

Lab 2

Enoch Kim

11:59PM February 25, 2021

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 <- c(1:100)
my_reverse(v)
```

```
##   [1] 100  99  98  97  96  95  94  93  92  91  90  89  88  87  86  85  84  83
##  [19]  82  81  80  79  78  77  76  75  74  73  72  71  70  69  68  67  66  65
##  [37]  64  63  62  61  60  59  58  57  56  55  54  53  52  51  50  49  48  47
##  [55]  46  45  44  43  42  41  40  39  38  37  36  35  34  33  32  31  30  29
##  [73]  28  27  26  25  24  23  22  21  20  19  18  17  16  15  14  13  12  11
##  [91]  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 : ncol(X))]
  } else{
    stop("Illegal Arg")
  }
}
```

```

}

X = matrix(rnorm(100), ncol = 25)
Y = matrix(rnorm(100), nrow = 25)
flip_matrix(X)

## [1] -0.1551804  0.4394384 -2.4357586 -2.1742732  1.4649841 -0.5493983
## [7]  0.4115146 -0.3676900 -0.2364445  0.1802308  1.1529562 -0.1158585
## [13]  1.2808520  0.9680753 -0.6504200 -0.6710065 -0.7532980 -0.5881780
## [19] -0.8873144  0.4996703 -0.9764865  0.6976767 -1.6769696  0.3919843
## [25] -0.3617364

```

```
flip_matrix(Y)
```

```

##           [,1]           [,2]           [,3]           [,4]
## [1,] -0.71185911  1.05278429 -0.22851781 -2.5023012
## [2,]  0.07111735  1.81231270  1.36532535  1.3811893
## [3,] -0.39527609 -0.68155640 -0.50728455  1.5296357
## [4,] -0.21304059 -0.35568516  1.10223947 -0.1684260
## [5,] -0.11623701 -0.56604502  0.85822868 -1.7935886
## [6,] -0.86082205 -0.66756790  1.33196759 -0.4975488
## [7,] -1.14576768  1.00894267  1.75968614 -0.2747119
## [8,]  0.06235210  1.11640219  0.29527882 -2.1589500
## [9,]  0.25595356  1.20212776 -1.46459168  0.5051942
## [10,]  2.24237229  1.29298984 -0.63276868  0.7219078
## [11,] -0.95013870  0.57100974  2.33990746 -1.3666385
## [12,] -0.07478775  1.09871108 -0.15421512 -0.3166318
## [13,]  0.78141404  1.52533087  1.07739984 -0.4474136
## [14,] -1.01173368  0.79054224 -0.74593842 -0.4830614
## [15,]  1.34995924  0.83043353  0.03430965 -0.7332770
## [16,]  0.70001860  0.39685465  0.54729152  2.5442244
## [17,]  0.46771671  1.82298689 -0.37503729  2.6334746
## [18,] -3.02256192 -0.21997645 -0.63019704 -1.3214767
## [19,]  0.85445671 -0.09454326 -1.95350396 -0.3214438
## [20,]  0.55164666  0.92221951 -1.86706925  1.5898515
## [21,] -1.65850694  1.96128498  0.03261075 -0.6734440
## [22,] -1.34479805 -1.19627685  1.00125352 -0.2055455
## [23,] -0.66288235 -0.25429590  0.18239767  1.3487336
## [24,]  0.74230910 -0.40272426  1.39774391 -1.0036816
## [25,] -2.13184050 -0.66612932  0.09527489  0.1913220

```

- 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.

```

my_list = list()

for (rows in 1:8){
  my_list[[LETTERS[rows]]] = array(data = 1: rows ^ rows, dim = c(rep(rows,rows)))
}

```

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?

The `object.size` provides an memory allocation estimation that is being used to store in the R object. In the above output you see the amount of estimation of memory allocation for each array and it does make sense in each increasing dimensions of the array, the further the dimension the more space in the memory is taken.

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

```
rm(list = ls())
```

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 :
sample(unlist(strsplit(lorem, split = "\\.\\" ")))
```

```
## [1] "Cras suscipit id nibh lacinia elementum"
## [2] "Integer dapibus mi lectus, eu posuere arcu ultricies in"
## [3] "Mauris at sodales augue"
## [4] "Lorem ipsum dolor sit amet, consectetur adipiscing elit"
## [5] "Aenean nulla ante, iaculis sed vehicula ac, finibus vel arcu"
```

```
## [6] "Donec vehicula sagittis nisi non semper"
## [7] "Curabitur est augue, congue eget quam in, scelerisque semper magna"
## [8] "Morbi faucibus ligula id massa ultricies viverra"
## [9] "Morbi posuere varius volutpat"
## [10] "Donec at tempor erat"
```

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

- 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 “Tracy, Dawn, Tina, Tammy, Melinda, Tamara, Tracey, Colleen, Sherri, Heidi”

