## Quiz 4

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#### 16/7/2020

## Question 1

The American Community Survey distributes downloadable data about United States communities. Download the 2006 microdata survey about housing for the state of Idaho using download.file() from here:

https://d396 qusza 40 orc.cloud front.net/get data % 2 F data % 2 Fss 06 hid.csv

and load the data into R. The code book, describing the variable names is here:

https://d396qusza40orc.cloudfront.net/getdata%2Fdata%2FPUMSDataDict06.pdf

Apply strsplit() to split all the names of the data frame on the characters "wgtp".

What is the value of the 123 element of the resulting list

```
# Download file...
Q1Url <- "https://d396qusza40orc.cloudfront.net/getdata%2Fdata%2Fss06hid.csv"
Q1 <- read.csv(Q1Url)
head(Q1)</pre>
```

```
RT SERIALNO DIVISION PUMA REGION ST
                                                                                   BDS BLD
##
                                                  ADJUST WGTP
                                                                NP
                                                                    TYPE
                                                                         ACR AGS
                                                                                             BUS
## 1
      Η
               186
                                700
                                             16
                                                             89
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                            8
                                                1015675
                                                                        1
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##
   2
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                                                1015675
                                                           310
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##
   5
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   6
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##
      CONP ELEP FS
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                           GASP
                                 HFL
                                      INSP KIT MHP
                                                     MRGI
                                                           MRGP
                                                                 MRGT MRGX PLM RMS RNTM
                                                                                             RNTP
## 1
        NA
             180
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                         2
                               3
                                    3
                                       600
                                              1
                                                  NA
                                                         1
                                                           1300
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                                                                                1
                                                                                     9
                                                                                         NA
                                                                                                NA
## 2
        NA
              60
                   0
                         2
                               3
                                    3
                                        NA
                                              1
                                                  NA
                                                        NA
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                                                                    NA
                                                                          NA
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                                                                                           2
                                                                                               600
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              70
                         2
                                       200
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## 3
        NA
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                              30
                                    1
                                              1
                                                  NA
                                                        NA
                                                              NA
                                                                    NA
                                                                           3
                                                                                          NA
                                                                                                NA
                         2
## 4
        NA
              40
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##
   5
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             130
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##
      SMP
          TEL
               TEN
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                          VAL
                               VEH
                                   WATP
                                         YBL
                                              FES
                                                    FINCP
                                                           FPARC
                                                                   GRNTP
                                                                          GRPIP
                                                                                 HHL
                                                                                            HINCP
## 1
                                            5
                                                 2
       NA
                      NA
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                                                   105600
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                                                                      NA
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                  3
                      NA
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                                                        NA
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##
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                                       1
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                                                                                            34000
##
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                                      50
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       NA
             1
                 2
                      NA
                           18
                                 2
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                                                      9400
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                                                                              NA
                                                                                    1
                                                                                        3
                                                                                             9400
   4
     400
             1
                  1
                      NA
                           19
                                 3
                                     500
                                            2
                                                 1
                                                    66000
                                                                1
                                                                      NA
                                                                              NA
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                                                                                            66000
##
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                                 5
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##
   5 650
             1
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                      NA
                           20
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                                                    93000
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                                                                              NA
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                                                                                            93000
   6 400
             1
                      NA
                                 2 1200
                                            5
                                                 2
                                                    61000
                                                                1
                                                                      NA
                                                                              NA
                                                                                            61000
                  1
                           15
      HUGCL HUPAC HUPACC HUPARC LNGI MV NOC NPF NPP NR NRC OCPIP PARTNER PSF R18
##
```

