

R version 3.6.1 (2019-07-05) -- "Action of the Toes"  
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Platform: x86\_64-apple-darwin15.6.0 (64-bit)

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Natural language support but running in an English locale

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[R.app GUI 1.70 (7684) x86\_64-apple-darwin15.6.0]

[Workspace restored from /Users/mac/.RData]  
[History restored from /Users/mac/.Rapp.history]

```
> library(qlcMatrix)
Error in library(qlcMatrix) : there is no package called 'qlcMatrix'
> install.packages("qlcMatrix")
also installing the dependencies 'slam', 'sparsesvd'
```

```
trying URL 'https://ftp.fau.de/cran/bin/macosx/el-capitan/contrib/3.6/slam_0.1-47.tgz'
Content type 'application/x-gzip' length 204039 bytes (199 KB)
=====
downloaded 199 KB
```

```
trying URL 'https://ftp.fau.de/cran/bin/macosx/el-capitan/contrib/3.6/sparsesvd_0.2.tgz'
Content type 'application/x-gzip' length 75385 bytes (73 KB)
=====
downloaded 73 KB
```

```
trying URL 'https://ftp.fau.de/cran/bin/macosx/el-capitan/contrib/3.6/qlcMatrix_0.9.7.tgz'
Content type 'application/x-gzip' length 3297736 bytes (3.1 MB)
=====
downloaded 3.1 MB
```