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

```
maleBoomer = strsplit("Theodore, Bernard, Gene, Herbert, Ray, Tom, Lee, Alfred, Leroy, Eddie", split = ",")
maleGenX = strsplit("Marc, Jamie, Greg, Darryl, Tim, Dean, Jon, Chris, Troy, Jeff", split = ",")[[1]]
maleMillennial = strsplit("Zachary, Dylan, Christian, Wesley, Seth, Austin, Gabriel, Evan, Casey, Luis", split = ",")
femaleBoomer = strsplit("Gloria, Joan, Dorothy, Shirley, Betty, Dianne, Kay, Marjorie, Lorraine, Mildred", split = ",")
femaleGenX = strsplit("Tracy, Dawn, Tina, Tammy, Melinda, Tamara, Tracey, Colleen, Sherri, Heidi", split = ",")
femaleMillennial = strsplit("Tracy, Dawn, Tina, Tammy, Melinda, Tamara, Tracey, Colleen, Sherri, Heidi", split = ",")

maleList <- list("Male Boomer" = maleBoomer, "Male GenX" = maleGenX, "Male Millennial" = maleMillennial)
femaleList <- list("Female Boomer" = femaleBoomer, "Female GenX" = femaleGenX, "Female Millennial" = femaleMillennial)

completeList <- list("M" = maleList, "F" = femaleList)

completeList
```

```
## $M
## $M$`Male Boomer`
## [1] "Theodore" "Bernard" "Gene" "Herbert" "Ray" "Tom"
## [7] "Lee" "Alfred" "Leroy" "Eddie"
##
## $M$`Male GenX`
## [1] "Marc" "Jamie" "Greg" "Darryl" "Tim" "Dean" "Jon"
## [8] "Chris" "Troy" "Jeff"
##
## $M$`Male Millennial`
## [1] "Zachary" "Dylan" "Christian" "Wesley" "Seth"
## [6] "Austin" "Gabriel" "Evan" "Casey" "Luis"
##
##
## $F
## $F$`Female Boomer`
## [1] "Gloria" "Joan" "Dorothy" "Shirley" "Betty" "Dianne"
## [7] "Kay" "Marjorie" "Lorraine" "Mildred"
##
## $F$`Female GenX`
## [1] "Tracy" "Dawn" "Tina" "Tammy" "Melinda" "Tamara"
## [7] "Tracey" "Colleen" "Sherri" "Heidi"
```

```
##
## $F$`Female Millenial`
## [1] "Tracy"      " Dawn"      " Tina"      " Tammy"      " Melinda" " Tamara"
## [7] " Tracey"    " Colleen"   " Sherri"    " Heidi"
```

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.

```
n = 14 * 3 * 2 * 3 * 10
X = data.frame(
  Treatment = rep(letters[1:14], each = n / 14),
  Variation = rep(c("A", "B", "C"), each = n / 14 / 3),
  Gender = rep(c("M", "F"), each = n / 14 / 3 / 2),
  Generation = rep(c("Boomer", "GenX", "Millenial"), each = n / 14 / 3 / 2 / 3),
  Name = rep(unlist(completeList), times = 14 * 3),
  y = rep(NA,n))
```

X

##	Treatment	Variation	Gender	Generation	Name	y
## 1	a	A	M	Boomer	Theodore	NA
## 2	a	A	M	Boomer	Bernard	NA
## 3	a	A	M	Boomer	Gene	NA
## 4	a	A	M	Boomer	Herbert	NA
## 5	a	A	M	Boomer	Ray	NA
## 6	a	A	M	Boomer	Tom	NA
## 7	a	A	M	Boomer	Lee	NA
## 8	a	A	M	Boomer	Alfred	NA
## 9	a	A	M	Boomer	Leroy	NA
## 10	a	A	M	Boomer	Eddie	NA
## 11	a	A	M	GenX	Marc	NA
## 12	a	A	M	GenX	Jamie	NA
## 13	a	A	M	GenX	Greg	NA
## 14	a	A	M	GenX	Darryl	NA
## 15	a	A	M	GenX	Tim	NA
## 16	a	A	M	GenX	Dean	NA
## 17	a	A	M	GenX	Jon	NA
## 18	a	A	M	GenX	Chris	NA
## 19	a	A	M	GenX	Troy	NA
## 20	a	A	M	GenX	Jeff	NA
## 21	a	A	M	Millenial	Zachary	NA
## 22	a	A	M	Millenial	Dylan	NA
## 23	a	A	M	Millenial	Christian	NA
## 24	a	A	M	Millenial	Wesley	NA
## 25	a	A	M	Millenial	Seth	NA

## 26	a	A	M	Millenial	Austin NA
## 27	a	A	M	Millenial	Gabriel NA
## 28	a	A	M	Millenial	Evan NA
## 29	a	A	M	Millenial	Casey NA
## 30	a	A	M	Millenial	Luis NA
## 31	a	A	F	Boomer	Gloria NA
## 32	a	A	F	Boomer	Joan NA
## 33	a	A	F	Boomer	Dorothy NA
## 34	a	A	F	Boomer	Shirley NA
## 35	a	A	F	Boomer	Betty NA
## 36	a	A	F	Boomer	Dianne NA
## 37	a	A	F	Boomer	Kay NA
## 38	a	A	F	Boomer	Marjorie NA
## 39	a	A	F	Boomer	Lorraine NA
## 40	a	A	F	Boomer	Mildred NA
## 41	a	A	F	GenX	Tracy NA
## 42	a	A	F	GenX	Dawn NA
## 43	a	A	F	GenX	Tina NA
## 44	a	A	F	GenX	Tammy NA
## 45	a	A	F	GenX	Melinda NA
## 46	a	A	F	GenX	Tamara NA
## 47	a	A	F	GenX	Tracey NA
## 48	a	A	F	GenX	Colleen NA
## 49	a	A	F	GenX	Sherri NA
## 50	a	A	F	GenX	Heidi NA
## 51	a	A	F	Millenial	Tracy NA
## 52	a	A	F	Millenial	Dawn NA
## 53	a	A	F	Millenial	Tina NA
## 54	a	A	F	Millenial	Tammy NA
## 55	a	A	F	Millenial	Melinda NA
## 56	a	A	F	Millenial	Tamara NA
## 57	a	A	F	Millenial	Tracey NA
## 58	a	A	F	Millenial	Colleen NA
## 59	a	A	F	Millenial	Sherri NA
## 60	a	A	F	Millenial	Heidi NA
## 61	a	B	M	Boomer	Theodore NA
## 62	a	B	M	Boomer	Bernard NA
## 63	a	B	M	Boomer	Gene NA
## 64	a	B	M	Boomer	Herbert NA
## 65	a	B	M	Boomer	Ray NA
## 66	a	B	M	Boomer	Tom NA
## 67	a	B	M	Boomer	Lee NA
## 68	a	B	M	Boomer	Alfred NA
## 69	a	B	M	Boomer	Leroy NA
## 70	a	B	M	Boomer	Eddie NA
## 71	a	B	M	GenX	Marc NA
## 72	a	B	M	GenX	Jamie NA
## 73	a	B	M	GenX	Greg NA
## 74	a	B	M	GenX	Darryl NA
## 75	a	B	M	GenX	Tim NA
## 76	a	B	M	GenX	Dean NA
## 77	a	B	M	GenX	Jon NA
## 78	a	B	M	GenX	Chris NA
## 79	a	B	M	GenX	Troy NA

