

# Usage of cube DEMO

*mja@statgroup.dk*

*2016-04-29*

## Contents

<b>Introduction</b>	<b>1</b>
<b>Create DEMO sample table from CSV file</b>	<b>1</b>
Execute the DEMO* SPARQL queries . . . . .	2
This works do not change . . . . .	11
Getting triples with information of object if literal . . . . .	13

## Introduction

This is not a good example yet - there is not real message nor flow in the document. TODO(mja): fix it.

## Create DEMO sample table from CSV file

This script creates the result and codelist for a simple DEMO table.

```
library(rrdfancillary)
devtools::load_all(pkg="../..")
```

```
## Loading rrdfqbcrndex
```

```
library(rrdfqbcrnd0)
library(rrdfqb)

cubeVocabularyFn<- system.file("extdata/cube-vocabulary-rdf","cube.ttl", package="rrdfqb")

dataCubeFile<- system.file("extdata/sample-rdf", "DC-DEMO-sample.ttl", package="rrdfqbcrndex")

store <- new.rdf() # Initialize

cat("Loading cube specfication from ", cubeVocabularyFn, "\n")
```

```
## Loading cube specfication from /home/ma/R/x86_64-redhat-linux-gnu-library/3.2/rrdfqb/extdata/cube-v
```

```
tmp<- load.rdf(cubeVocabularyFn, format="TURTLE", appendTo= store)

cat("Loading cube from ", dataCubeFile, "\n")
```

```
## Loading cube from /home/ma/projects/rrdfqbcrnd0/rrdfqbcrndex/inst/extdata/sample-rdf/DC-DEMO-sample
```

```
tmp<- load.rdf(dataCubeFile, format="TURTLE", appendTo= store)

summarize.rdf(store)
```

```
## [1] "Number of triples: 3379"
```

## Execute the DEMO\* SPARQL queries

```
rqFiles<- system.file("extdata/sample-rdf", list.files(system.file("extdata/sample-rdf", package="rrdf

for (rqFile in rqFiles) {
  cat("File ", rqFile, "\n")
  rq<- paste0(readLines(rqFile),collapse="\n")
  res<- data.frame(sparql.rdf(store, rq),stringsAsFactors=FALSE)
  print(nrow(res))
  if (nrow(res)>0) {
    print(knitr::kable(res))
  }
}
```

```
## File /home/ma/projects/rrdfqbcrnd0/rrdfqbcrndex/inst/extdata/sample-rdf/DEMOattributes.rq
```

```
## [1] 6
```

```
##
```

```
##
```

```
## p
```

```
## -----
```

```
## crnd-attribute:cellpartno
```

```
## crnd-attribute:measurefmt
```

```
## crnd-attribute:colno
```

```
## crnd-attribute:denominator
```

```
## crnd-attribute:unit
```

```
## crnd-attribute:rowno
```

```
## File /home/ma/projects/rrdfqbcrnd0/rrdfqbcrndex/inst/extdata/sample-rdf/DEMOcodelist.rq
```

```
## [1] 43
```

```
##
```

```
##
```

