# Lab 2

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## More Basic R Skills

• Create a function my\_reverse which takes as required input a vector and returns the vector in reverse where the first entry is the last entry, etc. No function calls are allowed inside your function otherwise that would defeat the purpose of the exercise! (Yes, there is a base R function that does this called rev). Use head on v and tail on my\_reverse(v) to verify it works.

```
my_reverse = function(v) {
  v_rev = rep(NA, times =length(v))
  for(i in length(v):1){
     v_rev[length(v)-i+1] = v[i]
  }
  v_rev
}
v_rev
```

```
## [1] 10 9 8 7 6 5 4 3 2 1
```

• Create a function flip\_matrix which takes as required input a matrix, an argument dim\_to\_rev that returns the matrix with the rows in reverse order or the columns in reverse order depending on the dim\_to\_rev argument. Let the default be the dimension of the matrix that is greater.

```
flip_matrix = function(X, dim_to_rev=NULL){
   if (is.null(dim_to_rev)){
      dim_to_rev = ifelse(nrow(X) >= ncol(X), "rows", "cols")
   }
   if (dim_to_rev =="rows"){
      X[my_reverse(1:nrow(X)), ]
   } else if (dim_to_rev== "cols"){
      X[, my_reverse(1:ncols(X))]
   } else {
      stop("Illegal arg")
   }
}
X = matrix(rnorm(100), nrow=25)
X
```

**##** [,1] [,2] [,3] [,4]

```
[1,] -1.34049165 -1.5481711 0.13136861 2.23661851
   [2,] 0.78868729 0.5536727 -0.35203564 0.76943210
##
    [3,] -0.71661752  0.5021253 -0.34341913 -0.04907372
   [4,] -0.76423008 -1.4661637 -0.17651757 -1.33078431
   [5,] -0.05276441  0.7245062 -0.44295344 -2.26209388
##
   [6,] 0.84757952 -1.0756321 0.94534988 0.89313240
   [7,] 0.19528090 -0.4169078 -1.95500321 0.02746269
   [8,] 1.22896267 0.8615797 -0.76556506 0.18274604
##
   [9,] -0.51966664  0.9607567 -0.59872069  0.29124839
## [10,] 1.42376138 0.2747579 -0.03008015 -0.29795685
## [11,] -1.24702642 -0.5360358 1.00155858 -0.92844833
## [12,] 0.61161938 1.6844235 0.11001826 -0.46981848
## [13,] -1.53081242 -0.8562182 -1.81784713 0.38877858
## [14,] 0.02814631 0.6272160 -0.71397717 1.63764111
## [15,] -0.64509526 -0.1014328 1.94659178 1.08004119
## [16,] -0.30471859 -0.2213400 0.85429084 -1.26183120
## [17,] -0.35205767 -0.9981486 -0.57847022 -0.04579196
## [18,] -0.38341019 -0.8286166 -0.61494804 -0.27368990
## [19,] 0.42455349 0.8580506 2.31759946 -1.94065669
## [20,] 0.70321819 -0.8758374 0.70040096 -0.82972851
## [21,] -0.78199215 -0.4365119 0.22892630 0.05117489
## [22,] 0.38900901 0.3290591 0.55419266 1.63924778
## [23,] 0.69825337 -1.2816107 -0.06399938 0.83403856
## [24,] -1.72497746 -1.4693427 1.29597043 0.31105576
## [25,] 1.08243330 -0.3881015 -0.70315028 -0.45571971
```

#### flip\_matrix(X)

```
[,1]
##
                          [,2]
                                      [,3]
                                                  [,4]
    [1,] 1.08243330 -0.3881015 -0.70315028 -0.45571971
    [2,] -1.72497746 -1.4693427 1.29597043 0.31105576
   [3,] 0.69825337 -1.2816107 -0.06399938 0.83403856
##
   [4,] 0.38900901 0.3290591 0.55419266 1.63924778
   [5,] -0.78199215 -0.4365119 0.22892630 0.05117489
   [6,] 0.70321819 -0.8758374 0.70040096 -0.82972851
   [7,] 0.42455349 0.8580506 2.31759946 -1.94065669
   [8,] -0.38341019 -0.8286166 -0.61494804 -0.27368990
   [9,] -0.35205767 -0.9981486 -0.57847022 -0.04579196
## [10,] -0.30471859 -0.2213400 0.85429084 -1.26183120
## [11,] -0.64509526 -0.1014328 1.94659178 1.08004119
## [12,] 0.02814631 0.6272160 -0.71397717 1.63764111
## [13,] -1.53081242 -0.8562182 -1.81784713 0.38877858
## [14,] 0.61161938 1.6844235 0.11001826 -0.46981848
## [15,] -1.24702642 -0.5360358 1.00155858 -0.92844833
## [16,] 1.42376138 0.2747579 -0.03008015 -0.29795685
## [17,] -0.51966664   0.9607567 -0.59872069   0.29124839
## [18,] 1.22896267 0.8615797 -0.76556506 0.18274604
## [19,] 0.19528090 -0.4169078 -1.95500321 0.02746269
## [20,] 0.84757952 -1.0756321 0.94534988 0.89313240
## [21,] -0.05276441 0.7245062 -0.44295344 -2.26209388
## [22,] -0.76423008 -1.4661637 -0.17651757 -1.33078431
## [23,] -0.71661752  0.5021253 -0.34341913 -0.04907372
## [24,] 0.78868729 0.5536727 -0.35203564 0.76943210
## [25,] -1.34049165 -1.5481711 0.13136861 2.23661851
```

• Create a list named my\_list with keys "A", "B", ... where the entries are arrays of size 1, 2 x 2, 3 x 3 x 3, etc. Fill the array with the numbers 1, 2, 3, etc. Make 8 entries according to this sequence.

Run the following code:

```
lapply(my_list, object.size)
```

```
## $A
## 224 bytes
##
## $B
## 232 bytes
##
## $C
## 352 bytes
##
## $D
## 1248 bytes
##
## $E
## 12744 bytes
##
## $F
## 186864 bytes
##
## $G
## 3294416 bytes
##
## $H
## 67109104 bytes
```

Use **?object.size** to read about what these functions do. Then explain the output you see above. For the later arrays, does it make sense given the dimensions of the arrays?

?object.size #Yes, given the fact that the later arrays are of higher dimension, #it makes perfect sense that more bytes would be used #up by the later arrays.

Now cleanup the namespace by deleting all stored objects and functions:

```
rm(my_list)
```

# A little about strings

• Use the strsplit function and sample to put the sentences in the string lorem below in random order. You will also need to manipulate the output of strsplit which is a list. You may need to learn basic concepts of regular expressions.

```
lorem = "Lorem ipsum dolor sit amet, consectetur adipiscing elit. Morbi posuere varius volutpat. Morbi
?strsplit
?sample
lorem_split= unlist(strsplit(lorem, split="[.]"))
lorem_split[sample(1:length(lorem_split))]
```

```
[1] " "
##
    [2] " Curabitur est augue, congue eget quam in, scelerisque semper magna"
##
    [3] " Cras suscipit id nibh lacinia elementum"
    [4] " Aenean nulla ante, iaculis sed vehicula ac, finibus vel arcu"
##
    [5] " Morbi faucibus ligula id massa ultricies viverra"
    [6] " Mauris at sodales augue"
##
    [7] " Integer dapibus mi lectus, eu posuere arcu ultricies in"
##
    [8] " Donec at tempor erat"
##
##
   [9] "Lorem ipsum dolor sit amet, consectetur adipiscing elit"
## [10] " Donec vehicula sagittis nisi non semper"
## [11] " Morbi posuere varius volutpat"
```

You have a set of names divided by gender (M / F) and generation (Boomer / GenX / Millenial):

- M / Boomer "Theodore, Bernard, Gene, Herbert, Ray, Tom, Lee, Alfred, Leroy, Eddie"
- M / GenX "Marc, Jamie, Greg, Darryl, Tim, Dean, Jon, Chris, Troy, Jeff"
- M / Millennial "Zachary, Dylan, Christian, Wesley, Seth, Austin, Gabriel, Evan, Casey, Luis"
- F / Boomer "Gloria, Joan, Dorothy, Shirley, Betty, Dianne, Kay, Marjorie, Lorraine, Mildred"
- F / GenX "Tracy, Dawn, Tina, Tammy, Melinda, Tamara, Tracey, Colleen, Sherri, Heidi"
- F / Millennial "Samantha, Alexis, Brittany, Lauren, Taylor, Bethany, Latoya, Candice, Brittney, Cheyenne"

name\_type\$M\$Boomer = c("Theodore", "Bernard", "Gene", "Herbert", "Ray", "Tom", "Lee", "Alfred", "Leroy"
name\_type\$M\$GenX = c("Marc", "Jamie", "Greg", "Darryl", "Tim", "Dean", "Jon", "Chris", "Troy", "Jeff")

Create a list-within-a-list that will intelligently store this data.

name\_type = list("M" = list(), "F" = list())

```
name_type$M$Millennial = strsplit("Zachary, Dylan, Christian, Wesley, Seth, Austin, Gabriel, Evan, Case
name_type$F$Boomer = strsplit("Gloria, Joan, Dorothy, Shirley, Betty, Dianne, Kay, Marjorie, Lorraine,
name_type$F$GenX = strsplit("Tracy, Dawn, Tina, Tammy, Melinda, Tamara, Tracey, Colleen, Sherri, Heidi"
name_type$F$Millennial = strsplit("Samantha, Alexis, Brittany, Lauren, Taylor, Bethany, Latoya, Candice
name_type
## $M
## $M$Boomer
    [1] "Theodore" "Bernard"
                               "Gene"
                                           "Herbert"
                                                      "Ray"
                                                                  "Tom"
    [7] "Lee"
##
                   "Alfred"
                               "Lerov"
                                           "Eddie"
##
## $M$GenX
##
    [1] "Marc"
                  "Jamie"
                           "Greg"
                                    "Darryl" "Tim"
                                                       "Dean"
                                                                 "Jon"
                                                                          "Chris"
##
    [9] "Troy"
                  "Jeff"
##
## $M$Millennial
##
    [1] "Zachary"
                     "Dylan"
                                 "Christian"
                                             "Wesley"
                                                          "Seth"
                                                                       "Austin"
    [7] "Gabriel"
                     "Evan"
                                 "Casey"
                                              "Luis"
##
##
##
## $F
## $F$Boomer
    [1] "Gloria"
                    "Joan"
                               "Dorothy" "Shirley"
                                                      "Betty"
                                                                  "Dianne"
    [7] "Kay"
##
                   "Marjorie" "Lorraine" "Mildred"
##
## $F$GenX
```

```
##
    [1] "Tracy"
                   "Dawn"
                             "Tina"
                                        "Tammy"
                                                  "Melinda" "Tamara"
##
    [8] "Colleen" "Sherri"
                             "Heidi"
##
## $F$Millennial
    [1] "Samantha" "Alexis"
                               "Brittany" "Lauren"
                                                       "Taylor"
                                                                  "Bethany"
    [7] "Latoya"
                    "Candice"
                               "Brittney" "Cheyenne"
```

#### Dataframe creation

##

Imagine you are running an experiment with many manipulations. You have 14 levels in the variable "treatment" with levels a, b, c, etc. For each of those manipulations you have 3 submanipulations in a variable named "variation" with levels A, B, C. Then you have "gender" with levels M / F. Then you have "generation" with levels Boomer, GenX, Millenial. Then you will have 6 runs per each of these groups. In each set of 6 you will need to select a name without duplication from the appropriate set of names (from the last question). Create a data frame with columns treatment, variation, gender, generation, name and y that will store all the unique unit information in this experiment. Leave y empty because it will be measured as the experiment is executed.

##		treatment	variation	gender	generation	name	У
##	1	a	Α	M	Boomer	Theodore	NA
##	2	a	Α	M	Boomer	Bernard	NA
##	3	a	Α	M	Boomer	Gene	NA
##	4	a	Α	M	Boomer	Herbert	NA
##	5	a	Α	M	Boomer	Ray	NA
##	6	a	Α	M	Boomer	Tom	NA
##	7	a	Α	M	Boomer	Lee	NA
##	8	a	Α	M	Boomer	Alfred	NA
##	9	a	Α	M	Boomer	Leroy	NA
##	10	a	Α	M	Boomer	Eddie	NA
##	11	a	Α	M	GenX	Marc	NA
##	12	a	Α	M	GenX	Jamie	NA
##	13	a	Α	M	GenX	Greg	NA
##	14	a	Α	M	GenX	Darryl	NA
##	15	a	Α	M	GenX	Tim	NA
##	16	a	Α	M	GenX	Dean	NA
##	17	a	Α	M	GenX	Jon	NA
##	18	a	Α	M	GenX	Chris	NA
##	19	a	Α	M	GenX	Troy	NA
##	20	a	Α	M	GenX	Jeff	NA

treatment variation mender meneration

##		a	A	M Millenia	•	
## ##		a -	A	M Millenia	3	
		a	A		l Christian	
##		a	A	M Millenia	J	
##		a	A	M Millenia		
	26	a	A	M Millenia		
##		a	A	M Millenia		
	28	a	A	M Millenia		
	29	a	A	M Millenia	J	
	30	a	A	M Millenia		
	31	a	A	F Boome		
	32	a	A	F Boome		
	33	a	Α	F Boome	•	
	34	a	Α	F Boome	J	
	35	a	A	F Boome	J	
	36	a	A	F Boome		
	37	a	Α	F Boome	J	
	38	a	Α	F Boome	er Marjorie	NA
##	39	a	Α	F Boome	er Lorraine	NA
##	40	a	Α	F Boome	er Mildred	NA
##	41	a	Α	F Ger	ıX Tracy	NA
##	42	a	Α	F Ger	ıX Dawn	NA
##	43	a	Α	F Ger	ıX Tina	NA
##	44	a	Α	F Ger	ıX Tammy	NA
##	45	a	Α	F Ger	X Melinda	NA
##	46	a	Α	F Ger	X Tamara	NA
##	47	a	Α	F Ger	X Tracey	NA
##	48	a	Α	F Ger	X Colleen	NA
##	49	a	Α	F Ger	X Sherri	NA
##	50	a	Α	F Ger	X Heidi	NA
##	51	a	Α	F Millenia	al Samantha	NA
##	52	a	Α	F Millenia	al Alexis	NA
##	53	a	Α	F Millenia	al Brittany	NA
##	54	a	Α	F Millenia	ıl Lauren	NA
##	55	a	Α	F Millenia	l Taylor	NA
##	56	a	Α	F Millenia	l Bethany	NA
##	57	a	Α	F Millenia	-	
##	58	a	Α	F Millenia	•	
##	59	a	Α	F Millenia		
##		a	Α	F Millenia	•	
##	61	a	В	M Boome	•	
##		a	В	M Boome		
##		a	В	M Boome		NA
##		a	В	M Boome		
##		a	В	M Boome		
##		a	В	M Boome	-	
##		a	В	M Boome		
##		a	В	M Boome		
##		a	В	M Boome		
##		a	В	M Boome	=	
##		a	В	M Ger		
	72	a	В	M Ger		
	73	a	В	M Ger		
	74	a	В	M Ger	_	
#		u	_	dei	Durryr	****

##	75		В	М	GenX	Tim	NT A
	76	a a	В	M	GenX	Dean	
	77	a	В	M	GenX	Jon	
	78	a	В	M	GenX	Chris	
	79	a	В	M	GenX	Troy	
	80	a	В	M	GenX	Jeff	
##		a	В	M	Millenial	Zachary	
##		a	В	M	Millenial	Dylan	
##		a	В	M		Christian	
	84	a	В	M	Millenial	Wesley	
	85	a	В	M	Millenial	Seth	
	86	a	В	M	Millenial	Austin	
	87	a	В	M	Millenial	Gabriel	
	88	a	В	M	Millenial	Evan	
	89		В	M	Millenial	Casey	
	90	a	В	M	Millenial	Luis	
	91	a	В	F	Boomer	Gloria	
	92	a	В	F	Boomer	Joan	
	93	a a	В	F	Boomer	Dorothy	
	94	a	В	F	Boomer	Shirley	
	95	a	В	F	Boomer	Betty	
##	96		В	F	Boomer	Dianne	
	97	a	В	F	Boomer	Kay	
	98	a	В	F	Boomer	Marjorie	
	99	a	В	F	Boomer	Lorraine	
##	100	a	В	F	Boomer	Mildred	
##	100	a a	В	r F	GenX		
##	101	a a	В	F	GenX	Tracy Dawn	
##	102	a a	В	F	GenX	Tina	
##	103		В	F	GenX		
##	104	a	В	F	GenX	Tammy Melinda	
##	106	a	В	F		Tamara	
##	107	a	В	r F	GenX		
	107	a	В	r F	GenX	Tracey Colleen	
##	100	a	В	r F	GenX	Sherri	
##	110	a	В	r F	GenX	Heidi	
##	111	a	В	r F	GenX Millenial	Samantha	
		a					
	112 113	a	B B	F F	Millenial Millenial	Alexis	
		a				Ū	
	114	a	B B	F F	Millenial	Lauren	
	115	a	В	r F	Millenial	Taylor	
	116	a	В		Millenial Millenial	Bethany	
	117	a		F F		Latoya	
	118	a -	В		Millenial	Candice	
## ##	119	a	В	F F	Millenial Millenial	Brittney	
	120	a	B C			Cheyenne	
	121	a		M M	Boomer	Theodore	
##	122	a	C	M M	Boomer	Bernard	
	123	a	C	M M	Boomer	Gene	
	124	a	C	M M	Boomer	Herbert	
	125	a	C C	M M	Boomer	Ray	
	126	a	C	M M	Boomer	Tom	
	127	a	C	М м	Boomer	Lee	
##	128	a	C	М	Boomer	Alfred	MM

	129	a	С	М	Boomer	Leroy	
	130	a	С	М	Boomer	Eddie	
##	131	a	С	М	GenX	Marc	
##	132	a	С	М	GenX	Jamie	
##	133	a	С	М	GenX	Greg	
##	134	a	С	М	GenX	Darryl	
##	135	a	С	М	GenX	Tim	
##	136	a	С	M	GenX	Dean	
##	137	a	С	М	GenX	Jon	
##	138	a	С	M	GenX	Chris	
##	139	a	С	М	GenX	Troy	
##	140	a	С	М	GenX	Jeff	
##	141	a	С		Millenial	Zachary	
	142	a	С		Millenial	Dylan	
	143	a	С			Christian	
	144	a	С		Millenial	Wesley	
	145	a	С		Millenial	Seth	
	146	a	С		Millenial	Austin	
	147	a	С		Millenial	Gabriel	
	148	a	С		Millenial	Evan	
	149	a	С	M 1	Millenial	Casey	NA
	150	a	С		Millenial	Luis	NA
##	151	a	С	F	Boomer	Gloria	NA
	152	a	С	F	Boomer	Joan	NA
##	153	a	С	F	Boomer	Dorothy	NA
##	154	a	С	F	Boomer	Shirley	NA
##	155	a	С	F	Boomer	Betty	NA
##	156	a	С	F	Boomer	Dianne	NA
##	157	a	С	F	Boomer	Kay	
##	158	a	С	F	Boomer	Marjorie	NA
##	159	a	С	F	Boomer	Lorraine	NA
##	160	a	С	F	Boomer	Mildred	NA
##	161	a	С	F	${\tt GenX}$	Tracy	NA
##	162	a	С	F	${\tt GenX}$	Dawn	NA
##	163	a	С	F	${\tt GenX}$	Tina	NA
##	164	a	С	F	${\tt GenX}$	Tammy	NA
##	165	a	С	F	${\tt GenX}$	Melinda	NA
##	166	a	С	F	${\tt GenX}$	Tamara	NA
##	167	a	С	F	${\tt GenX}$	Tracey	NA
##	168	a	С	F	${\tt GenX}$	Colleen	NA
##	169	a	С	F	${\tt GenX}$	Sherri	NA
##	170	a	С	F	${\tt GenX}$	Heidi	NA
##	171	a	С	F I	Millenial	Samantha	NA
##	172	a	С	F 1	Millenial	Alexis	NA
##	173	a	С	F 1	Millenial	Brittany	NA
##	174	a	С	F I	Millenial	Lauren	NA
##	175	a	С	F 1	Millenial	Taylor	NA
##	176	a	С	F 1	Millenial	Bethany	NA
##	177	a	С	F 1	Millenial	Latoya	NA
##	178	a	С	F 1	Millenial	Candice	NA
##	179	a	С	F 1	Millenial		
##	180	a	С	F 1	Millenial	Cheyenne	NA
##	181	b	Α	M	Boomer	Theodore	NA
##	182	b	Α	M	Boomer	Bernard	NA

