</i>
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**Description**

Key-value codes for ICD-O. Data from Rockan (Rocen).

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

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icdo3	<i>ICD-O3</i>
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**Description**

Key-value codes for ICD-O3. Data from Rockan (Rocen).

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

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 icdo3\_grov

*ICD-O3 Grov*


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### Description

Key-value codes for just the first two digits of the ICDO-3 code. This gives broader grouping. Based on the table of contents from: <http://www.socialstyrelsen.se/Lists/Artikelkatalog/Attachments/19446/2014-5-12.pdf>

### See Also

Other `key_value_data`: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

---

 keyvalue

*Coerce to a keyvalue object*


---

### Description

Functions to check if an object is a keyvalue object, or coerce it if possible.

### Usage

```
as.keyvalue(x, ...)
```

```
## S3 method for class 'data.frame'
```

```
as.keyvalue(x, standard_var_names = NULL, ...)
```

```
## Default S3 method:
```

```
as.keyvalue(x, y, ...)
```

```
is.keyvalue(x)
```

### Arguments

`x` object to test for, or coerce to, keyvalue (see the details).

`...` arguments passed between methods

`standard_var_names` a character vector with standard names for variables decoded with this key-values.

`y` a value vector if `x` is an unnamed vector (argument must be named `'y = .'`)

## Details

x can be of:

- a name of a package internal (or external) keyvalue object (character of length one)
- a `data.frame` with two columns "key" (with unique cells) and "value".
- a list as described in [as.keyvalue.list](#)
- a named vector with all names unique
- an unnamed vector with unique cells if supplemented by additional vector (y)

## Value

`as.keyvalue` returns a `data.frame` with additional class `keyvalue` that fulfills the requirements for a keyvalue object and with the key column as character. It also has two extra attributes `standard_var_names` as described above and `keyvalue11` which is `TRUE` for keyvalue objects with a 1:1 relation between its keys and values (otherwise `FALSE`).

## See Also

[as.keyvalue.list](#), [decode](#), [summary.keyvalue](#), [key\\_and\\_value](#)

## Examples

```
snomed2 <- as.keyvalue(snomed)
is.keyvalue(snomed2)
summary(snomed2)
```

---

klinik

*Clinic codes*

---

## Description

Key-value codes for the Swedish clinic types. Data mainly from url below (taken from the PDF). Some extra codes are added from Rockan (290, 291, 292, 446, 921 and 999 for unknown).

## See Also

Other `key_value_data`: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

---

kommun	<i>Swedish municipality codes</i>
--------	-----------------------------------

---

**Description**

Key-value codes for the Swedish municipalities. First four digits in the LKF code. Data from 2014-08-12.

**Source**

<https://www.scb.se/hitta-statistik/regional-statistik-och-kartor/regionala-indelningar/lan-och-kommuner/>

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

---

kon	<i>Gender code (kon)</i>
-----	--------------------------

---

**Description**

Key-value codes for gender (1 = man (Male) and 2 = Kvinna (female)). Be aware of the spelling ("kon")!

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)



---

kva	<i>Klassifikation av vardatgarder (KVA)</i>
-----	---

---

**Description**

Key-value codes for KVA (for surgery and medicine).

**Source**

<https://www.socialstyrelsen.se/utveckla-verksamhet/e-halsa/klassificering-och-koder/kva/>

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

---

lan	<i>Swedish county codes</i>
-----	-----------------------------

---

**Description**

Key-value codes for the Swedish counties (lan). Two first digits of the LKF code. Be aware of the spelling ("lan")!

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

---

m_rtr	<i>M-stadium</i>
-------	------------------

---

**Description**

Key-value codes for M-stadium (sep-03). Data from Rockan (Rocen).

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

---

n_rtr	<i>N-stadium</i>
-------	------------------

---

**Description**

Key-value codes for N-stadium (sep-03). Data from Rockan (Rocen).

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

---

pad	<i>PAD (C24) code</i>
-----	-----------------------

---

**Description**

Key-value codes for PAD (C24) Data from Rockan 2012-09-18.

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

---

pad0	<i>Pad leading zeros to character</i>
------	---------------------------------------

---

**Description**

Pad leading zeros to character

**Usage**

```
pad0(x, n)
```

**Arguments**

x	character or object that can be coerced to such
n	desired length of outcome vector

**Value**

Character vector of length n

---

patologiavdelning      *Pathology department codes*

---

### Description

Key-value codes for the Swedish "laboratories". Data is combined from two sources.

1. The official list from SOFS 2006:15 (see url below). This is the primary source for codes appearing in both sources.
2. Extra codes are also added from the old Rockan registry for historical reasons.

### See Also

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

---

region      *Swedish health care regional codes*

---

### Description

Key-value codes for the Swedish health care regions (1-6).

### See Also

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

---

rockan      *Help tables from Rockan*

---

### Description

Key-value codes from old help tables used with Rockan (by Swedish regional cancer centers)

### See Also

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

---

sida

*Sida*


---

### Description

Key-value codes for sida (Sida, 1 = Hoger, 2 = Vanster, 9 = Okant). Data from Rockan (Rocen).