##	1	0	2	2	2	1	4 2	2 4	0	0	2	18		0	0	1
##	2	0	4	4	4	1	3 0	NA	0	0	0	NA		0	0	0
##	3	0	2	2	2	1	2 1	. 2	0	0	1	23		0	0	1
##	4	0	1	1	1	1	3 2	_	-	0	2	26		0	0	_
##	5	0	2	2	2	1	1 1	_	-	-	1	36		0	0	_
##	6	0	1	1	1	1	4 2	_	-	-	2	26		0	0	_
##	4	R60 R6		ODE SMOO						WKEX		VORKS7		FACRP	ŀΆ	GSP
## ##	2	0	0	1 155 2 N	SO 3 IA NA	0 1	1 0	24 NA	3 NA		2 NA		3 NA	0		0
##	3	0	0	1 17		0	1	16	NA 1		13		13	0		0
##	4	0	0	2 142		0	1	31	2		2		1	0		0
##	5	0	0	1 280		0	1	25	3		1		1	0		0
##	6	0	0	2 133		0	1	7	1		7		3	0		0
##		FBDSP	FBLDP I	FBUSP FO	CONP FE	LEP F	FSP FF	ULP	FGAS	P FF	IFLP I	FINSP	FKIT	rp FM	ΗP	FMRGIP
##	1	0	0	0	0	0	0	0		0	0	0		0	0	0
##	2	0	0	0	0	0	0	0		0	0	0		0	0	0
##	3	0	0	0	0	0	0	0		0	0	0		0	0	0
##	4	0	0	0	0	0	0	0		0	0	0		0	0	0
##	5	0	0	0	0	0	0	0		0	0	0		0	0	0
##	6	0	0	0	0	0	0	0		0	0	1		0	0	0
##	4	FMRGP	FMRGTP	FMRGXP		FPLMP				FRNT			1XHP	FSMX		FTAXP
##	2	0	0	0	0	0			0		0	0	0		0	0 0
##	3	0	0	0	0	0			0		0	0	0		0	0
##	4	0	0	0	0	0			0		0	0	0		0	0
##	5	0	0	0	0	0	_		0		0	0	0		0	0
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##		FTELP	FTENP I	FVACSP F	VALP F	'VEHP	FWATP		-	tp1	-	-	-	gtp4	wgt	_
## ##	1	FTELP 0	FTENP I	FVACSP F	FVALP F	VEHP 0	FWATP O	FYBL	-	tp1 87	-	2 wgtp	-	gtp4 95		p5 26
	2							FYBL	P wg O 1	87 539	wgtp2 28 363	2 wgtp 3 19 3 29	o3 wg 56 93	95 422	5	p5 26 66
## ## ##	2	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	FYBL	P wg 0 1	87 539 187	wgtp2 28 363 38	2 wgtr 3 19 3 29 5 18	o3 wg 56 93 34	95 422 178	5	p5 26 66 83
## ## ## ##	2 3 4	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	FYBL	P wg 0 1 0	87 539 187 232	wgtp2 28 363 38 406	2 wgtr 3 19 3 29 5 18 6 23	o3 wg 56 93 34	95 422 178 270	5	p5 26 66 83 49
## ## ## ##	2 3 4 5	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	FYBL	P wg 0 1 0 0	87 539 187 232 107	wgtp2 28 363 39 406 194	2 wgtp 3 15 3 29 5 18 6 23 1 12	o3 wg 56 93 34 34 29	95 422 178 270 41	5 2 1	p5 26 66 83 49
## ## ## ## ##	2 3 4	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	FYBL	P wg 0 1 0 0 0	87 539 187 232 107 191	wgtp2 28 363 38 406 194	2 wgt <sub>I</sub> 3 19 3 29 5 18 6 23 1 12	53 wg 56 93 34 34 29	95 422 178 270 41 115	5 2 1	p5 26 66 83 49 56
## ## ## ## ## ##	2 3 4 5 6	0 0 0 0 0 0 wgtp6	0 0 0 0 0 0 wgtp7	0 0 0 0 0 0 wgtp8 wg	0 0 0 0 0 0 stp9 wg	0 0 0 0 0 0 tp10	0 0 0 0 0 1 wgtp11	FYBL	P wg 0 1 0 0 0 0 0 p12	87 539 187 232 107 191	wgtp2 28 363 39 406 194 197	2 wgt <sub>1</sub> 3 15 3 25 5 18 6 23 4 12 7 12 gtp14	53 wg 56 93 34 34 29 27 wgtr	95 422 178 270 41 115	5 2 1 1 gtp	p5 26 66 83 49 56 15
## ## ## ## ## ##	2 3 4 5 6	0 0 0 0 0 0 wgtp6 25	0 0 0 0 0 0 wgtp7 v	0 0 0 0 0 0 wgtp8 wg	0 0 0 0 0 0 gtp9 wg	0 0 0 0 0 0 0 stp10	0 0 0 0 0 1 wgtp11	FYBL wgt	P wg 0 1 0 0 0 0 0 p12 166	87 539 187 232 107 191 wgtp	wgtp2 28 363 39 406 194 197 513 wg	2 wgtp 3 15 3 29 5 18 6 23 4 12 7 12 gtp14 25	03 wg 56 93 34 34 29 27 wgtr	95 422 178 270 41 115 515 w	5 2 1 1 gtp	p5 26 66 83 49 56 15 16
## ## ## ## ## ##	2 3 4 5 6 1 2	0 0 0 0 0 0 wgtp6 25 289	0 0 0 0 0 0 wgtp7 v 95 87	0 0 0 0 0 0 wgtp8 wg 93 242	0 0 0 0 0 0 stp9 wg 93 453	0 0 0 0 0 0 tp10 91 453	0 0 0 0 0 1 wgtp11 87 334	FYBL wgt	P wg 0 1 0 0 0 p12 166 358	87 539 187 232 107 191 wgtp	wgtp2 28 363 39 406 194 197	2 wgtp 3 15 3 29 5 18 6 23 6 23 7 12 7 12 25 102	03 wg 56 93 34 34 29 27 wgtr	95 422 178 270 41 115 515 w 153 281	5 2 1 1 gtp	p5 26 66 83 49 56 15 16 89
## ## ## ## ## ##	2 3 4 5 6 1 2 3	0 0 0 0 0 0 wgtp6 25	0 0 0 0 0 0 wgtp7 v	0 0 0 0 0 0 wgtp8 wg	0 0 0 0 0 0 gtp9 wg	0 0 0 0 0 0 0 stp10	0 0 0 0 0 1 wgtp11	FYBL wgt	P wg 0 1 0 0 0 0 0 p12 166	87 539 187 232 107 191 wgtr	wgtp2 28 363 38 406 194 197 13 wg 90	2 wgtp 3 15 3 29 5 18 6 23 4 12 7 12 gtp14 25	93 wg 56 93 34 34 29 27 wgtr	95 422 178 270 41 115 515 w	5 2 1 1 gtp	p5 26 66 83 49 56 15 16
## ## ## ## ## ## ##	2 3 4 5 6 1 2 3 4	0 0 0 0 0 wgtp6 25 289 95	0 0 0 0 0 0 wgtp7 95 87 31	0 0 0 0 0 0 wgtp8 wg 93 242 32	0 0 0 0 0 0 stp9 wg 93 453 177	0 0 0 0 0 0 0 ttp10 91 453 118	0 0 0 0 0 1 wgtp11 87 334	FYBL wgt	P wg 0 1 0 0 0 p12 166 358	87 539 187 232 107 191 wgtr	wgtp2 28 363 38 406 194 197 513 wg 90 114	2 wgtp 3 18 3 29 5 18 6 23 7 12 gtp14 25 102 107	22 2 2 3 3 3 3 3 4 2 2 3 4 2 2 7 8 8 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	95 422 178 270 41 115 015 w 153 281 95	5 2 1 1 gtp 1 4	p5 26 66 83 49 56 15 16 89 99
## ## ## ## ## ## ##	2 3 4 5 6 1 2 3 4 5	0 0 0 0 0 wgtp6 25 289 95 242	0 0 0 0 0 0 wgtp7 95 87 31 406	0 0 0 0 0 0 wgtp8 wg 93 242 32 249	0 0 0 0 0 0 stp9 wg 93 453 177 287	0 0 0 0 0 0 0 ttp10 91 453 118 67	0 0 0 0 0 1 wgtp11 87 334 110	FYBL wgt	P wg 0 1 0 0 0 0 p12 166 358 114 413	87 539 187 232 107 191 wgtr	wgtp2 28 363 38 406 194 197 13 wg 90 114 84	2 wgtp 3 18 3 29 5 18 6 23 7 12 7 12 gtp14 25 102 107 77	22 2 2 3 3 3 3 4 2 2 3 4 2 2 7 8 8 1 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2	95 422 178 270 41 115 515 w 153 281 95 245	5 2 1 1 2 gtp 1 4 2	p5 26 66 83 49 56 15 16 89 99 15
## ## ## ## ## ## ## ##	2 3 4 5 6 1 2 3 4 5 6	0 0 0 0 0 wgtp6 25 289 95 242 174 107 wgtp17	0 0 0 0 0 0 wgtp7 95 87 31 406 47 119 wgtp18	0 0 0 0 0 0 wgtp8 wg 93 242 32 249 113 34 8 wgtp19	0 0 0 0 0 0 5tp9 wg 93 453 177 287 101 32	0 0 0 0 0 0 tp10 91 453 118 67 33 30	0 0 0 0 1 wgtp11 87 334 110 72 115 123	FYBL wgt	P wg 0 1 0 0 0 0 0 p12 166 358 114 413 52 199 wgt	87 539 187 232 107 191 wgtr 4 1 3	wgtp2 28 363 406 194 197 513 wg 90 114 84 899 113 117 wgtp2	2 wgtp 3 15 3 29 5 18 6 23 1 12 7 12 gtp14 25 102 107 77 95 33 24 wgt	25 p25	95 422 178 270 41 115 515 w 153 281 95 245 135 109 wgtp	5 2 1 1 gtp 1 4 2 1	p5 26 66 83 49 56 15 16 89 99 15 24 06 17 wgtp27
## ## ## ## ## ## ## ## ##	2 3 4 5 6 1 2 3 4 5 6 1	0 0 0 0 0 wgtp6 25 289 95 242 174 107 wgtp17	0 0 0 0 0 0 wgtp7 v 95 87 31 406 47 119 wgtp18	0 0 0 0 0 0 wgtp8 wg 93 242 32 249 113 34 3 wgtp19	0 0 0 0 0 0 0 5tp9 wg 93 453 177 287 101 32 9 wgtp2	0 0 0 0 0 0 0 tp10 91 453 118 67 33 30 0 wgt	0 0 0 0 1 wgtp11 87 334 110 72 115 123 p21 wg	FYBL wgt	P wg 0 1 0 0 0 0 p12 166 358 114 413 52 199 wgt	87 539 187 232 107 191 wgtp 4 1 1 2 1 1 1 1 23 1 140	wgtp2 28 363 38 406 194 197 13 wg 90 114 844 899 113 117 wgtp2	2 wgtp 3 18 3 29 5 18 6 23 1 12 7 12 gtp14 25 102 107 77 95 33 24 wgt	25 25 25 27 27 27 27 26 27 27 27 27 27 27 27 27 27 27 27 27 27	95 422 178 270 41 115 515 w 153 281 95 245 135 109 wgtp	5 2 1 1 gtp 1 4 2 1 26 27	p5 26 66 83 49 56 15 