Usage of cube DEMO

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Contents

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-_NONMIS
## ds:dsd-DEMO               crnd-dimension:ethnic    Codelist scheme: ethnic    code:ethnic-HISPANI
## ds:dsd-DEMO               crnd-dimension:ethnic    Codelist scheme: ethnic    code:ethnic-NOT_HIS
## ds:dsd-DEMO               crnd-dimension:ethnic    Codelist scheme: ethnic    code:ethnic-_ALL_
## ds:dsd-DEMO               crnd-dimension:ethnic    Codelist scheme: ethnic    code:ethnic-_NONMIS
## ds:dsd-DEMO               crnd-dimension:factor    Codelist scheme: factor    code:factor-_ALL_
## ds:dsd-DEMO               crnd-dimension:factor    Codelist scheme: factor    code:factor-_NONMIS
```

```
## 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-quanti
## 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-mea
## 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-_NONMIS
## 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 sche
## ds:dsd-DEMO               dccs:agegr1     crnd-dimension:agegr1     code:agegr1      Codelist sche
## ds:dsd-DEMO               dccs:agegr1     crnd-dimension:agegr1     code:agegr1      Codelist sche
## ds:dsd-DEMO               dccs:agegr1     crnd-dimension:agegr1     code:agegr1      Codelist sche
## ds:dsd-DEMO               dccs:agegr1     crnd-dimension:agegr1     code:agegr1      Codelist sche
## ds:dsd-DEMO               dccs:ethnic     crnd-dimension:ethnic     code:ethnic      Codelist sche
## ds:dsd-DEMO               dccs:ethnic     crnd-dimension:ethnic     code:ethnic      Codelist sche
## ds:dsd-DEMO               dccs:ethnic     crnd-dimension:ethnic     code:ethnic      Codelist sche
## ds:dsd-DEMO               dccs:ethnic     crnd-dimension:ethnic     code:ethnic      Codelist sche
## ds:dsd-DEMO               dccs:factor     crnd-dimension:factor     code:factor      Codelist sche
## ds:dsd-DEMO               dccs:factor     crnd-dimension:factor     code:factor      Codelist sche
## ds:dsd-DEMO               dccs:factor     crnd-dimension:factor     code:factor      Codelist sche
## ds:dsd-DEMO               dccs:factor     crnd-dimension:factor     code:factor      Codelist sche
## ds:dsd-DEMO               dccs:factor     crnd-dimension:factor     code:factor      Codelist sche
## ds:dsd-DEMO               dccs:factor     crnd-dimension:factor     code:factor      Codelist sche
## ds:dsd-DEMO               dccs:procedure  crnd-dimension:procedure  code:procedure   Codelist sche
```

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```
## ds:dsd-DEMO               dccs:procedure   crnd-dimension:procedure   code:procedure   Codelist scher
## ds:dsd-DEMO               dccs:procedure   crnd-dimension:procedure   code:procedure   Codelist scher
## ds:dsd-DEMO               dccs:procedure   crnd-dimension:procedure   code:procedure   Codelist scher
## ds:dsd-DEMO               dccs:procedure   crnd-dimension:procedure   code:procedure   Codelist scher
## ds:dsd-DEMO               dccs:procedure   crnd-dimension:procedure   code:procedure   Codelist scher
## ds:dsd-DEMO               dccs:procedure   crnd-dimension:procedure   code:procedure   Codelist scher
## ds:dsd-DEMO               dccs:procedure   crnd-dimension:procedure   code:procedure   Codelist scher
## ds:dsd-DEMO               dccs:procedure   crnd-dimension:procedure   code:procedure   Codelist scher
## ds:dsd-DEMO               dccs:procedure   crnd-dimension:procedure   code:procedure   Codelist scher
## ds:dsd-DEMO               dccs:race        crnd-dimension:race        code:race        Codelist scher
## ds:dsd-DEMO               dccs:race        crnd-dimension:race        code:race        Codelist scher
## ds:dsd-DEMO               dccs:race        crnd-dimension:race        code:race        Codelist scher
## ds:dsd-DEMO               dccs:race        crnd-dimension:race        code:race        Codelist scher
## ds:dsd-DEMO               dccs:race        crnd-dimension:race        code:race        Codelist scher
## ds:dsd-DEMO               dccs:race        crnd-dimension:race        code:race        Codelist scher
## ds:dsd-DEMO               dccs:race        crnd-dimension:race        code:race        Codelist scher
## ds:dsd-DEMO               dccs:sex         crnd-dimension:sex         code:sex         Codelist scher
## ds:dsd-DEMO               dccs:sex         crnd-dimension:sex         code:sex         Codelist scher
## ds:dsd-DEMO               dccs:sex         crnd-dimension:sex         code:sex         Codelist scher
## ds:dsd-DEMO               dccs:sex         crnd-dimension:sex         code:sex         Codelist scher
## ds:dsd-DEMO               dccs:sex         crnd-dimension:sex         code:sex         Codelist scher
## ds:dsd-DEMO               dccs:sex         crnd-dimension:sex         code:sex         Codelist scher
## ds:dsd-DEMO               dccs:trt01a      crnd-dimension:trt01a      code:trt01a      Codelist scher
## ds:dsd-DEMO               dccs:trt01a      crnd-dimension:trt01a      code:trt01a      Codelist scher
## ds:dsd-DEMO               dccs:trt01a      crnd-dimension:trt01a      code:trt01a      Codelist scher
## ds:dsd-DEMO               dccs:trt01a      crnd-dimension:trt01a      code:trt01a      Codelist scher
## ds:dsd-DEMO               dccs:trt01a      crnd-dimension:trt01a      code:trt01a      Codelist scher
## 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 reconcil
## 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 reconcil
## 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 reconcil
## 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 reconcil
## 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
```