## DataStructureDefinition	dimension	cprefLabel	cl
## -----	-----	-----	-----
## ds:dsd-DEMO	crnd-dimension:agegr1	Codelist scheme: agegr1	code:agegr1-65-80
## ds:dsd-DEMO	crnd-dimension:agegr1	Codelist scheme: agegr1	code:agegr1-_65
## ds:dsd-DEMO	crnd-dimension:agegr1	Codelist scheme: agegr1	code:agegr1-_80
## ds:dsd-DEMO	crnd-dimension:agegr1	Codelist scheme: agegr1	code:agegr1-_ALL_
## ds:dsd-DEMO	crnd-dimension:agegr1	Codelist scheme: agegr1	code:agegr1-_NONMI
## ds:dsd-DEMO	crnd-dimension:ethnic	Codelist scheme: ethnic	code:ethnic-HISPAN
## ds:dsd-DEMO	crnd-dimension:ethnic	Codelist scheme: ethnic	code:ethnic-NOT_HI
## ds:dsd-DEMO	crnd-dimension:ethnic	Codelist scheme: ethnic	code:ethnic-_ALL_
## ds:dsd-DEMO	crnd-dimension:ethnic	Codelist scheme: ethnic	code:ethnic-_NONMI
## ds:dsd-DEMO	crnd-dimension:factor	Codelist scheme: factor	code:factor-_ALL_
## ds:dsd-DEMO	crnd-dimension:factor	Codelist scheme: factor	code:factor-_NONMI

```

## ds:dsd-DEMO          crnd-dimension:factor      Codelist scheme: factor      code:factor-age
## ds:dsd-DEMO          crnd-dimension:factor      Codelist scheme: factor      code:factor-propor
## ds:dsd-DEMO          crnd-dimension:factor      Codelist scheme: factor      code:factor-quantit
## ds:dsd-DEMO          crnd-dimension:factor      Codelist scheme: factor      code:factor-weight
## ds:dsd-DEMO          crnd-dimension:procedure    Codelist scheme: procedure    code:procedure-cou
## ds:dsd-DEMO          crnd-dimension:procedure    Codelist scheme: procedure    code:procedure-max
## ds:dsd-DEMO          crnd-dimension:procedure    Codelist scheme: procedure    code:procedure-mean
## ds:dsd-DEMO          crnd-dimension:procedure    Codelist scheme: procedure    code:procedure-med
## ds:dsd-DEMO          crnd-dimension:procedure    Codelist scheme: procedure    code:procedure-min
## ds:dsd-DEMO          crnd-dimension:procedure    Codelist scheme: procedure    code:procedure-n
## ds:dsd-DEMO          crnd-dimension:procedure    Codelist scheme: procedure    code:procedure-per
## ds:dsd-DEMO          crnd-dimension:procedure    Codelist scheme: procedure    code:procedure-q1
## ds:dsd-DEMO          crnd-dimension:procedure    Codelist scheme: procedure    code:procedure-q3
## ds:dsd-DEMO          crnd-dimension:procedure    Codelist scheme: procedure    code:procedure-std
## ds:dsd-DEMO          crnd-dimension:race         Codelist scheme: race         code:race-AMERICAN
## ds:dsd-DEMO          crnd-dimension:race         Codelist scheme: race         code:race-ASIAN
## ds:dsd-DEMO          crnd-dimension:race         Codelist scheme: race         code:race-BLACK_OR
## ds:dsd-DEMO          crnd-dimension:race         Codelist scheme: race         code:race-NATIVE_H
## ds:dsd-DEMO          crnd-dimension:race         Codelist scheme: race         code:race-WHITE
## ds:dsd-DEMO          crnd-dimension:race         Codelist scheme: race         code:race-_ALL_
## ds:dsd-DEMO          crnd-dimension:race         Codelist scheme: race         code:race-_NONMISS
## ds:dsd-DEMO          crnd-dimension:sex          Codelist scheme: sex          code:sex-F
## ds:dsd-DEMO          crnd-dimension:sex          Codelist scheme: sex          code:sex-M
## ds:dsd-DEMO          crnd-dimension:sex          Codelist scheme: sex          code:sex-U
## ds:dsd-DEMO          crnd-dimension:sex          Codelist scheme: sex          code:sex-UN
## ds:dsd-DEMO          crnd-dimension:sex          Codelist scheme: sex          code:sex-_ALL_
## ds:dsd-DEMO          crnd-dimension:sex          Codelist scheme: sex          code:sex-_NONMISS_
## ds:dsd-DEMO          crnd-dimension:trt01a        Codelist scheme: trt01a        code:trt01a-Placeb
## ds:dsd-DEMO          crnd-dimension:trt01a        Codelist scheme: trt01a        code:trt01a-Xanome
## ds:dsd-DEMO          crnd-dimension:trt01a        Codelist scheme: trt01a        code:trt01a-Xanome
## ds:dsd-DEMO          crnd-dimension:trt01a        Codelist scheme: trt01a        code:trt01a-_ALL_
## ds:dsd-DEMO          crnd-dimension:trt01a        Codelist scheme: trt01a        code:trt01a-_NONMI
## File /home/ma/projects/rrdfqbcrnd0/rrdfqbcrndex/inst/extdata/sample-rdf/DEMOcodelistfull.rq
## [1] 43
##
##
## DataStructureDefinition  component      dimension      c      cprefLabel
## -----
## ds:dsd-DEMO          dccs:agegr1      crnd-dimension:agegr1      code:agegr1      Codelist schen
## ds:dsd-DEMO          dccs:agegr1      crnd-dimension:agegr1      code:agegr1      Codelist schen
## ds:dsd-DEMO          dccs:agegr1      crnd-dimension:agegr1      code:agegr1      Codelist schen
## ds:dsd-DEMO          dccs:agegr1      crnd-dimension:agegr1      code:agegr1      Codelist schen
## ds:dsd-DEMO          dccs:agegr1      crnd-dimension:agegr1      code:agegr1      Codelist schen
## ds:dsd-DEMO          dccs:ethnic      crnd-dimension:ethnic      code:ethnic      Codelist schen
## ds:dsd-DEMO          dccs:ethnic      crnd-dimension:ethnic      code:ethnic      Codelist schen
## ds:dsd-DEMO          dccs:ethnic      crnd-dimension:ethnic      code:ethnic      Codelist schen
## ds:dsd-DEMO          dccs:ethnic      crnd-dimension:ethnic      code:ethnic      Codelist schen
## ds:dsd-DEMO          dccs:ethnic      crnd-dimension:ethnic      code:ethnic      Codelist schen
## ds:dsd-DEMO          dccs:factor      crnd-dimension:factor      code:factor      Codelist schen
## ds:dsd-DEMO          dccs:factor      crnd-dimension:factor      code:factor      Codelist schen
## ds:dsd-DEMO          dccs:factor      crnd-dimension:factor      code:factor      Codelist schen
## ds:dsd-DEMO          dccs:factor      crnd-dimension:factor      code:factor      Codelist schen
## ds:dsd-DEMO          dccs:factor      crnd-dimension:factor      code:factor      Codelist schen
## ds:dsd-DEMO          dccs:factor      crnd-dimension:factor      code:factor      Codelist schen
## ds:dsd-DEMO          dccs:factor      crnd-dimension:factor      code:factor      Codelist schen
## ds:dsd-DEMO          dccs:procedure   crnd-dimension:procedure   code:procedure   Codelist schen