	400	,			_	~	
	183	b	A	М	Boomer	Gene	
##	184	b	A	M	Boomer	Herbert	
##	185	b	A	М	Boomer	Ray	
##	186	b	A	М	Boomer	Tom	
##	187	b	A	М	Boomer	Lee	
##	188	b	A	М	Boomer	Alfred	
##	189	b	A	М	Boomer	Leroy	
##	190	b	A	М	Boomer	Eddie	
##	191	b	A	M	GenX	Marc	
##	192	b	A	М	GenX	Jamie	
##	193	b	Α	М	GenX	Greg	
##	194	b	Α	М	GenX	Darryl	
##	195	b	A	М	GenX	Tim	
##	196	b	A	М	GenX	Dean	
##	197	b	Α	М	GenX	Jon	
##	198	b	Α	М	GenX	Chris	
##	199	b	Α	М	GenX	Troy	NA
##	200	b	Α	М	GenX	Jeff	NA
##	201	b	Α	М	Millenial	Zachary	NA
##	202	b	Α	М	Millenial	Dylan	NA
##	203	b	Α	М	Millenial	${\tt Christian}$	NA
##	204	b	Α	М	Millenial	Wesley	NA
##	205	b	Α	М	Millenial	Seth	NA
##	206	b	Α	М	Millenial	Austin	NA
##	207	b	Α	М	Millenial	Gabriel	NA
##	208	b	Α	М	Millenial	Evan	NA
##	209	b	Α	М	Millenial	Casey	NA
##	210	b	Α	М	Millenial	Luis	
##	211	b	Α	F	Boomer	Gloria	NA
##	212	b	Α	F	Boomer	Joan	
	213	b	Α	F	Boomer	Dorothy	
	214	b	Α	F	Boomer	Shirley	
	215	b	A	F	Boomer	Betty	
	216	b	A	F	Boomer	Dianne	
	217	b	A	F	Boomer	Kay	
	218	b	A	F	Boomer	Marjorie	
	219	b	A	F	Boomer	Lorraine	
	220	b	A	F	Boomer	Mildred	
	221	b	A	F	GenX	Tracy	
	222	b	A	F	GenX	Dawn	
	223	b	A	F	GenX	Tina	
	224	b	A	F			
			A		GenX	Tammy	
	225	b h	A	F	GenX		
	226	b h		F	GenX		
	227	b	A	F	GenX	•	
	228	b h	A	F	GenX	Colleen	
	229	b	A	F	GenX	Sherri	
	230	b	A	F	GenX	Heidi	
	231	b	A	F	Millenial	Samantha	
	232	b	A	F	Millenial	Alexis	
	233	b	A	F	Millenial	•	
	234	b	A	F	Millenial	Lauren	
	235	b	A	F	Millenial	Taylor	
##	236	b	Α	F	Millenial	Bethany	ΝA

##	237	b	Α	F	Millenial	Latoya	NΑ
##	238	b	A	F	Millenial	Candice	
##	239	b	A	F	Millenial	Brittney	
##	240	b	A	F	Millenial	Cheyenne	
##	241	b	В	M	Boomer	Theodore	
##	242	b	В	М	Boomer	Bernard	
##	243	b	В	М	Boomer	Gene	
##	244	b	В	М	Boomer	Herbert	
##	245	b	В	М	Boomer	Ray	
##	246	b	В	М	Boomer	Tom	
##	247	b	В	М	Boomer	Lee	
##	248	Ъ	В	М		Alfred	
	249		В		Boomer		
##		b		M	Boomer	Leroy	
##	250	b	В	M	Boomer	Eddie	
##	251	b	В	М	GenX	Marc	
##	252	b	В	M	GenX	Jamie	
##	253	b	В	М	GenX	Greg	
##	254	b	В	М	GenX	Darryl	
##	255	b	В	М	GenX	Tim	
##	256	b	В	М	GenX	Dean	
##	257	b	В	М	GenX	Jon	
##	258	b	В	М	GenX	Chris	NA
##	259	b	В	M	GenX	Troy	NA
##	260	b	В	M	GenX	Jeff	NA
##	261	b	В	M	Millenial	Zachary	NA
##	262	b	В	M	Millenial	Dylan	NA
##	263	b	В	M	Millenial	${\tt Christian}$	NA
##	264	b	В	M	Millenial	Wesley	NA
##	265	b	В	M	Millenial	Seth	NA
##	266	b	В	M	Millenial	Austin	NA
##	267	b	В	М	Millenial	Gabriel	NA
##	268	b	В	М	Millenial	Evan	NA
##	269	Ъ	В	М	Millenial	Casey	NA
##	270	Ъ	В	М	Millenial	Luis	
##	271	b	В	F	Boomer	Gloria	
##	272	b	В	F	Boomer	Joan	
	273	b	В	F	Boomer	Dorothy	
	274	b	В	F	Boomer	Shirley	
##	275	b	В	F	Boomer	Betty	
##	276	b	В	F	Boomer	Dianne	
##	277	b	В	F	Boomer	Kay	
##	278	b	В	F	Boomer	Marjorie	
##	279	b	В	F		Lorraine	
##	280	b	В	F	Boomer Boomer	Mildred	
##							
##	281	b b	В	F	GenX	Tracy	
	282	b b	В	F	GenX	Dawn	
##	283	b	В	F	GenX	Tina	
##	284	b	В	F	GenX	Tammy	
##	285	b	В	F	GenX	Melinda	
##	286	b	В	F	GenX	Tamara	
	287	b	В	F	GenX	Tracey	
	288	b	В	F	GenX	Colleen	
	289	b b	B B	F	GenX	Sherri	
##	290			F	GenX	Heidi	

	291	b	В	F	Millenial		
	292	b	В	F	Millenial		
##	293	b	В	F	Millenial	3	
##	294	b	В	F	Millenial	Lauren	
##	295	b	В	F	Millenial	Taylor	
##	296	b	В	F	Millenial	Bethany	
##	297	b	В	F	Millenial	Latoya	
##	298	b	В	F	Millenial	Candice	
##	299	b	В	F	Millenial	3	
##	300	b	В	F	Millenial	3	
##	301	b	C	М	Boomer		
##	302	b	C	М	Boomer		
##	303	b	C	М	Boomer	Gene	
##	304	b	С	М	Boomer	Herbert	
##	305	b	С	М	Boomer	Ray	
##	306	b	С	М	Boomer	Tom	
##	307	b	С	М	Boomer	Lee	
##	308	b	С	М	Boomer	Alfred	
##	309	b	С	М	Boomer	Leroy	
##	310	b	С	М	Boomer	Eddie	
##	311	b	С	М	GenX	Marc	
##	312	b	С	М	GenX	Jamie	
##	313	b	С	М	GenX	Greg	
##	314	b	С	М	GenX	Darryl	NA
##	315	Ъ	С	M	GenX	Tim	
##	316	Ъ	С	M	GenX	Dean	NA
##	317	b	С	М	GenX	Jon	NA
##	318	Ъ	С	M	GenX	Chris	
##	319	Ъ	С	M	GenX	Troy	NA
##	320	Ъ	С	M	GenX	Jeff	NA
##	321	Ъ	С	M	Millenial	Zachary	
##	322	Ъ	С	M	Millenial	Dylan	NA
##	323	b	С	M	Millenial	${\tt Christian}$	
##	324	Ъ	С	M	Millenial	Wesley	NA
##	325	b	С	M	Millenial	Seth	
##	326	b	С	M	Millenial	Austin	NA
##	327	b	C	M	Millenial	Gabriel	NA
##	328	b	С	M	Millenial	Evan	NA
##	329	b	С	M	Millenial	Casey	
##	330	b	С	M	Millenial	Luis	NA
##	331	b	С	F	Boomer	Gloria	NA
##	332	b	С	F	Boomer	Joan	NA
##	333	b	С	F	Boomer	Dorothy	NA
##	334	b	С	F	Boomer	Shirley	NA
##	335	b	С	F	Boomer	Betty	NA
##	336	b	C	F	Boomer	Dianne	NA
##	337	b	C	F	Boomer	Kay	NA
##	338	b	C	F	Boomer	Marjorie	NA
##	339	Ъ	C	F	Boomer	Lorraine	NA
##	340	b	C	F	Boomer	Mildred	NA
##	341	Ъ	C	F	GenX	Tracy	NA
##	342	b	C	F	${\tt GenX}$	Dawn	NA
##	343	b	C	F	${\tt GenX}$	Tina	NA
##	344	Ъ	C	F	GenX	Tammy	NA

##	345	b	С	F	GenX	Melinda	NΑ
	346	b	C	F	GenX	Tamara	
	347	b	C	F	GenX	Tracey	
	348	b	C	F	GenX	Colleen	
	349	b	C	F	GenX	Sherri	
	350	b	C	F	GenX	Heidi	
	351	b	C	F	Millenial	Samantha	
	352	b	C	F	Millenial	Alexis	
	353	b	C	F	Millenial	Brittany	
	354	b	C	F	Millenial	Lauren	
	355	b	C	F	Millenial	Taylor	
	356	b	C	F	Millenial	Bethany	
	357	b	C	F	Millenial	Latoya	
	358	b	C	F	Millenial	Candice	
	359	b	C	F	Millenial	Brittney	
	360	b	C	F	Millenial	Cheyenne	
	361	C	A	M	Boomer	Theodore	
	362	c	A	M	Boomer	Bernard	
	363	С	A	M	Boomer	Gene	
	364	С	A	M	Boomer	Herbert	
	365	С	A	M	Boomer	Ray	
	366	С	A	M	Boomer	Tom	
	367	С	A	M	Boomer	Lee	
	368	С	A	M	Boomer	Alfred	
	369	С	A	M	Boomer	Leroy	
	370	С	A	M	Boomer	Eddie	
	371	С	A	M	GenX	Marc	
	372	С	A	M	GenX	Jamie	
	373	С	A	M	GenX		
	374	С	A	M	GenX	Greg Darryl	
	374		A	M	GenX	Tim	
	376	С		M	GenX	Dean	
		С	A				
	377	С	A	M	GenX	Jon Chris	
	378	С	A	M	GenX		
	379	С	A	M	GenX	Troy	
	380	С	A	M	GenX	Jeff	
	381	С	A	M	Millenial Millenial	Zachary	
	382	C	A	M		Dylan	
	383	С	A	M		Christian	
	384	С	A	M	Millenial	Wesley	
	385	С	A	M	Millenial	Seth	
	386	С	A	M	Millenial	Austin	
	387	С	A	M	Millenial	Gabriel	
	388	С	A	М	Millenial	Evan	
	389	С	A	М	Millenial	Casey	
	390	С	A	М	Millenial	Luis	
	391	С	A	F	Boomer	Gloria	
	392	С	A	F	Boomer	Joan	
	393	С	A	F	Boomer	Dorothy	
	394	С	A	F	Boomer	Shirley	
	395	С	A	F	Boomer	Betty	
	396	С	A	F	Boomer	Dianne	
	397	С	A	F	Boomer	Kay	
##	398	С	Α	F	Boomer	Marjorie	ΝA

##	399	С	Α	F	Boomer	Lorraine	NΤΛ
	400	С	A	F	Boomer	Mildred	
	401	С	A	F	GenX	Tracy	
	402	С	A	F	GenX	Dawn	
	403	С	A	F	GenX	Tina	
	404	С	A	F	GenX	Tammy	
	405	С	A	F	GenX	Melinda	
	406		A	r F	GenX	Tamara	
	407	С	A	r F	GenX	Tracey	
##	407	С	A	r F	GenX	Colleen	
##	409	С	A	r F	GenX	Sherri	
##	410	С	A	r F	GenX	Heidi	
		C					
##	411	C	A	F	Millenial	Samantha	
##	412	C	A	F	Millenial	Alexis	
	413	С	A	F	Millenial	Brittany	
	414	С	A	F	Millenial	Lauren	
	415	С	A	F	Millenial	Taylor	
	416	С	A	F	Millenial	Bethany	
	417	С	A	F	Millenial	Latoya	
	418	С	A	F	Millenial	Candice	
	419	С	A	F	Millenial	Brittney	
	420	С	Α	F	Millenial	Cheyenne	
	421	С	В	M	Boomer	Theodore	
	422	С	В	M	Boomer	Bernard	
	423	С	В	M	Boomer	Gene	
	424	С	В	M	Boomer	Herbert	
	425	С	В	M	Boomer	Ray	
##	426	С	В	M	Boomer	Tom	
##	427	С	В	M	Boomer	Lee	ΝA
##	428	С	В	M	Boomer	Alfred	NA
##	429	С	В	M	Boomer	Leroy	
##	430	С	В	M	Boomer	Eddie	NA
##	431	С	В	M	GenX	Marc	NA
##	432	С	В	M	GenX	Jamie	NA
##	433	С	В	M	GenX	Greg	NA
##	434	С	В	M	GenX	Darryl	NA
##	435	С	В	M	GenX	Tim	NA
##	436	С	В	M	${\tt GenX}$	Dean	NA
##	437	С	В	M	GenX	Jon	NA
##	438	С	В	M	${\tt GenX}$	Chris	NA
##	439	С	В	M	GenX	Troy	NA
##	440	С	В	M	GenX	Jeff	NA
##	441	С	В	M	Millenial	Zachary	NA
##	442	С	В	M	Millenial	Dylan	NA
##	443	С	В	M	Millenial	${\tt Christian}$	NA
##	444	С	В	M	Millenial	Wesley	NA
##	445	С	В	М	Millenial	Seth	
	446	С	В	М	Millenial	Austin	
	447	С	В	М	Millenial	Gabriel	NA
	448	С	В	М	Millenial	Evan	
	449	С	В	М	Millenial	Casey	
	450	С	В	М	Millenial	Luis	
	451	С	В	F	Boomer	Gloria	
	452	С	В	F	Boomer	Joan	

##	453	С	В	F	Boomer	Dorothy	NΑ
	454	С	В	F	Boomer	Shirley	
	455	С	В	F	Boomer	Betty	
	456	С	В	F	Boomer	Dianne	
	457	С	В	F	Boomer	Kay	
	458	С	В	F	Boomer	Marjorie	
	459	С	В	F	Boomer	Lorraine	
	460	С	В	F	Boomer	Mildred	
	461	С	В	F	GenX	Tracy	
	462	С	В	F	GenX	Dawn	
	463	С	В	F	GenX	Tina	
	464		В	F	GenX	Tammy	
	465	С	В	F		•	
		С			GenX	Melinda	
	466	С	В	F	GenX	Tamara	
	467	С	В	F	GenX	Tracey	
	468	С	В	F	GenX	Colleen	
	469	С	В	F	GenX	Sherri	
	470	С	В	F	GenX	Heidi	
	471	С	В	F	Millenial	Samantha	
	472	С	В	F	Millenial	Alexis	NA
##	473	С	В	F	Millenial	Brittany	NA
##	474	С	В	F	Millenial	Lauren	
##	475	С	В	F	Millenial	Taylor	NA
##	476	С	В	F	Millenial	Bethany	NA
##	477	С	В	F	Millenial	Latoya	NA
##	478	С	В	F	Millenial	Candice	NA
##	479	С	В	F	Millenial	Brittney	NA
##	480	С	В	F	Millenial	Cheyenne	NA
##	481	С	С	M	Boomer	Theodore	NA
##	482	С	С	M	Boomer	Bernard	NA
##	483	С	С	М	Boomer	Gene	NA
##	484	С	С	М	Boomer	Herbert	NA
	485	С	С	М	Boomer	Ray	
##	486	С	С	М	Boomer	Tom	
	487	С	C	М	Boomer	Lee	
	488	С	C	М	Boomer	Alfred	
	489	С	C	М	Boomer	Leroy	
	490	С	C	М	Boomer	Eddie	
	491	С	C	М	GenX	Marc	
	492	С	C	М	GenX	Jamie	
	493	С	C	M	GenX	Greg	
	494	С	C	M	GenX	Darryl	
	495		C	M	GenX	Tim	
	496	С	C	M		Dean	
		С	C		GenX		
	497	С		M	GenX	Jon	
	498	С	C	M	GenX	Chris	
	499	С	C	M	GenX	Troy	
	500	С	C	M	GenX	Jeff	
	501	С	C	M	Millenial	Zachary	
	502	С	C	M	Millenial	Dylan	
	503	С	C	M		Christian	
	504	С	C	M	Millenial	Wesley	
	505	С	C	M	Millenial	Seth	
##	506	С	С	M	Millenial	Austin	ΝA

##	507	С	С	М	Millenial	Gabriel	NA
	508	С	C	M	Millenial	Evan	
##	509	С	С	М	Millenial	Casey	
##	510	С	C	М	Millenial	Luis	
##	511	С	C	F	Boomer	Gloria	
##	512	С	C	F	Boomer	Joan	
	513	С	C	F	Boomer	Dorothy	
	514	С	C	F	Boomer	Shirley	
##	515	С	C	F	Boomer	Betty	
##	516	С	C	F	Boomer	Dianne	
##	517	С	C	F	Boomer	Kay	
##	518	С	C	F	Boomer	Marjorie	
##	519	С	C	F	Boomer	Lorraine	
##	520	С	C	F	Boomer	Mildred	
##	521	С	C	F	GenX	Tracy	
##	522	С	C	F	GenX	Dawn	
##	523	С	C	F	GenX	Tina	
##	524	С	C	F	GenX	Tammy	
	525	С	C	F	GenX	Melinda	
##	526	С	C	F	GenX	Tamara	
##	527	С	C	F	GenX	Tracey	
##	528	С	C	F	GenX	Colleen	
##	529	С	C	F	GenX	Sherri	
	530	С	C	F	GenX	Heidi	
	531	С	C	F	Millenial	Samantha	
	532	С	C	F	Millenial	Alexis	
	533	С	C	F	Millenial	Brittany	
	534	С	C	F	Millenial	Lauren	
	535		C	r F	Millenial		
	536	С	C	r F		Taylor	
	537	С	C	r F	Millenial	Bethany	
	538	С	C	r F	Millenial	Latoya	
##		С			Millenial	Candice	
	539 540	С	C	F	Millenial	Brittney	
		C	C	F	Millenial	Cheyenne	
	541	d	A	M	Boomer	Theodore	
	542	d	A	M	Boomer	Bernard	
	543	d	A	M	Boomer	Gene	
	544	d	A	M	Boomer	Herbert	
	545	d	A	M	Boomer	Ray	
	546	d	A	M	Boomer	Tom	
	547	d	A	M	Boomer	Lee	
	548	d	A	M	Boomer	Alfred	
	549	d	A	M	Boomer	Leroy	
	550	d	A	M	Boomer	Eddie	
	551	d	A	M	GenX	Marc	
	552	d	A	M	GenX	Jamie	
	553	d	A	M	GenX	Greg	
	554	d	A	M	GenX	Darryl	
	555	d	A	M	GenX	Tim	
	556	d	A	M	GenX	Dean	
	557	d	A	M	GenX	Jon	
	558	d	A	M	GenX	Chris	
	559	d	A	M	GenX	Troy	
##	560	d	A	M	GenX	Jeff	ΝA

	561	d	Α	М	Millenial	Zachary	
	562	d	A	M	Millenial	Dylan	
	563	d	A	M		Christian	
	564	d	A	M	Millenial	Wesley	
	565	d	A	M	Millenial	Seth	
	566	d	A	М	Millenial	Austin	
	567	d	Α	M	Millenial	Gabriel	
	568	d	Α	M	Millenial	Evan	
	569	d	A	М	Millenial	Casey	
	570	d	Α	M	Millenial	Luis	
	571	d	Α	F	Boomer	Gloria	
	572	d	Α	F	Boomer	Joan	
	573	d	Α	F	Boomer	Dorothy	
##	574	d	Α	F	Boomer	Shirley	NA
##	575	d	Α	F	Boomer	Betty	NA
##	576	d	Α	F	Boomer	Dianne	NA
##	577	d	Α	F	Boomer	Kay	NA
##	578	d	Α	F	Boomer	Marjorie	NA
##	579	d	Α	F	Boomer	Lorraine	NA
##	580	d	Α	F	Boomer	Mildred	NA
##	581	d	Α	F	GenX	Tracy	NA
##	582	d	Α	F	GenX	Dawn	NA
##	583	d	Α	F	GenX	Tina	NA
##	584	d	Α	F	GenX	Tammy	NA
##	585	d	Α	F	GenX	Melinda	NA
##	586	d	Α	F	GenX	Tamara	NA
##	587	d	Α	F	GenX	Tracey	NA
##	588	d	Α	F	GenX	Colleen	NA
##	589	d	Α	F	GenX	Sherri	NA
##	590	d	Α	F	GenX	Heidi	NA
##	591	d	Α	F	Millenial	Samantha	NA
##	592	d	Α	F	Millenial	Alexis	NA
##	593	d	Α	F	Millenial	Brittany	NA
##	594	d	Α	F	Millenial	Lauren	NA
##	595	d	Α	F	Millenial	Taylor	NA
##	596	d	Α	F	Millenial	Bethany	NA
##	597	d	Α	F	Millenial	Latoya	
##	598	d	Α	F	Millenial	Candice	
##	599	d	Α	F	Millenial	Brittney	
	600	d	Α	F	Millenial	Cheyenne	
	601	d	В	М	Boomer	Theodore	
	602	d	В	М	Boomer	Bernard	
	603	d	В	М	Boomer	Gene	NA
	604	d	В	М	Boomer	Herbert	
	605	d	В	М	Boomer	Ray	
	606	d	В	М	Boomer	Tom	
	607	d	В	М	Boomer	Lee	
	608	d	В	М	Boomer	Alfred	
	609	d	В	М	Boomer	Leroy	
	610	d	В	М	Boomer	Eddie	
	611	d	В	М	GenX	Marc	
	612	d	В	М	GenX	Jamie	
	613	d	В	М	GenX	Greg	
	614	d	В	М	GenX	Darryl	
		<b>~</b>	_	••	G 01111		

##	615	d	В	М	ConV	Tim	NT A
	616		В	M	GenX GenX	Dean	
	617		В	M	GenX	Jon	
	618		В	M	GenX	Chris	
	619		В	M	GenX	Troy	
	620		В	M	GenX	Jeff	
	621		В	M	Millenial	Zachary	
	622		В	M	Millenial	Dylan	
	623		В	M		Christian	
	624		В	M	Millenial	Wesley	
	625		В	M	Millenial	Seth	
	626		В	M	Millenial	Austin	
	627		В	M	Millenial	Gabriel	
	628		В	M	Millenial	Evan	
	629		В	M	Millenial	Casey	
	630		В	M	Millenial	Luis	
	631		В	F	Boomer	Gloria	
	632		В	F	Boomer	Joan	
	633		В	r F	Boomer	Dorothy	
	634		В	F	Boomer	Shirley	
	635		В	F	Boomer	Betty	
	636		В	F	Boomer	Dianne	
	637		В	r F	Boomer	Kay	
	638		В	r F	Boomer	Marjorie	
	639		В	r F	Boomer	Lorraine	
	640		В	r F	Boomer	Mildred	
	641		В	r F	GenX	Tracy	
	642		В	F	GenX	Dawn	
	643		В	F	GenX	Tina	
	644		В	F	GenX	Tammy	
	645		В	F	GenX	Melinda	
	646		В	F	GenX	Tamara	
	647		В	F	GenX	Tracey	
	648		В	F	GenX	Colleen	
	649		В	F	GenX	Sherri	
##	650		В	F	GenX	Heidi	
	651		В	F	Millenial	Samantha	
	652		В	F	Millenial	Alexis	
	653		В	F	Millenial		
	654		В	F	Millenial	Lauren	
	655		В	r F	Millenial	Taylor	
	656		В	F	Millenial	Bethany	
	657		В	r F	Millenial	Latoya	
	658		В	r F	Millenial	Candice	
				r F			
	659 660		B B	r F	Millenial Millenial	Brittney Cheyenne	
	661		С	r M	Boomer	Theodore	
	662		C	M	Boomer	Bernard	
	663		C	M M	Boomer	Gene	
	664		C	M	Boomer	Herbert	
	665		C	M M	Boomer	Ray	
	666		C	M M	Boomer	ray Tom	
	667		C	M M		Lee	
			C		Boomer		
##	668	d	U	М	Boomer	Alfred	INH