## 80	a	B	M	GenX	Jeff NA
## 81	a	B	M	Millenial	Zachary NA
## 82	a	B	M	Millenial	Dylan NA
## 83	a	B	M	Millenial	Christian NA
## 84	a	B	M	Millenial	Wesley NA
## 85	a	B	M	Millenial	Seth NA
## 86	a	B	M	Millenial	Austin NA
## 87	a	B	M	Millenial	Gabriel NA
## 88	a	B	M	Millenial	Evan NA
## 89	a	B	M	Millenial	Casey NA
## 90	a	B	M	Millenial	Luis NA
## 91	a	B	F	Boomer	Gloria NA
## 92	a	B	F	Boomer	Joan NA
## 93	a	B	F	Boomer	Dorothy NA
## 94	a	B	F	Boomer	Shirley NA
## 95	a	B	F	Boomer	Betty NA
## 96	a	B	F	Boomer	Dianne NA
## 97	a	B	F	Boomer	Kay NA
## 98	a	B	F	Boomer	Marjorie NA
## 99	a	B	F	Boomer	Lorraine NA
## 100	a	B	F	Boomer	Mildred NA
## 101	a	B	F	GenX	Tracy NA
## 102	a	B	F	GenX	Dawn NA
## 103	a	B	F	GenX	Tina NA
## 104	a	B	F	GenX	Tammy NA
## 105	a	B	F	GenX	Melinda NA
## 106	a	B	F	GenX	Tamara NA
## 107	a	B	F	GenX	Tracey NA
## 108	a	B	F	GenX	Colleen NA
## 109	a	B	F	GenX	Sherri NA
## 110	a	B	F	GenX	Heidi NA
## 111	a	B	F	Millenial	Tracy NA
## 112	a	B	F	Millenial	Dawn NA
## 113	a	B	F	Millenial	Tina NA
## 114	a	B	F	Millenial	Tammy NA
## 115	a	B	F	Millenial	Melinda NA
## 116	a	B	F	Millenial	Tamara NA
## 117	a	B	F	Millenial	Tracey NA
## 118	a	B	F	Millenial	Colleen NA
## 119	a	B	F	Millenial	Sherri NA
## 120	a	B	F	Millenial	Heidi NA
## 121	a	C	M	Boomer	Theodore NA
## 122	a	C	M	Boomer	Bernard NA
## 123	a	C	M	Boomer	Gene NA
## 124	a	C	M	Boomer	Herbert NA
## 125	a	C	M	Boomer	Ray NA
## 126	a	C	M	Boomer	Tom NA
## 127	a	C	M	Boomer	Lee NA
## 128	a	C	M	Boomer	Alfred NA
## 129	a	C	M	Boomer	Leroy NA
## 130	a	C	M	Boomer	Eddie NA
## 131	a	C	M	GenX	Marc NA
## 132	a	C	M	GenX	Jamie NA
## 133	a	C	M	GenX	Greg NA

## 134	a	C	M	GenX	Darryl NA
## 135	a	C	M	GenX	Tim NA
## 136	a	C	M	GenX	Dean NA
## 137	a	C	M	GenX	Jon NA
## 138	a	C	M	GenX	Chris NA
## 139	a	C	M	GenX	Troy NA
## 140	a	C	M	GenX	Jeff NA
## 141	a	C	M	Millenial	Zachary NA
## 142	a	C	M	Millenial	Dylan NA
## 143	a	C	M	Millenial	Christian NA
## 144	a	C	M	Millenial	Wesley NA
## 145	a	C	M	Millenial	Seth NA
## 146	a	C	M	Millenial	Austin NA
## 147	a	C	M	Millenial	Gabriel NA
## 148	a	C	M	Millenial	Evan NA
## 149	a	C	M	Millenial	Casey NA
## 150	a	C	M	Millenial	Luis NA
## 151	a	C	F	Boomer	Gloria NA
## 152	a	C	F	Boomer	Joan NA
## 153	a	C	F	Boomer	Dorothy NA
## 154	a	C	F	Boomer	Shirley NA
## 155	a	C	F	Boomer	Betty NA
## 156	a	C	F	Boomer	Dianne NA
## 157	a	C	F	Boomer	Kay NA
## 158	a	C	F	Boomer	Marjorie NA
## 159	a	C	F	Boomer	Lorraine NA
## 160	a	C	F	Boomer	Mildred NA
## 161	a	C	F	GenX	Tracy NA
## 162	a	C	F	GenX	Dawn NA
## 163	a	C	F	GenX	Tina NA
## 164	a	C	F	GenX	Tammy NA
## 165	a	C	F	GenX	Melinda NA
## 166	a	C	F	GenX	Tamara NA
## 167	a	C	F	GenX	Tracey NA
## 168	a	C	F	GenX	Colleen NA
## 169	a	C	F	GenX	Sherri NA
## 170	a	C	F	GenX	Heidi NA
## 171	a	C	F	Millenial	Tracy NA
## 172	a	C	F	Millenial	Dawn NA
## 173	a	C	F	Millenial	Tina NA
## 174	a	C	F	Millenial	Tammy NA
## 175	a	C	F	Millenial	Melinda NA
## 176	a	C	F	Millenial	Tamara NA
## 177	a	C	F	Millenial	Tracey NA
## 178	a	C	F	Millenial	Colleen NA
## 179	a	C	F	Millenial	Sherri NA
## 180	a	C	F	Millenial	Heidi NA
## 181	b	A	M	Boomer	Theodore NA
## 182	b	A	M	Boomer	Bernard NA
## 183	b	A	M	Boomer	Gene NA
## 184	b	A	M	Boomer	Herbert NA
## 185	b	A	M	Boomer	Ray NA
## 186	b	A	M	Boomer	Tom NA
## 187	b	A	M	Boomer	Lee NA