```

```

## ds:dsd-DEMO          dccs:procedure    crnd-dimension:procedure    code:procedure    Codelist schen
## ds:dsd-DEMO          dccs:procedure    crnd-dimension:procedure    code:procedure    Codelist schen
## ds:dsd-DEMO          dccs:procedure    crnd-dimension:procedure    code:procedure    Codelist schen
## ds:dsd-DEMO          dccs:procedure    crnd-dimension:procedure    code:procedure    Codelist schen
## ds:dsd-DEMO          dccs:procedure    crnd-dimension:procedure    code:procedure    Codelist schen
## ds:dsd-DEMO          dccs:procedure    crnd-dimension:procedure    code:procedure    Codelist schen
## ds:dsd-DEMO          dccs:procedure    crnd-dimension:procedure    code:procedure    Codelist schen
## ds:dsd-DEMO          dccs:procedure    crnd-dimension:procedure    code:procedure    Codelist schen
## ds:dsd-DEMO          dccs:procedure    crnd-dimension:procedure    code:procedure    Codelist schen
## ds:dsd-DEMO          dccs:race         crnd-dimension:race         code:race          Codelist schen
## ds:dsd-DEMO          dccs:race         crnd-dimension:race         code:race          Codelist schen
## ds:dsd-DEMO          dccs:race         crnd-dimension:race         code:race          Codelist schen
## ds:dsd-DEMO          dccs:race         crnd-dimension:race         code:race          Codelist schen
## ds:dsd-DEMO          dccs:race         crnd-dimension:race         code:race          Codelist schen
## ds:dsd-DEMO          dccs:race         crnd-dimension:race         code:race          Codelist schen
## ds:dsd-DEMO          dccs:sex          crnd-dimension:sex          code:sex           Codelist schen
## ds:dsd-DEMO          dccs:sex          crnd-dimension:sex          code:sex           Codelist schen
## ds:dsd-DEMO          dccs:sex          crnd-dimension:sex          code:sex           Codelist schen
## ds:dsd-DEMO          dccs:sex          crnd-dimension:sex          code:sex           Codelist schen
## ds:dsd-DEMO          dccs:sex          crnd-dimension:sex          code:sex           Codelist schen
## ds:dsd-DEMO          dccs:sex          crnd-dimension:sex          code:sex           Codelist schen
## ds:dsd-DEMO          dccs:trt01a       crnd-dimension:trt01a       code:trt01a        Codelist schen
## ds:dsd-DEMO          dccs:trt01a       crnd-dimension:trt01a       code:trt01a        Codelist schen
## ds:dsd-DEMO          dccs:trt01a       crnd-dimension:trt01a       code:trt01a        Codelist schen
## ds:dsd-DEMO          dccs:trt01a       crnd-dimension:trt01a       code:trt01a        Codelist schen
## ds:dsd-DEMO          dccs:trt01a       crnd-dimension:trt01a       code:trt01a        Codelist schen
## File /home/ma/projects/rrdfqbcrnd0/rrdfqbcrndex/inst/extdata/sample-rdf/DEMOdimensions.rq
## [1] 7
##
##
## p
## -----
## crnd-dimension:ethnic
## crnd-dimension:race
## crnd-dimension:procedure
## crnd-dimension:agegr1
## crnd-dimension:factor
## crnd-dimension:trt01a
## crnd-dimension:sex
## File /home/ma/projects/rrdfqbcrnd0/rrdfqbcrndex/inst/extdata/sample-rdf/DEMOfactor-codelist.rq
## [1] 53
##
##
## s          p          o
## -----
## code:factor-weightbl    skos:topConceptOf        code:factor
## code:factor-weightbl    skos:prefLabel           weightbl
## code:factor-weightbl    skos:inScheme            code:factor
## code:factor-weightbl    rrdfqbcrnd0:R-selectionvalue weightbl
## code:factor-weightbl    rrdfqbcrnd0:R-selectionoperator ==
## code:factor-weightbl    rrdfqbcrnd0:DataSetRefD2RQ rrdfqbcrnd0:ADSL_WEIGHTBL
## code:factor-weightbl    rdfs:comment             Coded values from data source. No reconcili
## code:factor-weightbl    rdf:type                 skos:Concept