##	669	d	С	М	Boomer	Leroy	NΙΔ
	670	d	C	M	Boomer	Eddie	
	671	d	С	М	GenX	Marc	
	672	d	С	M	GenX	Jamie	
	673	d	С	M	GenX	Greg	
	674	d	С	M	GenX	Darryl	
	675	d	C	M	GenX	Tim	
	676	d	C	M	GenX	Dean	
	677	d	C	M	GenX	Jon	
##	678	d	C	M	GenX	Chris	
##	679	d	С	M	GenX	Troy	
##	680	d	C	M	GenX	Jeff	
##	681	d	C	M	Millenial	Zachary	
##	682	d	C	M	Millenial	Dylan	
##	683	d	C	M		Christian	
##	684	d	C	M	Millenial	Wesley	
##	685	d	C	M	Millenial	Seth	
##	686	d	C	M	Millenial	Austin	
##	687	d d	C	M	Millenial	Gabriel	
##	688	d	C	M	Millenial	Evan	
##	689	d	C	M	Millenial	Casey	
##	690	d d	C	M	Millenial	Luis	
##	691	d d	C	F	Boomer	Gloria	
##	692	d d	C	F	Boomer	Joan	
##	693	d d	C	F	Boomer	Dorothy	
##	694	d d	C	r F	Boomer	Shirley	
##	695	d d	C	r F	Boomer	Betty	
##	696	d d	C	F	Boomer	Dianne	
##	697	d d	C	r F	Boomer	Kay	
##	698	d d	C	r F	Boomer	•	
##	699	d d	C	r F	Boomer	Marjorie Lorraine	
	700	d d	C	r F		Mildred	
##					Boomer		
##	701	d	C C	F	GenX	Tracy	
##	702	d	C	F	GenX GenX	Dawn	
##	703 704	d d	C	F F	GenX	Tina	
	704	d d	C	r F	GenX	Tammy Melinda	
					GenX		
	706	d	C	F		Tamara	
	707	d	C	F	GenX	Tracey	
	708	d	C	F	GenX	Colleen	
	709	d	C	F	GenX	Sherri	
	710	d	C	F	GenX	Heidi	
	711	d	C	F	Millenial	Samantha	
	712	d	C	F	Millenial	Alexis	
	713	d	C	F	Millenial	Brittany	
	714	d a	C	F	Millenial	Lauren	
	715	d	C	F	Millenial	Taylor	
	716	d	C	F	Millenial	Bethany	
	717	d	C	F	Millenial	Latoya	
	718	d	C	F	Millenial	Candice	
	719	d	C	F	Millenial	Brittney	
	720	d	C	F	Millenial	Cheyenne	
	721	е	A	М	Boomer	Theodore	
##	722	е	A	М	Boomer	Bernard	ΝA

##	723	е	Α	М	Boomer	Gene	NΑ
	724	e	A	М	Boomer	Herbert	
##	725	e	A	М	Boomer	Ray	
##	726	e	A	М	Boomer	Tom	
##	727	e	A	М	Boomer	Lee	
##	728	e	A	М	Boomer	Alfred	
##	729	e	A	М	Boomer	Leroy	
##	730	e	A	М	Boomer	Eddie	
##	731	e	A	М	GenX	Marc	
##	732	e	A	М	GenX	Jamie	
##	733	e	A	M	GenX	Greg	
##	734	e	A	М	GenX	Darryl	
##	735	e	A	М	GenX	Tim	
##	736	e	A	M	GenX	Dean	
##	737	e	A	M	GenX	Jon	
##	738	e	A	M	GenX	Chris	
##	739			M	GenX	Troy	
##	740	e	A			Jeff	
##	740 741	e	A A	M M	GenX Millenial	Zachary	
##	742	e	A	M		-	
	743	e			Millenial	Dylan Christian	
##		e	A	M			
##	744	e	A	M	Millenial	Wesley	
##	745	e	A	M	Millenial	Seth	
##	746	e	A	M	Millenial	Austin	
##	747	e	A	M	Millenial	Gabriel	
##	748	e	A	M	Millenial	Evan	
##	749	е	A	М	Millenial	Casey	
##	750	е	A	М	Millenial	Luis	
##	751	е	A	F	Boomer	Gloria	
##	752	е	A	F	Boomer	Joan	
##	753	е	A	F	Boomer	Dorothy	
##	754	е	A	F	Boomer	Shirley	
##	755	е	Α	F	Boomer	Betty	
##	756	е	Α	F	Boomer	Dianne	
##	757	е	Α	F	Boomer	Kay	
##	758	е	Α	F	Boomer	Marjorie	
##	759	е	Α	F	Boomer	Lorraine	
##	760	е	Α	F	Boomer	Mildred	NA
	761	е	Α	F	GenX	Tracy	
	762	е	Α	F	GenX	Dawn	NA
##	763	е	Α	F	GenX	Tina	NA
##	764	е	Α	F	GenX	Tammy	NA
	765	е	Α	F	GenX	Melinda	
	766	е	Α	F	GenX	Tamara	
	767	е	Α	F	GenX	Tracey	NA
##	768	е	Α	F	${\tt GenX}$	Colleen	NA
##	769	е	Α	F	GenX	Sherri	NA
##	770	е	A	F	GenX	Heidi	NA
##	771	е	A	F	Millenial	Samantha	NA
##	772	е	A	F	Millenial	Alexis	NA
##	773	е	A	F	Millenial	Brittany	NA
##	774	е	Α	F	Millenial	Lauren	NA
##	775	е	A	F	Millenial	Taylor	
##	776	е	A	F	Millenial	Bethany	NA

##	777	е	Α	F	Millenial	Latoya	NA
##	778	e	A	F	Millenial	Candice	
##	779	e	Α	F	Millenial	Brittney	
##	780	e	A	F	Millenial	Cheyenne	
##	781	e	В	M	Boomer	Theodore	
##	782	e	В	М	Boomer	Bernard	
##	783	e	В	М	Boomer	Gene	
##	784	e	В	M	Boomer	Herbert	
##	785	e	В	M	Boomer	Ray	
##	786	e	В	M	Boomer	Tom	
##	787	e	В	М	Boomer	Lee	
##	788	e	В	М	Boomer	Alfred	
##	789	e	В	М	Boomer	Leroy	
##	790	e	В	M	Boomer	Eddie	
##	791	e	В	M	GenX	Marc	
##	792	e	В	M	GenX	Jamie	
##	793	e	В	М	GenX	Greg	
##	794	e	В	М	GenX	Darryl	
##	795	e	В	M	GenX	Tim	
##	796	e	В	M	GenX	Dean	
##	797	e	В	M	GenX	Jon	
##	798	e	В	M	GenX	Chris	
##	799	e	В	M	GenX	Troy	
##	800	e	В	М	GenX	Jeff	
	801	e	В	М	Millenial	Zachary	
	802	e	В	М	Millenial	Dylan	
##	803	e	В	M		Christian	
##	804	e	В	M	Millenial	Wesley	
##	805	e	В	M	Millenial	Seth	
##	806	e	В	M	Millenial	Austin	
##	807	e	В	M	Millenial	Gabriel	
##	808	e	В	M	Millenial	Evan	
##	809	e	В	M	Millenial	Casey	
##	810	e	В	M	Millenial	Luis	
##	811	e	В	F	Boomer	Gloria	
##	812	e	В	F	Boomer	Joan	
	813	e	В	F	Boomer	Dorothy	
	814	e	В	F	Boomer	Shirley	
	815	e	В	F	Boomer	Betty	
	816	e	В	F	Boomer	Dianne	
	817	e	В	F	Boomer	Kay	
	818	e	В	F	Boomer	Marjorie	
	819	e	В	F	Boomer	Lorraine	
	820	e	В	F	Boomer	Mildred	
	821	e	В	F	GenX	Tracy	
	822	e	В	F	GenX	Dawn	
	823	e	В	F	GenX	Tina	
	824	e	В	F	GenX	Tammy	
	825	e	В	F	GenX	Melinda	
	826	e	В	F	GenX	Tamara	
	827	e	В	F	GenX	Tracey	
	828	e	В	F	GenX	Colleen	
	829	e	В	F	GenX	Sherri	
	830	e	В	F	GenX	Heidi	
		S	ב	•	GOIIN	110141	

	831	е	В	F	Millenial	Samantha	
##	832	е	В	F	Millenial	Alexis	
##	833	е	В	F	Millenial	Brittany	ΝA
##	834	е	В	F	Millenial	Lauren	NA
##	835	е	В	F	Millenial	Taylor	NA
##	836	е	В	F	Millenial	Bethany	NA
##	837	е	В	F	Millenial	Latoya	NA
##	838	е	В	F	Millenial	Candice	NA
##	839	е	В	F	Millenial	Brittney	NA
##	840	е	В	F	Millenial	Cheyenne	NA
##	841	е	C	M	Boomer	Theodore	NA
##	842	е	C	M	Boomer	Bernard	NA
##	843	е	C	M	Boomer	Gene	NA
##	844	е	C	M	Boomer	Herbert	NA
##	845	е	C	M	Boomer	Ray	NA
##	846	е	C	M	Boomer	Tom	NA
##	847	е	C	M	Boomer	Lee	NA
##	848	е	C	M	Boomer	Alfred	NA
##	849	е	C	M	Boomer	Leroy	NA
##	850	е	C	M	Boomer	Eddie	NA
##	851	е	C	M	GenX	Marc	NA
##	852	е	C	M	GenX	Jamie	NA
##	853	е	C	M	GenX	Greg	NA
##	854	е	C	M	GenX	Darryl	NA
##	855	е	C	M	GenX	Tim	NA
##	856	е	C	M	GenX	Dean	NA
##	857	е	C	M	GenX	Jon	NA
##	858	е	C	M	GenX	Chris	NA
##	859	е	C	M	GenX	Troy	NA
##	860	е	C	M	GenX	Jeff	NA
##	861	е	C	M	Millenial	Zachary	NA
##	862	е	C	M	Millenial	Dylan	NA
##	863	е	C	M	Millenial	${\tt Christian}$	NA
##	864	е	C	M	Millenial	Wesley	NA
##	865	е	C	M	Millenial	Seth	NA
##	866	е	C	M	Millenial	Austin	NA
##	867	е	C	M	Millenial	Gabriel	NA
##	868	е	C	M	Millenial	Evan	NA
##	869	е	C	M	Millenial	Casey	NA
##	870	е	C	M	Millenial	Luis	NA
##	871	е	C	F	Boomer	Gloria	NA
##	872	е	C	F	Boomer	Joan	NA
##	873	е	C	F	Boomer	Dorothy	NA
##	874	е	C	F	Boomer	Shirley	
##	875	е	C	F	Boomer	Betty	NA
##	876	е	C	F	Boomer	Dianne	
##	877	е	С	F	Boomer	Kay	NA
##	878	е	С	F	Boomer	Marjorie	
##	879	е	C	F	Boomer	Lorraine	
	880	е	C	F	Boomer	Mildred	NA
	881	е	C	F	GenX	Tracy	NA
	882	е	С	F	GenX	Dawn	
##	883	е	С	F	GenX	Tina	NA
##	884	е	С	F	GenX	Tammy	NA
						•	

##	885	е	С	F	GenX	Melinda	NΔ
	886	e	C	F	GenX	Tamara	
	887	e	C	F	GenX	Tracey	
	888	e	C	F	GenX	Colleen	
	889	e	C	F	GenX	Sherri	
	890	e	C	F	GenX	Heidi	
	891	e	C	F	Millenial	Samantha	
	892	e	C	F	Millenial	Alexis	
	893	e	C	F	Millenial	Brittany	
##	894	e	C	F	Millenial	Lauren	
##	895	e	C	F	Millenial	Taylor	
##	896	e	C	F	Millenial	Bethany	
##	897	e	C	F	Millenial	Latoya	
##	898	e	C	F	Millenial	Candice	
##	899	e	C	F	Millenial	Brittney	
##	900	e	C	F	Millenial	Cheyenne	
##	901	f	A	M	Boomer	Theodore	
##	902	f	A	M	Boomer	Bernard	
##	903	f	A	M	Boomer	Gene	
##	904	f	A	M	Boomer	Herbert	
##	905	f	A	M	Boomer	Ray	
##	906	f	A	M		Tom	
##	906	f		M M	Boomer Boomer	Lee	
		f	A			Alfred	
##	908 909	f	A	M	Boomer		
##		_	A	M	Boomer	Leroy	
##	910 911	f f	A	M	Boomer GenX	Eddie Marc	
##	911	f	A	M M	GenX	Jamie	
##			A				
##	913	f	A	M	GenX	Greg	
##	914	f	A	M	GenX	Darryl	
##	915	f	A	M	GenX	Tim	
##	916	f	A	M	GenX	Dean	
##	917	f	A	M	GenX	Jon	
##	918	f	A	M	GenX	Chris	
##	919	f	A	М	GenX	Troy	
##	920	f	A	М	GenX	Jeff	
	921	f	A	M	Millenial	Zachary	
	922	f	A	M	Millenial	Dylan	
	923	f	A	М		Christian	
	924	f	A	M	Millenial	Wesley	
	925	f	A	M	Millenial	Seth	
	926	f	A	M	Millenial	Austin	
	927	f	A	М	Millenial	Gabriel	
	928	f	A	M	Millenial	Evan	
	929	f	A	M	Millenial	Casey	
	930	f	A	М	Millenial	Luis	
	931	f	A	F	Boomer	Gloria	
	932	f	A	F	Boomer	Joan	
	933	f	A	F	Boomer	Dorothy	
	934	f	A	F	Boomer	Shirley	
	935	f	A	F	Boomer	Betty	
	936	f	A	F	Boomer	Dianne	
	937	f	A	F	Boomer	Kay	
##	938	f	A	F	Boomer	Marjorie	ΝA

##	939	f	Α	F	Boomer	Lorraine	NΑ
	940	f	A	F	Boomer	Mildred	
	941	f	A	F	GenX	Tracy	
	942	f	A	F	GenX	Dawn	
	943	f	A	F	GenX	Tina	
	944	f	A	F	GenX	Tammy	
	945	f	A	F	GenX	Melinda	
	946	f	A	F	GenX	Tamara	
	947	f	A	F	GenX	Tracey	
	948	f	A	F	GenX	Colleen	
	949	f	A	F	GenX	Sherri	
	950	f	A	F	GenX	Heidi	
	951	f	A	F	Millenial	Samantha	
	952	f	A	F	Millenial	Alexis	
	953	f	A	F	Millenial	Brittany	
	954	f	Α	F	Millenial	Lauren	
	955	f	Α	F	Millenial	Taylor	
	956	f	Α	F	Millenial	Bethany	
	957	f	Α	F	Millenial	Latoya	
	958	f	Α	F	Millenial	Candice	
##	959	f	Α	F	Millenial	Brittney	NA
##	960	f	Α	F	Millenial	Cheyenne	
##	961	f	В	М	Boomer	Theodore	
##	962	f	В	М	Boomer	Bernard	NA
##	963	f	В	М	Boomer	Gene	NA
##	964	f	В	М	Boomer	Herbert	NA
##	965	f	В	М	Boomer	Ray	NA
##	966	f	В	M	Boomer	Tom	NA
##	967	f	В	M	Boomer	Lee	NA
##	968	f	В	M	Boomer	Alfred	NA
##	969	f	В	M	Boomer	Leroy	NA
##	970	f	В	M	Boomer	Eddie	NA
##	971	f	В	M	${\tt GenX}$	Marc	NA
##	972	f	В	M	${\tt GenX}$	Jamie	NA
##	973	f	В	M	${\tt GenX}$	Greg	NA
##	974	f	В	M	GenX	Darryl	NA
##	975	f	В	M	GenX	Tim	NA
##	976	f	В	M	GenX	Dean	NA
##	977	f	В	M	GenX	Jon	NA
	978	f	В	M	GenX	Chris	
##	979	f	В	M	GenX	Troy	
##	980	f	В	M	GenX	Jeff	
	981	f	В	M	Millenial	Zachary	
	982	f	В	M	Millenial	Dylan	
	983	f	В	М		${\tt Christian}$	
	984	f	В	М	Millenial	Wesley	
	985	f	В	М	Millenial	Seth	
	986	f	В	М	Millenial	Austin	
	987	f	В	М	Millenial	Gabriel	
	988	f	В	М	Millenial	Evan	
	989	f	В	M	Millenial	Casey	
	990	f	В	M	Millenial	Luis	
	991	f	В	F	Boomer	Gloria	
##	992	f	В	F	Boomer	Joan	ΝA

##	993	f	В	F	Boomer	Dorothy	NA
##	994	f	В	F	Boomer	Shirley	
##	995	f	В	F	Boomer	Betty	
##	996	f	В	F	Boomer	Dianne	NA
##	997	f	В	F	Boomer	Kay	NA
##	998	f	В	F	Boomer	Marjorie	
##	999	f	В	F	Boomer	Lorraine	
##	1000	f	В	F	Boomer	Mildred	NA
##	1001	f	В	F	GenX	Tracy	NA
##	1002	f	В	F	GenX	Dawn	
##	1003	f	В	F	GenX	Tina	NA
##	1004	f	В	F	GenX	Tammy	NA
##	1005	f	В	F	GenX	Melinda	
##	1006	f	В	F	GenX	Tamara	NA
##	1007	f	В	F	GenX	Tracey	
##	1008	f	В	F	GenX	Colleen	
##	1009	f	В	F	GenX	Sherri	NA
##	1010	f	В	F	GenX	Heidi	NA
##	1011	f	В	F	Millenial	Samantha	NA
##	1012	f	В	F	Millenial	Alexis	NA
##	1013	f	В	F	Millenial	Brittany	NA
##	1014	f	В	F	Millenial	Lauren	NA
##	1015	f	В	F	Millenial	Taylor	NA
##	1016	f	В	F	Millenial	Bethany	NA
##	1017	f	В	F	Millenial	Latoya	NA
##	1018	f	В	F	Millenial	Candice	NA
##	1019	f	В	F	Millenial	Brittney	NA
##	1020	f	В	F	Millenial	Cheyenne	NA
##	1021	f	C	M	Boomer	Theodore	NA
##	1022	f	C	M	Boomer	Bernard	NA
##	1023	f	C	M	Boomer	Gene	NA
##	1024	f	C	M	Boomer	Herbert	NA
##	1025	f	C	M	Boomer	Ray	NA
##	1026	f	C	M	Boomer	Tom	NA
##	1027	f	C	M	Boomer	Lee	NA
##	1028	f	C	M	Boomer	Alfred	NA
##	1029	f	C	M	Boomer	Leroy	NA
##	1030	f	C	M	Boomer	Eddie	NA
##	1031	f	C	M	GenX	Marc	NA
##	1032	f	C	M	GenX	Jamie	NA
##	1033	f	C	M	GenX	Greg	NA
##	1034	f	C	M	GenX	Darryl	NA
##	1035	f	C	M	GenX	Tim	
##	1036	f	C	M	GenX	Dean	NA
##	1037	f	C	M	GenX	Jon	
##	1038	f	C	M	GenX	Chris	
##	1039	f	C	M	GenX	Troy	
##	1040	f	C	M	GenX	Jeff	
##	1041	f	C	M	Millenial	Zachary	
##	1042	f	C	M	Millenial	Dylan	
##	1043	f	C	M		Christian	
##	1044	f	C	M	Millenial	Wesley	
##	1045	f	C	M	Millenial	Seth	
##	1046	f	С	M	Millenial	Austin	ΝA

