

# quick view tools for eSets

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## 1 Introduction

In teaching a course where a large number of datasets are introduced over a short period of time, the relationship between data content and software infrastructure can be hard to master. This document introduces a number of experimental approaches to getting rapid access to key elements of eSet derivatives.

We will work with the ALL data for demonstration.

```
> library(Biobase)
> library(ALL)
> data(ALL)
> ALL
```

## 2 An alternative to the current show method

It could be nice to tell the package from which the dataset was loaded.

```
> dataSource = function(dsn) {
+   if (!is(dsn, "character"))
+     dsn = try(deparse(substitute(dsn)))
+   if (inherits(dsn, "try-error"))
+     stop("can't parse dsn arg")
+   dd = data()$results
+ }
```

```
+   if (is.na(match(dsn, dd[, "Item"])))
+       return(NULL)
+   paste("package:", dd[dd[, "Item"] == dsn, "Package"],
+       sep = "")
+ }
```

We use `peek` to get a concise view:

```
> peek(ALL)
```

```
ALL [from package:ALL]:
Platform annotation: hgu95av2
primary assay results are:
Features  Samples
  12625      128
sample attributes are:
first 10 of 21 attributes:

                                labelDescription.truncated.
cod                                Patient ID
diagnosis                        Date of diagnosis
sex                               Gender of the patient
age                               Age of the patient at entry
BT                                does the patient have B-cell or T-cell ALL
remission  Complete remission(CR), refractory(REF) or NA. De
CR                                Original remisson data
date.cr                           Date complete remission if achieved
t(4;11)    did the patient have t(4;11) translocation. Deriv
t(9;22)    did the patient have t(9;22) translocation. Deriv
-----
use varTable to see values/freqs of all sample attributes
-----
```

### 3 Sample characterization

Getting a handle on sample characterization requires survey of variable names.

```
> varNames(ALL)
```

```
[1] "cod"           "diagnosis"     "sex"
[4] "age"           "BT"            "remission"
[7] "CR"           "date.cr"       "t(4;11)"
[10] "t(9;22)"       "cyto.normal"   "citog"
[13] "mol.biol"      "fusion protein" "mdr"
```

```
[16] "kinet"          "ccr"          "relapse"
[19] "transplant"    "f.u"          "date last seen"
```

In addition, we need to know values taken. This can be very cumbersome. We have a few parameters on how much detail is provided.

```
> varTable(ALL, max = 4)
```

```
$cod
```

```
[1] "10005" "... " "LAL5"
```

```
$diagnosis
```

```
[1] "1/13/1997" "... " "9/4/1997"
```

```
$sex
```

```
[1] "F" "M"
```

```
$age
```

```
[1] "5" "... " "58"
```

In the above, we are only showing 4 attributes. By default all attributes would be shown. Note that the report on range of values is truncated and is character mode. We can show the full range of values using the `full` parameter.

```
> varTable(ALL, full = TRUE, max = 4)
```

```
$cod
```

```
[1] "10005" "1003" "1005" "1007" "1010" "11002" "11005"
[8] "12006" "12007" "12008" "12012" "12019" "12026" "14016"
[15] "15001" "15004" "15005" "15006" "16002" "16004" "16007"
[22] "16009" "17003" "18001" "19002" "19005" "19008" "19014"
[29] "19017" "20002" "20005" "2020" "22009" "22010" "22011"
[36] "22013" "24001" "24005" "24006" "24008" "24010" "24011"
[43] "24017" "24018" "24019" "24022" "25003" "25006" "26001"
[50] "26003" "26005" "26008" "26009" "27003" "27004" "28001"
[57] "28003" "28005" "28006" "28007" "28008" "28009" "28019"
[64] "28021" "28023" "28024" "28028" "28031" "28032" "28035"
[71] "28036" "28037" "28042" "28043" "28044" "28047" "30001"
[78] "3002" "31007" "31011" "31015" "33005" "36001" "36002"
[85] "37001" "37013" "4006" "4007" "4008" "4010" "4016"
[92] "4018" "43001" "43004" "43006" "43007" "43012" "43015"
[99] "44001" "48001" "49004" "49006" "56007" "57001" "6002"
[106] "62001" "62002" "62003" "63001" "64001" "64002" "64005"
[113] "65003" "65005" "68001" "68003" "8001" "8011" "8012"
```

[120] "8018" "8024" "83001" "84004" "9002" "9008" "9017"  
 [127] "LAL4" "LAL5"

# \$diagnosis

[1] "1/13/1997" "1/14/1997" "1/15/1997" "1/15/1998"  
 [5] "1/15/1999" "1/16/1997" "1/17/1998" "1/29/1997"  
 [9] "1/3/1997" "1/30/1997" "10/1/1998" "10/14/1997"  
 [13] "10/19/1996" "10/20/1998" "10/21/1997" "10/22/1998"  
 [17] "10/23/1998" "10/30/1997" "10/4/1996" "11/1/1998"  
 [21] "11/11/1997" "11/14/1996" "11/15/1997" "11/28/1996"  
 [25] "12/17/1999" "12/21/1998" "12/21/1999" "12/23/1996"  
 [29] "12/23/1998" "12/27/1996" "12/3/1998" "12/30/1998"  
 [33] "12/31/1999" "12/4/1998" "2/10/1998" "2/10/2000"  
 [37] "2/18/1997" "2/18/1998" "2/18/1999" "2/20/1997"  
 [41] "2/21/1997" "2/26/1998" "2/29/2000" "2/3/2000"  
 [45] "2/4/1997" "3/11/1997" "3/15/2000" "3/17/2000"  
 [49] "3/18/1998" "3/18/2000" "3/19/1997" "3/22/1997"  
 [53] "3/23/2000" "3/24/1999" "3/24/2000" "3/27/1997"  
 [57] "3/27/1998" "3/29/2000" "4/1/1998" "4/10/1997"  
 [61] "4/11/2000" "4/17/2000" "4/19/1997" "4/19/1998"  
 [65] "4/23/1997" "4/29/1998" "4/7/2000" "4/8/1997"  
 [69] "5/14/1997" "5/14/1998" "5/15/1997" "5/21/1997"  
 [73] "5/22/1998" "5/27/1999" "5/28/1998" "5/29/1998"  
 [77] "5/4/1999" "5/4/2000" "5/9/1997" "6/1/1998"  
 [81] "6/10/1998" "6/17/1997" "6/18/1999" "6/24/1998"  
 [85] "6/28/1999" "6/3/1997" "7/11/2000" "7/17/1997"  
 [89] "7/20/1999" "7/20/2000" "7/22/1997" "7/30/1997"  
 [93] "7/8/1997" "7/8/1998" "8/10/1999" "8/12/1998"  
 [97] "8/17/2000" "8/21/1998" "8/25/1999" "8/26/1999"  
 [101] "8/27/1999" "8/28/1997" "8/5/1997" "8/6/1999"  
 [105] "9/15/1998" "9/18/1997" "9/23/1998" "9/25/1998"  
 [109] "9/26/1998" "9/27/1997" "9/29/1997" "9/3/1997"  
 [113] "9/30/1997" "9/30/1998" "9/4/1997"

# \$sex

[1] "F" "M"

# \$age

[1] "5" "14" "15" "16" "17" "18" "19" "20" "21" "22" "23" "24"  
 [13] "25" "26" "27" "28" "29" "30" "31" "32" "33" "36" "37" "38"  
 [25] "39" "40" "41" "43" "44" "45" "46" "47" "48" "49" "50" "51"  
 [37] "52" "53" "54" "55" "57" "58"