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```
## 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-selectio
## [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                                          procedu
## ----------   ----------------------------------  --------------------------------------------  -------
## ds:obs001    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs002    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs003    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs004    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs005    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs006    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs007    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs008    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs009    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs010    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs011    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs012    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs013    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs014    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs015    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs016    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs017    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs018    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs019    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs020    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs021    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs022    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs023    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs024    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs025    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
## ds:obs026    code:ethnic-_ALL_                   code:race-_ALL_                               code:pi
```

```
## ds:obs027   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs028   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs029   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs030   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs031   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs032   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs033   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs034   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs035   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs036   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs037   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs038   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs039   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs040   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs041   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs042   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs043   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs044   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs045   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs046   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs047   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs048   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs049   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs050   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs051   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs052   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs053   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs054   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs055   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs056   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs057   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs058   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs059   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs060   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs061   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs062   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs063   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs064   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs065   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs066   code:ethnic-_ALL_          code:race-_ALL_                          code:p
## ds:obs067   code:ethnic-_ALL_          code:race-_NONMISS_                       code:p
## ds:obs068   code:ethnic-_ALL_          code:race-_NONMISS_                       code:p
## ds:obs069   code:ethnic-_ALL_          code:race-_NONMISS_                       code:p
## ds:obs070   code:ethnic-_ALL_          code:race-_NONMISS_                       code:p
## ds:obs071   code:ethnic-_ALL_          code:race-_NONMISS_                       code:p
## ds:obs072   code:ethnic-_ALL_          code:race-_NONMISS_                       code:p
## ds:obs073   code:ethnic-_ALL_          code:race-WHITE                          code:p
## ds:obs074   code:ethnic-_ALL_          code:race-WHITE                          code:p
## ds:obs075   code:ethnic-_ALL_          code:race-WHITE                          code:p
## ds:obs076   code:ethnic-_ALL_          code:race-WHITE                          code:p
## ds:obs077   code:ethnic-_ALL_          code:race-WHITE                          code:p
## ds:obs078   code:ethnic-_ALL_          code:race-WHITE                          code:p
## ds:obs079   code:ethnic-_ALL_          code:race-BLACK_OR_AFRICAN_AMERICAN       code:p
## ds:obs080   code:ethnic-_ALL_          code:race-BLACK_OR_AFRICAN_AMERICAN       code:p
```

```
## 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
## 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 = TRU
## 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-q1        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-n         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-percent   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
##
##
```

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   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-median   rdf:type                         rdfs:Resource
## File  /home/ma/projects/rrdfqbcrnd0/rrdfqbcrndex/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.cdisc.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 rrdfqbcrnd0: <http://www.example.org/rrdfqbcrnd0/>
## prefix code: <http://www.example.org/dc/code/>
## prefix dccs: <http://www.example.org/dc/demo/dccs/>
## 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-weighttbl
ds:obs114	crnd-dimension:trt01a	code:trt01a-Xanomeline_High_Dose
ds:obs114	crnd-dimension:sex	code:sex-ALL
ds:obs114	crnd-dimension:ethnic	code:ethnic-ALL
ds:obs114	crnd-dimension:procedure	code:procedure-min
ds:obs114	crnd-dimension:race	code:race-ALL
ds:obs114	crnd-dimension:agegr1	code:agegr1-ALL

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/RtmpSAfNF4/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 Rgraphvis 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)
```