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	1047 1048	f f	C C	M	Millenial	Gabriel	
##	1048	f	C	M	Millenial	Evan	
##		f	C	M	Millenial	Casey	
##	1050			M	Millenial	Luis Gloria	
##	1051	f	C	F	Boomer	Joan	
##	1052	f	C	F	Boomer		
##	1053	f	C	F	Boomer	Dorothy	
##	1054	f	C	F	Boomer	Shirley	
##	1055	f	C	F	Boomer	Betty	
##	1056	f	C	F	Boomer	Dianne	
##	1057	f	C	F	Boomer	Kay	
##	1058	f	С	F	Boomer	Marjorie	
##	1059	f	C	F	Boomer	Lorraine	
##	1060	f	C	F	Boomer	Mildred	
##	1061	f	C	F	GenX	Tracy	
##	1062	f	C	F	${\tt GenX}$	Dawn	
##	1063	f	C	F	${\tt GenX}$	Tina	
##	1064	f	C	F	${\tt GenX}$	Tammy	NA
##	1065	f	C	F	${\tt GenX}$	Melinda	NA
##	1066	f	C	F	GenX	Tamara	NA
##	1067	f	C	F	${\tt GenX}$	Tracey	NA
##	1068	f	C	F	${\tt GenX}$	Colleen	NA
##	1069	f	C	F	${\tt GenX}$	Sherri	NA
##	1070	f	C	F	${\tt GenX}$	Heidi	NA
##	1071	f	C	F	Millenial	Samantha	NA
##	1072	f	C	F	Millenial	Alexis	NA
##	1073	f	C	F	Millenial	Brittany	NA
##	1074	f	C	F	Millenial	Lauren	NA
##	1075	f	C	F	Millenial	Taylor	NA
##	1076	f	C	F	Millenial	Bethany	NA
##	1077	f	C	F	Millenial	Latoya	NA
##	1078	f	C	F	Millenial	Candice	NA
##	1079	f	C	F	Millenial	Brittney	NA
##	1080	f	C	F	Millenial	Cheyenne	
##	1081	g	Α	M	Boomer	Theodore	NA
##	1082	g	A	М	Boomer	Bernard	NA
##	1083	g	Α	M	Boomer	Gene	NA
##	1084	g	Α	М	Boomer	Herbert	NA
##	1085	g	Α	М	Boomer	Ray	NA
##	1086	g	Α	М	Boomer	Tom	
##	1087	g	Α	М	Boomer	Lee	NA
##	1088	g	Α	М	Boomer	Alfred	NA
##	1089	g	Α	М	Boomer	Leroy	
##	1090	g	Α	М	Boomer	Eddie	
##	1091	g	Α	М	GenX	Marc	
##	1092	g	Α	М	GenX	Jamie	
##	1093	g	A	М	GenX	Greg	
##	1094	g	A	М	GenX	Darryl	
##	1095	g	A	М	GenX	Tim	
##	1096	g	A	М	GenX	Dean	
##	1097	g	A	М	GenX	Jon	
##	1098	g	A	М	GenX	Chris	
##	1099	g	A	М	GenX	Troy	
##	1100		A	М	GenX	Jeff	
π#	1100	g	и	1.1	Genv	2611	IVM

шш	1101			м	M: 11 : - 1	71	BT A
	1101	g	A	M	Millenial	Zachary	
##	1102	g	A	M	Millenial	Dylan	
##	1103	g	A	M		Christian	
##	1104	g	A	M	Millenial	Wesley	
##	1105	g	A	М	Millenial	Seth	
##	1106	g	A	М	Millenial	Austin	
##	1107	g	A	M	Millenial	Gabriel	
##	1108	g	A	M	Millenial	Evan	
##	1109	g	A	M	Millenial	Casey	
##	1110	g	A	M	Millenial	Luis	
##	1111	g	A	F	Boomer	Gloria	
##	1112	g	A	F	Boomer	Joan	
##	1113	g	Α	F	Boomer	Dorothy	
##	1114	g	Α	F	Boomer	Shirley	
##	1115	g	Α	F	Boomer	Betty	
##	1116	g	Α	F	Boomer	Dianne	
##	1117	g	Α	F	Boomer	Kay	
##	1118	g	Α	F	Boomer	Marjorie	
##	1119	g	Α	F	Boomer	Lorraine	NA
##	1120	g	Α	F	Boomer	Mildred	NA
##	1121	g	Α	F	GenX	Tracy	NA
##	1122	g	Α	F	GenX	Dawn	NA
##	1123	g	Α	F	GenX	Tina	NA
##	1124	g	Α	F	GenX	Tammy	NA
##	1125	g	Α	F	GenX	Melinda	NA
##	1126	g	Α	F	GenX	Tamara	NA
##	1127	g	Α	F	GenX	Tracey	NA
##	1128	g	Α	F	GenX	Colleen	NA
##	1129	g	Α	F	GenX	Sherri	NA
##	1130	g	Α	F	GenX	Heidi	NA
##	1131	g	Α	F	Millenial	Samantha	NA
##	1132	g	Α	F	Millenial	Alexis	NA
##	1133	g	Α	F	Millenial	Brittany	NA
##	1134	g	Α	F	Millenial	Lauren	
##	1135	g	Α	F	Millenial	Taylor	NA
##	1136	g	Α	F	Millenial	Bethany	
##	1137	g	Α	F	Millenial	Latoya	
##	1138	g	A	F	Millenial	Candice	
##	1139	g	A	F	Millenial	Brittney	
##	1140	g	A	F	Millenial	Cheyenne	
##	1141	g	В	М	Boomer	Theodore	
##	1142	g	В	М	Boomer	Bernard	
##	1143	g	В	М	Boomer	Gene	
##	1144	g	В	М	Boomer	Herbert	
##	1145		В	М	Boomer	Ray	
##	1146	g ø	В	M	Boomer	Tom	
##	1147	g	В	M	Boomer	Lee	
##	1147	g	В	M	Boomer	Alfred	
##	1149	g	В	M	Boomer	Leroy	
##		g				•	
##	1150	g	В	M M	Boomer	Eddie	
	1151	g	В	M M	GenX	Marc	
##	1152	g	В	M	GenX	Jamie	
##	1153	g	В	M	GenX	Greg	
##	1154	g	В	M	GenX	Darryl	ΝA

##	1155	<b>m</b>	D	м	ConV	Tim	NT A
##	1156	g	B B	M M	GenX GenX	Dean	
##	1157	g	В	M	GenX	Jon	
##	1158	g	В	M	GenX	Chris	
##	1159	g	В	M	GenX	Troy	
##	1160	g	В	M	GenX	Jeff	
		g					
##	1161	g	В	M	Millenial	Zachary	
##	1162 1163	g	В	M	Millenial	Dylan	
##		g	В	M		Christian	
##	1164	g	В	M	Millenial	Wesley Seth	
##	1165	g	В	M	Millenial		
##	1166	g	В	М	Millenial	Austin	
##	1167	g	В	М	Millenial	Gabriel	
##	1168	g	В	М	Millenial	Evan	
##	1169	g	В	M	Millenial	Casey	
##	1170	g	В	M	Millenial	Luis	
##	1171	g	В	F	Boomer	Gloria	
##	1172	g	В	F	Boomer	Joan	
##	1173	g	В	F	Boomer	Dorothy	
##	1174	g	В	F	Boomer	Shirley	
##	1175	g	В	F	Boomer	Betty	
##	1176	g	В	F	Boomer	Dianne	
##	1177	g	В	F	Boomer	Kay	
##	1178	g	В	F	Boomer	Marjorie	
##	1179	g	В	F	Boomer	Lorraine	NA
##	1180	g	В	F	Boomer	Mildred	NA
##	1181	g	В	F	${\tt GenX}$	Tracy	NA
##	1182	g	В	F	GenX	Dawn	NA
##	1183	g	В	F	GenX	Tina	NA
##	1184	g	В	F	GenX	Tammy	NA
##	1185	g	В	F	GenX	Melinda	NA
##	1186	g	В	F	GenX	Tamara	NA
##	1187	g	В	F	GenX	Tracey	NA
##	1188	g	В	F	GenX	Colleen	NA
##	1189	g	В	F	${\tt GenX}$	Sherri	NA
##	1190	g	В	F	GenX	Heidi	NA
##	1191	g	В	F	Millenial	Samantha	NA
##	1192	g	В	F	Millenial	Alexis	NA
##	1193	g	В	F	Millenial	Brittany	NA
##	1194	g	В	F	Millenial	Lauren	NA
##	1195	g	В	F	Millenial	Taylor	NA
##	1196	g	В	F	Millenial	Bethany	NA
##	1197	g	В	F	Millenial	Latoya	NA
##	1198	g	В	F	Millenial	Candice	
##	1199	g	В	F	Millenial	Brittney	NA
##	1200	g	В	F	Millenial	Cheyenne	
##	1201	g	С	М	Boomer	Theodore	
##	1202	g	C	М	Boomer	Bernard	
##	1203	g	C	М	Boomer	Gene	
##	1204	g	C	М	Boomer	Herbert	
##	1205	g	C	М	Boomer	Ray	
##	1206	g	C	М	Boomer	Tom	
##	1207	g	C	М	Boomer	Lee	
##	1208	g	C	М	Boomer	Alfred	
		0	-				

##	1209	g	С	М	Boomer	Leroy	NΑ
##	1210	g	C	М	Boomer	Eddie	
##	1211	g	C	М	GenX	Marc	
##	1212	g	C	М	GenX	Jamie	
##	1213	g	C	М	GenX	Greg	
##	1214	g	C	М	GenX	Darryl	
##	1215		C	М	GenX	Tim	
##	1216	g	C	M	GenX	Dean	
##	1217	g	C	M	GenX	Jon	
##	1218	g	C	М	GenX	Chris	
##	1219	g	C	M	GenX	Troy	
##	1220	g	C	М	GenX	Jeff	
##	1221	g	C	М	Millenial	Zachary	
##	1222	g	C	M	Millenial	=	
##	1223	g	C			Dylan Christian	
		g		M			
##	1224	g	C	M	Millenial	Wesley	
##	1225	g	C	M	Millenial	Seth	
##	1226	g	C	M	Millenial	Austin	
##	1227	g	C	M	Millenial	Gabriel	
##	1228	g	C	М	Millenial	Evan	
##	1229	g	С	М	Millenial	Casey	
##	1230	g	С	М	Millenial	Luis	
##	1231	g	С	F	Boomer	Gloria	
##	1232	g	С	F	Boomer	Joan	
##	1233	g	C	F	Boomer	Dorothy	
##	1234	g	С	F	Boomer	Shirley	
##	1235	g	С	F	Boomer	Betty	NA
##	1236	g	C	F	Boomer	Dianne	NA
##	1237	g	C	F	Boomer	Kay	NA
##	1238	g	C	F	Boomer	Marjorie	NA
##	1239	g	C	F	Boomer	Lorraine	NA
##	1240	g	C	F	Boomer	Mildred	NA
##	1241	g	C	F	${\tt GenX}$	Tracy	NA
##	1242	g	C	F	${\tt GenX}$	Dawn	NA
##	1243	g	C	F	GenX	Tina	NA
##	1244	g	C	F	GenX	Tammy	NA
##	1245	g	C	F	GenX	Melinda	
##	1246	g	С	F	GenX	Tamara	NA
##	1247	g	С	F	GenX	Tracey	NA
##	1248	g	С	F	GenX	Colleen	
##	1249	g	C	F	GenX	Sherri	
##	1250	g	C	F	GenX	Heidi	
##	1251	g	C	F	Millenial	Samantha	
##	1252	g	C	F	Millenial	Alexis	
##	1253	g	C	F	Millenial	Brittany	
##	1254	g	C	F	Millenial	Lauren	
##	1255	g	C	F	Millenial	Taylor	
##	1256	g g	C	F	Millenial	Bethany	
##	1257	g g	C	F	Millenial	Latoya	
##	1258		C	F	Millenial	Candice	
##	1259	g o	C	F	Millenial	Brittney	
##	1260	g ø	C	F	Millenial	Cheyenne	
##	1261	g h	A	M	Boomer	Theodore	
##	1262	h h	A	M		Bernard	
##	1202	11	А	M	Boomer	permard	INH

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	1263	h L	A	M	Boomer	Gene	
##	1264	h L	A	M	Boomer	Herbert	
##	1265	h 1-	A	M	Boomer	Ray	
##	1266	h 1-	A	M	Boomer	Tom	
##	1267	h	A	М	Boomer	Lee	
##	1268	h	A	М	Boomer	Alfred	
##	1269	h	A	M	Boomer	Leroy	
##	1270	h	A	M	Boomer	Eddie	
##	1271	h	A	M	GenX	Marc	
##	1272	h	A	М	GenX	Jamie	
##	1273	h	A	М	GenX	Greg	
##	1274	h	A	М	GenX	Darryl	
##	1275	h	Α	М	GenX	Tim	
##	1276	h	Α	М	GenX	Dean	
##	1277	h	Α	М	GenX	Jon	
##	1278	h	Α	М	GenX	Chris	
##	1279	h	Α	М	GenX	Troy	NA
##	1280	h	Α	М	GenX	Jeff	
##	1281	h	Α	М	Millenial	Zachary	
##	1282	h	Α	М	Millenial	Dylan	NA
##	1283	h	Α	М	Millenial	${\tt Christian}$	NA
##	1284	h	Α	М	Millenial	Wesley	NA
##	1285	h	Α	M	Millenial	Seth	NA
##	1286	h	Α	M	Millenial	Austin	NA
##	1287	h	Α	М	Millenial	Gabriel	NA
##	1288	h	Α	М	Millenial	Evan	NA
##	1289	h	Α	М	Millenial	Casey	NA
##	1290	h	Α	М	Millenial	Luis	NA
##	1291	h	Α	F	Boomer	Gloria	NA
##	1292	h	Α	F	Boomer	Joan	NA
##	1293	h	Α	F	Boomer	Dorothy	NA
##	1294	h	Α	F	Boomer	Shirley	
##	1295	h	Α	F	Boomer	Betty	
##	1296	h	Α	F	Boomer	Dianne	
##	1297	h	Α	F	Boomer	Kay	NA
##	1298	h	Α	F	Boomer	Marjorie	
##	1299	h	Α	F	Boomer	Lorraine	
##	1300	h	A	F	Boomer	Mildred	
##	1301	h	A	F	GenX	Tracy	
##	1302	h	A	F	GenX	Dawn	
##	1303	h	A	F	GenX	Tina	
##	1304	h	A	F	GenX	Tammy	
##	1305	h	A	F	GenX	=	
##	1306	h	A	F	GenX	Tamara	
##	1307	h	A	F	GenX		
##	1308	h	A	F	GenX	-	
##	1309	h	A	F	GenX	Sherri	
##	1310	h	A	F	GenX	Heidi	
##	1311	h	A	F	Millenial	Samantha	
##	1312	h h	A	F	Millenial	Alexis	
##			A	r F	Millenial		
	1313 1314	h h	A	r F	Millenial	Brittany Lauren	
##	1314	h h	A	r F	Millenial		
						Taylor	
##	1316	h	A	F	Millenial	Bethany	IVA

##	1317	h	Α	F	Milloniol	T a+ a***	NT A
##	1317	h h	A	r F	Millenial Millenial	Latoya Candice	
##	1319	h h	A	r F	Millenial		
##	1320	h h	A	r F		Brittney	
	1321		В	M	Millenial	Cheyenne Theodore	
##		h h		M M	Boomer	Bernard	
##	1322	h h	В		Boomer		
##	1323	h	В	М	Boomer	Gene	
##	1324	h	В	M	Boomer	Herbert	
##	1325	h	В	М	Boomer	Ray	
##	1326	h	В	M	Boomer	Tom	
##	1327	h	В	M	Boomer	Lee	
##	1328	h	В	M	Boomer	Alfred	
##	1329	h	В	M	Boomer	Leroy	
##	1330	h	В	М	Boomer	Eddie	
##	1331	h	В	М	GenX	Marc	
##	1332	h	В	M	GenX	Jamie	
##	1333	h	В	М	GenX	Greg	
##	1334	h	В	М	${\tt GenX}$	Darryl	NA
##	1335	h	В	М	GenX	Tim	
##	1336	h	В	М	${\tt GenX}$	Dean	
##	1337	h	В	М	${\tt GenX}$	Jon	
##	1338	h	В	М	GenX	Chris	NA
##	1339	h	В	M	GenX	Troy	NA
##	1340	h	В	M	GenX	Jeff	NA
##	1341	h	В	М	Millenial	Zachary	NA
##	1342	h	В	М	Millenial	Dylan	NA
##	1343	h	В	М	Millenial	${\tt Christian}$	NA
##	1344	h	В	М	Millenial	Wesley	NA
##	1345	h	В	M	Millenial	Seth	NA
##	1346	h	В	M	Millenial	Austin	NA
##	1347	h	В	M	Millenial	Gabriel	NA
##	1348	h	В	M	Millenial	Evan	NA
##	1349	h	В	M	Millenial	Casey	NA
##	1350	h	В	М	Millenial	Luis	NA
##	1351	h	В	F	Boomer	Gloria	NA
##	1352	h	В	F	Boomer	Joan	NA
##	1353	h	В	F	Boomer	Dorothy	NA
##	1354	h	В	F	Boomer	Shirley	NA
##	1355	h	В	F	Boomer	Betty	
##	1356	h	В	F	Boomer	Dianne	
##	1357	h	В	F	Boomer	Kay	NA
##	1358	h	В	F	Boomer	Marjorie	
##	1359	h	В	F	Boomer	Lorraine	
##	1360	h	В	F	Boomer	Mildred	NA
##	1361	h	В	F	GenX	Tracy	
##	1362	h	В	F	GenX	Dawn	
##	1363	h	В	F	GenX	Tina	
##	1364	h	В	F	GenX	Tammy	
##	1365	h	В	F	GenX	Melinda	
##	1366	h	В	F	GenX	Tamara	
##	1367	h	В	F	GenX	Tracey	
##	1368	h	В	F	GenX	Colleen	
##	1369	h	В	F	GenX	Sherri	
##	1370	h	В	F	GenX	Heidi	
π#	1010	11	ט	I.	Genv	HETUI	IVM

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	1371	h h	В	F	Millenial		
##	1372	h L	В	F	Millenial		
##	1373	h L	В	F	Millenial	3	
##	1374	h L	В	F	Millenial	Lauren	
##	1375	h	В	F	Millenial	Taylor	
##	1376	h	В	F	Millenial	Bethany	
##	1377	h	В	F	Millenial	Latoya	
##	1378	h	В	F	Millenial		
##	1379	h	В	F	Millenial	J	
##	1380	h	В	F	Millenial	3	
##	1381	h	C	M	Boomer		
##	1382	h	C	M	Boomer		
##	1383	h	C	M	Boomer	Gene	
##	1384	h	C	M	Boomer	Herbert	
##	1385	h	C	M	Boomer	Ray	
##	1386	h	C	М	Boomer	Tom	
##	1387	h	C	М	Boomer	Lee	NA
##	1388	h	C	M	Boomer	Alfred	
##	1389	h	C	M	Boomer	Leroy	NA
##	1390	h	C	M	Boomer	Eddie	NA
##	1391	h	C	M	GenX	Marc	NA
##	1392	h	C	M	GenX	Jamie	NA
##	1393	h	C	M	GenX	Greg	NA
##	1394	h	C	M	GenX	Darryl	NA
##	1395	h	C	M	GenX	Tim	NA
##	1396	h	C	M	GenX	Dean	NA
##	1397	h	C	M	GenX	Jon	NA
##	1398	h	C	M	GenX	Chris	NA
##	1399	h	C	М	GenX	Troy	NA
##	1400	h	C	М	GenX	Jeff	
##	1401	h	С	M	Millenial	Zachary	NA
##	1402	h	С	M	Millenial	Dylan	
##	1403	h	С	M	Millenial	Christian	
##	1404	h	C	М	Millenial	Wesley	NA
##	1405	h	C	М	Millenial	Seth	
##	1406	h	С	М	Millenial	Austin	NA
##	1407	h	C	М	Millenial	Gabriel	NA
##	1408	h	C	М	Millenial	Evan	
##	1409	h	C	М	Millenial	Casey	
##	1410	h	C	М	Millenial	Luis	
##	1411	h	C	F	Boomer	Gloria	
##	1412	h	C	F	Boomer	Joan	
##	1413	h	C	F	Boomer	Dorothy	
##	1414	h	C	F	Boomer	·	
##	1415	h	C	F	Boomer	Betty	
##	1416	h	C	F	Boomer	Dianne	
##	1417	h	C	F	Boomer	Kay	
##	1417	h	C	F	Boomer	•	
##	1419	h	C	F	Boomer	Lorraine	
##	1419	h	C	r F	Boomer	Mildred	
##	1421		C	r F	GenX		
##	1421	h h	C	r F		Tracy Dawn	
##			C		GenX		
	1423	h h		F	GenX	Tina	
##	1424	h	С	F	GenX	Tammy	IVA

	1425	h	С	F	GenX	Melinda	
##	1426	h	С	F	GenX	Tamara	
##	1427	h	С	F	GenX	Tracey	
##	1428	h	С	F	GenX	Colleen	
##	1429	h	С	F	GenX	Sherri	
##	1430	h	С	F	GenX	Heidi	ΝA
##	1431	h	С	F	Millenial	Samantha	
##	1432	h	С	F	Millenial	Alexis	NA
##	1433	h	С	F	Millenial	Brittany	NA
##	1434	h	С	F	Millenial	Lauren	NA
##	1435	h	C	F	Millenial	Taylor	NA
##	1436	h	C	F	Millenial	Bethany	NA
##	1437	h	C	F	Millenial	Latoya	NA
##	1438	h	C	F	Millenial	Candice	NA
##	1439	h	С	F	Millenial	Brittney	NA
##	1440	h	C	F	Millenial	Cheyenne	NA
##	1441	i	Α	M	Boomer	Theodore	NA
##	1442	i	Α	М	Boomer	Bernard	NA
##	1443	i	Α	M	Boomer	Gene	NA
##	1444	i	Α	М	Boomer	Herbert	NA
##	1445	i	Α	M	Boomer	Ray	NA
##	1446	i	Α	M	Boomer	Tom	
##	1447	i	Α	М	Boomer	Lee	NA
##	1448	i	Α	М	Boomer	Alfred	NA
##	1449	i	Α	М	Boomer	Leroy	NA
##	1450	i	Α	М	Boomer	Eddie	
##	1451	i	Α	М	GenX	Marc	NA
##	1452	i	Α	М	GenX	Jamie	
##	1453	i	Α	М	GenX	Greg	
##	1454	i	A	М	GenX	Darryl	
##	1455	i	A	М	GenX	Tim	
##	1456	i	A	М	GenX	Dean	
##	1457	i	A	М	GenX	Jon	
##	1458	i	A	М	GenX	Chris	
##	1459	i	A	М	GenX	Troy	
##	1460	i	A	М	GenX	Jeff	
##	1461	i	A	М	Millenial	Zachary	
	1462	i	A	М	Millenial	Dylan	
	1463	i	A	М		Christian	
	1464	i	A	М	Millenial	Wesley	
	1465	i	A	М	Millenial	Seth	
	1466	i	A	М	Millenial	Austin	
	1467	i	A	М	Millenial	Gabriel	
	1468	i	A	М	Millenial	Evan	
##	1469	i	A	М	Millenial	Casey	
		i			Millenial	•	
	1470	i	Α	M F		Luis	
	1471		A		Boomer	Gloria	
	1472	i	A	F	Boomer	Joan	
	1473	i	A	F	Boomer	Dorothy	
	1474	i	A	F	Boomer	Shirley	
	1475	i	A	F	Boomer	Betty	
	1476	i	A	F	Boomer	Dianne	
	1477	i	A	F	Boomer	Kay	
##	1478	i	Α	F	Boomer	Marjorie	NΑ