```

```

## code:factor-weightbl      rdf:type      code:Factor
## code:factor-age          skos:topConceptOf code:factor
## code:factor-age          skos:prefLabel   age
## code:factor-age          skos:inScheme    code:factor
## code:factor-age          rrdfqbcrnd0:R-selectionvalue age
## code:factor-age          rrdfqbcrnd0:R-selectionoperator ==
## code:factor-age          rrdfqbcrnd0:DataSetRefD2RQ    rrdfqbcrnd0:ADSL_AGE
## code:factor-age          rdfs:comment      Coded values from data source. No reconcili
## code:factor-age          rdf:type          skos:Concept
## code:factor-age          rdf:type          code:Factor
## code:factor-_ALL_        skos:topConceptOf code:factor
## code:factor-_ALL_        skos:prefLabel   _ALL_
## code:factor-_ALL_        skos:inScheme    code:factor
## code:factor-_ALL_        rdfs:comment      NON-CDISC: Represents all codelist categor
## code:factor-_ALL_        rdf:type          skos:Concept
## code:factor-_ALL_        rdf:type          code:Factor
## code:factor-quantity     skos:topConceptOf code:factor
## code:factor-quantity     skos:prefLabel   quantity
## code:factor-quantity     skos:inScheme    code:factor
## code:factor-quantity     rrdfqbcrnd0:R-selectionvalue quantity
## code:factor-quantity     rrdfqbcrnd0:R-selectionoperator ==
## code:factor-quantity     rdfs:comment      Coded values from data source. No reconcili
## code:factor-quantity     rdf:type          skos:Concept
## code:factor-quantity     rdf:type          code:Factor
## code:factor-_NONMISS_    skos:topConceptOf code:factor
## code:factor-_NONMISS_    skos:prefLabel   _NONMISS_
## code:factor-_NONMISS_    skos:inScheme    code:factor
## code:factor-_NONMISS_    rrdfqbcrnd0:R-selectionfunction is.na
## code:factor-_NONMISS_    rdfs:comment      NON-CDISC: Represents the non-missing cod
## code:factor-_NONMISS_    rdf:type          skos:Concept
## code:factor-_NONMISS_    rdf:type          code:Factor
## code:factor-proportion   skos:topConceptOf code:factor
## code:factor-proportion   skos:prefLabel   proportion
## code:factor-proportion   skos:inScheme    code:factor
## code:factor-proportion   rrdfqbcrnd0:R-selectionvalue proportion
## code:factor-proportion   rrdfqbcrnd0:R-selectionoperator ==
## code:factor-proportion   rdfs:comment      Coded values from data source. No reconcili
## code:factor-proportion   rdf:type          skos:Concept
## code:factor-proportion   rdf:type          code:Factor
## code:factor-proportion   rdf:type          rdfs:Resource
## code:factor-_NONMISS_    rdf:type          rdfs:Resource
## code:factor-quantity     rdf:type          rdfs:Resource
## code:factor-_ALL_        rdf:type          rdfs:Resource
## code:factor-age          rdf:type          rdfs:Resource
## code:factor-weightbl     rdf:type          rdfs:Resource
## File /home/ma/projects/rrdfqbcrnd0/rrdfqbcrndex/inst/extdata/sample-rdf/DEMOfactor.rq
## [1] 6
##
##
## factor      prefLabel      DataSetRefD2RQ      Rselectionvalue
## -----
## code:factor-_ALL_      _ALL_      NA      NA
## code:factor-proportion proportion      NA      proportion
## code:factor-weightbl   weightbl     rrdfqbcrnd0:ADSL_WEIGHTBL weightbl

```

```

## code:factor-_NONMISS_      _NONMISS_      NA      NA
## code:factor-quantity      quantity      NA      quantity
## code:factor-age      age      rrdfqbcrnd0:ADSL_AGE      age
## File /home/ma/projects/rrdfqbcrnd0/rrdfqbcrndex/inst/extdata/sample-rdf/DEMOobservations-R-data-par
## [1] 2
##
##
## obs      D2RQPropertyBridge      Rselectionvalue
## -----
## ds:obs007 http://www.example.org/datasets/vocab/ADSL_SEX      F
## ds:obs007 http://www.example.org/datasets/vocab/ADSL_TRT01A      Placebo
## File /home/ma/projects/rrdfqbcrnd0/rrdfqbcrndex/inst/extdata/sample-rdf/DEMOobservations-R-data.rq
## [1] 0
## File /home/ma/projects/rrdfqbcrnd0/rrdfqbcrndex/inst/extdata/sample-rdf/DEMOobservations-R-selection
## [1] 3
##
##
## obs      rrdfqbcrnd0Rcolumnname      Rselectionoperator      Rselectionvalue
## -----
## ds:obs027 trt01a      ==      Xanomeline High Dose
## ds:obs056 trt01a      ==      Xanomeline Low Dose
## ds:obs056 agegr1      ==      65-80
## File /home/ma/projects/rrdfqbcrnd0/rrdfqbcrndex/inst/extdata/sample-rdf/DEMOobservations.rq
## [1] 132
##
##
## s      ethnic      race      proced
## -----
## ds:obs001 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs002 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs003 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs004 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs005 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs006 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs007 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs008 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs009 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs010 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs011 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs012 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs013 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs014 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs015 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs016 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs017 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs018 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs019 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs020 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs021 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs022 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs023 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs024 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs025 code:ethnic-_ALL_      code:race-_ALL_      code:p
## ds:obs026 code:ethnic-_ALL_      code:race-_ALL_      code:p