## 188	b	A	M	Boomer	Alfred NA
## 189	b	A	M	Boomer	Leroy NA
## 190	b	A	M	Boomer	Eddie NA
## 191	b	A	M	GenX	Marc NA
## 192	b	A	M	GenX	Jamie NA
## 193	b	A	M	GenX	Greg NA
## 194	b	A	M	GenX	Darryl NA
## 195	b	A	M	GenX	Tim NA
## 196	b	A	M	GenX	Dean NA
## 197	b	A	M	GenX	Jon NA
## 198	b	A	M	GenX	Chris NA
## 199	b	A	M	GenX	Troy NA
## 200	b	A	M	GenX	Jeff NA
## 201	b	A	M	Millennial	Zachary NA
## 202	b	A	M	Millennial	Dylan NA
## 203	b	A	M	Millennial	Christian NA
## 204	b	A	M	Millennial	Wesley NA
## 205	b	A	M	Millennial	Seth NA
## 206	b	A	M	Millennial	Austin NA
## 207	b	A	M	Millennial	Gabriel NA
## 208	b	A	M	Millennial	Evan NA
## 209	b	A	M	Millennial	Casey NA
## 210	b	A	M	Millennial	Luis NA
## 211	b	A	F	Boomer	Gloria NA
## 212	b	A	F	Boomer	Joan NA
## 213	b	A	F	Boomer	Dorothy NA
## 214	b	A	F	Boomer	Shirley NA
## 215	b	A	F	Boomer	Betty NA
## 216	b	A	F	Boomer	Dianne NA
## 217	b	A	F	Boomer	Kay NA
## 218	b	A	F	Boomer	Marjorie NA
## 219	b	A	F	Boomer	Lorraine NA
## 220	b	A	F	Boomer	Mildred NA
## 221	b	A	F	GenX	Tracy NA
## 222	b	A	F	GenX	Dawn NA
## 223	b	A	F	GenX	Tina NA
## 224	b	A	F	GenX	Tammy NA
## 225	b	A	F	GenX	Melinda NA
## 226	b	A	F	GenX	Tamara NA
## 227	b	A	F	GenX	Tracey NA
## 228	b	A	F	GenX	Colleen NA
## 229	b	A	F	GenX	Sherri NA
## 230	b	A	F	GenX	Heidi NA
## 231	b	A	F	Millennial	Tracy NA
## 232	b	A	F	Millennial	Dawn NA
## 233	b	A	F	Millennial	Tina NA
## 234	b	A	F	Millennial	Tammy NA
## 235	b	A	F	Millennial	Melinda NA
## 236	b	A	F	Millennial	Tamara NA
## 237	b	A	F	Millennial	Tracey NA
## 238	b	A	F	Millennial	Colleen NA
## 239	b	A	F	Millennial	Sherri NA
## 240	b	A	F	Millennial	Heidi NA
## 241	b	B	M	Boomer	Theodore NA

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

## 296	b	B	F	Millenial	Tamara NA
## 297	b	B	F	Millenial	Tracey NA
## 298	b	B	F	Millenial	Colleen NA
## 299	b	B	F	Millenial	Sherri NA
## 300	b	B	F	Millenial	Heidi NA
## 301	b	C	M	Boomer	Theodore NA
## 302	b	C	M	Boomer	Bernard NA
## 303	b	C	M	Boomer	Gene NA
## 304	b	C	M	Boomer	Herbert NA
## 305	b	C	M	Boomer	Ray NA
## 306	b	C	M	Boomer	Tom NA
## 307	b	C	M	Boomer	Lee NA
## 308	b	C	M	Boomer	Alfred NA
## 309	b	C	M	Boomer	Leroy NA
## 310	b	C	M	Boomer	Eddie NA
## 311	b	C	M	GenX	Marc NA
## 312	b	C	M	GenX	Jamie NA
## 313	b	C	M	GenX	Greg NA
## 314	b	C	M	GenX	Darryl NA
## 315	b	C	M	GenX	Tim NA
## 316	b	C	M	GenX	Dean NA
## 317	b	C	M	GenX	Jon NA
## 318	b	C	M	GenX	Chris NA
## 319	b	C	M	GenX	Troy NA
## 320	b	C	M	GenX	Jeff NA
## 321	b	C	M	Millenial	Zachary NA
## 322	b	C	M	Millenial	Dylan NA
## 323	b	C	M	Millenial	Christian NA
## 324	b	C	M	Millenial	Wesley NA
## 325	b	C	M	Millenial	Seth NA
## 326	b	C	M	Millenial	Austin NA
## 327	b	C	M	Millenial	Gabriel NA
## 328	b	C	M	Millenial	Evan NA
## 329	b	C	M	Millenial	Casey NA
## 330	b	C	M	Millenial	Luis NA
## 331	b	C	F	Boomer	Gloria NA
## 332	b	C	F	Boomer	Joan NA
## 333	b	C	F	Boomer	Dorothy NA
## 334	b	C	F	Boomer	Shirley NA
## 335	b	C	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	b	C	F	Boomer	Lorraine NA
## 340	b	C	F	Boomer	Mildred NA
## 341	b	C	F	GenX	Tracy NA
## 342	b	C	F	GenX	Dawn NA
## 343	b	C	F	GenX	Tina NA
## 344	b	C	F	GenX	Tammy NA
## 345	b	C	F	GenX	Melinda NA
## 346	b	C	F	GenX	Tamara NA
## 347	b	C	F	GenX	Tracey NA
## 348	b	C	F	GenX	Colleen NA
## 349	b	C	F	GenX	Sherri NA