##	1479	i	Α	F	Boomer	Lorraine	NΔ
##	1480	i	A	F	Boomer	Mildred	
##	1481	i	A	F	GenX	Tracy	
##	1482	i	A	F	GenX	Dawn	
##	1483	i	A	F	GenX	Tina	
##	1484	i	A	F	GenX	Tammy	
##	1485	i	A	F	GenX	Melinda	
##	1486	i	A	F	GenX	Tamara	
##	1487	i	A	F	GenX	Tracey	
##	1488	i	A	F	GenX	Colleen	
##	1489	i	A	F	GenX	Sherri	
##	1490	i	A	F	GenX	Heidi	
##	1491	i	A	F	Millenial	Samantha	
##	1492	i	A	F	Millenial	Alexis	
##	1493	i	A	F	Millenial	Brittany	
##	1494	i	A	F	Millenial	Lauren	
##	1495	i	A	F	Millenial	Taylor	
##	1496	i	A	F	Millenial	Bethany	
##	1497	i	A	F	Millenial	Latoya	
##	1498	i	A	F	Millenial	Candice	
##	1499	i	A	F	Millenial	Brittney	
##	1500	i	A	F	Millenial	Cheyenne	
##	1501	i	В	M	Boomer	Theodore	
##	1501	i	В	М	Boomer	Bernard	
##	1502	i	В	М	Boomer	Gene	
##	1504	i	В	М	Boomer	Herbert	
##	1504	i	В	M	Boomer	Ray	
##	1506	i	В	М	Boomer	Tom	
##	1507	i	В	М	Boomer	Lee	
##	1507	i	В	М	Boomer	Alfred	
##	1509	i	В	M		Leroy	
	1510		В	M	Boomer	Eddie	
##		i			Boomer	Marc	
##	1511	i	В	M	GenX GenX		
##	1512	i	В	M		Jamie	
##	1513 1514	i i	B B	M M	GenX	Greg	
	1514	i	В	M	GenX	Darryl Tim	
##		_	_		GenX		
	1516	i	В	M	GenX	Dean	
##	1517	i	В	M	GenX	Jon	
##	1518	i	В	M	GenX		
##	1519	i	В	M	GenX	•	
##	1520	i	В	M	GenX	Jeff	
##	1521	i	В	M	Millenial	Zachary	
##	1522	i	В	M	Millenial	Dylan	
##	1523	i	В	M		Christian	
##	1524	i	В	M	Millenial	Wesley	
##	1525	i	В	M	Millenial	Seth	
##	1526	i	В	M	Millenial	Austin	
##	1527	i	В	M	Millenial	Gabriel	
##	1528	i	В	M	Millenial	Evan	
##	1529	i	В	M	Millenial	Casey	
##	1530	i	В	М	Millenial	Luis	
##	1531	i	В	F	Boomer	Gloria	
##	1532	i	В	F	Boomer	Joan	ΝA

##	1533	i	В	F	Boomer	Dorothy	NA
##	1534	i	В	F	Boomer	Shirley	
##	1535	i	В	F	Boomer	Betty	
##	1536	i	В	F	Boomer	Dianne	
##	1537	i	В	F	Boomer	Kay	NA
##	1538	i	В	F	Boomer	Marjorie	
##	1539	i	В	F	Boomer	Lorraine	
##	1540	i	В	F	Boomer	Mildred	NA
##	1541	i	В	F	GenX	Tracy	
##	1542	i	В	F	GenX	Dawn	
##	1543	i	В	F	GenX	Tina	NA
##	1544	i	В	F	GenX	Tammy	NA
##	1545	i	В	F	GenX	Melinda	
##	1546	i	В	F	GenX	Tamara	NA
##	1547	i	В	F	GenX	Tracey	
##	1548	i	В	F	GenX	Colleen	
##	1549	i	В	F	GenX	Sherri	
##	1550	i	В	F	GenX	Heidi	
##	1551	i	В	F	Millenial	Samantha	
##	1552	i	В	F	Millenial	Alexis	
##	1553	i	В	F	Millenial	Brittany	
##	1554	i	В	F	Millenial	Lauren	
##	1555	i	В	F	Millenial	Taylor	
##	1556	i	В	F	Millenial	Bethany	
##	1557	i	В	F	Millenial	Latoya	
##	1558	i	В	F	Millenial	Candice	
##	1559	i	В	F	Millenial	Brittney	
##	1560	i	В	F	Millenial	Cheyenne	
##	1561	i	C	M	Boomer	Theodore	
##	1562	i	C	М	Boomer	Bernard	
##	1563	i	C	М	Boomer	Gene	
##	1564	i	C	М	Boomer	Herbert	
##	1565	i	C	М	Boomer	Ray	
##	1566	i	C	М	Boomer	Tom	
##	1567	i	C	М	Boomer	Lee	
##	1568	i	C	М	Boomer	Alfred	
##	1569	i	C	М	Boomer	Leroy	
##	1570	i	C	М	Boomer	Eddie	
##	1571	i	C	М	GenX	Marc	
##	1572	i	C	М	GenX	Jamie	
##	1573	i	C	М	GenX	Greg	
##	1574	i	C	М	GenX	Darryl	
##	1575	i	C	М	GenX	Tim	
##	1576	i	C	М	GenX	Dean	
##	1577	i	C	М	GenX	Jon	
##	1578	i	C	М	GenX	Chris	
##	1579	i	C	M	GenX	Troy	
##	1580	i	C	M	GenX	Jeff	
##	1581	i	C	M	Millenial	Zachary	
##	1582	i	C	M	Millenial	Dylan	
##	1583	i	C	M		Christian	
##	1584	i	C	М	Millenial	Wesley	
##	1585	i	C	М	Millenial	Seth	
##	1586	i	C	М	Millenial	Austin	
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##	1587	i	С	М	Millenial	Gabriel	МΛ
##	1588	i	C	M	Millenial	Evan	
##	1589	i	C	M	Millenial	Casey	
##	1590	i	C	M	Millenial	Luis	
##	1591	i	C	F	Boomer	Gloria	
##	1592	i	C	F	Boomer	Joan	
##	1593	i	C	F	Boomer	Dorothy	
##	1594	i	C	F	Boomer	Shirley	
##	1595	i	C	F	Boomer	Betty	
##	1596	i	C	F	Boomer	Dianne	
##	1597	i	C	F	Boomer	Kay	
##	1598	i	C	F	Boomer	Marjorie	
##	1599	i	C	F	Boomer	Lorraine	
##	1600	i	C	r F	Boomer	Mildred	
##	1601	i	C	r F	GenX	Tracy	
##	1602	i	C	r F	GenX	Dawn	
##	1603	i	C	r F	GenX	Tina	
##	1603	i	C	r F	Genx		
##	1604	i	C	r F	GenX	Tammy Melinda	
##	1605	i	C	r F	Genx	Tamara	
##	1607	i	C	r F	GenX		
##	1607	i	C	r F	Genx	Tracey Colleen	
##	1609	i	C	r F			
		_	C	=	GenX	Sherri	
##	1610	i		F	GenX	Heidi	
##	1611	i	C	F	Millenial	Samantha	
##	1612	i	C	F	Millenial	Alexis	
##	1613	i	C	F	Millenial	Brittany	
##	1614	i	C	F	Millenial	Lauren	
##	1615	i	C	F	Millenial	Taylor	
##	1616	i	C	F	Millenial	Bethany	
##	1617	i	C	F	Millenial	Latoya	
##	1618	i	C	F	Millenial	Candice	
##	1619	i	C	F	Millenial	Brittney	
##	1620	i	C	F	Millenial	Cheyenne	
##	1621	j	A	M	Boomer	Theodore	
##	1622	j	A	M	Boomer	Bernard	
##	1623	j	A	M	Boomer	Gene	
##	1624	j	A	M	Boomer	Herbert	
##	1625	j	A	M	Boomer	Ray	
##	1626	j	A	M	Boomer	Tom	
##	1627	j	A	M	Boomer	Lee	
##	1628	j	A	M	Boomer	Alfred	
##	1629	j	A	M	Boomer	Leroy	
##	1630	j	A	M	Boomer	Eddie	
##	1631	j	A	M	GenX	Marc	
##	1632	j	A	M	GenX	Jamie	
##	1633	j	A	M	GenX	Greg	
##	1634	j	A	M	GenX	Darryl	
##	1635	j	A	M	GenX	Tim	
##	1636	j	A	M	GenX	Dean	
##	1637	j	A	M	GenX	Jon	
##	1638	j	A	M	GenX	Chris	
##	1639	j	A	M	GenX	Troy	
##	1640	j	A	М	GenX	Jeff	ΝA

##	1641	j	Α	М	Millenial	Zachary	NA
##	1642	j	A	М	Millenial	Dylan	
##	1643	j	Α	М		Christian	
##	1644	j	A	М	Millenial	Wesley	
##	1645	j	A	М	Millenial	Seth	
##	1646	j	A	М	Millenial	Austin	
##	1647	j	A	М	Millenial	Gabriel	
##	1648	j	A	M	Millenial	Evan	
##	1649	j	A	M	Millenial	Casey	
##	1650	j	A	M	Millenial	Luis	
##	1651		A	F		Gloria	
##		j		F	Boomer	Joan	
	1652	j	A		Boomer		
##	1653	j	A	F	Boomer	Dorothy	
##	1654	j	A	F	Boomer	Shirley	
##	1655	j	A	F	Boomer	Betty	
##	1656	j	A	F	Boomer	Dianne	
##	1657	j	Α	F	Boomer	Kay	
##	1658	j	Α	F	Boomer	Marjorie	
##	1659	j	Α	F	Boomer	Lorraine	
##	1660	j	Α	F	Boomer	Mildred	NA
##	1661	j	Α	F	GenX	Tracy	NA
##	1662	j	Α	F	GenX	Dawn	NA
##	1663	j	Α	F	GenX	Tina	NA
##	1664	j	Α	F	GenX	Tammy	NA
##	1665	j	Α	F	GenX	Melinda	NA
##	1666	j	Α	F	GenX	Tamara	NA
##	1667	j	Α	F	GenX	Tracey	NA
##	1668	j	Α	F	GenX	Colleen	
##	1669	j	Α	F	GenX	Sherri	NA
##	1670	j	Α	F	GenX	Heidi	
##	1671	j	Α	F	Millenial	Samantha	NA
##	1672	j	A	F	Millenial	Alexis	
##	1673	j	A	F	Millenial	Brittany	
##	1674	j	A	F	Millenial	Lauren	
##	1675	j	A	F	Millenial	Taylor	
##	1676	j	A	F	Millenial	Bethany	
##	1677	j	A	F	Millenial	=	
				_	Millenial	Latoya	
##	1678	j	A	F		Candice	
##	1679	j	A	F	Millenial	Brittney	
##	1680	j	A	F	Millenial	Cheyenne	
##	1681	j	В	M	Boomer	Theodore	
##	1682	j	В	M	Boomer	Bernard	
##	1683	j	В	M	Boomer	Gene	
##	1684	j	В	M	Boomer	Herbert	
##	1685	j	В	M	Boomer	Ray	
##	1686	j	В	M	Boomer	Tom	
##	1687	j	В	M	Boomer	Lee	NA
##	1688	j	В	М	Boomer	Alfred	NA
##	1689	j	В	M	Boomer	Leroy	NA
##	1690	j	В	M	Boomer	Eddie	NA
##	1691	j	В	M	GenX	Marc	NA
##	1692	j	В	M	GenX	Jamie	NA
##	1693	j	В	M	GenX	Greg	
##	1694	j	В	М	GenX	Darryl	
		3				J	

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	1695 1696	j B i B	M M	GenX GenX	Tim Dean	
##		3				
##	1697	j B	M	GenX	Jon	
##	1698	j B	M	GenX	Chris	
##	1699	j B	M	GenX	Troy	
##	1700	j B	M	GenX	Jeff	
##	1701	j B	М	Millenial	Zachary	
##	1702	j B	М	Millenial	Dylan	
##	1703	j B	M		Christian	
##	1704	j B	М	Millenial	Wesley	
##	1705	j B	М	Millenial	Seth	
##	1706	j B	М	Millenial	Austin	
##	1707	j B	М	Millenial	Gabriel	
##	1708	j B	M	Millenial	Evan	
##	1709	j B	M	Millenial	Casey	NA
##	1710	j B	M	Millenial	Luis	NA
##	1711	j B	F	Boomer	Gloria	NA
##	1712	j B	F	Boomer	Joan	NA
##	1713	j B	F	Boomer	Dorothy	NA
##	1714	j B	F	Boomer	Shirley	NA
##	1715	j B	F	Boomer	Betty	NA
##	1716	j B	F	Boomer	Dianne	NA
##	1717	j B	F	Boomer	Kay	NA
##	1718	j B	F	Boomer	Marjorie	NA
##	1719	j B	F	Boomer	Lorraine	NA
##	1720	j B	F	Boomer	Mildred	NA
##	1721	j B	F	GenX	Tracy	NA
##	1722	j B	F	GenX	Dawn	
##	1723	j B	F	GenX	Tina	NA
##	1724	j B	F	GenX	Tammy	NA
##	1725	j B	F	GenX	Melinda	
##	1726	j B	F	GenX	Tamara	
##	1727	j B	F	GenX	Tracey	
##	1728	j B	F	GenX	Colleen	
##	1729	j B	F	GenX	Sherri	
##	1730	j B	F	GenX	Heidi	
##	1731	j B	F	Millenial	Samantha	
	1732	j B	F	Millenial	Alexis	
##	1733	j B	F	Millenial		
##	1734	j B	F	Millenial	Lauren	
##	1735	j B	F	Millenial	Taylor	
##	1736		F	Millenial	Bethany	
##	1737	· ·	F	Millenial	Latoya	
##	1738	J	r F	Millenial	Candice	
##						
	1739	j B	F	Millenial	v	
##	1740	j B	F	Millenial	Cheyenne	
##	1741	j C	M	Boomer		
##	1742	j C	M	Boomer	Bernard	
##	1743	j C	M	Boomer	Gene	
##	1744	j C	M	Boomer	Herbert	
##	1745	j C	M	Boomer	Ray	
##	1746	j C	M	Boomer	Tom	
##	1747	j C	М	Boomer	Lee	
##	1748	j C	М	Boomer	Alfred	NA

##	1749	j C	М	Boomer	Leroy	NΑ
##	1750	j C		Boomer	Eddie	
##	1751	j C		GenX	Marc	
##	1752	j C		GenX	Jamie	
##	1753	j C		GenX	Greg	
##	1754	j C		GenX	Darryl	
##	1755	j C		GenX	Tim	
##	1756	j C		GenX	Dean	
##	1757	j C		GenX	Jon	
##	1758	j C		GenX	Chris	
##	1759	j C		GenX	Troy	
##	1760	j (		GenX	Jeff	
##	1761	j (		Millenial	Zachary	
##	1762	j C		Millenial	Dylan	
##	1763				Christian	
##	1764	3		Millenial		
##	1765	3		Millenial	Wesley	
	1766	3		Millenial	Seth Austin	
##	1767	<i>3</i>		Millenial	Gabriel	
##		3				
##	1768	j C		Millenial	Evan	
##	1769	j C		Millenial	Casey	
##	1770	j C		Millenial	Luis	
##	1771	j (		Boomer	Gloria	
##	1772	j (		Boomer	Joan	
##	1773	j (		Boomer	Dorothy	
##	1774	j C		Boomer	Shirley	
##	1775	j (		Boomer	Betty	
##	1776	j (		Boomer	Dianne	
##	1777	j (		Boomer	Kay	
##	1778	j (		Boomer	Marjorie	
##	1779	j C		Boomer	Lorraine	
##	1780	j C		Boomer	Mildred	
##	1781	j C		GenX	Tracy	
##	1782	j C		GenX	Dawn	
##	1783	j C		GenX	Tina	
##	1784	j C		GenX	Tammy	
##	1785	j C	F	GenX	Melinda	ΝA
##	1786	j C		GenX	Tamara	
##	1787	j C		GenX	Tracey	
##	1788	j		GenX	Colleen	
##	1789	j C		GenX	Sherri	NA
##	1790	j C		GenX	Heidi	NA
##	1791	j		Millenial	Samantha	NA
##	1792	j C	F	Millenial	Alexis	NA
##	1793	j C	F	Millenial	Brittany	NA
##	1794	j C	F	Millenial	Lauren	NA
##	1795	j C		Millenial	Taylor	NA
##	1796	j C	F	Millenial	Bethany	NA
##	1797	j C	F	Millenial	Latoya	NA
##	1798	j	F	Millenial	Candice	NA
##	1799	j	F	Millenial	Brittney	NA
##	1800	j	F	Millenial	Cheyenne	NA
##	1801	k A	M	Boomer	Theodore	NA
##	1802	k A	. M	Boomer	Bernard	NA

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	1803	k	A	M	Boomer	Gene	
##	1804	k 1-	A	M	Boomer	Herbert	
##	1805	k 1-	A	M	Boomer	Ray	
##	1806	k 1-	A	M	Boomer	Tom	
##	1807	k	A	M	Boomer	Lee	
##	1808	k	A	M	Boomer	Alfred	
##	1809	k	A	M	Boomer	Leroy	
##	1810	k	A	M	Boomer	Eddie	
##	1811	k	A	M	GenX	Marc	
##	1812	k	A	M	GenX	Jamie	
##	1813	k	A	M	GenX	Greg	
##	1814	k	A	М	GenX	Darryl	
##	1815	k	Α	М	GenX	Tim	
##	1816	k	Α	М	GenX	Dean	
##	1817	k	Α	М	GenX	Jon	
##	1818	k	Α	М	GenX	Chris	
##	1819	k	Α	М	GenX	Troy	NA
##	1820	k	Α	M	GenX	Jeff	
##	1821	k	Α	M	Millenial	Zachary	NA
##	1822	k	Α	M	Millenial	Dylan	NA
##	1823	k	Α	M	Millenial	${\tt Christian}$	NA
##	1824	k	Α	M	Millenial	Wesley	NA
##	1825	k	Α	M	Millenial	Seth	NA
##	1826	k	Α	М	Millenial	Austin	NA
##	1827	k	Α	M	Millenial	Gabriel	NA
##	1828	k	Α	M	Millenial	Evan	NA
##	1829	k	Α	M	Millenial	Casey	NA
##	1830	k	Α	M	Millenial	Luis	NA
##	1831	k	Α	F	Boomer	Gloria	NA
##	1832	k	Α	F	Boomer	Joan	NA
##	1833	k	Α	F	Boomer	Dorothy	NA
##	1834	k	Α	F	Boomer	Shirley	
##	1835	k	Α	F	Boomer	Betty	
##	1836	k	Α	F	Boomer	Dianne	
##	1837	k	Α	F	Boomer	Kay	NA
##	1838	k	Α	F	Boomer	Marjorie	
##	1839	k	Α	F	Boomer	Lorraine	
##	1840	k	Α	F	Boomer	Mildred	NA
##	1841	k	Α	F	GenX	Tracy	
##	1842	k	A	F	GenX	Dawn	
##	1843	k	A	F	GenX	Tina	
##	1844	k	A	F	GenX	Tammy	
##	1845	k	A	F	GenX	=	
##	1846	k	A	F	GenX	Tamara	
##	1847	k	A	F	GenX		
##	1848	k	A	F	GenX	Colleen	
##	1849	k	A	F	GenX	Sherri	
##	1850	k	A	F	GenX	Heidi	
##	1851	k	A	F	Millenial	Samantha	
##	1852	k	A	r F	Millenial	Alexis	
##	1853		A	r F	Millenial		
##	1854	k k	A	r F	Millenial	Brittany Lauren	
##			A	r F	Millenial		
	1855	k le				Taylor	
##	1856	k	Α	F	Millenial	Bethany	IVA

##	1857	k	Α	F	Millenial	Latoya	NA
##	1858	k	Α	F	Millenial	Candice	
##	1859	k	Α	F	Millenial	Brittney	NA
##	1860	k	Α	F	Millenial	Cheyenne	
##	1861	k	В	М	Boomer	Theodore	
##	1862	k	В	М	Boomer	Bernard	
##	1863	k	В	М	Boomer	Gene	
##	1864	k	В	М	Boomer	Herbert	
##	1865	k	В	М	Boomer	Ray	
##	1866	k	В	М	Boomer	Tom	
##	1867	k	В	М	Boomer	Lee	
##	1868	k	В	М	Boomer	Alfred	
##	1869	k	В	М	Boomer	Leroy	
##	1870	k	В	М	Boomer	Eddie	
##	1871	k	В	M	GenX	Marc	
##	1872	k	В	M	GenX	Jamie	
##	1873	k	В	M	GenX	Greg	
##	1874	k	В	M	GenX	Darryl	
##	1875	k	В	M	GenX	Tim	
##	1876	k	В	M	GenX	Dean	
##	1877	k	В	M	GenX	Jon	
##	1878	k	В	M	GenX	Chris	
##	1879	k	В	M	GenX	Troy	
##		k	В	M	GenX	Jeff	
	1880 1881		В	M			
##		k			Millenial	Zachary	
##	1882	k	В	M	Millenial	Dylan	
##	1883	k	В	M		Christian	
##	1884	k 1-	В	M	Millenial	Wesley	
##	1885	k 1-	В	M	Millenial	Seth	
##	1886	k	В	M	Millenial	Austin	
##	1887	k 1-	В	M	Millenial	Gabriel	
##	1888	k	В	M	Millenial	Evan	
##	1889	k	В	M	Millenial	Casey	
##	1890	k	В	M	Millenial	Luis	
##	1891	k	В	F	Boomer	Gloria	
##	1892	k	В	F	Boomer	Joan	
##	1893	k	В	F	Boomer	Dorothy	
##	1894	k	В	F	Boomer	Shirley	
##	1895	k	В	F	Boomer	Betty	
##	1896	k	В	F	Boomer	Dianne	
##	1897	k	В	F	Boomer	Kay	
##	1898	k	В	F	Boomer	Marjorie	
##	1899	k	В	F	Boomer	Lorraine	
##	1900	k	В	F	Boomer	Mildred	
##	1901	k	В	F	GenX	Tracy	
##	1902	k	В	F	GenX	Dawn	
##	1903	k	В	F	GenX	Tina -	
##	1904	k	В	F	GenX	Tammy	
##	1905	k	В	F	GenX	Melinda	
##	1906	k	В	F	GenX	Tamara	
##	1907	k	В	F	GenX	Tracey	
##	1908	k	В	F	GenX	Colleen	
##	1909	k	В	F	${\tt GenX}$	Sherri	
##	1910	k	В	F	GenX	Heidi	NA