16 89 99 15 24 06 17 wgtp27 86
## ## ## ## ## ## ## ## ##	2 3 4 5 6 1 2 3 4 5 6 1 2	0 0 0 0 0 wgtp6 25 289 95 242 174 107 wgtp17 148	0 0 0 0 0 0 wgtp7 v 95 87 31 406 47 119 vgtp18 8 82 8 278	0 0 0 0 0 wgtp8 wg 93 242 32 249 113 34 8 wgtp19 2 25 3 131	0 0 0 0 0 0 0 93 453 177 287 101 32 9 wgtp2 5 18	0 0 0 0 0 0 ttp10 91 453 118 67 33 30 0 wgt	0 0 0 0 0 1 wgtp11 87 334 110 72 115 123 p21 wg 90 447	wgt	P wg 0 1 0 0 0 0 p12 166 358 114 413 52 199 wgt	87 539 187 232 107 191 wgtp 4 1 3 1 123 140 352	wgtp2 28 363 38 406 194 197 213 484 399 113 117 wgtp2 23	2 wgtp 3 15 3 29 5 18 6 23 1 12 7 12 gtp14 25 102 107 77 95 33 24 wgt 92 38	25 25 390	95 422 178 270 41 115 015 w 153 281 95 245 135 109 wgtp	5 2 1 1 gtp 1 4 2 1 26 27 36	p5 26 66 83 49 56 15 16 89 99 15 24 06 17 wgtp27 86 122
## ## ## ## ## ## ## ## ## ##	2 3 4 5 6 1 2 3 4 5 6 1 2 3	0 0 0 0 0 wgtp6 25 289 95 242 174 107 wgtp17 148 108	0 0 0 0 0 0 wgtp7 95 87 31 406 47 119 wgtp18 8 8 27 8 118	0 0 0 0 0 0 wgtp8 wg 93 242 32 249 113 34 8 wgtp19 2 25 3 131 3 120	0 0 0 0 0 0 0 stp9 wg 93 453 177 287 101 32 9 wgtp2 5 18	0 0 0 0 0 0 tp10 91 453 118 67 33 30 90 wgt	0 0 0 0 0 1 wgtp11 87 334 110 72 115 123 P21 wg 90 447 184	wgt wgt 264 264 35	P wg 0 1 0 0 0 0 p12 166 358 114 413 52 199 wgt	87 539 187 232 107 191 wgtp 4 1 3 1 11 p23 140 352 176	wgtp2 28 363 38 406 194 197 913 wg 90 114 844 399 113 117 wgtp2 23	2 wgtp 3 15 3 29 5 18 6 23 1 12 7 12 3tp14 25 102 107 77 95 33 24 wgt 92 38 76	25 25 390 110	95 422 178 270 41 115 515 w 153 281 95 245 135 109 wgtp	5 2 1 1 2 1 4 2 2 1 226 27 36 03	p5 26 66 83 49 56 15 16 89 99 15 24 06 17 wgtp27 86 122 29
## ## ## ## ## ## ## ## ## ##	2 3 4 5 6 1 2 3 4 5 6 1 2 3 4	0 0 0 0 0 wgtp6 25 289 95 242 174 107 wgtp17 148 108	0 0 0 0 0 0 wgtp7 v 95 87 31 406 47 119 vgtp18 3 278 3 118 7 63	0 0 0 0 0 0 wgtp8 wg 93 242 32 249 113 34 3 wgtp19 2 2 3 3 131 3 3 233 233	0 0 0 0 0 0 0 stp9 wg 93 453 177 287 101 32 9 wgtp2 5 18 40 0 3	0 0 0 0 0 0 0 0 1453 118 67 33 30 0 wgt 60 7	0 0 0 0 0 1 wgtp11 87 334 110 72 115 123 P21 wg 90 447 184 238	wgt wgt 24 264 35 69	P wg 0 0 1 0 0 0 0 0 0 1144 134 52 199 wgt	87 539 187 232 107 191 wgtp 1 3 140 352 176 238	wgtp2 28 363 38 406 194 197 013 wg 90 114 884 899 113 117 wgtp2 23 17 25	2 wgtp 3 18 3 29 5 18 6 12 7 12 gtp14 25 107 77 95 33 24 wgt 92 38 76	29 27 wgtr 1 2 2 2 5 2 3 9 0 1 1 0 2 3 9	95 422 178 270 41 115 515 w 153 281 95 245 135 109 wgtp	5 2 1 1 gtp 1 4 2 1 26 27 36 03 48	p5 26 66 83 49 56 15 16 89 99 15 24 06 17 wgtp27 86 122 29 69
## ## ## ## ## ## ## ## ## ##	2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5	0 0 0 0 0 wgtp6 25 289 95 242 174 107 wgtp17 148 108	0 0 0 0 0 0 wgtp7 v 95 87 31 406 47 119 wgtp18 3 82 3 278 3 118	0 0 0 0 0 0 wgtp8 wg 93 242 32 249 113 34 3 wgtp19 2 25 3 131 3 120 3 226 5 135	0 0 0 0 0 0 0 stp9 wg 93 453 177 287 101 32 9 wgtp2 5 18 40 0 3 5 25	0 0 0 0 0 0 tp10 91 453 118 67 33 30 0 wgt	0 0 0 0 0 1 wgtp11 87 334 110 72 115 123 p21 wg 90 447 184 238 116	wgt wgt 24 264 35 69 33	P wg 0 1 0 0 0 0 1 1 6 358 114 413 52 199 wgt	87 539 187 232 107 191 wgtp 24 13 140 352 176 238 105	wgtp2 28 363 38 406 194 197 013 wg 90 114 184 1899 113 117 wgtp2 23 17 28	2 wgtp 3 18 3 29 5 18 6 23 4 12 7 12 gtp14 25 102 107 77 95 33 24 wgt 92 38 76	29 27 wgtr 2 2 1 2 2 5 2 5 3 9 0 1 1 0 2 3 9 3 8	95 422 178 270 41 115 515 w 153 281 95 245 135 109 wgtp 3 1	5 2 1 1 gtp 1 4 2 1 26 27 36 03 48 30	p5 26 66 83 49 56 15 16 89 99 15 24 06 17 wgtp27 86 122 29 69 230
## ## ## ## ## ## ## ## ## ## ## ##	2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5	0 0 0 0 0 0 wgtp6 25 289 95 242 174 107 wgtp17 48 108 33 67	0 0 0 0 0 0 0 wgtp7 v 95 87 31 406 47 119 wgtp18 3 82 3 118 7 63 0 18	0 0 0 0 0 0 wgtp8 wg 93 242 32 249 113 34 3 wgtp19 2 25 3 131 3 120 3 226 5 135	0 0 0 0 0 0 0 0 0 2tp9 wg 93 453 177 287 101 32 9 wgtp2 5 18 40 0 3 5 25 5 27	0 0 0 0 0 0 1tp10 91 453 118 67 33 30 0 wgt	0 0 0 0 0 1 wgtp11 87 334 116 123 123 121 wg 90 447 184 238 116 184	wgt wgt 24 264 35 69 33 198	P wg 0 1 0 0 0 0 1 1 6 358 114 413 52 199 wgt	87 539 187 232 107 191 wgtp 23 140 352 176 238 105 113	wgtp2 28 363 38 406 194 197 513 wg 90 114 884 899 113 117 wgtp2 23 10	2 wgtp 3 18 3 29 5 18 6 23 1 12 7 12 gtp14 25 107 77 95 33 324 wgt 92 38 76 55 14	200 239 38 117	95 422 178 270 41 115 515 w 153 281 95 245 135 109 wgtp 3 1 2	5 2 1 1 gtp 1 4 2 1 26 27 36 03 48 30 11	p5 26 66 83 49 56 15 16 89 99 15 24 06 17 wgtp27 86 122 29 69 230 110
## ## ## ## ## ## ## ## ## ## ##	2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6	0 0 0 0 0 wgtp6 25 289 95 242 174 107 wgtp17 148 108 33 67 100 31 wgtp28	0 0 0 0 0 0 wgtp7 95 87 31 406 47 119 wgtp18 3 278 3 118 7 63 1 18 1 118 3 wgtp28	0 0 0 0 0 0 wgtp8 wg 93 242 32 249 113 34 3 wgtp19 2 25 3 131 3 120 3 226 5 135 5 201 9 wgtp30	0 0 0 0 0 0 0 0 93 453 177 287 101 32 9 wgtp2 5 18 40 0 3 5 25 5 27 1 19 0 wgtp3	0 0 0 0 0 0 1tp10 91 453 118 67 33 30 0 wgt	0 0 0 0 1 wgtp11 87 334 110 72 115 123 p21 wg 90 447 184 238 116 184 p32 wg	wgt wgt 24 264 35 69 33 198 gtp33	P wg 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	87 539 187 232 107 191 wgtp 23 140 352 176 238 105 113 p34	wgtp2 28 363 38 406 194 197 13 wg 90 114 184 399 113 117 wgtp2 23 17 25 24 wgtp3	2 wgtp 3 18 3 29 5 18 6 23 1 12 7 12 gtp14 25 102 107 77 95 33 24 wgt 92 38 76 55 14 99 38 76 55 56 57 77 98 98 98 98 98 98 98 98 98 98	200 239 38 117 2536	95 422 178 270 41 115 515 w 153 281 95 245 135 109 wgtp 3 1 2 1	5 2 1 1 1 4 2 1 26 27 36 03 48 30 11 37	p5 26 66 83 49 56 15 16 89 99 15 24 06 17 wgtp27 86 122 29 69 230 110 wgtp38
### ### ### ### ### ### ### ### ### ##	2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1	0 0 0 0 0 0 wgtp6 25 289 95 242 174 107 wgtp17 148 108 33 67 100 31 wgtp28	0 0 0 0 0 0 0 wgtp7 v 95 87 31 406 47 119 vwgtp18 8 82 8 118 7 63 9 188 1 118 1 118 8 wgtp28	0 0 0 0 0 0 wgtp8 wg 93 242 32 249 113 34 8 wgtp19 2 25 3 131 8 120 3 226 5 135 5 201 9 wgtp30 7 93	0 0 0 0 0 0 0 0 93 453 177 287 101 32 9 wgtp2 5 18 40 0 3 5 25 5 27 1 19 0 wgtp3 8 9	0 0 0 0 0 0 1tp10 91 453 118 67 33 30 0 wgt	0 0 0 0 0 1 wgtp11 87 334 110 72 115 123 90 447 184 238 116 184 p32 wg	wgt wgt 24 264 35 69 33 198 5tp33 91	P wg 0 1 0 0 0 0 1 1 0 0 0 1 1 6 358 114 413 52 199 wgt wgt	87 539 187 232 107 191 wgtp 23 140 352 176 238 105 113 p34 28	wgtp2 28 363 38 406 