The downloaded binary packages are in  
/var/folders/qs/bglg4qhd7r7f8l3kn\_3d62w40000gn/T//RtmpTNIuNV/downloaded\_packages

```
> library(qlcMatrix)
Loading required package: Matrix
Loading required package: slam
Loading required package: sparsesvd
> ?qlcMatrix
starting httpd help server ... done
> deu <- read.text("~/Documents/GitHub/paralleltext/bibles/corpus/deu-x-bible-albrecht.txt")
> head(deu)
```

```

40001001
      "Dies ist das Buch der Geschichte Jesu Christi , des Sohnes Davids , des Sohnes Abrahams ."
```

```
40001002
      "Abraham war der Vater Isaaks . Isaak war der Vater Jakobs . Jakob war der Vater Judas und seiner Brüder ."
```

```
40001003
      "Juda war – durch Thamar – der Vater des Perez und Serah . Perez war der Vater Hezrons . Hezron war der Vater Rams ."
```

```
40001004
      "Ram war der Vater Aminadabs . Aminadab war der Vater Nahessons . Nahesson war der Vater Salmas ."
```

```
40001005
      "Salma war – durch Rahab – der Vater des Boas . Boas war – durch Ruth – der Vater Obeds . Obed war der Vater Isais ."
```

```
40001006
      "Isai war der Vater des Königs David . David war – durch Urias Witwe – der Vater Salomos ."
```

```
> eng <- read.text("~/Documents/GitHub/paralleltext/bibles/corpus/eng-x-bible-amplified.txt")
Error in read.text("~/Documents/GitHub/paralleltext/bibles/corpus/eng-x-bible-amplified.txt") :
  could not find function "read.text"
> eng <- read.text("~/Documents/GitHub/paralleltext/bibles/corpus/eng-x-bible-amplified.txt")
> sim <- sim.words(deu, eng)
> str(sim)
```

```
Formal class 'dgCMatrix' [package "Matrix"] with 6 slots
..@ i      : int [1:1577876] 0 1 2 3 4 5 6 7 8 9 ...
..@ p      : int [1:10467] 0 2779 2836 9291 15746 26870 26897 29017 39479 39539 ...
..@ Dim    : int [1:2] 11733 10466
..@ Dimnames:List of 2
.. ..$ : chr [1:11733] "!" "\" " ' " 's" ...
.. ..$ : chr [1:10466] "!" "$" "(" ")" ...
..@ x      : num [1:1577876] 28.04 18.08 7.09 2.16 -2.13 ...
..@ factors : list()
> sim@Dimnames[[2]][1:100]
```

```

[1] "!" "$" "(" ")"
[5] ", " "- " "- " ". "
[9] "1,260" "1,500" "1,600" "10,000"
[13] "10,000,000" "12,000" "144" "144,000"
[17] "153" "2,000" "200" "200,000,000"
[21] "276" "3,000" "300" "3:00"
[25] "4,000" "400" "42" "430"
[29] "450" "5" "5,000" "50,000"
[33] "6" "666" "6:00" "700"
[37] "72" "80,000" "9,300" "900"
[41] "9:00" ":" ";" "?"
[45] "[" "]" "a" "a.m."
[49] "aaron" "abaddon" "abandon" "abandoned"
[53] "abandoning" "abandonment" "abased" "abba"
[57] "abdomen" "abel" "abhor" "abhorrence"
[61] "abhorrent" "abhorring" "abia" "abiathar"
[65] "abide" "abides" "abiding" "abijah"
[69] "abilene" "abilities" "ability" "abiud"
[73] "ablaze" "able" "abnormal" "aboard"
[77] "abode" "abodes" "abolish" "abolished"
[81] "abolishing" "abominable" "abominates" "abomination"
[85] "abominations" "abound" "abounded" "abounding"
[89] "abounds" "about" "above" "abraham"
[93] "abraham's" "abroad" "absence" "absent"
[97] "absolute" "absolutely" "absolved" "absolving"
> sort(sim["warum",],decreasing = T)[1:10]
Error in sort.int(x, na.last = na.last, decreasing = decreasing, ...) :
unused argument (decreasing = T)
> sort(sim["warum",],decreasing = T)[1:10]
      why      ?      lama      sabachthani      molest      praiseworthy
64.58206  24.97575  13.05949  13.05949      10.60123      10.60123
      swayed      troubling      untying      do
10.60123  10.60123  10.60123  10.27958
> sort(sim["was",],decreasing = T)[1:10]
      what      ?      whatever      do      everything      done      things
39.897383  16.685888  14.278403  12.561697  8.817542  7.774158  7.059094
assemblies      mean      you
6.765313  6.493124  6.386768
> sort(sim["wie",],decreasing = T)[1:10]
      how      like      as      just      can      saw      dove
24.890063  23.461667  21.320445  12.382581  7.790031  6.262889  6.142454
resembled      neighbor      chance
6.142454  5.450446  5.319521
> sort(sim[, "which"],decreasing = T)[1:10]
      das      bauleute      gerechtigkeit      worin      die
8.455957  7.023808  6.912646  6.291278  5.744648
eckstein      goldenen      verworfen      gottes      befassen
5.715973  5.715973  5.591386  5.452550  5.440618
> sort(sim["welcher",],decreasing = T)[1:10]
householder      rouse      burglar      lessons      nearer      recalls
29.63677  29.63677  25.68563  25.68563  25.68563  25.68563
undermined      wake      critical      guidance
25.68563  25.68563  18.13499  18.13499
> sort(sim["welche",],decreasing = T)[1:10]
      5      alliances      complicity      condoning      cor      dismembered
20.39485  20.39485  20.39485  20.39485  20.39485  20.39485
exhibitions      inanimate      inconsistent      mete
20.39485  20.39485  20.39485  20.39485
> sort(sim["welches",],decreasing = T)[1:10]
      predict      enabled      fitly      noticing      signify      admirably
33.65159  23.77427  23.77427  23.77427  23.77427  19.39447
important      indicate      principal      commandment
18.57596  16.78126  14.99634  13.60487
> sort(sim["wer",],decreasing = T)[1:10]
whoever      who      anyone      does      believes      relies      everyone      heed
32.64844  22.43736  17.77502  16.24014  14.14400  12.17521  11.26501  11.22999
trusts      let
11.22999  11.22715
> deu <- read.text("~/Documents/GitHub/paralleltxt/bibles/corpus/deu-x-bible-schlachter.txt")
> chn <- read.text("~/Documents/GitHub/paralleltxt/bibles/corpus/zho-x-bible-contemp.txt")
> sim <- sim.words(deu,chn)
> dim(sim)
[1] 26240 26930
> sort(sim[, "那麼"],decreasing = T)[1:10]
      säumt      weinbergs      betrübe      bleicher      einladet
22.21346  20.34030  19.26331  19.26331  19.26331
entwurzle      erwirbst      gnadengeschenk      häßlich      lästerst
19.26331  19.26331  19.26331  19.26331  19.26331
> sort(sim["warum",],decreasing = T)[1:10]
      為什麼      為何      ?      呢      何必      責問      問
108.05172  59.81887  55.55771  48.95596  36.57051  19.55056  17.04123
      :      丿      丿