		_	_	_			
	1911	k	В	F	Millenial		
##	1912	k	В	F	Millenial		
##	1913	k	В	F	Millenial	<i>J</i>	
##	1914	k	В	F	Millenial		
##	1915	k	В	F	Millenial	Taylor	
##	1916	k	В	F	Millenial	Bethany	
##	1917	k	В	F	Millenial	Latoya	
##	1918	k	В	F	Millenial		
##	1919	k	В	F	Millenial		
##	1920	k	В	F	Millenial	3	
##	1921	k	C	M	Boomer		
##	1922	k	C	M	Boomer		
##	1923	k	С	M	Boomer	Gene	
##	1924	k	С	M	Boomer		
##	1925	k	С	M	Boomer	Ray	
##	1926	k	С	M	Boomer	Tom	
##	1927	k	C	M	Boomer	Lee	
##	1928	k	C	M	Boomer	Alfred	
##	1929	k	С	M	Boomer	Leroy	NA
##	1930	k	C	M	Boomer	Eddie	NA
##	1931	k	C	M	GenX	Marc	NA
##	1932	k	C	M	${\tt GenX}$	Jamie	NA
##	1933	k	C	М	GenX	Greg	NA
##	1934	k	C	М	GenX	Darryl	NA
##	1935	k	C	М	GenX	Tim	NA
##	1936	k	C	M	GenX	Dean	NA
##	1937	k	C	М	GenX	Jon	NA
##	1938	k	C	M	GenX	Chris	NA
##	1939	k	C	М	GenX	Troy	NA
##	1940	k	C	M	GenX	Jeff	NA
##	1941	k	C	M	Millenial	Zachary	NA
##	1942	k	C	M	Millenial	Dylan	NA
##	1943	k	C	M	Millenial	${\tt Christian}$	NA
##	1944	k	C	M	Millenial	Wesley	NA
##	1945	k	C	М	Millenial	Seth	NA
##	1946	k	C	M	Millenial	Austin	NA
##	1947	k	C	М	Millenial	Gabriel	NA
##	1948	k	C	М	Millenial	Evan	NA
##	1949	k	C	М	Millenial	Casey	NA
##	1950	k	C	М	Millenial	Luis	NA
##	1951	k	C	F	Boomer	Gloria	NA
##	1952	k	C	F	Boomer	Joan	NA
##	1953	k	C	F	Boomer	Dorothy	
##	1954	k	С	F	Boomer	-	
##	1955	k	C	F	Boomer	Betty	
##	1956	k	C	F	Boomer	Dianne	
##	1957	k	C	F	Boomer	Kay	NA
##	1958	k	C	F	Boomer	•	
##	1959	k	С	F	Boomer	_	
##	1960	k	С	F	Boomer	Mildred	
##	1961	k	C	F	GenX		
##	1962	k	C	F	GenX	Dawn	
##	1963	k	C	F	GenX	Tina	
##	1964	k	C	F	GenX	Tammy	
			-	-	20221	<i>J</i>	

##	1965	k	С	F	GenX	Melinda	МΛ
##	1966	k	C	F	GenX	Tamara	
##	1967	k	C	F	GenX	Tracey	
##	1968	k	C	F	GenX	Colleen	
##	1969	k	C	F	GenX	Sherri	
##	1970	k	C	F	GenX	Heidi	
##	1971	k	C	F	Millenial	Samantha	
##	1971	k	C	r F	Millenial	Alexis	
##	1972		C	r F	Millenial		
##	1973	k k	C	r F	Millenial	Brittany Lauren	
##	1975	k	C	F	Millenial	Taylor	
##	1976	k	C	F	Millenial	Bethany	
##	1977	k	C	F	Millenial	Latoya	
##	1978	k	C	F	Millenial	Candice	
##	1979	k	С	F	Millenial	Brittney	
##	1980	k	C	F	Millenial	Cheyenne	
##	1981	1	Α	M	Boomer	Theodore	
##	1982	1	Α	М	Boomer	Bernard	
##	1983	1	Α	M	Boomer	Gene	
##	1984	1	Α	M	Boomer	Herbert	
##	1985	1	Α	M	Boomer	Ray	NA
##	1986	1	Α	M	Boomer	Tom	NA
##	1987	1	Α	M	Boomer	Lee	NA
##	1988	1	Α	M	Boomer	Alfred	NA
##	1989	1	Α	M	Boomer	Leroy	NA
##	1990	1	Α	M	Boomer	Eddie	NA
##	1991	1	Α	M	GenX	Marc	NA
##	1992	1	Α	M	GenX	Jamie	NA
##	1993	1	Α	M	GenX	Greg	NA
##	1994	1	Α	M	GenX	Darryl	
##	1995	1	Α	М	GenX	Tim	
##	1996	1	Α	М	GenX	Dean	NA
##	1997	1	Α	М	GenX	Jon	
##	1998	1	Α	М	GenX	Chris	
##	1999	1	A	М	GenX	Troy	
##	2000	1	A	М	GenX	Jeff	
##	2001	1	A	М	Millenial	Zachary	
	2002	1	A	М	Millenial	Dylan	
	2003	1	A	М		Christian	
	2004	1	A	М	Millenial	Wesley	
	2005	1	A	M	Millenial	Seth	
	2006	1	A	M	Millenial	Austin	
	2007	1	A	M	Millenial	Gabriel	
		1		M	Millenial	Evan	
	2008		A				
##	2009	1 1	A	M	Millenial Millenial	Casey	
##	2010		A	M		Luis	
##	2011	1	A	F	Boomer	Gloria	
##	2012	1	A	F	Boomer	Joan	
##	2013	1	A	F	Boomer	Dorothy	
	2014	1	A	F	Boomer	Shirley	
	2015	1	A	F	Boomer	Betty	
	2016	1	A	F	Boomer	Dianne	
	2017	1	A	F	Boomer	Kay	
##	2018	1	Α	F	Boomer	Marjorie	NA

##	2019	1	Α	F	Boomer	Lorraine	ΝΛ
##	2020	1	A	F	Boomer	Mildred	
##	2021	1	A	F	GenX	Tracy	
##	2022	1	A	F	GenX	Dawn	
##	2023	1	A	F	GenX	Tina	
##	2024	1	A	F	GenX	Tammy	
##	2024	1	A	F	GenX	Melinda	
##	2025	1	A	r F	GenX	Tamara	
	2026	1	A	r F	GenX		
## ##	2027	1	A	r F	GenX	Tracey Colleen	
		1		r F			
##	2029		A	=	GenX	Sherri	
##	2030	1	A	F	GenX	Heidi	
##	2031	1	A	F	Millenial		
##	2032	1	A	F	Millenial	Alexis	
##	2033	1	A	F	Millenial	3	
##	2034	1	Α	F	Millenial	Lauren	
##	2035	1	Α	F	Millenial	Taylor	
##	2036	1	Α	F	Millenial	Bethany	
##	2037	1	Α	F	Millenial	Latoya	NA
##	2038	1	Α	F	Millenial	Candice	NA
##	2039	1	Α	F	Millenial	Brittney	NA
##	2040	1	Α	F	Millenial	Cheyenne	NA
##	2041	1	В	M	Boomer	Theodore	NA
##	2042	1	В	M	Boomer	Bernard	NA
##	2043	1	В	M	Boomer	Gene	NA
##	2044	1	В	M	Boomer	Herbert	NA
##	2045	1	В	M	Boomer	Ray	NA
##	2046	1	В	М	Boomer	Tom	
##	2047	1	В	М	Boomer	Lee	NA
##	2048	1	В	М	Boomer	Alfred	NA
##	2049	1	В	М	Boomer	Leroy	NA
##	2050	1	В	М	Boomer	Eddie	
##	2051	1	В	М	GenX	Marc	
##	2052	1	В	М	GenX	Jamie	
##	2053	1	В	М	GenX	Greg	
##	2054	1	В	М	GenX	Darryl	
##	2055	1	В	М	GenX	Tim	
	2056	1	В	М	GenX	Dean	
##	2057	1	В		GenX	Jon	
		1		M			
	2058		В	M	GenX		
	2059	1	В	M	GenX	Troy	
	2060	1	В	M	GenX	Jeff	
	2061	1	В	M	Millenial	Zachary	
##	2062	1	В	М	Millenial	Dylan	
##	2063	1	В	M		Christian	
##	2064	1	В	М	Millenial	Wesley	
##	2065	1	В	M	Millenial	Seth	
##	2066	1	В	М	Millenial	Austin	
##	2067	1	В	М	Millenial	Gabriel	
##	2068	1	В	М	Millenial	Evan	
##	2069	1	В	М	Millenial	Casey	
##	2070	1	В	M	Millenial	Luis	NA
##	2071	1	В	F	Boomer	Gloria	NA
##	2072	1	В	F	Boomer	Joan	NA

##	2073	1	В	F	Boomer	Dorothy	NΑ
##	2074	1	В	F	Boomer	Shirley	
##	2075	1	В	F	Boomer	Betty	
##	2076	1	В	F	Boomer	Dianne	
##	2077	1	В	F	Boomer	Kay	
##	2078	1	В	F	Boomer	Marjorie	
##	2079	1	В	F	Boomer	Lorraine	
##	2019	1	В	F	Boomer	Mildred	
##	2081	1	В	F	GenX	Tracy	
##	2081	1	В	r F	GenX	Dawn	
	2082	1	В	r F		Tina	
##					GenX		
##	2084	1	В	F	GenX	Tammy	
##	2085	1	В	F	GenX	Melinda	
##	2086	1	В	F	GenX	Tamara	
##	2087	1	В	F	GenX	Tracey	
##	2088	1	В	F	GenX	Colleen	
##	2089	1	В	F	GenX	Sherri	
##	2090	1	В	F	GenX	Heidi	
##	2091	1	В	F	Millenial	Samantha	
##	2092	1	В	F	Millenial	Alexis	NA
##	2093	1	В	F	Millenial	Brittany	NA
##	2094	1	В	F	Millenial	Lauren	NA
##	2095	1	В	F	Millenial	Taylor	NA
##	2096	1	В	F	Millenial	Bethany	NA
##	2097	1	В	F	Millenial	Latoya	NA
##	2098	1	В	F	Millenial	Candice	NA
##	2099	1	В	F	Millenial	Brittney	NA
##	2100	1	В	F	Millenial	Cheyenne	NA
##	2101	1	C	M	Boomer	Theodore	
##	2102	1	С	M	Boomer	Bernard	NA
##	2103	1	С	М	Boomer	Gene	
##	2104	1	С	М	Boomer	Herbert	NA
##	2105	1	C	М	Boomer	Ray	
##	2106	1	C	М	Boomer	Tom	
##	2107	1	C	М	Boomer	Lee	
##	2108	1	C	М	Boomer	Alfred	
##	2109	1	C	M	Boomer	Leroy	
	2110	1	C	M	Boomer	Eddie	
##	2111	1	C	M	GenX	Marc	
##	2112	1	C	M	GenX	Jamie	
##	2112	1	C	M	GenX		
##		1	C			Greg	
	2114			M	GenX	Darryl	
##	2115	1	C	M	GenX	Tim	
	2116	1	C	M	GenX	Dean	
	2117	1	C	M	GenX	Jon	
##	2118	1	C	М	GenX	Chris	
	2119	1	C	M	GenX	Troy	
	2120	1	C	М	GenX	Jeff	
	2121	1	C	М	Millenial	Zachary	
	2122	1	С	M	Millenial	Dylan	
	2123	1	С	М		Christian	
	2124	1	С	M	Millenial	Wesley	
##	2125	1	C	М	Millenial	Seth	
##	2126	1	C	М	Millenial	Austin	NA

	0407	-	<b>a</b>				
	2127 2128	1 1	C C	M	Millenial	Gabriel	
	2129	1	C	M M	Millenial Millenial	Evan	
	2129	1	C	M M	Millenial	Casey Luis	
	2130	1	C	м F		Gloria	
		1	C	r F	Boomer	Joan	
##	2132				Boomer		
##	2133	1	C	F	Boomer	Dorothy	
##	2134	1	C	F	Boomer	Shirley	
##	2135 2136	1 1	C	F	Boomer	Betty	
##			C	F	Boomer	Dianne	
##	2137	1	C	F	Boomer	Kay	
##	2138	1	C	F	Boomer	Marjorie	
##	2139	1	C	F	Boomer	Lorraine	
##	2140	1	C	F	Boomer	Mildred	
##	2141	1	C	F	GenX	Tracy	
##	2142	1	C	F	GenX	Dawn	
##	2143	1	C	F	GenX	Tina -	
##	2144	1	C	F	GenX	Tammy	
	2145	1	С	F	GenX	Melinda	
	2146	1	С	F	GenX	Tamara	
	2147	1	С	F	${\tt GenX}$	Tracey	
##	2148	1	С	F	GenX	Colleen	
##	2149	1	С	F	${\tt GenX}$	Sherri	NA
##	2150	1	C	F	${\tt GenX}$	Heidi	NA
##	2151	1	C	F	Millenial	Samantha	NA
##	2152	1	C	F	Millenial	Alexis	NA
##	2153	1	C	F	Millenial	Brittany	NA
##	2154	1	C	F	Millenial	Lauren	NA
##	2155	1	C	F	Millenial	Taylor	NA
##	2156	1	C	F	Millenial	Bethany	NA
##	2157	1	C	F	Millenial	Latoya	NA
##	2158	1	C	F	Millenial	Candice	NA
##	2159	1	C	F	Millenial	Brittney	NA
##	2160	1	C	F	Millenial	Cheyenne	NA
##	2161	m	Α	M	Boomer	Theodore	NA
##	2162	m	Α	M	Boomer	Bernard	NA
##	2163	m	Α	М	Boomer	Gene	NA
##	2164	m	Α	М	Boomer	Herbert	NA
##	2165	m	Α	M	Boomer	Ray	NA
##	2166	m	Α	М	Boomer	Tom	NA
##	2167	m	A	M	Boomer	Lee	NA
##	2168	m	Α	M	Boomer	Alfred	NA
##	2169	m	Α	М	Boomer	Leroy	NA
##	2170	m	Α	M	Boomer	Eddie	NA
##	2171	m	Α	М	GenX	Marc	NA
	2172	m	Α	М	${\tt GenX}$	Jamie	NA
	2173	m	Α	М	${\tt GenX}$	Greg	NA
	2174	m	Α	М	GenX	Darryl	
	2175	m	Α	М	GenX	Tim	
	2176	m	Α	М	GenX	Dean	
	2177	m	Α	М	GenX	Jon	
	2178	m	Α	М	GenX	Chris	
	2179	m	Α	М	GenX	Troy	
	2180	m	A	М	GenX	Jeff	
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	2181	m ~	A	M	Millenial		
	2182	m 	A	M	Millenial	Dylan	
	2183	m	A	M		Christian	
	2184	m	A	M	Millenial	Wesley	
##	2185	m	A	M	Millenial	Seth	
##	2186	m	A	M	Millenial	Austin	
##	2187	m	A	M	Millenial	Gabriel	
##	2188	m	A	M	Millenial	Evan	
##	2189	m	A	M	Millenial	Casey	
##	2190	m	A	M	Millenial	Luis	
##	2191	m	A	F	Boomer	Gloria	
##	2192	m	A	F	Boomer	Joan	
##	2193	m	A	F	Boomer	Dorothy	
##	2194	m	A	F	Boomer	Shirley	
##	2195	m	A	F	Boomer	Betty	
##	2196	m	A	F	Boomer	Dianne	
##	2197	m	A	F	Boomer	Kay	
##	2198	m	A	F	Boomer	Marjorie	
##	2199	m	A	F	Boomer		
##	2200	m	Α	F	Boomer	Mildred	
##	2201	m	Α	F	GenX	Tracy	NA
##	2202	m	Α	F	GenX	Dawn	
##	2203	m	Α	F	GenX	Tina	
##	2204	m	Α	F	GenX	Tammy	NA
##	2205	m	Α	F	GenX	Melinda	NA
##	2206	m	Α	F	GenX	Tamara	NA
##	2207	m	Α	F	GenX	Tracey	NA
##	2208	m	Α	F	GenX	Colleen	NA
##	2209	m	Α	F	GenX	Sherri	NA
##	2210	m	Α	F	GenX	Heidi	NA
##	2211	m	Α	F	Millenial	Samantha	NA
##	2212	m	Α	F	Millenial	Alexis	NA
##	2213	m	Α	F	Millenial	Brittany	NA
##	2214	m	Α	F	Millenial	Lauren	NA
##	2215	m	Α	F	Millenial	Taylor	NA
##	2216	m	Α	F	Millenial	Bethany	NA
##	2217	m	Α	F	Millenial	Latoya	NA
##	2218	m	Α	F	Millenial	Candice	NA
##	2219	m	Α	F	Millenial	Brittney	NA
##	2220	m	A	F	Millenial	Cheyenne	
##	2221	m	В	M	Boomer	Theodore	
##	2222	m	В	M	Boomer	Bernard	NA
	2223	m	В	M	Boomer	Gene	
	2224	m	В	M	Boomer	Herbert	NA
##	2225	m	В	M	Boomer	Ray	NA
	2226	m	В	M	Boomer	Tom	
	2227	m	В	М	Boomer	Lee	
	2228	m	В	М	Boomer	Alfred	
	2229	m	В	М	Boomer	Leroy	
	2230	m	В	М	Boomer	Eddie	
	2231	m	В	М	GenX	Marc	
	2232	m	В	М	GenX		
	2233	m	В	М	GenX		
	2234	m	В	М	GenX	Darryl	
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##	2235	m	В	М	GenX	Tim	NΤΛ
	2236	m m	В	M	GenX	Dean	
	2237	m	В	M	GenX	Jon	
	2238	m	В	M	GenX	Chris	
##	2239	m m	В	M	GenX	Troy	
	2240	m m	В	M	GenX	Jeff	
	2240		В	M	Millenial	Zachary	
	2241	m 	В	M M	Millenial	Dylan	
	2242	m 	В	M M		Christian	
##	2243	m m	В	M	Millenial	Wesley	
##	2244	m 	В	M M	Millenial	wesley Seth	
##	2245	m 	В	M M	Millenial	Austin	
		m 				Gabriel	
##	2247	m	В	M	Millenial		
##	2248	m	В	М	Millenial	Evan	
##	2249	m	В	М	Millenial	Casey	
##	2250	m	В	М	Millenial	Luis	
##	2251	m	В	F	Boomer	Gloria	
##	2252	m	В	F	Boomer	Joan	
	2253	m	В	F	Boomer	Dorothy	
	2254	m	В	F	Boomer	Shirley	
	2255	m	В	F	Boomer	Betty	
	2256	m	В	F	Boomer	Dianne	
	2257	m	В	F	Boomer	Kay	
	2258	m	В	F	Boomer	Marjorie	
	2259	m	В	F	Boomer	Lorraine	
	2260	m	В	F	Boomer	Mildred	
##	2261	m	В	F	GenX	Tracy	
##	2262	m	В	F	GenX	Dawn	
##	2263	m	В	F	GenX	Tina	
##	2264	m	В	F	GenX	Tammy	
##	2265	m	В	F	GenX	Melinda	
##	2266	m	В	F	GenX	Tamara	NA
	2267	m	В	F	${\tt GenX}$	Tracey	NA
##	2268	m	В	F	${\tt GenX}$	Colleen	
##	2269	m	В	F	${\tt GenX}$	Sherri	
##	2270	m	В	F	${\tt GenX}$	Heidi	NA
	2271	m	В	F	Millenial	Samantha	
##	2272	m	В	F	Millenial	Alexis	NA
##	2273	m	В	F	Millenial	Brittany	NA
##	2274	m	В	F	Millenial	Lauren	NA
##	2275	m	В	F	Millenial	Taylor	NA
##	2276	m	В	F	Millenial	Bethany	NA
##	2277	m	В	F	Millenial	Latoya	
##	2278	m	В	F	Millenial	Candice	NA
##	2279	m	В	F	Millenial	Brittney	NA
##	2280	m	В	F	Millenial	Cheyenne	NA
##	2281	m	C	M	Boomer	Theodore	NA
##	2282	m	C	M	Boomer	Bernard	NA
##	2283	m	C	М	Boomer	Gene	NA
##	2284	m	C	М	Boomer	Herbert	NA
##	2285	m	C	М	Boomer	Ray	NA
##	2286	m	C	М	Boomer	Tom	NA
##	2287	m	C	М	Boomer	Lee	NA
##	2288	m	C	М	Boomer	Alfred	NA