## 350	b	C	F	GenX	Heidi NA
## 351	b	C	F	Millenial	Tracy NA
## 352	b	C	F	Millenial	Dawn NA
## 353	b	C	F	Millenial	Tina NA
## 354	b	C	F	Millenial	Tammy NA
## 355	b	C	F	Millenial	Melinda NA
## 356	b	C	F	Millenial	Tamara NA
## 357	b	C	F	Millenial	Tracey NA
## 358	b	C	F	Millenial	Colleen NA
## 359	b	C	F	Millenial	Sherri NA
## 360	b	C	F	Millenial	Heidi NA
## 361	c	A	M	Boomer	Theodore NA
## 362	c	A	M	Boomer	Bernard NA
## 363	c	A	M	Boomer	Gene NA
## 364	c	A	M	Boomer	Herbert NA
## 365	c	A	M	Boomer	Ray NA
## 366	c	A	M	Boomer	Tom NA
## 367	c	A	M	Boomer	Lee NA
## 368	c	A	M	Boomer	Alfred NA
## 369	c	A	M	Boomer	Leroy NA
## 370	c	A	M	Boomer	Eddie NA
## 371	c	A	M	GenX	Marc NA
## 372	c	A	M	GenX	Jamie NA
## 373	c	A	M	GenX	Greg NA
## 374	c	A	M	GenX	Darryl NA
## 375	c	A	M	GenX	Tim NA
## 376	c	A	M	GenX	Dean NA
## 377	c	A	M	GenX	Jon NA
## 378	c	A	M	GenX	Chris NA
## 379	c	A	M	GenX	Troy NA
## 380	c	A	M	GenX	Jeff NA
## 381	c	A	M	Millenial	Zachary NA
## 382	c	A	M	Millenial	Dylan NA
## 383	c	A	M	Millenial	Christian NA
## 384	c	A	M	Millenial	Wesley NA
## 385	c	A	M	Millenial	Seth NA
## 386	c	A	M	Millenial	Austin NA
## 387	c	A	M	Millenial	Gabriel NA
## 388	c	A	M	Millenial	Evan NA
## 389	c	A	M	Millenial	Casey NA
## 390	c	A	M	Millenial	Luis NA
## 391	c	A	F	Boomer	Gloria NA
## 392	c	A	F	Boomer	Joan NA
## 393	c	A	F	Boomer	Dorothy NA
## 394	c	A	F	Boomer	Shirley NA
## 395	c	A	F	Boomer	Betty NA
## 396	c	A	F	Boomer	Dianne NA
## 397	c	A	F	Boomer	Kay NA
## 398	c	A	F	Boomer	Marjorie NA
## 399	c	A	F	Boomer	Lorraine NA
## 400	c	A	F	Boomer	Mildred NA
## 401	c	A	F	GenX	Tracy NA
## 402	c	A	F	GenX	Dawn NA
## 403	c	A	F	GenX	Tina NA

## 404	c	A	F	GenX	Tammy NA
## 405	c	A	F	GenX	Melinda NA
## 406	c	A	F	GenX	Tamara NA
## 407	c	A	F	GenX	Tracey NA
## 408	c	A	F	GenX	Colleen NA
## 409	c	A	F	GenX	Sherri NA
## 410	c	A	F	GenX	Heidi NA
## 411	c	A	F	Millenial	Tracy NA
## 412	c	A	F	Millenial	Dawn NA
## 413	c	A	F	Millenial	Tina NA
## 414	c	A	F	Millenial	Tammy NA
## 415	c	A	F	Millenial	Melinda NA
## 416	c	A	F	Millenial	Tamara NA
## 417	c	A	F	Millenial	Tracey NA
## 418	c	A	F	Millenial	Colleen NA
## 419	c	A	F	Millenial	Sherri NA
## 420	c	A	F	Millenial	Heidi NA
## 421	c	B	M	Boomer	Theodore NA
## 422	c	B	M	Boomer	Bernard NA
## 423	c	B	M	Boomer	Gene NA
## 424	c	B	M	Boomer	Herbert NA
## 425	c	B	M	Boomer	Ray NA
## 426	c	B	M	Boomer	Tom NA
## 427	c	B	M	Boomer	Lee NA
## 428	c	B	M	Boomer	Alfred NA
## 429	c	B	M	Boomer	Leroy NA
## 430	c	B	M	Boomer	Eddie NA
## 431	c	B	M	GenX	Marc NA
## 432	c	B	M	GenX	Jamie NA
## 433	c	B	M	GenX	Greg NA
## 434	c	B	M	GenX	Darryl NA
## 435	c	B	M	GenX	Tim NA
## 436	c	B	M	GenX	Dean NA
## 437	c	B	M	GenX	Jon NA
## 438	c	B	M	GenX	Chris NA
## 439	c	B	M	GenX	Troy NA
## 440	c	B	M	GenX	Jeff NA
## 441	c	B	M	Millenial	Zachary NA
## 442	c	B	M	Millenial	Dylan NA
## 443	c	B	M	Millenial	Christian NA
## 444	c	B	M	Millenial	Wesley NA
## 445	c	B	M	Millenial	Seth NA
## 446	c	B	M	Millenial	Austin NA
## 447	c	B	M	Millenial	Gabriel NA
## 448	c	B	M	Millenial	Evan NA
## 449	c	B	M	Millenial	Casey NA
## 450	c	B	M	Millenial	Luis NA
## 451	c	B	F	Boomer	Gloria NA
## 452	c	B	F	Boomer	Joan NA
## 453	c	B	F	Boomer	Dorothy NA
## 454	c	B	F	Boomer	Shirley NA
## 455	c	B	F	Boomer	Betty NA
## 456	c	B	F	Boomer	Dianne NA
## 457	c	B	F	Boomer	Kay NA