```

```

16.17946 15.36967 14.91118
> sort(sim["welcher",],decreasing = T)[1:10]
授權給 支流 內側 跳出 那位 指揮 趕散 權柄
16.80848 14.50558 13.72407 13.72407 11.14678 11.14678 11.14678 10.77875
一點鐘 上坐
9.70438 9.70438
> sort(sim["wer",],decreasing = T)[1:10]
誰 凡 ? 呢 能 應當聽 人 碰到
75.37517 29.58343 27.88948 22.29997 20.20607 17.52626 15.81645 15.70762
凡有 處死
14.49524 14.32672
> sort(sim["wann",],decreasing = T)[1:10]
何時 也可能 前景 售賣 夜半 夜漫漫 拂曉 王欣然
54.61377 32.64597 32.64597 32.64597 32.64597 32.64597 32.64597 32.64597
興家立業 輾轉難眠
32.64597 32.64597
> sort(sim[, "怎麼樣"],decreasing = T)[1:10]
steht's auffahren überaus antun
66.49490 47.00836 29.71053 23.47229
schicksal helfer schwiegermutter gleiche
20.98474 17.71927 17.11456 16.06904
getrost fürchte
14.80483 13.72407
> sort(sim[, "怎麼"],decreasing = T)[1:10]
? wieso abwesende anwohnern befragten belogen
27.07702 21.99195 15.55066 15.55066 15.55066 15.55066
bescherte beschloßest echtem einflößte
15.55066 15.55066 15.55066 15.55066
> s40011009 <- chn["40011009",]
Error in chn["40011009", ] : incorrect number of dimensions
> dim(chn)
NULL
> s40011009 <- chn["40011009"]
> s40011009

```

40011009

"你們 究竟 想 看 什麼 ? 看 先知 嗎 ? 是的 , 我 告訴 你們 , 他 不 只是 先知 。"

```

> s40027022 <- chn["40027022"]
> s40027022

```

40027022

"彼拉多問 : 「 那麼 , 我 怎樣 處置 那個 被 稱為 基督 的 耶穌 呢 ? 」 他們 齊聲 說 : 「 把 祂 釘在 十字架 上 ! 」"

```

> strsplit(s40027022, split = " ")>split
> split
$`40027022`
[1] "彼拉多問" ": " " " "那麼" ", " "我"
[7] "怎樣" "處置" "那個" "被" "稱為" "基督"
[13] "的" "耶穌" "呢" "? " " "他們"
[19] "齊聲" "說" ": " " " "把" "祂"
[25] "釘在" "十字架" "上" "! " " " "

```

```

> tmp <- sim[,split]
Error in sim[, split] :
invalid or not-yet-implemented 'Matrix' subsetting
> tmp <- sim[,split[[1]]]
> colMax(tmp)
sparse vector (nnz/length = 29/29) of class "dsparseVector"
[1] 99.734832 101.167115 81.799331 22.213459 5.965403 104.107594
[7] 25.308227 35.891630 20.751041 20.857380 57.983148 134.645504
[13] 11.516004 105.462013 89.631425 143.261767 58.622675 62.184970
[19] 66.494899 89.259800 101.167115 81.799331 16.903388 26.381896
[25] 84.355206 96.007466 26.519916 55.219375 58.622675
> colMax(tmp, which = T)->pos
> str(pos)
List of 2
 $ max :Formal class 'dsparseVector' [package "Matrix"] with 3 slots
 .. ..@ x : num [1:29] 99.73 101.17 81.8 22.21 5.97 ...
 .. ..@ length: int 29
 .. ..@ i : int [1:29] 1 2 3 4 5 6 7 8 9 10 ...
 $ which:Formal class 'ngCMatrix' [package "Matrix"] with 5 slots
 .. ..@ i : int [1:33] 13610 19688 260 20379 261 12260 17121 4995 11541 14325 ...
 .. ..@ p : int [1:30] 0 1 2 3 4 5 6 7 11 12 ...
 .. ..@ Dim : int [1:2] 26240 29
 .. ..@ Dimnames:List of 2
 .. .. ..$ : chr [1:26240] "!" "(" ")" " " " ...
 .. .. ..$ : chr [1:29] "彼拉多問" ": " " " "那麼" ...
 .. ..@ factors : list()
> which(pos$which==1)
[1] 13611 45929 52741 99100 105222 143461 174562 188676 195222 198006
[11] 200090 226686 260379 271635 293316 319920 353851 367623 393863 420101
[21] 465372 487856 498302 498821 544489 551301 596572 610045 638721 664961
[31] 683988 708481 734981