##	2289	m	С	М	Boomer	Leroy	NΤΛ
	2290	m m	C	M	Boomer	Eddie	
	2291	m	C	M	GenX	Marc	
##	2292	m	C	M	GenX	Jamie	
##	2293	m m	C	M	GenX	Greg	
##	2294	m m	C	M	GenX	Darryl	
##	2295		C	M	GenX	Tim	
##	2296	m ~	C	M	GenX	Dean	
##	2297	m ~	C	M	GenX	Jon	
##	2298	m m	C	M	GenX	Chris	
##	2299	m m	C	M	GenX	Troy	
##	2300		C	M	GenX	Jeff	
	2300	m ~	C	M	Millenial		
##		m 				Zachary	
##	2302	m 	C	M	Millenial	Dylan	
##	2303	m 	C	M		Christian	
##	2304	m	C	M	Millenial	Wesley	
##	2305	m	C	M	Millenial	Seth	
##	2306	m	C	M	Millenial	Austin	
##	2307	m	C	M	Millenial	Gabriel	
##	2308	m	C	M	Millenial	Evan	
	2309	m	C	M	Millenial	Casey	
	2310	m	C	M	Millenial	Luis	
##	2311	m	C	F	Boomer	Gloria	
##	2312	m	C	F	Boomer	Joan	
##	2313	m	C	F	Boomer	Dorothy	
##	2314	m	C	F	Boomer	Shirley	
	2315	m	C	F	Boomer	Betty	
	2316	m	C	F	Boomer	Dianne	
	2317	m	C	F	Boomer	Kay	
	2318	m	C	F	Boomer	Marjorie	
	2319	m	C	F	Boomer	Lorraine	
	2320	m	C	F	Boomer	Mildred	
	2321	m	C	F	GenX	Tracy	
	2322	m	C	F	GenX	Dawn	
##	2323	m	C	F	GenX	Tina	
##	2324	m	C	F	GenX	Tammy	NA
	2325	m	C	F	GenX	Melinda	
##	2326	m	C	F	GenX	Tamara	
	2327	m	C	F	GenX	Tracey	NA
##	2328	m	C	F	GenX		
##	2329	m	C	F	GenX	Sherri	NA
##	2330	m	C	F	GenX	Heidi	NA
##	2331	m	C	F	Millenial	Samantha	NA
##	2332	m	C	F	Millenial	Alexis	NA
##	2333	m	C	F	Millenial	Brittany	NA
##	2334	m	C	F	Millenial	Lauren	NA
##	2335	m	C	F	Millenial	Taylor	NA
##	2336	m	C	F	Millenial	Bethany	NA
##	2337	m	C	F	Millenial	Latoya	
##	2338	m	C	F	Millenial	Candice	NA
##	2339	m	C	F	Millenial	Brittney	NA
##	2340	m	C	F	Millenial	Cheyenne	NA
##	2341	n	Α	M	Boomer	Theodore	NA
##	2342	n	A	M	Boomer	Bernard	NA

##	2343	<b>n</b>	Α	М	Boomer	Gene	NT A
	2344	n n	A	M	Boomer	Herbert	
	2344		A	M		Ray	
	2346	n	A	M	Boomer Boomer	Tom	
	2347	n	A	M		Lee	
		n 			Boomer	Alfred	
	2348	n	A	M	Boomer		
	2349	n	A	М	Boomer	Leroy	
	2350	n	A	М	Boomer	Eddie	
##	2351	n	A	M	GenX	Marc	
##	2352	n	A	М	GenX	Jamie	
##	2353	n	A	М	GenX	Greg	
##	2354	n	A	M	GenX	Darryl	
##	2355	n	A	M	GenX	Tim	
##	2356	n	A	М	GenX	Dean	
##	2357	n	Α	M	GenX	Jon	
##	2358	n	Α	M	GenX	Chris	
##	2359	n	Α	M	GenX	Troy	
##	2360	n	Α	M	GenX	Jeff	
	2361	n	Α	M	Millenial	Zachary	
##	2362	n	Α	М	Millenial	Dylan	NA
##	2363	n	Α	M	Millenial	${\tt Christian}$	
##	2364	n	Α	M	Millenial	Wesley	NA
##	2365	n	Α	M	Millenial	Seth	NA
##	2366	n	Α	M	Millenial	Austin	NA
##	2367	n	Α	M	Millenial	Gabriel	NA
##	2368	n	Α	M	Millenial	Evan	NA
##	2369	n	Α	M	Millenial	Casey	NA
##	2370	n	Α	M	Millenial	Luis	NA
##	2371	n	Α	F	Boomer	Gloria	NA
##	2372	n	Α	F	Boomer	Joan	NA
##	2373	n	Α	F	Boomer	Dorothy	NA
##	2374	n	Α	F	Boomer	Shirley	NA
##	2375	n	Α	F	Boomer	Betty	NA
##	2376	n	Α	F	Boomer	Dianne	NA
##	2377	n	Α	F	Boomer	Kay	NA
##	2378	n	Α	F	Boomer	Marjorie	
##	2379	n	Α	F	Boomer	Lorraine	
##	2380	n	Α	F	Boomer	Mildred	NA
	2381	n	Α	F	GenX	Tracy	
##	2382	n	Α	F	GenX	Dawn	
##	2383	n	Α	F	GenX	Tina	NA
	2384	n	A	F	GenX	Tammy	
	2385	n	A	F	GenX	=	
	2386	n	A	F	GenX	Tamara	
	2387	n	A	F	GenX		
	2388	n	A	F	GenX	•	
	2389	n	A	F	GenX	Sherri	
	2390	n	A	F	GenX	Heidi	
	2391	n	A	F	Millenial	Samantha	
##	2391	n	A	F	Millenial	Alexis	
	2392		A	F	Millenial	Brittany	
	2394	n n	A	F	Millenial	Lauren	
	2394		A A	r F	Millenial	Taylor	
	2396	n n	A A	r F	Millenial	•	
##	2030	n	А	I,	utttenigt	Bethany	иH

##	2397	<b>n</b>	A	F	Millenial	Latoya	NT A
	2398	n n	A	F	Millenial	Candice	
	2399	n	A	F	Millenial	Brittney	
	2400	n	A	F	Millenial	Cheyenne	
	2400	n	В	M	Boomer	Theodore	
	2401		В	M	Boomer	Bernard	
	2402	n	В	M		Gene	
	2403	n 			Boomer		
	2404	n	В	M	Boomer	Herbert	
##		n 	В	M	Boomer	Ray	
##	2406	n	В	M	Boomer	Tom	
##	2407	n	В	M	Boomer	Lee	
##	2408	n	В	M	Boomer	Alfred	
##	2409	n	В	M	Boomer	Leroy	
##	2410	n	В	M	Boomer	Eddie	
	2411	n	В	M	GenX	Marc	
	2412	n	В	M	GenX	Jamie	
	2413	n	В	M	GenX	Greg	
	2414	n	В	M	GenX	Darryl	
	2415	n	В	M	GenX	Tim	
	2416	n	В	M	GenX	Dean	
##	2417	n	В	M	GenX	Jon	
##	2418	n	В	M	GenX	Chris	
##	2419	n	В	M	GenX	Troy	NA
##	2420	n	В	M	GenX	Jeff	NA
##	2421	n	В	М	Millenial	Zachary	NA
##	2422	n	В	M	Millenial	Dylan	NA
##	2423	n	В	M	Millenial	${\tt Christian}$	NA
##	2424	n	В	M	Millenial	Wesley	NA
##	2425	n	В	М	Millenial	Seth	NA
##	2426	n	В	M	Millenial	Austin	NA
##	2427	n	В	M	Millenial	Gabriel	NA
##	2428	n	В	M	Millenial	Evan	NA
##	2429	n	В	M	Millenial	Casey	NA
##	2430	n	В	М	Millenial	Luis	NA
##	2431	n	В	F	Boomer	Gloria	NA
##	2432	n	В	F	Boomer	Joan	NA
##	2433	n	В	F	Boomer	Dorothy	NA
##	2434	n	В	F	Boomer	Shirley	NA
##	2435	n	В	F	Boomer	Betty	
##	2436	n	В	F	Boomer	Dianne	
	2437	n	В	F	Boomer	Kay	NA
	2438	n	В	F	Boomer	Marjorie	
	2439	n	В	F	Boomer	Lorraine	
	2440	n	В	F	Boomer	Mildred	NA
	2441	n	В	F	GenX	Tracy	
	2442	n	В	F	GenX	Dawn	
	2443	n	В	F	GenX	Tina	
	2444	n	В	F	GenX	Tammy	
	2445	n	В	F	GenX	-	
	2446	n	В	F	GenX		
	2447	n	В	F	GenX		
	2448	n	В	F	GenX		
	2449	n	В	F	GenX		
	2449	n	В	F	GenX	Heidi	
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	2451	n	В	F	Millenial		
	2452	n	В	F	Millenial		
##	2453	n	В	F	Millenial	Brittany	NA
##	2454	n	В	F	Millenial	Lauren	
##	2455	n	В	F	Millenial	Taylor	NA
##	2456	n	В	F	Millenial	Bethany	NA
##	2457	n	В	F	Millenial	Latoya	NA
##	2458	n	В	F	Millenial	Candice	NA
##	2459	n	В	F	Millenial	Brittney	NA
##	2460	n	В	F	Millenial	Cheyenne	NA
##	2461	n	C	M	Boomer	Theodore	NA
##	2462	n	C	M	Boomer	Bernard	NA
##	2463	n	C	M	Boomer	Gene	NA
##	2464	n	C	M	Boomer	Herbert	NA
##	2465	n	C	M	Boomer	Ray	NA
##	2466	n	C	M	Boomer	Tom	NA
##	2467	n	С	M	Boomer	Lee	NA
##	2468	n	С	M	Boomer	Alfred	NA
##	2469	n	С	M	Boomer	Leroy	NA
##	2470	n	С	M	Boomer	Eddie	
##	2471	n	С	M	GenX	Marc	NA
##	2472	n	С	M	GenX	Jamie	NA
##	2473	n	С	М	GenX	Greg	
##	2474	n	С	М	GenX	Darryl	
##	2475	n	C	М	GenX	Tim	
##	2476	n	C	М	GenX	Dean	
##	2477	n	C	М	GenX	Jon	NA
##	2478	n	C	М	GenX	Chris	
##	2479	n	C	M	GenX	Troy	
##	2480	n	C	M	GenX	Jeff	
##	2481	n	C	M	Millenial	Zachary	
##	2482	n	C	M	Millenial	Dylan	
##	2483	n	C	M		Christian	
##	2484	n	C	M	Millenial	Wesley	
##	2485	n	C	М	Millenial	Seth	
##	2486	n	C	М	Millenial	Austin	
##	2487	n	C	М	Millenial	Gabriel	
	2488	n	C	М	Millenial	Evan	
	2489	n	C	M	Millenial	Casey	
	2490	n	C	M	Millenial	Luis	
	2491	n	C	F	Boomer	Gloria	
	2492	n	C	F	Boomer	Joan	
	2493	n	C	F	Boomer	Dorothy	
	2494	n	C	F	Boomer	Shirley	
	2495	n	C	F	Boomer	Betty	
	2496	n	C	F	Boomer	Dianne	
	2497	n	C	F	Boomer	Kay	
	2498	n	C	F	Boomer	Marjorie	
	2499	n	C	r F	Boomer	Lorraine	
	2500		C	r F	Boomer	Mildred	
	2000	n	C	r F	GenX	Tracy	
	2501	n					TAL
	2501	n n				-	
##	2502	n	C	F	GenX	Dawn	NA
## ##						-	NA NA

```
С
## 2505
                                   F
                                           GenX
                                                   Melinda NA
                 n
## 2506
                           C
                                   F
                                                    Tamara NA
                                           GenX
                 n
                           С
                                   F
                                                    Tracey NA
## 2507
                 n
                                           GenX
                           С
                                   F
## 2508
                                           GenX
                                                   Colleen NA
                 n
                           С
## 2509
                 n
                                   F
                                           GenX
                                                    Sherri NA
## 2510
                           С
                                   F
                                                     Heidi NA
                                           GenX
                 n
## 2511
                           C
                                   F
                                      Millenial
                                                  Samantha NA
                 n
                           С
                                   F
## 2512
                 n
                                      Millenial
                                                    Alexis NA
## 2513
                           C
                                   F
                                      Millenial
                                                 Brittany NA
                 n
                           С
## 2514
                 n
                                   F
                                      Millenial
                                                    Lauren NA
## 2515
                           С
                                      Millenial
                                                    Taylor NA
                 n
                           С
## 2516
                                   F
                                      Millenial
                                                   Bethany NA
                 n
                           С
## 2517
                                   F
                                      Millenial
                                                    Latoya NA
                 n
                           С
## 2518
                                                   Candice NA
                 n
                                      Millenial
## 2519
                           С
                                   F
                                      Millenial
                 n
                                                  Brittney NA
## 2520
                           С
                                      Millenial
                                                  Cheyenne NA
```

# **Packages**

Install the package pacman using regular base R.

```
if (!require('pacman'))
{
  install.packages('packman');
  library(pacman);
}
```

### ## Loading required package: pacman

First, install the package testthat (a widely accepted testing suite for R) from https://github.com/r-lib/testthat using pacman. If you are using Windows, this will be a long install, but you have to go through it for some of the stuff we are doing in class. LINUX (or MAC) is preferred for coding. If you can't get it to work, install this package from CRAN (still using pacman), but this is not recommended long term.

```
pacman::p_load(testthat)
```

• Create vector v consisting of all numbers from -100 to 100 and test using the second line of code su

```
v= seq(-100, 100)
# expect_equal(v, -100 : 101) gives an error...
```

If there are any errors, the expect\_equal function will tell you about them. If there are no errors, then it will be silent.

Test the my\_reverse function from lab2 using the following code:

```
v = 1:100
expect_equal(my_reverse(v), rev(v))
expect_equal(my_reverse(c("A", "B", "C")), c("C", "B", "A"))
```

## Multinomial Classification using KNN

Write a k = 1 nearest neighbor algorithm using the Euclidean distance function. This is standard "Roxygen" format for documentation. Hopefully, we will get to packages at some point and we will go over this again. It is your job also to fill in this documentation.

```
#' Nearest Neighbor Classifier
#'
#' Classify an observation based on the label of the closest observation in the set of training observa
#'
#' @param Xinput
                      A matrix of features for training data observations
#' @param y_binary
                      The vector of training data labels
#' @param Xtest
                      A test observation as a row vector
#' @return
                      The predicted label for the test observation
nn_algorithm_predict = function(Xinput, y_binary, Xtest){
  n = nrow(Xinput)
  distances = array(NA, n)
  for (i in 1:n) {
    distances[i] = sum((Xinput[i, ]-Xtest)^2)
  }
  y_binary[which.min(distances)]
```

Write a few tests to ensure it actually works:

```
data(iris)
iris
```

```
##
       Sepal.Length Sepal.Width Petal.Length Petal.Width
                                                                  Species
## 1
                 5.1
                               3.5
                                             1.4
                                                                   setosa
## 2
                 4.9
                               3.0
                                             1.4
                                                          0.2
                                                                   setosa
## 3
                 4.7
                               3.2
                                             1.3
                                                          0.2
                                                                   setosa
## 4
                 4.6
                               3.1
                                             1.5
                                                          0.2
                                                                   setosa
## 5
                 5.0
                                             1.4
                                                          0.2
                               3.6
                                                                   setosa
## 6
                 5.4
                               3.9
                                             1.7
                                                          0.4
                                                                   setosa
## 7
                 4.6
                               3.4
                                             1.4
                                                          0.3
                                                                   setosa
                 5.0
                               3.4
                                             1.5
                                                          0.2
## 8
                                                                   setosa
## 9
                 4.4
                               2.9
                                             1.4
                                                          0.2
                                                                   setosa
## 10
                 4.9
                                             1.5
                                                          0.1
                               3.1
                                                                   setosa
## 11
                 5.4
                               3.7
                                             1.5
                                                          0.2
                                                                   setosa
                                                          0.2
## 12
                 4.8
                               3.4
                                             1.6
                                                                   setosa
## 13
                 4.8
                               3.0
                                             1.4
                                                          0.1
                                                                   setosa
## 14
                 4.3
                               3.0
                                             1.1
                                                          0.1
                                                                   setosa
## 15
                               4.0
                                                          0.2
                 5.8
                                             1.2
                                                                   setosa
## 16
                 5.7
                               4.4
                                             1.5
                                                          0.4
                                                                   setosa
                 5.4
## 17
                               3.9
                                             1.3
                                                          0.4
                                                                   setosa
## 18
                 5.1
                               3.5
                                             1.4
                                                          0.3
                                                                   setosa
## 19
                 5.7
                               3.8
                                             1.7
                                                          0.3
                                                                   setosa
## 20
                 5.1
                               3.8
                                             1.5
                                                          0.3
                                                                   setosa
## 21
                 5.4
                               3.4
                                             1.7
                                                          0.2
                                                                   setosa
## 22
                 5.1
                               3.7
                                             1.5
                                                          0.4
                                                                   setosa
## 23
                 4.6
                               3.6
                                             1.0
                                                          0.2
                                                                   setosa
## 24
                 5.1
                               3.3
                                             1.7
                                                          0.5
                                                                   setosa
```