```

7

## ds:obs081	code:ethnic-_ALL_	code:race-BLACK_OR_AFRICAN_AMERICAN	code:p
## ds:obs082	code:ethnic-_ALL_	code:race-BLACK_OR_AFRICAN_AMERICAN	code:p
## ds:obs083	code:ethnic-_ALL_	code:race-BLACK_OR_AFRICAN_AMERICAN	code:p
## ds:obs084	code:ethnic-_ALL_	code:race-BLACK_OR_AFRICAN_AMERICAN	code:p
## ds:obs085	code:ethnic-_ALL_	code:race-AMERICAN_INDIAN_OR_ALASKA_NATIVE	code:p
## ds:obs086	code:ethnic-_ALL_	code:race-AMERICAN_INDIAN_OR_ALASKA_NATIVE	code:p
## ds:obs087	code:ethnic-_ALL_	code:race-AMERICAN_INDIAN_OR_ALASKA_NATIVE	code:p
## ds:obs088	code:ethnic-_ALL_	code:race-AMERICAN_INDIAN_OR_ALASKA_NATIVE	code:p
## ds:obs089	code:ethnic-_ALL_	code:race-AMERICAN_INDIAN_OR_ALASKA_NATIVE	code:p
## ds:obs090	code:ethnic-_ALL_	code:race-AMERICAN_INDIAN_OR_ALASKA_NATIVE	code:p
## ds:obs091	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs092	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs093	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs094	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs095	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs096	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs097	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs098	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs099	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs100	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs101	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs102	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs103	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs104	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs105	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs106	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs107	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs108	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs109	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs110	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs111	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs112	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs113	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs114	code:ethnic-_ALL_	code:race-_ALL_	code:p
## ds:obs115	code:ethnic-_NONMISS_	code:race-_ALL_	code:p
## ds:obs116	code:ethnic-_NONMISS_	code:race-_ALL_	code:p
## ds:obs117	code:ethnic-_NONMISS_	code:race-_ALL_	code:p
## ds:obs118	code:ethnic-_NONMISS_	code:race-_ALL_	code:p
## ds:obs119	code:ethnic-_NONMISS_	code:race-_ALL_	code:p
## ds:obs120	code:ethnic-_NONMISS_	code:race-_ALL_	code:p
## ds:obs121	code:ethnic-NOT_HISPANIC_OR_LATINO	code:race-_ALL_	code:p
## ds:obs122	code:ethnic-NOT_HISPANIC_OR_LATINO	code:race-_ALL_	code:p
## ds:obs123	code:ethnic-NOT_HISPANIC_OR_LATINO	code:race-_ALL_	code:p
## ds:obs124	code:ethnic-NOT_HISPANIC_OR_LATINO	code:race-_ALL_	code:p
## ds:obs125	code:ethnic-NOT_HISPANIC_OR_LATINO	code:race-_ALL_	code:p
## ds:obs126	code:ethnic-NOT_HISPANIC_OR_LATINO	code:race-_ALL_	code:p
## ds:obs127	code:ethnic-HISPANIC_OR_LATINO	code:race-_ALL_	code:p
## ds:obs128	code:ethnic-HISPANIC_OR_LATINO	code:race-_ALL_	code:p
## ds:obs129	code:ethnic-HISPANIC_OR_LATINO	code:race-_ALL_	code:p
## ds:obs130	code:ethnic-HISPANIC_OR_LATINO	code:race-_ALL_	code:p
## ds:obs131	code:ethnic-HISPANIC_OR_LATINO	code:race-_ALL_	code:p
## ds:obs132	code:ethnic-HISPANIC_OR_LATINO	code:race-_ALL_	code:p
## File	/home/ma/projects/rrdfqbcrnd0/rrdfqbcrndex/inst/extdata/sample-rdf/DEMOprocedure-codelist.rq		
## [1]	100		