```

```

> which(pos$which==1, arr.ind=T)
      row col
kreuzige 13611 1
sprach  19689 2
:        261 3
säumt   20380 4
;        262 5
ich     12261 6
ratet   17122 7
demütigtest 4996 8
hinaufzöge 11542 8
leugnen 14326 8
offenkundiges 16410 8
pfunde  16766 9
werden  24219 10
gerechtfertigt 9235 11
christus 4676 12
des     5040 13
jesus   12731 14
?       263 15
?       263 16
:       261 17
sie     19292 18
morgensterne 15536 19
überbrachte 25982 19
:        261 20
sprach  19689 21
:        261 22
sie     19292 23
er       6525 24
gekreuzigt 8961 25
gekreuzigt 8961 26
auf     1748 27
!        1 28
:       261 29
> cbind(which(pos$which==1, arr.ind=T),split[[1]])
      row col
kreuzige "13611" "1" "彼拉多問"
sprach  "19689" "2" " ": "
:        "261"  "3" " 「"
säumt   "20380" "4" "那麼"
;        "262"  "5" " ", "
ich     "12261" "6" "我"
ratet   "17122" "7" "怎樣"
demütigtest "4996" "8" "處置"
hinaufzöge "11542" "8" "那個"
leugnen  "14326" "8" "被"
offenkundiges "16410" "8" "稱為"
pfunde    "16766" "9" "基督"
werden    "24219" "10" "的"
gerechtfertigt "9235" "11" "耶穌"
christus  "4676"  "12" "呢"
des       "5040"  "13" "? "
jesus     "12731" "14" "」"
?         "263"  "15" "他們"
?         "263"  "16" "齊聲"
:         "261"  "17" "說"
sie       "19292" "18" " ": "
morgensterne "15536" "19" " 「"
überbrachte "25982" "19" "把"
:          "261"  "20" "牠"
sprach     "19689" "21" "釘在"
:          "261"  "22" "十字架"
sie        "19292" "23" "上"
er         "6525"  "24" "！"
gekreuzigt "8961"  "25" "」"
gekreuzigt "8961"  "26" "彼拉多問"
auf        "1748"  "27" " ": "
!          "1"    "28" " 「"
:          "261"  "29" "那麼"
Warning message:
In cbind(which(pos$which == 1, arr.ind = T), split[[1]]) :
  number of rows of result is not a multiple of vector length (arg 2)
> which(pos$which==1, arr.ind=T)
      row col
kreuzige 13611 1
sprach  19689 2
:        261 3

```

säumt	20380	4
;	262	5
ich	12261	6
ratet	17122	7
demütigtest	4996	8
hinaufzüge	11542	8
leugnen	14326	8
offenkundiges	16410	8
pfunde	16766	9
werden	24219	10
gerechtfertigt	9235	11
christus	4676	12
des	5040	13
jesus	12731	14
?	263	15
?	263	16
:	261	17
sie	19292	18
morgensterne	15536	19
überbrachte	25982	19
:	261	20
sprach	19689	21
:	261	22
sie	19292	23
er	6525	24
gekreuzigt	8961	25
gekreuzigt	8961	26
auf	1748	27
!	1	28
:	261	29

```
> split[[1]]
```

```
[1] "彼拉多問" ":" " " "那麼" ", " "我"
[7] "怎樣" "處置" "那個" "被" "稱為" "基督"
[13] "的" "耶穌" "呢" "? " " " "他們"
[19] "齊聲" "說" ":" " " "把" "祂"
[25] "釘在" "十字架" "上" "!" " " " " "
```

```
> sort(sim["jesus",],decreasing = T)[1:10]
```

耶穌	主耶穌	基督	門徒	父	恩典	:
105.46201	56.33736	45.72877	22.54135	21.63930	21.62325	20.81194
拿撒勒人	藉著	「				
19.68751	15.84859	15.53848				

```
> sort(sim["haus",],decreasing = T)[1:10]
```

家	殿	房子	殿宇	建造	全家	家裡	建殿
46.77954	43.14179	31.65713	27.47720	25.30069	20.94498	20.66814	19.49716
王宮	回家						
14.53854	14.37488						

```
> dim(sim)
```

```
[1] 26240 26930
```

```
> prod(dim(sim))
```

```
[1] 706643200
```

```
> ? prod
```

```
> ? prod
```

```
2020-01-23 13:07:25.534 R[1652:65215] -deltaZ is deprecated for NSEventTypeMagnify. Please use -magnification.
objc[1652]: Class FIFinderSyncExtensionHost is implemented in both /System/Library/PrivateFrameworks/
FinderKit.framework/Versions/A/FinderKit (0x7fff8b476cd0) and /System/Library/PrivateFrameworks/
FileProvider.framework/OverrideBundles/FinderSyncCollaborationFileProviderOverride.bundle/Contents/MacOS/
FinderSyncCollaborationFileProviderOverride (0x115641cd8). One of the two will be used. Which one is undefined.
>
```