## 458	c	B	F	Boomer	Marjorie	NA
## 459	c	B	F	Boomer	Lorraine	NA
## 460	c	B	F	Boomer	Mildred	NA
## 461	c	B	F	GenX	Tracy	NA
## 462	c	B	F	GenX	Dawn	NA
## 463	c	B	F	GenX	Tina	NA
## 464	c	B	F	GenX	Tammy	NA
## 465	c	B	F	GenX	Melinda	NA
## 466	c	B	F	GenX	Tamara	NA
## 467	c	B	F	GenX	Tracey	NA
## 468	c	B	F	GenX	Colleen	NA
## 469	c	B	F	GenX	Sherri	NA
## 470	c	B	F	GenX	Heidi	NA
## 471	c	B	F	Millenial	Tracy	NA
## 472	c	B	F	Millenial	Dawn	NA
## 473	c	B	F	Millenial	Tina	NA
## 474	c	B	F	Millenial	Tammy	NA
## 475	c	B	F	Millenial	Melinda	NA
## 476	c	B	F	Millenial	Tamara	NA
## 477	c	B	F	Millenial	Tracey	NA
## 478	c	B	F	Millenial	Colleen	NA
## 479	c	B	F	Millenial	Sherri	NA
## 480	c	B	F	Millenial	Heidi	NA
## 481	c	C	M	Boomer	Theodore	NA
## 482	c	C	M	Boomer	Bernard	NA
## 483	c	C	M	Boomer	Gene	NA
## 484	c	C	M	Boomer	Herbert	NA
## 485	c	C	M	Boomer	Ray	NA
## 486	c	C	M	Boomer	Tom	NA
## 487	c	C	M	Boomer	Lee	NA
## 488	c	C	M	Boomer	Alfred	NA
## 489	c	C	M	Boomer	Leroy	NA
## 490	c	C	M	Boomer	Eddie	NA
## 491	c	C	M	GenX	Marc	NA
## 492	c	C	M	GenX	Jamie	NA
## 493	c	C	M	GenX	Greg	NA
## 494	c	C	M	GenX	Darryl	NA
## 495	c	C	M	GenX	Tim	NA
## 496	c	C	M	GenX	Dean	NA
## 497	c	C	M	GenX	Jon	NA
## 498	c	C	M	GenX	Chris	NA
## 499	c	C	M	GenX	Troy	NA
## 500	c	C	M	GenX	Jeff	NA
## 501	c	C	M	Millenial	Zachary	NA
## 502	c	C	M	Millenial	Dylan	NA
## 503	c	C	M	Millenial	Christian	NA
## 504	c	C	M	Millenial	Wesley	NA
## 505	c	C	M	Millenial	Seth	NA
## 506	c	C	M	Millenial	Austin	NA
## 507	c	C	M	Millenial	Gabriel	NA
## 508	c	C	M	Millenial	Evan	NA
## 509	c	C	M	Millenial	Casey	NA
## 510	c	C	M	Millenial	Luis	NA
## 511	c	C	F	Boomer	Gloria	NA

## 512	c	C	F	Boomer	Joan NA
## 513	c	C	F	Boomer	Dorothy NA
## 514	c	C	F	Boomer	Shirley NA
## 515	c	C	F	Boomer	Betty NA
## 516	c	C	F	Boomer	Dianne NA
## 517	c	C	F	Boomer	Kay NA
## 518	c	C	F	Boomer	Marjorie NA
## 519	c	C	F	Boomer	Lorraine NA
## 520	c	C	F	Boomer	Mildred NA
## 521	c	C	F	GenX	Tracy NA
## 522	c	C	F	GenX	Dawn NA
## 523	c	C	F	GenX	Tina NA
## 524	c	C	F	GenX	Tammy NA
## 525	c	C	F	GenX	Melinda NA
## 526	c	C	F	GenX	Tamara NA
## 527	c	C	F	GenX	Tracey NA
## 528	c	C	F	GenX	Colleen NA
## 529	c	C	F	GenX	Sherri NA
## 530	c	C	F	GenX	Heidi NA
## 531	c	C	F	Millenial	Tracy NA
## 532	c	C	F	Millenial	Dawn NA
## 533	c	C	F	Millenial	Tina NA
## 534	c	C	F	Millenial	Tammy NA
## 535	c	C	F	Millenial	Melinda NA
## 536	c	C	F	Millenial	Tamara NA
## 537	c	C	F	Millenial	Tracey NA
## 538	c	C	F	Millenial	Colleen NA
## 539	c	C	F	Millenial	Sherri NA
## 540	c	C	F	Millenial	Heidi NA
## 541	d	A	M	Boomer	Theodore NA
## 542	d	A	M	Boomer	Bernard NA
## 543	d	A	M	Boomer	Gene NA
## 544	d	A	M	Boomer	Herbert NA
## 545	d	A	M	Boomer	Ray NA
## 546	d	A	M	Boomer	Tom NA
## 547	d	A	M	Boomer	Lee NA
## 548	d	A	M	Boomer	Alfred NA
## 549	d	A	M	Boomer	Leroy NA
## 550	d	A	M	Boomer	Eddie NA
## 551	d	A	M	GenX	Marc NA
## 552	d	A	M	GenX	Jamie NA
## 553	d	A	M	GenX	Greg NA
## 554	d	A	M	GenX	Darryl NA
## 555	d	A	M	GenX	Tim NA
## 556	d	A	M	GenX	Dean NA
## 557	d	A	M	GenX	Jon NA
## 558	d	A	M	GenX	Chris NA
## 559	d	A	M	GenX	Troy NA
## 560	d	A	M	GenX	Jeff NA
## 561	d	A	M	Millenial	Zachary NA
## 562	d	A	M	Millenial	Dylan NA
## 563	d	A	M	Millenial	Christian NA
## 564	d	A	M	Millenial	Wesley NA
## 565	d	A	M	Millenial	Seth NA