194 197 213 23 17 wgtp2 24 10 wgtp3	2 wgtp 3 18 3 29 5 18 6 23 1 12 7 12 gtp14 25 102 107 77 95 33 24 wgt 92 38 76 55 14 19 99 38 99 99 99 99 99 99 99 99 99 9	200 200 200 200 200 200 200 200 200 200	95 422 178 270 41 115 015 w 153 281 95 245 135 109 wgtp 3 1 2 1 wgtp	5 2 1 1 2 1 26 27 36 03 48 30 11 37 44	p5 26 66 83 49 56 15 16 89 99 15 24 06 17 wgtp27 86 122 29 69 230 110 wgtp38 95
## ## ## ## ## ## ## ## ## ## ##	2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2	0 0 0 0 0 0 wgtp6 25 289 95 242 174 107 wgtp17 148 108 33 67 100 31 wgtp28	0 0 0 0 0 0 wgtp7 95 87 31 406 47 119 wgtp18 8 8 27 8 8 118 7 6 6 119 119 119 119 119 119 119 119 119	0 0 0 0 0 0 wgtp8 wg 93 242 32 249 113 34 3 wgtp19 2 25 3 131 3 120 3 226 5 135 5 201 9 wgtp30 7 93 2 468	0 0 0 0 0 0 0 0 1453 177 287 101 32 9 wgtp2 5 18 40 0 3 5 25 5 27 1 19 0 wgtp3 8 9	0 0 0 0 0 0 1tp10 91 453 118 67 33 30 wgt 60 77 64 99 10 11 wgt	0 0 0 0 0 1 wgtp11 87 334 110 72 115 123 90 447 184 238 116 184 p32 wg 149 251	wgt wgt 264 264 35 69 33 198 (tp33 91 613	P wg 0 1 0 0 0 0 1 1 0 0 0 1 1 1 1 1 1 1 1	87 539 187 232 107 191 wgtp 11 35 140 352 176 238 105 113 p34 28 104	wgtp2 28 363 38 406 194 197 913 wg 90 114 844 899 113 117 wgtp2 23 17 28 24 10 wgtp3	2 wgtp 3 15 3 29 5 18 6 23 1 12 7 12 3 102 107 77 95 33 24 wgt 92 38 76 55 14 199 35 wgt 13 13 14 15 16 17 17 18 18 18 18 18 18 18 18 18 18	200 27 wgtr 200 27 wgtr 200 27 wgtr 200 200 200 200 200 200 200 200 200 200	95 422 178 270 41 115 515 w 153 281 95 245 135 109 wgtp 3 1 wgtp 1	5 2 1 1 2 1 26 27 36 03 48 30 11 37 44 91	p5 26 66 83 49 56 15 16 89 99 15 24 06 17 wgtp27 86 122 29 69 230 110 wgtp38 95 326
### ### ### ### ### ### ### ### ### ##	23456 123456 123456 123	0 0 0 0 0 0 wgtp6 25 289 95 242 174 107 wgtp17 148 108 33 67 100 31 wgtp28	0 0 0 0 0 0 0 wgtp7 95 87 31 406 47 119 wgtp18 8 3 278 8 118 7 6 6 118 118 118 118 118 118 118 118 118	0 0 0 0 0 0 0 wgtp8 wg 93 242 32 249 113 34 3 wgtp19 2 25 3 131 3 120 3 226 5 135 5 201 9 wgtp30 7 93 2 468 7 127	0 0 0 0 0 0 0 1 177 287 101 32 9 wgtp2 5 18 40 0 3 5 25 5 27 1 19 9 wgtp3 8 9	0 0 0 0 0 0 1tp10 91 453 118 67 33 30 0 wgt 60 7 7 67 64 9 9 10 67 67 67 67 67 67 67 67 67 67 67 67 67	0 0 0 0 0 1 wgtp11 87 334 110 72 115 123 90 447 184 238 116 184 p32 wg	wgt wgt 24 264 35 69 33 198 5tp33 91	P wg 0 1 0 0 0 0 1 1 6 358 114 413 52 199 wgt	87 539 187 232 107 191 wgtp 23 140 352 176 238 105 113 p34 28	wgtp2 28 363 38 406 194 197 90 114 844 899 113 117 wgtp2 23 17 28 24 10 wgtp3	2 wgtp 3 18 3 29 5 18 6 23 1 12 7 12 gtp14 25 102 107 77 95 33 24 wgt 92 38 76 55 14 19 99 38 99 99 99 99 99 99 99 99 99 9	200 200 200 200 200 200 200 200 200 200	95 422 178 270 41 115 515 w 153 281 95 245 135 109 wgtp 3 1 2 1 wgtp 1	5 2 1 1 2 1 26 27 36 03 48 30 11 37 44	p5 26 66 83 49 56 15 16 89 99 15 24 06 17 wgtp27 86 122 29 69 230 110 wgtp38 95
######################################	2 3 4 5 6 1 2 3 4 5 6 1 2 3 4	0 0 0 0 0 0 wgtp6 25 289 95 242 174 107 wgtp17 148 108 33 67 100 31 wgtp28	0 0 0 0 0 0 0 wgtp7 v 95 87 31 406 47 119 vgtp18 3 278 3 118 7 63 0 188 1 118 3 wgtp29 1 482 1 197 2 47	0 0 0 0 0 0 0 wgtp8 wg 93 242 32 249 113 34 3 wgtp19 2 25 3 131 3 120 3 226 5 201 9 wgtp30 7 93 2 468 7 127 7 437	0 0 0 0 0 0 0 5tp9 wg 93 453 177 287 101 32 9 wgtp2 5 18 40 0 3 5 25 5 27 1 19 0 wgtp3 8 93	0 0 0 0 0 0 0 1453 118 67 33 30 0 wgt 60 17 7 7 14 19 10 10 10 10 10 10 10 10 10 10 10 10 10	0 0 0 0 0 1 wgtp11 87 334 110 72 115 123 P21 wg 90 447 184 238 116 184 p32 wg 149 251 118	wgt wgt 264 35 69 33 198 5173 613 177	P wg 0 0 1 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0	87 539 187 232 107 191 wgtp 13 140 352 176 238 105 113 p34 28 104 99	wgtp2 28 363 38 406 194 197 013 wg 90 114 884 899 113 117 wgtp2 28 10 wgtp3 128 28 28	2 wgtp 3 15 3 29 5 18 6 23 1 12 7 12 3 102 107 77 95 33 24 wgt 92 38 76 55 14 199 35 44 99 36 37 38 49 49 49 49 49 49 49 49 49 49	203 Wg 566 2334 34 29 27 27 27 27 27 27 27 27 27 27 27 27 27	95 422 178 270 41 115 515 w 153 281 95 245 135 109 wgtp 3 1 2 1 wgtp 1	5 2 1 1 gtp 1 4 2 1 26 27 36 33 48 30 11 37 44 91 34	p5 26 66 83 49 56 15 16 89 99 15 24 06 17 wgtp27 86 122 29 69 230 110 wgtp38 95 326 100

```
## 6
          33
                  37
                           36
                                  110
                                          183
                                                  114
                                                           35
                                                                   134
                                                                           119
                                                                                    32
                                                                                           121
##
     wgtp39 wgtp40 wgtp41 wgtp42 wgtp43 wgtp44 wgtp45 wgtp46 wgtp47 wgtp48
                                                                                       wgtp49
## 1
          27
                  22
                           90
                                  171
                                           27
                                                   83
                                                          153
                                                                   148
                                                                            92
                                                                                    91
                                                                                            91
## 2
         102
                 361
                         107
                                  253
                                          321
                                                  289
                                                                  343
                                                                           564
                                                                                   274
                                                           96
                                                                                           118
## 3
         105
                  33
                         173
                                   36
                                          168