##	25	4.8	3.4	1.9	0.2	setosa
##	26	5.0	3.0	1.6	0.2	setosa
##	27	5.0	3.4	1.6	0.4	setosa
##	28	5.2	3.5	1.5	0.2	setosa
##	29	5.2	3.4	1.4	0.2	setosa
##	30	4.7	3.2	1.6	0.2	setosa
##	31	4.8	3.1	1.6	0.2	setosa
##	32	5.4	3.4	1.5	0.4	setosa
##	33	5.2	4.1	1.5	0.1	setosa
##	34	5.5	4.2	1.4	0.2	setosa
##	35	4.9	3.1	1.5	0.2	setosa
##	36	5.0	3.2	1.2	0.2	setosa
##	37	5.5	3.5	1.3	0.2	setosa
##	38	4.9	3.6	1.4	0.1	setosa
##	39	4.4	3.0	1.3	0.2	setosa
##	40	5.1	3.4	1.5	0.2	setosa
##	41	5.0	3.5	1.3	0.3	setosa
##	42	4.5	2.3	1.3	0.3	setosa
##	43	4.4	3.2	1.3	0.2	setosa
##	44	5.0	3.5	1.6	0.6	setosa
##	45	5.1	3.8	1.9	0.4	setosa
##	46	4.8	3.0	1.4	0.3	setosa
##	47	5.1	3.8	1.6	0.2	setosa
##	48	4.6	3.2	1.4	0.2	setosa
##	49	5.3	3.7	1.5	0.2	setosa
##	50	5.0	3.3	1.4	0.2	setosa
##	51	7.0	3.2	4.7	1.4 ver	
##	52	6.4	3.2	4.5	1.5 ver	
##	53	6.9	3.1	4.9	1.5 ver	
##	54	5.5	2.3	4.0	1.3 ver	
##	55	6.5	2.8	4.6	1.5 ver	
##	56	5.7	2.8	4.5	1.3 ver	sicolor
##	57	6.3	3.3	4.7	1.6 ver	sicolor
##	58	4.9	2.4	3.3	1.0 ver	sicolor
##	59	6.6	2.9	4.6	1.3 ver	sicolor
##	60	5.2	2.7	3.9	1.4 ver	sicolor
##	61	5.0	2.0	3.5	1.0 ver	sicolor
##	62	5.9	3.0	4.2	1.5 ver	sicolor
##	63	6.0	2.2	4.0	1.0 ver	sicolor
##	64	6.1	2.9	4.7	1.4 ver	sicolor
##	65	5.6	2.9	3.6	1.3 ver	sicolor
##	66	6.7	3.1	4.4	1.4 ver	sicolor
##	67	5.6	3.0	4.5	1.5 ver	sicolor
##	68	5.8	2.7	4.1	1.0 ver	sicolor
##	69	6.2	2.2	4.5	1.5 ver	sicolor
##	70	5.6	2.5	3.9	1.1 ver	
##	71	5.9	3.2	4.8	1.8 ver	
##	72	6.1	2.8	4.0	1.3 ver	
##	73	6.3	2.5	4.9	1.5 ver	
##	74	6.1	2.8	4.7	1.2 ver	
	75	6.4	2.9	4.3	1.3 ver	
	76	6.6	3.0	4.4	1.4 ver	
	77	6.8	2.8	4.8	1.4 ver	
##		6.7	3.0	5.0	1.7 ver	
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## 79 6.0 2.9 4.5 1.5 versicolor ## 80 5.7 2.6 3.5 1.0 versicolor ## 81 5.5 2.4 3.8 1.1 versicolor ## 82 5.5 2.4 3.7 1.0 versicolor ## 82 5.5 2.4 3.7 1.0 versicolor ## 82 5.5 2.4 3.7 1.0 versicolor ## 83 5.8 2.7 3.9 1.2 versicolor ## 84 6.0 2.7 5.1 1.6 versicolor ## 85 5.4 3.0 4.5 1.5 versicolor ## 86 6.0 3.4 4.5 1.5 versicolor ## 87 6.7 3.1 4.7 1.5 versicolor ## 88 6.3 2.3 4.4 1.3 versicolor ## 89 5.6 3.0 4.1 1.3 versicolor ## 90 5.5 2.5 4.0 1.3 versicolor ## 91 5.5 2.6 4.4 1.2 versicolor ## 92 6.1 3.0 4.6 1.4 versicolor ## 93 5.8 2.6 4.0 1.2 versicolor ## 94 5.0 2.3 3.3 1.0 versicolor ## 95 5.6 2.7 4.2 1.3 versicolor ## 96 5.7 3.0 4.2 1.2 versicolor ## 97 5.7 2.9 4.2 1.3 versicolor ## 98 6.2 2.9 4.3 1.3 versicolor ## 99 5.1 2.5 3.0 1.1 versicolor ## 100 5.7 2.8 4.1 1.3 versicolor ## 100 5.7 2.8 4.1 1.3 versicolor ## 101 6.3 3.3 6.0 2.5 virginica ## 102 5.8 2.7 5.1 1.9 virginica ## 104 6.3 2.9 5.6 1.8 virginica ## 105 6.5 3.0 5.8 2.2 virginica ## 106 6.5 3.0 5.8 2.2 virginica ## 107 4.9 2.5 4.5 1.7 virginica ## 108 6.5 3.0 5.8 2.2 virginica ## 109 6.7 2.5 5.8 1.8 virginica ## 109 6.7 2.5 5.8 1.8 virginica ## 109 6.7 2.5 5.8 1.8 virginica ## 110 7.2 3.6 6.1 2.5 virginica ## 110 6.5 3.2 5.7 2.3 virginica ## 110 6.5 3.2 5.7 2.3 virginica ## 110 7.7 2.6 6.9 2.3 virginica ## 111 6.5 3.2 5.7 2.3 virginica ## 112 6.4 2.7 5.3 2.3 virginica ## 114 6.5 3.2 5.7 2.3 virginica ## 115 6.6 3.0 5.5 2.1 virginica ## 116 6.4 3.2 5.3 2.3 virginica ## 117 6.5 3.0 5.5 5.1 2.1 virginica ## 118 7.7 2.6 6.9 2.3 virginica ## 122 5.6 2.8 4.9 2.0 virginica ## 124 6.3 2.7 4.9 1.8 virginica ## 124 6.3 2.7 4.9 1.8 virginica ## 124 6.3 2.7 4.9 1.8 virg	===				
## 81	## 79	6.0	2.9	4.5	1.5 versicolor
## 82   5.5   2.4   3.7   1.0 versicolor ## 83   5.8   2.7   3.9   1.2 versicolor ## 84   6.0   2.7   5.1   1.6 versicolor ## 85   5.4   3.0   4.5   1.5 versicolor ## 86   6.0   3.4   4.5   1.6 versicolor ## 87   6.7   3.1   4.7   1.5 versicolor ## 88   6.3   2.3   4.4   1.3 versicolor ## 88   6.3   2.3   4.4   1.3 versicolor ## 89   5.6   3.0   4.1   1.3 versicolor ## 91   5.5   2.5   4.0   1.3 versicolor ## 92   6.1   3.0   4.6   1.4 versicolor ## 92   6.1   3.0   4.6   1.4 versicolor ## 94   5.0   2.3   3.3   1.0 versicolor ## 95   5.6   2.7   4.2   1.3 versicolor ## 95   5.6   2.7   4.2   1.3 versicolor ## 96   5.7   3.0   4.2   1.3 versicolor ## 97   5.7   2.9   4.2   1.3 versicolor ## 98   6.2   2.9   4.3   1.3 versicolor ## 99   5.1   2.5   3.0   1.1 versicolor ## 100   5.7   2.8   4.1   1.3 versicolor ## 101   6.3   3.3   6.0   2.5 virginica ## 102   5.8   2.7   5.1   1.9 virginica ## 104   6.3   2.9   5.6   1.8 virginica ## 105   6.5   3.0   5.8   2.2 virginica ## 106   7.6   3.0   5.6   2.1 virginica ## 107   4.9   2.5   4.5   1.7 virginica ## 110   7.2   3.6   6.1   2.5 virginica ## 110   6.5   3.2   5.1   2.0 virginica ## 111   6.5   3.2   5.1   2.0 virginica ## 112   6.4   2.7   5.3   2.9 virginica ## 113   6.8   3.0   5.5   2.1 virginica ## 114   5.7   2.5   5.0   2.0 virginica ## 115   6.5   3.0   5.5   3.0   3.8 virginica ## 116   6.4   3.2   5.3   2.3 virginica ## 117   6.5   3.0   5.5   3.0   3.0 virginica ## 118   7.7   3.8   6.7   2.2 virginica ## 119   7.7   2.6   6.9   2.3 virginica ## 120   6.0   2.2   5.0   1.5 virginica ## 120   6.0   2.2   5.0   1.5 virginica ## 120   6.0   2.2   5.0   1.5 virginica ## 120   6.0   2.2   5.0	## 80	5.7		3.5	1.0 versicolor
## 83	## 81	5.5	2.4	3.8	1.1 versicolor
## 84	## 82	5.5	2.4	3.7	1.0 versicolor
## 85	## 83	5.8	2.7	3.9	1.2 versicolor
## 86 6.0 3.4 4.5 1.6 versicolor ## 87 6.7 3.1 4.7 1.5 versicolor ## 88 6.3 2.3 4.4 1.3 versicolor ## 89 5.6 3.0 4.1 1.3 versicolor ## 90 5.5 2.5 4.0 1.3 versicolor ## 91 5.5 2.6 4.4 1.2 versicolor ## 91 5.5 2.6 4.4 1.2 versicolor ## 93 5.8 2.6 4.0 1.2 versicolor ## 94 5.0 2.3 3.3 1.0 versicolor ## 95 5.6 2.7 4.2 1.3 versicolor ## 96 5.7 3.0 4.2 1.2 versicolor ## 97 5.7 2.9 4.2 1.3 versicolor ## 98 6.2 2.9 4.3 1.3 versicolor ## 98 6.2 2.9 4.3 1.3 versicolor ## 100 5.7 2.8 4.1 1.3 versicolor ## 101 6.3 3.3 6.0 2.5 virginica ## 104 6.3 2.9 5.6 1.8 virginica ## 104 6.3 2.9 5.6 1.8 virginica ## 105 6.5 3.0 5.8 2.2 virginica ## 106 7.6 3.0 6.6 2.1 virginica ## 107 4.9 2.5 4.5 1.7 virginica ## 110 6.7 2.5 5.8 2.9 6.3 1.8 virginica ## 110 6.7 2.5 5.8 2.9 6.3 1.8 virginica ## 110 6.7 2.5 5.8 2.9 6.3 1.8 virginica ## 110 6.7 2.5 5.8 2.9 6.3 1.8 virginica ## 110 6.7 2.5 5.8 2.9 5.1 2.0 virginica ## 110 6.7 2.5 5.8 2.9 6.3 1.8 virginica ## 110 6.7 2.5 5.8 2.9 6.3 1.8 virginica ## 110 6.7 2.5 5.8 2.9 6.3 1.8 virginica ## 110 6.7 2.5 5.8 2.9 6.3 1.8 virginica ## 110 6.5 3.2 5.1 2.0 virginica ## 110 6.5 3.2 5.1 2.0 virginica ## 111 6.5 3.2 5.1 2.0 virginica ## 111 6.5 3.2 5.1 2.0 virginica ## 112 6.4 2.7 5.3 1.9 virginica ## 115 5.8 2.8 5.1 2.4 virginica ## 116 6.4 3.2 5.1 2.0 virginica ## 117 6.5 3.0 5.5 5.1 2.0 virginica ## 118 7.7 2.6 6.9 2.3 virginica ## 119 7.7 2.6 6.9 2.3 virginica ## 119 7.7 2.6 6.9 2.3 virginica ## 119 7.7 2.6 6.9 2.3 virginica ## 120 6.0 2.2 5.0 1.5 virginica ## 120 6.0 2.2 5.0 1.5 virginica ## 120 6.0 2.2 5.0 1.5 virginica ## 121 6.9 3.2 5.7 2.1 virginica ## 122 5.6 2.8 4.9 2.0 virginica ## 124 6.3 2.7 4.9 1.8 virginica ## 125 6.7 3.3 5.7 2.1 virginica ## 126 7.2 3.2 6.0 1.5 virginica ## 127 6.2 2.8 4.8 4.8 1.8 virginica ## 128 6.1 3.0 4.9 1.8 virginica ## 128 6.1 3.0 4.9 1.8 virginica ## 129 6.4 2.8 5.6 2.1 virginica ## 131 7.4 2.8 6.1 1.9 virginica	## 84	6.0	2.7	5.1	1.6 versicolor
## 87	## 85	5.4	3.0	4.5	1.5 versicolor
## 88	## 86	6.0	3.4	4.5	1.6 versicolor
## 88	## 87	6.7	3.1	4.7	1.5 versicolor
## 89			2.3		1.3 versicolor
## 90			3.0		1.3 versicolor
## 91			2.5	4.0	1.3 versicolor
## 92 6.1 3.0 4.6 1.4 versicolor ## 93 5.8 2.6 4.0 1.2 versicolor ## 94 5.0 2.3 3.3 1.0 versicolor ## 95 5.6 2.7 4.2 1.3 versicolor ## 96 5.7 3.0 4.2 1.2 versicolor ## 97 5.7 2.9 4.2 1.3 versicolor ## 98 6.2 2.9 4.3 1.3 versicolor ## 99 5.1 2.5 3.0 1.1 versicolor ## 100 5.7 2.8 4.1 1.3 versicolor ## 101 6.3 3.3 6.0 2.5 virginica ## 102 5.8 2.7 5.1 1.9 virginica ## 104 6.3 2.9 5.6 1.8 virginica ## 105 6.5 3.0 5.8 2.2 virginica ## 106 7.6 3.0 6.6 2.1 virginica ## 107 4.9 2.5 4.5 1.7 virginica ## 109 6.7 2.5 5.8 1.8 virginica ## 110 7.2 3.6 6.1 2.5 virginica ## 111 6.5 3.2 5.1 2.9 virginica ## 111 6.5 3.2 5.1 2.0 virginica ## 112 6.4 2.7 5.3 1.9 virginica ## 113 6.8 3.0 5.5 2.1 virginica ## 114 5.7 2.5 5.0 2.0 virginica ## 115 5.8 2.8 5.1 2.4 virginica ## 116 6.4 3.2 5.3 2.3 virginica ## 117 6.5 3.0 5.5 1.8 virginica ## 118 7.7 3.8 6.7 2.2 virginica ## 119 7.7 2.6 6.9 2.3 virginica ## 119 7.7 2.6 6.9 2.3 virginica ## 120 6.0 2.2 5.0 1.5 virginica ## 121 6.9 3.2 5.7 2.3 virginica ## 121 6.9 3.2 5.7 2.3 virginica ## 121 6.9 3.2 5.7 2.3 virginica ## 122 5.6 2.8 4.9 2.0 virginica ## 124 6.3 2.7 4.9 1.8 virginica ## 125 6.7 3.3 5.7 2.1 virginica ## 126 7.2 3.2 4.8 4.9 2.0 virginica ## 127 6.2 2.8 4.8 4.9 2.0 virginica ## 128 6.1 3.0 4.9 1.8 virginica ## 128 6.1 3.0 4.9 1.8 virginica ## 128 6.1 3.0 5.8 1.6 virginica ## 129 6.4 2.8 5.6 2.1 virginica ## 131 7.4 2.8 6.1 1.9 virginica			2.6		1.2 versicolor
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## 129 6.4 2.8 5.6 2.1 virginica ## 130 7.2 3.0 5.8 1.6 virginica ## 131 7.4 2.8 6.1 1.9 virginica					_
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```
6.4
                                    5.6
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## 149
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                                                 2.3 virginica
## 150
             5.9
                         3.0
                                    5.1
                                                1.8 virginica
pacman::p_load(skimr)
X_input = iris
X_input$Species = NULL
#Test based on all three species
test1 = nn_algorithm_predict(X_input, iris$Species, c(4.9,3.4,1.5,0.2))
test2 = nn_algorithm_predict(X_input, iris$Species, c(5.9,2.8,4.1,1.2))
test3 = nn_algorithm_predict(X_input, iris$Species, c(6.4,3.1,5.2,2.2))
#run the three seperate tests
test1
## [1] setosa
## Levels: setosa versicolor virginica
test2
## [1] versicolor
## Levels: setosa versicolor virginica
test3
## [1] virginica
## Levels: setosa versicolor virginica
#fourth test to make sure (should be setosa)
test4 = nn_algorithm_predict(X_input, iris$Species, c(5.0,3.3,1.5,0.4))
test4
## [1] setosa
```

## Levels: setosa versicolor virginica

We now add an argument d representing any legal distance function to the nn\_algorithm\_predict function. Update the implementation so it performs NN using that distance function. Set the default function to be the Euclidean distance in the original function. Also, alter the documentation in the appropriate places.

```
#' Nearest Neighbor Classifier
#'
#' Classify an observation based on the label of the closest observation in the set of training observa
#'
#' @param Xinput
                     A matrix of features for training data observations
                     The vector of training data labels
#' @param y_binary
#' @param Xtest
                     A test observation as a row vector
#' @param d
                     A distance function which takes inputs to different row vectors
#' @return
                      The predicted label for the test observation
nn_algorithm_predict = function(Xinput, y_binary, Xtest, d=function(v1, v2){sum((v1-v2)^2)}){
 n = nrow(Xinput)
  distances = array(NA, n)
  for (i in 1:n) {
   distances[i] = d(Xinput[i,], Xtest)
  }
  y_binary[which.min(distances)]
}
```

For extra credit (unless you're a masters student), add an argument k to the nn\_algorithm\_predict function and update the implementation so it performs KNN. In the case of a tie, choose  $\hat{y}$  randomly. Set the default k to be the square root of the size of  $\mathcal{D}$  which is an empirical rule-of-thumb popularized by the "Pattern Classification" book by Duda, Hart and Stork (2007). Also, alter the documentation in the appropriate places.

```
#TO-DO for the 650 students but extra credit for undergrads
```

## **Basic Binary Classification Modeling**

• Load the famous iris data frame into the namespace. Provide a summary of the columns using the skim function in package skimr and write a few descriptive sentences about the distributions using the code below and in English.

```
data(iris)
pacman::p_load(skimr)
skim(iris)
```

Table 1: Data summary

Name	iris
Number of rows	150
Number of columns	5
Column type frequency:	
factor	1
numeric	4
Group variables	None

#### Variable type: factor

skim_variable	n_missing	$complete\_rate$	ordered	n_unique	top_counts
Species	0	1	FALSE	3	set: 50, ver: 50, vir: 50

#### Variable type: numeric

skim_variable	n_missing	complete_rate	mean	$\operatorname{sd}$	p0	p25	p50	p75	p100	hist
Sepal.Length	0	1	5.84	0.83	4.3	5.1	5.80	6.4	7.9	
Sepal.Width	0	1	3.06	0.44	2.0	2.8	3.00	3.3	4.4	
Petal.Length	0	1	3.76	1.77	1.0	1.6	4.35	5.1	6.9	
Petal.Width	0	1	1.20	0.76	0.1	0.3	1.30	1.8	2.5	

#### #TO-DO: describe this data

The outcome / label / response is Species. This is what we will be trying to predict. However, we only care about binary classification between "setosa" and "versicolor" for the purposes of this exercise. Thus the first order of business is to drop one class. Let's drop the data for the level "virginica" from the data frame.

```
iris = iris[iris$Species != "virginica", ]
```

Now create a vector y that is length the number of remaining rows in the data frame whose entries are 0 if "setosa" and 1 if "versicolor".

```
y = as.integer(iris$Species == "setosa")
```

• Write a function mode returning the sample mode.

```
mode = function(v){
  names(sort(table(v), decreasing=TRUE)[1])
}
```

• Fit a threshold model to y using the feature Sepal.Length. Write your own code to do this. What is the estimated value of the threshold parameter? Save the threshold value as threshold.

```
n = nrow(iris)
num_errors = array(NA, n)
for (i in 1 : n) {
   y_hat = as.numeric(iris$Sepal.Length > iris$Sepal.Length[i])
   num_errors[i] = sum(y_hat != y)
}
threshold = iris$Sepal.Length[which.min(num_errors)]
g = function(x) {
   as.numeric(x > threshold)
}
```

What is the total number of errors this model makes?

```
sum(g(iris$Sepal.Length) != y)
## [1] 50
```

Does the threshold model's performance make sense given the following summaries:

threshold

```
## [1] 7
```

```
summary(iris[iris$Species == "setosa", "Sepal.Length"])
##
      Min. 1st Qu. Median
                              Mean 3rd Qu.
                                               Max.
##
     4.300
             4.800
                    5.000
                             5.006
                                      5.200
                                              5.800
summary(iris[iris$Species == "versicolor", "Sepal.Length"])
##
      Min. 1st Qu. Median
                              Mean 3rd Qu.
                                               Max.
##
     4.900
             5.600
                     5.900
                             5.936
                                      6.300
                                              7.000
```

# Yes, it makes sense because the 'setosa' species has a median that #is lower than the predicted model, and the 'versicolor' #species has a median that is higher. Making the model accurate

Create the function g explicitly that can predict y from x being a new Sepal.Length.

```
g = function(x){
  as.numeric(x> threshold)
}
```

## Perceptron

You will code the "perceptron learning algorithm" for arbitrary number of features p. Take a look at the comments above the function. Respect the spec below:

```
#' Name: perceptron_learning_algorithm
#'
#' TO-DO: Explain what this function does in a few sentences
#'
#' @param Xinput
                     Columns in the data set that are concatenated
#' @param y_binary
                     variable which holds the binary values (0 and 1)
#' @param MAX_ITER
                     The amount of times the perception needs to adjust its values
#' @param w
                      W is the default parameter which we fill with NULLs
#'
#' @return
                      The computed final parameter (weight) as a vector of length p + 1
perceptron_learning_algorithm = function(Xinput, y_binary, MAX_ITER = 1000, w = NULL){
 X = cbind(1, Xinput)
 n = nrow(X)
 p = ncol(X)
 w = rep(0, p)
 for (iter in 1 : MAX_ITER){
```

```
is_error = FALSE
for(a in 1 : n){
    x_a = X[a, ]
    yhat_i = ifelse(sum(X[a, ] * w) > 0, 1, 0)
    if(yhat_i == 0)
        is_error = TRUE
    for (i in 1 : p){
        y_i = y_binary[a]
        w[i] = w[i] + (y_i - yhat_i) * x_a[i]
    }
}
if(is_error == FALSE)
    return(w)
}
```

To understand what the algorithm is doing - linear "discrimination" between two response categories, we can draw a picture. First let's make up some very simple training data  $\mathbb{D}$ .

```
Xy_simple = data.frame(
  response = factor(c(0, 0, 0, 1, 1, 1)), #nominal
  first_feature = c(1, 1, 2, 3, 3, 4), #continuous
  second_feature = c(1, 2, 1, 3, 4, 3) #continuous
)
```

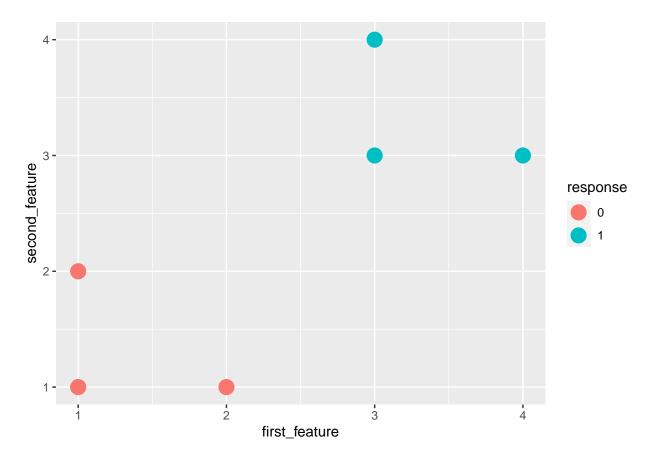
We haven't spoken about visualization yet, but it is important we do some of it now. Thus, I will write this code for you and you will just run it. First we load the visualization library we're going to use:

```
pacman::p_load(ggplot2)
```

We are going to just get some plots and not talk about the code to generate them as we will have a whole unit on visualization using ggplot2 in the future.

Let's first plot y by the two features so the coordinate plane will be the two features and we use different colors to represent the third dimension, y.

```
simple_viz_obj = ggplot(Xy_simple, aes(x = first_feature, y = second_feature, color = response)) +
    geom_point(size = 5)
simple_viz_obj
```



#This plot is demonstrating two different features in which red corresponds #to the binary value of 0 and blue corresponds to 1. #Based on the position of these dots they seem to be linearly #seperable. Thus, we can run a perceptron as the code below does.

Now, let us run the algorithm and see what happens:

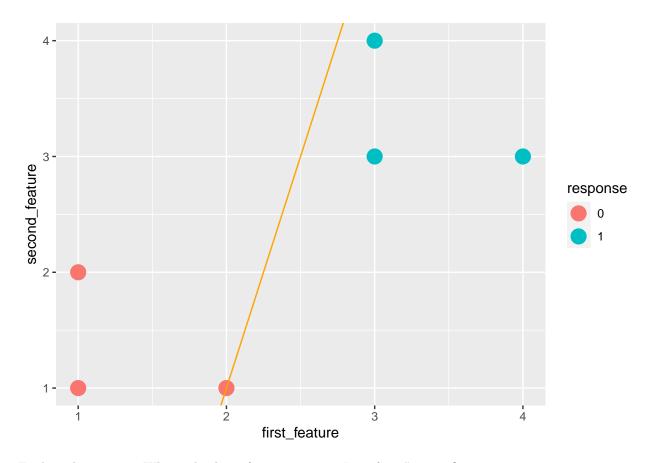
```
w_vec_simple_per = perceptron_learning_algorithm(
  cbind(Xy_simple$first_feature, Xy_simple$second_feature),
  as.numeric(Xy_simple$response == 1))
w_vec_simple_per
```

```
## [1] -7 4 -1
```

Explain this output. What do the numbers mean? What is the intercept of this line and the slope? You will have to do some algebra.

#The output is three numbers which represent the intercept and the weights. #In these numbers, -7 is the intercept and 4 is the slope.

```
simple_perceptron_line = geom_abline(
   intercept = -w_vec_simple_per[1] / w_vec_simple_per[3],
   slope = -w_vec_simple_per[2] / w_vec_simple_per[3],
   color = "orange")
simple_viz_obj + simple_perceptron_line
```



Explain this picture. Why is this line of separation not "satisfying" to you?

#This is not satisfying because it does not execute #seperation correctly. Specifically, because the #line passes through an orange dot (binary value of 0).

For extra credit, program the maximum-margin hyperplane perceptron that provides the best linear discrimination model for linearly separable data. Make sure you provide ROxygen documentation for this function.

#T0-D0