## 566	d	A	M	Millenial	Austin NA
## 567	d	A	M	Millenial	Gabriel NA
## 568	d	A	M	Millenial	Evan NA
## 569	d	A	M	Millenial	Casey NA
## 570	d	A	M	Millenial	Luis NA
## 571	d	A	F	Boomer	Gloria NA
## 572	d	A	F	Boomer	Joan NA
## 573	d	A	F	Boomer	Dorothy NA
## 574	d	A	F	Boomer	Shirley NA
## 575	d	A	F	Boomer	Betty NA
## 576	d	A	F	Boomer	Dianne NA
## 577	d	A	F	Boomer	Kay NA
## 578	d	A	F	Boomer	Marjorie NA
## 579	d	A	F	Boomer	Lorraine NA
## 580	d	A	F	Boomer	Mildred NA
## 581	d	A	F	GenX	Tracy NA
## 582	d	A	F	GenX	Dawn NA
## 583	d	A	F	GenX	Tina NA
## 584	d	A	F	GenX	Tammy NA
## 585	d	A	F	GenX	Melinda NA
## 586	d	A	F	GenX	Tamara NA
## 587	d	A	F	GenX	Tracey NA
## 588	d	A	F	GenX	Colleen NA
## 589	d	A	F	GenX	Sherri NA
## 590	d	A	F	GenX	Heidi NA
## 591	d	A	F	Millenial	Tracy NA
## 592	d	A	F	Millenial	Dawn NA
## 593	d	A	F	Millenial	Tina NA
## 594	d	A	F	Millenial	Tammy NA
## 595	d	A	F	Millenial	Melinda NA
## 596	d	A	F	Millenial	Tamara NA
## 597	d	A	F	Millenial	Tracey NA
## 598	d	A	F	Millenial	Colleen NA
## 599	d	A	F	Millenial	Sherri NA
## 600	d	A	F	Millenial	Heidi NA
## 601	d	B	M	Boomer	Theodore NA
## 602	d	B	M	Boomer	Bernard NA
## 603	d	B	M	Boomer	Gene NA
## 604	d	B	M	Boomer	Herbert NA
## 605	d	B	M	Boomer	Ray NA
## 606	d	B	M	Boomer	Tom NA
## 607	d	B	M	Boomer	Lee NA
## 608	d	B	M	Boomer	Alfred NA
## 609	d	B	M	Boomer	Leroy NA
## 610	d	B	M	Boomer	Eddie NA
## 611	d	B	M	GenX	Marc NA
## 612	d	B	M	GenX	Jamie NA
## 613	d	B	M	GenX	Greg NA
## 614	d	B	M	GenX	Darryl NA
## 615	d	B	M	GenX	Tim NA
## 616	d	B	M	GenX	Dean NA
## 617	d	B	M	GenX	Jon NA
## 618	d	B	M	GenX	Chris NA
## 619	d	B	M	GenX	Troy NA

## 620	d	B	M	GenX	Jeff NA
## 621	d	B	M	Millenial	Zachary NA
## 622	d	B	M	Millenial	Dylan NA
## 623	d	B	M	Millenial	Christian NA
## 624	d	B	M	Millenial	Wesley NA
## 625	d	B	M	Millenial	Seth NA
## 626	d	B	M	Millenial	Austin NA
## 627	d	B	M	Millenial	Gabriel NA
## 628	d	B	M	Millenial	Evan NA
## 629	d	B	M	Millenial	Casey NA
## 630	d	B	M	Millenial	Luis NA
## 631	d	B	F	Boomer	Gloria NA
## 632	d	B	F	Boomer	Joan NA
## 633	d	B	F	Boomer	Dorothy NA
## 634	d	B	F	Boomer	Shirley NA
## 635	d	B	F	Boomer	Betty NA
## 636	d	B	F	Boomer	Dianne NA
## 637	d	B	F	Boomer	Kay NA
## 638	d	B	F	Boomer	Marjorie NA
## 639	d	B	F	Boomer	Lorraine NA
## 640	d	B	F	Boomer	Mildred NA
## 641	d	B	F	GenX	Tracy NA
## 642	d	B	F	GenX	Dawn NA
## 643	d	B	F	GenX	Tina NA
## 644	d	B	F	GenX	Tammy NA
## 645	d	B	F	GenX	Melinda NA
## 646	d	B	F	GenX	Tamara NA
## 647	d	B	F	GenX	Tracey NA
## 648	d	B	F	GenX	Colleen NA
## 649	d	B	F	GenX	Sherri NA
## 650	d	B	F	GenX	Heidi NA
## 651	d	B	F	Millenial	Tracy NA
## 652	d	B	F	Millenial	Dawn NA
## 653	d	B	F	Millenial	Tina NA
## 654	d	B	F	Millenial	Tammy NA
## 655	d	B	F	Millenial	Melinda NA
## 656	d	B	F	Millenial	Tamara NA
## 657	d	B	F	Millenial	Tracey NA
## 658	d	B	F	Millenial	Colleen NA
## 659	d	B	F	Millenial	Sherri NA
## 660	d	B	F	Millenial	Heidi NA
## 661	d	C	M	Boomer	Theodore NA
## 662	d	C	M	Boomer	Bernard NA
## 663	d	C	M	Boomer	Gene NA
## 664	d	C	M	Boomer	Herbert NA
## 665	d	C	M	Boomer	Ray NA
## 666	d	C	M	Boomer	Tom NA
## 667	d	C	M	Boomer	Lee NA
## 668	d	C	M	Boomer	Alfred NA
## 669	d	C	M	Boomer	Leroy NA
## 670	d	C	M	Boomer	Eddie NA
## 671	d	C	M	GenX	Marc NA
## 672	d	C	M	GenX	Jamie NA
## 673	d	C	M	GenX	Greg NA