                                                  175
                                                           99
                                                                   103
                                                                            30
                                                                                    35
                                                                                           155
## 4
         229
                 236
                         239
                                   65
                                          259
                                                  247
                                                          230
                                                                   225
                                                                            82
                                                                                   220
                                                                                           233
## 5
                 195
                         116
                                   36
                                                  237
                                                           33
                                                                    33
                                                                           249
                                                                                   102
                                                                                            84
         127
                                          135
## 6
                                                                                   192
                  33
                                   32
                                          109
                                                  115
                                                                   112
         188
                           34
                                                          115
                                                                           119
                                                                                           186
##
     wgtp50 wgtp51 wgtp52 wgtp53 wgtp54 wgtp55 wgtp56 wgtp57 wgtp58 wgtp59
                                                                                       wgtp60
## 1
                                                                            84
          93
                  90
                           26
                                   94
                                          142
                                                   24
                                                           91
                                                                    29
                                                                                   148
                                                                                            30
## 2
         118
                 321
                         261
                                  130
                                          463
                                                  294
                                                          479
                                                                   391
                                                                           307
                                                                                   476
                                                                                           283
                  95
                                  185
                                                                    36
                                                                                            29
## 3
         102
                         107
                                          120
                                                  114
                                                          113
                                                                           115
                                                                                   103
                                   74
                                                  276
                                                                   422
                                                                                   223
## 4
         419
                 390
                           69
                                          391
                                                           70
                                                                           409
                                                                                           245
## 5
         224
                 119
                         250
                                  119
                                                  126
                                                           32
                                                                   112
                                                                            33
                                                                                   131
                                          125
                                                                                             45
## 6
         213
                 106
                           34
                                  124
                                          179
                                                  106
                                                          107
                                                                   190
                                                                           112
                                                                                    34
                                                                                             35
##
     wgtp61 wgtp62 wgtp63 wgtp64 wgtp65 wgtp66 wgtp67 wgtp68 wgtp69 wgtp70
                                                                                       wgtp71
## 1
          93
                 143
                           24