##	s	p	o
##	-----	-----	-----
## code:procedure-min	skos:topConceptOf		code:procedure
## code:procedure-min	skos:prefLabel		min
## code:procedure-min	skos:inScheme		code:procedure
## code:procedure-min	rrdfqbcrnd0:RdescStatDefFun		function (x) { min(x, na.rm = TRUE) }
## code:procedure-min	rrdfqbcrnd0:R-selectionvalue		min
## code:procedure-min	rrdfqbcrnd0:R-selectionoperator		==
## code:procedure-min	rdfs:comment		Descriptive statistics min
## code:procedure-min	rdf:type		skos:Concept
## code:procedure-min	rdf:type		code:Procedure
## code:procedure-std	skos:topConceptOf		code:procedure
## code:procedure-std	skos:prefLabel		std
## code:procedure-std	skos:inScheme		code:procedure
## code:procedure-std	rrdfqbcrnd0:RdescStatDefFun		function (x) { sd(x, na.rm = TRUE) }
## code:procedure-std	rrdfqbcrnd0:R-selectionvalue		std
## code:procedure-std	rrdfqbcrnd0:R-selectionoperator		==
## code:procedure-std	rdfs:comment		Descriptive statistics std
## code:procedure-std	rdf:type		skos:Concept
## code:procedure-std	rdf:type		code:Procedure
## code:procedure-q3	skos:topConceptOf		code:procedure
## code:procedure-q3	skos:prefLabel		q3
## code:procedure-q3	skos:inScheme		code:procedure
## code:procedure-q3	rrdfqbcrnd0:RdescStatDefFun		function (x) { quantile(x, probs = c(0, 0.75)) }
## code:procedure-q3	rrdfqbcrnd0:R-selectionvalue		q3
## code:procedure-q3	rrdfqbcrnd0:R-selectionoperator		==
## code:procedure-q3	rdfs:comment		Descriptive statistics q3
## code:procedure-q3	rdf:type		skos:Concept
## code:procedure-q3	rdf:type		code:Procedure
## code:procedure-median	skos:topConceptOf		code:procedure
## code:procedure-median	skos:prefLabel		median
## code:procedure-median	skos:inScheme		code:procedure
## code:procedure-median	rrdfqbcrnd0:RdescStatDefFun		function (x) { median(x, na.rm = TRUE) }
## code:procedure-median	rrdfqbcrnd0:R-selectionvalue		median
## code:procedure-median	rrdfqbcrnd0:R-selectionoperator		==
## code:procedure-median	rdfs:comment		Descriptive statistics median
## code:procedure-median	rdf:type		skos:Concept
## code:procedure-median	rdf:type		code:Procedure
## code:procedure-count	skos:topConceptOf		code:procedure
## code:procedure-count	skos:prefLabel		count
## code:procedure-count	skos:inScheme		code:procedure
## code:procedure-count	rrdfqbcrnd0:RdescStatDefFun		function (x) { length(x) }
## code:procedure-count	rrdfqbcrnd0:R-selectionvalue		count
## code:procedure-count	rrdfqbcrnd0:R-selectionoperator		==
## code:procedure-count	rdfs:comment		Descriptive statistics count
## code:procedure-count	rdf:type		skos:Concept
## code:procedure-count	rdf:type		code:Procedure
## code:procedure-max	skos:topConceptOf		code:procedure
## code:procedure-max	skos:prefLabel		max
## code:procedure-max	skos:inScheme		code:procedure
## code:procedure-max	rrdfqbcrnd0:RdescStatDefFun		function (x) { max(x, na.rm = TRUE) }
## code:procedure-max	rrdfqbcrnd0:R-selectionvalue		max

```

## code:procedure-max      rrdfqbcrnd0:R-selectionoperator  ==
## code:procedure-max      rdfs:comment                    Descriptive statistics max
## code:procedure-max      rdf:type                        skos:Concept
## code:procedure-max      rdf:type                        code:Procedure
## code:procedure-mean     skos:topConceptOf               code:procedure
## code:procedure-mean     skos:prefLabel                 mean
## code:procedure-mean     skos:inScheme                   code:procedure
## code:procedure-mean     rrdfqbcrnd0:RdescStatDefFun    function (x) {      mean(x, na.rm = TRUE)
## code:procedure-mean     rrdfqbcrnd0:R-selectionvalue   mean
## code:procedure-mean     rrdfqbcrnd0:R-selectionoperator ==
## code:procedure-mean     rdfs:comment                    Descriptive statistics mean
## code:procedure-mean     rdf:type                        skos:Concept
## code:procedure-mean     rdf:type                        code:Procedure
## code:procedure-mean     skos:topConceptOf               code:procedure
## code:procedure-q1       skos:prefLabel                 q1
## code:procedure-q1       skos:inScheme                   code:procedure
## code:procedure-q1       rrdfqbcrnd0:RdescStatDefFun    function (x) {      quantile(x, probs = c
## code:procedure-q1       rrdfqbcrnd0:R-selectionvalue   q1
## code:procedure-q1       rrdfqbcrnd0:R-selectionoperator ==
## code:procedure-q1       rdfs:comment                    Descriptive statistics q1
## code:procedure-q1       rdf:type                        skos:Concept
## code:procedure-q1       rdf:type                        code:Procedure
## code:procedure-q1       skos:topConceptOf               code:procedure
## code:procedure-n        skos:prefLabel                 n
## code:procedure-n        skos:inScheme                   code:procedure
## code:procedure-n        rrdfqbcrnd0:RdescStatDefFun    function (x) {      length(x[!is.na(x)])
## code:procedure-n        rrdfqbcrnd0:R-selectionvalue   n
## code:procedure-n        rrdfqbcrnd0:R-selectionoperator ==
## code:procedure-n        rdfs:comment                    Descriptive statistics n
## code:procedure-n        rdf:type                        skos:Concept
## code:procedure-n        rdf:type                        code:Procedure
## code:procedure-n        skos:topConceptOf               code:procedure
## code:procedure-percent  skos:prefLabel                 percent
## code:procedure-percent  skos:inScheme                   code:procedure
## code:procedure-percent  rrdfqbcrnd0:RdescStatDefFun    function (x) {      -1 }
## code:procedure-percent  rrdfqbcrnd0:R-selectionvalue   percent
## code:procedure-percent  rrdfqbcrnd0:R-selectionoperator ==
## code:procedure-percent  rdfs:comment                    Descriptive statistics percent
## code:procedure-percent  rdf:type                        skos:Concept
## code:procedure-percent  rdf:type                        code:Procedure
## code:procedure-q3       rdf:type                        rdfs:Resource
## code:procedure-mean     rdf:type                        rdfs:Resource
## code:procedure-q1       rdf:type                        rdfs:Resource
## code:procedure-std      rdf:type                        rdfs:Resource
## code:procedure-count    rdf:type                        rdfs:Resource
## code:procedure-median   rdf:type                        rdfs:Resource
## code:procedure-percent  rdf:type                        rdfs:Resource
## code:procedure-min      rdf:type                        rdfs:Resource
## code:procedure-max      rdf:type                        rdfs:Resource
## code:procedure-n        rdf:type                        rdfs:Resource
## File /home/ma/projects/rrdfqbcrnd0/rrdfqbcrndex/inst/extdata/sample-rdf/DEMOprocedure-median.rq
## [1] 10
##
##