### See Also

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

---

sjukhus

*Hospital codes*


---

### Description

Key-value codes for Swedish hospitals and some primary health care units.

### Details

Data from 'Rockan'. Note that this is an old version of the classification! See the reference link below for the new version. The old version should be used of historical reasons. One difference is for example that the Sahlgrenska university hospital is one hospital in the new version of the classification but the Swedish regional cancer centers still classify it as three different hospitals. Note also that primary health care units did receive their own codes until 1992 (?) but not later!

### See Also

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

---

sjukhus_inca	<i>Hospital codes used by INCA</i>
--------------	------------------------------------

---

**Description**

Codes taken from INCA's organizational register 2017-02-03.

**See Also**

Other key\_value\_data: atc, distrikt, figo, forsamling, hemort, hsn, icd10cm, icd10se, icd7\_grov, icd7, icd9cmd, icd9, icdo3\_grov, icdo3, icdo, klinik, kommun, kon, kva, lan, m\_rtr, n\_rtr, pad, patologiavdelning, region, rockan, sida, sjukhus\_par, sjukhus, sjukvardsomrade, snomed3, snomed, t\_rtr, tnmgrund

---

sjukhus_par	<i>Hospital codes used by Socialstyrelsen and the National Patient Register</i>
-------------	---

---

**Description**

Codes taken from Excel sheets 2014 from link below.

**See Also**

Other key\_value\_data: atc, distrikt, figo, forsamling, hemort, hsn, icd10cm, icd10se, icd7\_grov, icd7, icd9cmd, icd9, icdo3\_grov, icdo3, icdo, klinik, kommun, kon, kva, lan, m\_rtr, n\_rtr, pad, patologiavdelning, region, rockan, sida, sjukhus\_inca, sjukhus, sjukvardsomrade, snomed3, snomed, t\_rtr, tnmgrund

---

sjukvardsomrade	<i>Geographical health care areas</i>
-----------------	---------------------------------------

---

**Description**

Key-value codes for health care areas.

**Details**

- Key: the first four digits from the LKF-code
- Value: A geographical area (sub area of county/lan) with special interest

The object currently only applies to the Western health care region

- Storgoteborg
- Fyrbodal
- Sodra\_Alvsborg
- Skaraborg
- Norra\_Halland

Updates for other regions needs to be requested (please do!).

**Kungälv**

Kungälv is an independent area by default. There are situations when Kungälv should be dealt with as an independent health care region or as a part of greater Gothenburg. See section "extra\_functions" in [decode](#) to handle this.

**See Also**

[extra\\_functions](#)

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [snomed3](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

---

snomed

*Snomed code*

---

**Description**

Key-value codes for Snomed. Data from Rockan 2012-10-05. Note tht this variable is the same as snomed from Rockan. It should not be confused with the later version snomed3!

**See Also**

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [t\\_rtr](#), [tnmgrund](#)

---

 snomed3

*Snomed 3*


---

**Description**

Key-value codes for Snomed3 (fr 2005). Data from Rockan (Rocen).

**See Also**

Other `key_value_data`: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed](#), [t\\_rtr](#), [tnmgrund](#)

---

 summary.keyvalue

*Object summary for keyvalue objects*


---

**Description**

Objects of type `keyvalue11` are summarized as `data.frames` with an additional display of possible `standard_var_names`. Objects of type `keyvalue` also gives a list of non 1:1 key-value pairs.

**Usage**

```
## S3 method for class 'keyvalue'
summary(object, ...)
```

**Arguments**

<code>object</code>	a <code>keyvalue</code> object
<code>...</code>	ignored

**Value**

A list with three elements: a summary of the underlying `data.frame`, the `standard_var_names` and possibly a `data.frame` with all non 1:1 relations.

**See Also**

[keyvalue](#)

---

tnmgrund

*Grund till TNM (patologisk/klinisk)*

---

### Description

Key-value codes for TNM-grund (Grund till TNM, 1=patologisk, 2=klinisk). Data from Rockan (Rocen).

### See Also

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [t\\_rtr](#)

---

t\_rtr

*T-stadium*

---

### Description

Key-value codes for T-stadium (sep 2003). Data from Rockan (Rocen).

### See Also

Other key\_value\_data: [atc](#), [distrikt](#), [figo](#), [forsamling](#), [hemort](#), [hsn](#), [icd10cm](#), [icd10se](#), [icd7\\_grov](#), [icd7](#), [icd9cmd](#), [icd9](#), [icdo3\\_grov](#), [icdo3](#), [icdo](#), [klinik](#), [kommun](#), [kon](#), [kva](#), [lan](#), [m\\_rtr](#), [n\\_rtr](#), [pad](#), [patologiavdelning](#), [region](#), [rockan](#), [sida](#), [sjukhus\\_inca](#), [sjukhus\\_par](#), [sjukhus](#), [sjukvardsomrade](#), [snomed3](#), [snomed](#), [tnmgrund](#)



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