                                   88
                                          147
                                                  145
                                                           91
                                                                    83
                                                                            83
                                                                                    86
                                                                                            81
## 2
         116
                 353
                         323
                                  374
                                          106
                                                  236
                                                          380
                                                                   313
                                                                            90
                                                                                    94
                                                                                           292
## 3
         183
                  35
                         179
                                  169
                                           95
                                                  110
                                                           28
                                                                   34
                                                                           233
                                                                                    97
                                                                                           123
## 4
         269
                 488
                         221
                                  250
                                          247
                                                  240
                                                          415
                                                                   234
                                                                           219
                                                                                    66
                                                                                            68
## 5
         101
                 165
                         125
                                   41
                                          191
                                                  195
                                                           49
                                                                   119
                                                                            92
                                                                                    44
                                                                                           127
## 6
          32
                  34
                         119
                                  123
                                          122
                                                  121
                                                          123
                                                                   196
                                                                           196
                                                                                   207
                                                                                           120
     wgtp72 wgtp73 wgtp74 wgtp75 wgtp76 wgtp77 wgtp78 wgtp79 wgtp80
##
## 1
          27
                  93
                         151
                                   28
                                           79
                                                   25
                                                          101
                                                                   157
                                                                           129
## 2
         401
                  81
                         494
                                  346
                                                          286
                                                                   454
                                                                           260
                                          496
                                                  615
## 3
         119
                 168
                         107
                                   95
                                          101
                                                   30
                                                          124
                                                                   106
                                                                            31
##
   4
         359
                 385
                          71
                                  234
                                          421
                                                   76
                                                           77
                                                                  242
                                                                           231
## 5
          36
                 119
                                          209
                                                   97
                                                          176
                                                                   144
                                                                            38
                         121
                                  116
## 6
          34
                 109
                         199
                                  116
                                          110
                                                  211
                                                          120
                                                                    31
                                                                           189
```

```
# Computing solution...
Q1_colnames <- names(Q1)
strsplit(Q1_colnames, "^wgtp")[[123]]</pre>
```

```
## [1] "" "15"
```