```

```

## s                                     p                                     o
## -----
## code:procedure-median               skos:topConceptOf               code:procedure
## code:procedure-median               skos:prefLabel                  median
## code:procedure-median               skos:inScheme                    code:procedure
## code:procedure-median               rrdqbcrnd0:RdescStatDefFun       function (x) {      median(x, na.rm = TRUE)
## code:procedure-median               rrdqbcrnd0:R-selectionvalue      median
## code:procedure-median               rrdqbcrnd0:R-selectionoperator   ==
## code:procedure-median               rdfs:comment                     Descriptive statistics median
## code:procedure-median               rdf:type                         skos:Concept
## code:procedure-median               rdf:type                         code:Procedure
## code:procedure-median               rdf:type                         rdfs:Resource
## File /home/ma/projects/rrdqbcrnd0/rrdqbcrndex/inst/extdata/sample-rdf/DEMOprocedure.rq
## [1] 10
##
##
## procedure                           prefLabel   functiondef
## -----
## code:procedure-max                  max         function (x) {      max(x, na.rm = TRUE) }
## code:procedure-std                  std         function (x) {      sd(x, na.rm = TRUE) }
## code:procedure-mean                 mean        function (x) {      mean(x, na.rm = TRUE) }
## code:procedure-min                 min         function (x) {      min(x, na.rm = TRUE) }
## code:procedure-percent              percent     function (x) {      -1 }
## code:procedure-count               count       function (x) {      length(x) }
## code:procedure-q3                  q3          function (x) {      quantile(x, probs = c(0.75), na.rm = TRUE) }
## code:procedure-n                   n           function (x) {      length(x[!is.na(x)]) }
## code:procedure-median              median      function (x) {      median(x, na.rm = TRUE) }
## code:procedure-q1                  q1          function (x) {      quantile(x, probs = c(0.25), na.rm = TRUE) }

```

This works do not change

```

dsdName<- GetDsdNameFromCube( store )
domainName<- GetDomainNameFromCube( store )
cat("dsdName ", dsdName, ", domainName ", domainName, "\n" )

```

```
## dsdName   dsd-DEMO , domainName   DEMO
```

```

forsparqlprefix<- GetForSparqlPrefix( domainName )
cat(forsparqlprefix,"\n")

```

```

## prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
## prefix skos: <http://www.w3.org/2004/02/skos/core#>
## prefix prov: <http://www.w3.org/ns/prov#>
## prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#>
## prefix dcat: <http://www.w3.org/ns/dcat#>
## prefix owl: <http://www.w3.org/2002/07/owl#>
## prefix xsd: <http://www.w3.org/2001/XMLSchema#>
## prefix pav: <http://purl.org/pav>
## prefix dc: <http://purl.org/dc/elements/1.1/>
## prefix dct: <http://purl.org/dc/terms/>
## prefix mms: <http://rdf.cd-disc.org/mms#>