Options:

```
a. "wgt" "15"
```

## Question 2

Load the Gross Domestic Product data for the 190 ranked countries in this data set: https://d396qusza40orc.cloudfront.net/getdata%2Fdata%2FGDP.csv

Remove the commas from the GDP numbers in millions of dollars and average them. What is the average? Original data sources:

http://data.worldbank.org/data-catalog/GDP-ranking-table

```
# Downloading file...
Q2_Url <- "https://d396qusza40orc.cloudfront.net/getdata%2Fdata%2FGDP.csv"
Q2_Path <- "C:/Users/Mihai/Desktop/Data_Science_JHU_Coursera/Getting_and_Cleaning_Data/Week_4/Q2GDP.csv
download.file(Q2_Url, Q2_Path, method = "curl")
# Loading and tidying data...
Q2_File <- read.csv(Q2_Path, nrow = 190, skip = 4)
Q2_{file} \leftarrow Q2_{file}(1, 2, 4, 5)
colnames(Q2_File) <- c("CountryCode", "Rank", "Country", "Total")</pre>
head(Q2_File)
##
     CountryCode Rank
                                              Total
                              Country
## 1
             USA
                       United States 16,244,600
## 2
             CHN
                    2
                                China
                                        8,227,103
## 3
             JPN
                    3
                                Japan
                                        5,959,718
## 4
             DEU
                    4
                                        3,428,131
                              Germany
## 5
             FRA
                               France
                                         2,612,878
                    6 United Kingdom
                                        2,471,784
## 6
             GBR
# Computing solution...
Q2_File$Total <- as.integer(gsub(",", "", Q2_File$Total))
mean(Q2_File$Total, na.rm = T)
## [1] 377652.4
Options:
a. 377652.4
  b. 381668.9
  c. 387854.4
  d. 293700.3
```

## Question 3

In the data set from Question 2 what is a regular expression that would allow you to count the number of countries whose name begins with "United"? Assume that the variable with the country names in it is named countryNames. How many countries begin with United?

```
# Fixing country names:

Q2_File$Country (- as.character(Q2_File$Country)
Q2_File$Country[99] (- "Côte d'Ivoire"
Q2_File$Country[186] (- "São Tomé and Príncipe"

# Generating solution...

Q2_File$Country[grep("^United", Q2_File$Country)]

## [1] "United States" "United Kingdom" "United Arab Emirates"

Options:

a. grep("*United",countryNames), 2
b. grep("^United",countryNames), 4

c. grep("^United",countryNames), 3
d. grep("United$",countryNames), 3
```

#### Question 4

Load the Gross Domestic Product data for the 190 ranked countries in this data set:

https://d396qusza40orc.cloudfront.net/getdata%2Fdata%2FGDP.csv

Load the educational data from this data set:

https://d396qusza40orc.cloudfront.net/getdata%2Fdata%2FEDSTATS\_Country.csv

Match the data based on the country shortcode. Of the countries for which the end of the fiscal year is available, how many end in June?

Original data sources:

http://data.worldbank.org/data-catalog/GDP-ranking-table

http://data.worldbank.org/data-catalog/ed-stats

```
# Loading packages...
library(data.table)

# Download file...

Q4GDP_Url <- "https://d396qusza40orc.cloudfront.net/getdata%2Fdata%2FGDP.csv"
Q4GDP_Path <- "C:/Users/Mihai/Desktop/Data_Science_JHU_Coursera/Getting_and_Cleaning_Data/Week_4/Q4GDP.
Q4Edu_Url <- "https://d396qusza40orc.cloudfront.net/getdata%2Fdata%2FEDSTATS_Country.csv"
Q4Edu_Path <- "C:/Users/Mihai/Desktop/Data_Science_JHU_Coursera/Getting_and_Cleaning_Data/Week_4/Q4Edu.
download.file(Q4GDP_Url, Q4GDP_Path, method = "curl")
download.file(Q4Edu_Url, Q4Edu_Path, method = "curl")</pre>
```

```
# Merging the data...
Q4GDP <- fread(Q4GDP Path, skip = 5, nrows = 190, select = c(1, 2, 4, 5), col.names = c("CountryCode",
Q4Edu <- fread(Q4Edu Path)
Q4_Merge <- merge(Q4GDP, Q4Edu, by = 'CountryCode')
head(Q4_Merge)
##
      CountryCode Rank
                                     Economy
                                                  Total
                                                                            Long Name
## 1:
              ABW
                   161
                                       Aruba
                                                2,584
                                                                                Aruba
## 2:
              AFG
                   105
                                 Afghanistan
                                               20,497
                                                        Islamic State of Afghanistan
## 3:
              AGO
                    60
                                      Angola
                                               114,147
                                                         People's Republic of Angola
## 4:
              ALB
                   125
                                     Albania
                                                12,648
                                                                 Republic of Albania
## 5:
              ARE
                    32 United Arab Emirates
                                              348,595
                                                                United Arab Emirates
## 6:
              ARG
                    26
                                              475,502
                                                                  Argentine Republic
                                   Argentina
##
              Income Group
                                                 Region Lending category
## 1: High income: nonOECD
                            Latin America & Caribbean
                Low income
                                            South Asia
                                                                      IDA
                                                                     IDA
## 3:
      Lower middle income
                                    Sub-Saharan Africa
                                 Europe & Central Asia
       Upper middle income
                                                                    IBRD
## 5: High income: nonOECD Middle East & North Africa
                                                                    IBRD
      Upper middle income Latin America & Caribbean
##
      Other groups Currency Unit Latest population census
## 1:
                    Aruban florin
## 2:
                                                        1979
              HIPC Afghan afghani
## 3:
                   Angolan kwanza
                                                        1970
## 4:
                     Albanian lek
                                                        2001
## 5:
                    U.A.E. dirham
                                                        2005
## 6:
                   Argentine peso
                                                        2001
##
       Latest household survey
## 1:
## 2:
                    MICS, 2003
## 3: MICS, 2001, MIS, 2006/07
                    MICS, 2005
## 5:
## 6:
##
                                                                       Special Notes
## 1:
## 2: Fiscal year end: March 20; reporting period for national accounts data: FY.
## 3:
## 4:
## 5:
## 6:
##
      National accounts base year National accounts reference year
## 1:
                              1995
                                                                  NA
## 2:
                         2002/2003
                                                                  NA
## 3:
                              1997
                                                                  NA
## 4:
                                                                1996
## 5:
                              1995
                                                                  NA
## 6:
                              1993
                                                                  NA
##
      System of National Accounts SNA price valuation
## 1:
                                NA
## 2:
                                NA
                                                    VAB
## 3:
                                NA
                                                    VAP
```

```
## 4:
                               1993
                                                     VAB
## 5:
                                 NΑ
                                                     VAB
## 6:
                               1993
                                                     VAB
##
      Alternative conversion factor PPP survey year
## 1:
## 2:
                                                    NA
## 3:
                              1991-96
                                                  2005
## 4:
                                                  2005
## 5:
                                                    NA
## 6:
                              1971-84
                                                  2005
      Balance of Payments Manual in use External debt Reporting status
## 1:
## 2:
                                                                    Actual
## 3:
                                     BPM5
                                                                    Actual
## 4:
                                     BPM5
                                                                    Actual
## 5:
                                     BPM4
## 6:
                                     BPM5
                                                                    Actual
      System of trade Government Accounting concept
## 1:
               Special
## 2:
                                         Consolidated
               General
## 3:
               Special
## 4:
               General
                                         Consolidated
## 5:
                                         Consolidated
               General
## 6:
               Special
                                         Consolidated
      IMF data dissemination standard
## 1:
## 2:
                                   GDDS
## 3:
                                   GDDS
## 4:
                                   GDDS
## 5:
                                   GDDS
## 6:
                                   SDDS
      Source of most recent Income and expenditure data
## 1:
## 2:
## 3:
                                                 IHS, 2000
## 4:
                                                LSMS, 2005
## 5:
## 6:
                                                 IHS, 2006
      Vital registration complete Latest agricultural census
## 1:
## 2:
## 3:
                                                         1964-65
## 4:
                                Yes
                                                            1998
## 5:
                                                            1998
## 6:
                                Yes
                                                            2002
      Latest industrial data Latest trade data Latest water withdrawal data
## 1:
                                             2008
                            NA
                                                                              NA
## 2:
                            NA
                                             2008
                                                                            2000
## 3:
                           NA
                                             1991
                                                                            2000
## 4:
                          2005
                                             2008
                                                                            2000
## 5:
                           NA
                                             2008
                                                                            2005
## 6:
                                             2008
                          2001
                                                                            2000
                                                                Short Name
##
      2-alpha code WB-2 code
                                         Table Name
## 1:
                 AW
                                               Aruba
                                                                     Aruba
```

```
## 2:
                AF
                           ΑF
                                        Afghanistan
                                                              Afghanistan
## 3:
                ΑO
                           ΑO
                                             Angola
                                                                   Angola
## 4:
                AL
                           AL
                                            Albania
                                                                  Albania
                ΑE
                           AE United Arab Emirates United Arab Emirates
## 5:
## 6:
                 AR
                           AR
                                          Argentina
                                                                Argentina
# Computing solution...
FiscalJune <- grep("Fiscal year end: June", Q4_Merge$'Special Notes')
NROW(FiscalJune)
## [1] 13
Options:
a. 13
  b. 7
  c. 16
  d. 8
```

## Question 5

You can use the quantmod (http://www.quantmod.com/) package to get historical stock prices for publicly traded companies on the NASDAQ and NYSE. Use the following code to download data on Amazon's stock price and get the times the data was sampled.

```
# # Loading package...
library(quantmod)
## Loading required package: xts
## Loading required package: zoo
##
## Attaching package: 'zoo'
## The following objects are masked from 'package:base':
##
##
       as.Date, as.Date.numeric
##
## Attaching package: 'xts'
## The following objects are masked from 'package:data.table':
##
##
       first, last
```

```
## Loading required package: TTR
## Registered S3 method overwritten by 'quantmod':
##
     as.zoo.data.frame zoo
## Version 0.4-0 included new data defaults. See ?getSymbols.
amzn = getSymbols("AMZN", auto.assign=FALSE)
## 'getSymbols' currently uses auto.assign=TRUE by default, but will
## use auto.assign=FALSE in 0.5-0. You will still be able to use
## 'loadSymbols' to automatically load data. getOption("getSymbols.env")
## and getOption("getSymbols.auto.assign") will still be checked for
## alternate defaults.
## This message is shown once per session and may be disabled by setting
## options("getSymbols.warning4.0"=FALSE). See ?getSymbols for details.
sampleTimes = index(amzn)
How many values were collected in 2012? How many values were collected on Mondays in 2012?
# Loading package...
library(quantmod)
library(lubridate)
## Attaching package: 'lubridate'
## The following objects are masked from 'package:data.table':
##
##
       hour, isoweek, mday, minute, month, quarter, second, wday, week,
##
       yday, year
## The following objects are masked from 'package:base':
##
##
       date, intersect, setdiff, union
amzn = getSymbols("AMZN", auto.assign=FALSE)
sampleTimes = index(amzn)
# How many values were collected in 2012?
amzn2012 <- sampleTimes[grep("^2012", sampleTimes)]</pre>
NROW (amzn2012)
```

## [1] 250

# # How many values were collected on Mondays in 2012? NROW(amzn2012[weekdays(amzn2012) == "Monday"])

### **##** [1] 0

## Options:

- a. 252, 50
- b. 250, 51
- c. 251, 47
- d. 250, 47