```

```

## prefix cts: <http://rdf.cdisc.org/ct/schema#>
## prefix cdiscs: <http://rdf.cdisc.org/std/schema#>
## prefix cdash-1-1: <http://rdf.cdisc.org/std/cdash-1-1#>
## prefix cdashct: <http://rdf.cdisc.org/cdash-terminology#>
## prefix sdtmct: <http://rdf.cdisc.org/sdtm-terminology#>
## prefix sdtm-1-2: <http://rdf.cdisc.org/std/sdtm-1-2#>
## prefix sdtm-1-3: <http://rdf.cdisc.org/std/sdtm-1-3#>
## prefix sdtms-1-3: <http://rdf.cdisc.org/sdtm-1-3/schema#>
## prefix sdtmig-3-1-2: <http://rdf.cdisc.org/std/sdtmig-3-1-2#>
## prefix sdtmig-3-1-3: <http://rdf.cdisc.org/std/sdtmig-3-1-3#>
## prefix sendct: <http://rdf.cdisc.org/send-terminology#>
## prefix sendig-3-0: <http://rdf.cdisc.org/std/sendig-3-0#>
## prefix adamct: <http://rdf.cdisc.org/adam-terminology#>
## prefix adam-2-1: <http://rdf.cdisc.org/std/adam-2-1#>
## prefix adamig-1-0: <http://rdf.cdisc.org/std/adamig-1-0#>
## prefix adamvr-1-2: <http://rdf.cdisc.org/std/adamvr-1-2#>
## prefix qb: <http://purl.org/linked-data/cube#>
## prefix rrdqbcrnd0: <http://www.example.org/rrdfqbcrnd0/>
## prefix code: <http://www.example.org/dc/code/>
## prefix dccc: <http://www.example.org/dc/demo/dccc/>
## prefix ds: <http://www.example.org/dc/demo/ds/>
## prefix crnd-dimension: <http://www.example.org/dc/dimension#>
## prefix crnd-attribute: <http://www.example.org/dc/attribute#>
## prefix crnd-measure: <http://www.example.org/dc/measure#>
##

```

```

rq<- paste( forsparqlprefix,
,
select *
where {
?s a qb:Observation ;
?p ?o .
[] qb:dimension ?p .
values (?s) {
(ds:obs114)
}
}
# limit 30
,
"\n"
)

cube.observations<- sparql.rdf(store, rq)
knitr::kable(cube.observations)

```

s	p	o
ds:obs114	crnd-dimension:factor	code:factor-weightbl
ds:obs114	crnd-dimension:trt01a	code:trt01a-Xanomeline_High_Dose
ds:obs114	crnd-dimension:sex	code:sex- <i>ALL</i>
ds:obs114	crnd-dimension:ethnic	code:ethnic- <i>ALL</i>
ds:obs114	crnd-dimension:procedure	code:procedure-min
ds:obs114	crnd-dimension:race	code:race- <i>ALL</i>
ds:obs114	crnd-dimension:agegr1	code:agegr1- <i>ALL</i>

## Getting triples with information of object if literal

```
cons.rq<- paste( forsparqlprefix,
,
construct { ?s ?p ?o }
where {
?s ?p ?o .
BIND( datatype(?o) as ?datatype )
BIND( isLiteral(?o) as ?isLiteral )
BIND( lang(?o) as ?lang )
values (?s) {
(ds:obs114)
}
}
,
"\n"
)

save.rdf(construct.rdf( store, cons.rq) , file.path(tempdir(), "rapperin.ttl"), "TURTLE")
```

```
## [1] "/tmp/RtmpEzA34u/rapperin.ttl"
```

To see dot code generated by rapper:

```
rapper -i turtle -o dot /tmp/Rtmpcccgdg/rapperin.ttl
```

To display the dot code

```
rapper -i turtle -o dot /tmp/Rtmpcccgdg/rapperin.ttl | dot -x -Tpdf -ograph.pdf
```

See also (<http://www.bioconductor.org/packages/release/bioc/vignettes/Rgraphviz/inst/doc/Rgraphviz.pdf>) for Rgraphviz package - may be used to display graphs.

ToDo(MJA): move this to another package - is more an example of R code for making Rgraphviz statement

```
rq<- paste( forsparqlprefix,
,
select *
where {
?s ?p ?o .
BIND( datatype(?o) as ?datatype )
BIND( isLiteral(?o) as ?isLiteral )
BIND( lang(?o) as ?lang )
values (?s) {
(ds:obs114)
}
}
,
"\n"
)
```

```

res<- sparql.rdf(store, rq)
knitr::kable(res)

dimnames(res)

allIRI<- c( res[,1],res[,2])
uallIRI<- unique(allIRI)
L<- list()
for (i in 1:length(uallIRI) ) {
L[[ uallIRI[i] ]] <- paste( "L", i, sep="" )
}

rowcols<- cbind( as.matrix(apply(res[,1:2],c(1,2),function(x) as.character(L[[x]] ))),as.matrix(res[,3])
cat(paste(rowcols, sep=" ", "\n")

```

### Check the statistics

ToDo(MJA): move this to another package - maybe the check package

```

stmtSQL<- GetSQLFromCube(store)
cat(stmtSQL$summStatSQL)

```