## 674	d	C	M	GenX	Darryl NA
## 675	d	C	M	GenX	Tim NA
## 676	d	C	M	GenX	Dean NA
## 677	d	C	M	GenX	Jon NA
## 678	d	C	M	GenX	Chris NA
## 679	d	C	M	GenX	Troy NA
## 680	d	C	M	GenX	Jeff NA
## 681	d	C	M	Millenial	Zachary NA
## 682	d	C	M	Millenial	Dylan NA
## 683	d	C	M	Millenial	Christian NA
## 684	d	C	M	Millenial	Wesley NA
## 685	d	C	M	Millenial	Seth NA
## 686	d	C	M	Millenial	Austin NA
## 687	d	C	M	Millenial	Gabriel NA
## 688	d	C	M	Millenial	Evan NA
## 689	d	C	M	Millenial	Casey NA
## 690	d	C	M	Millenial	Luis NA
## 691	d	C	F	Boomer	Gloria NA
## 692	d	C	F	Boomer	Joan NA
## 693	d	C	F	Boomer	Dorothy NA
## 694	d	C	F	Boomer	Shirley NA
## 695	d	C	F	Boomer	Betty NA
## 696	d	C	F	Boomer	Dianne NA
## 697	d	C	F	Boomer	Kay NA
## 698	d	C	F	Boomer	Marjorie NA
## 699	d	C	F	Boomer	Lorraine NA
## 700	d	C	F	Boomer	Mildred NA
## 701	d	C	F	GenX	Tracy NA
## 702	d	C	F	GenX	Dawn NA
## 703	d	C	F	GenX	Tina NA
## 704	d	C	F	GenX	Tammy NA
## 705	d	C	F	GenX	Melinda NA
## 706	d	C	F	GenX	Tamara NA
## 707	d	C	F	GenX	Tracey NA
## 708	d	C	F	GenX	Colleen NA
## 709	d	C	F	GenX	Sherri NA
## 710	d	C	F	GenX	Heidi NA
## 711	d	C	F	Millenial	Tracy NA
## 712	d	C	F	Millenial	Dawn NA
## 713	d	C	F	Millenial	Tina NA
## 714	d	C	F	Millenial	Tammy NA
## 715	d	C	F	Millenial	Melinda NA
## 716	d	C	F	Millenial	Tamara NA
## 717	d	C	F	Millenial	Tracey NA
## 718	d	C	F	Millenial	Colleen NA
## 719	d	C	F	Millenial	Sherri NA
## 720	d	C	F	Millenial	Heidi NA
## 721	e	A	M	Boomer	Theodore NA
## 722	e	A	M	Boomer	Bernard NA
## 723	e	A	M	Boomer	Gene NA
## 724	e	A	M	Boomer	Herbert NA
## 725	e	A	M	Boomer	Ray NA
## 726	e	A	M	Boomer	Tom NA
## 727	e	A	M	Boomer	Lee NA

## 728	e	A	M	Boomer	Alfred NA
## 729	e	A	M	Boomer	Leroy NA
## 730	e	A	M	Boomer	Eddie NA
## 731	e	A	M	GenX	Marc NA
## 732	e	A	M	GenX	Jamie NA
## 733	e	A	M	GenX	Greg NA
## 734	e	A	M	GenX	Darryl NA
## 735	e	A	M	GenX	Tim NA
## 736	e	A	M	GenX	Dean NA
## 737	e	A	M	GenX	Jon NA
## 738	e	A	M	GenX	Chris NA
## 739	e	A	M	GenX	Troy NA
## 740	e	A	M	GenX	Jeff NA
## 741	e	A	M	Millenial	Zachary NA
## 742	e	A	M	Millenial	Dylan NA
## 743	e	A	M	Millenial	Christian NA
## 744	e	A	M	Millenial	Wesley NA
## 745	e	A	M	Millenial	Seth NA
## 746	e	A	M	Millenial	Austin NA
## 747	e	A	M	Millenial	Gabriel NA
## 748	e	A	M	Millenial	Evan NA
## 749	e	A	M	Millenial	Casey NA
## 750	e	A	M	Millenial	Luis NA
## 751	e	A	F	Boomer	Gloria NA
## 752	e	A	F	Boomer	Joan NA
## 753	e	A	F	Boomer	Dorothy NA
## 754	e	A	F	Boomer	Shirley NA
## 755	e	A	F	Boomer	Betty NA
## 756	e	A	F	Boomer	Dianne NA
## 757	e	A	F	Boomer	Kay NA
## 758	e	A	F	Boomer	Marjorie NA
## 759	e	A	F	Boomer	Lorraine NA
## 760	e	A	F	Boomer	Mildred NA
## 761	e	A	F	GenX	Tracy NA
## 762	e	A	F	GenX	Dawn NA
## 763	e	A	F	GenX	Tina NA
## 764	e	A	F	GenX	Tammy NA
## 765	e	A	F	GenX	Melinda NA
## 766	e	A	F	GenX	Tamara NA
## 767	e	A	F	GenX	Tracey NA
## 768	e	A	F	GenX	Colleen NA
## 769	e	A	F	GenX	Sherri NA
## 770	e	A	F	GenX	Heidi NA
## 771	e	A	F	Millenial	Tracy NA
## 772	e	A	F	Millenial	Dawn NA
## 773	e	A	F	Millenial	Tina NA
## 774	e	A	F	Millenial	Tammy NA
## 775	e	A	F	Millenial	Melinda NA
## 776	e	A	F	Millenial	Tamara NA
## 777	e	A	F	Millenial	Tracey NA
## 778	e	A	F	Millenial	Colleen NA
## 779	e	A	F	Millenial	Sherri NA
## 780	e	A	F	Millenial	Heidi NA
## 781	e	B	M	Boomer	Theodore NA

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

## 836	e	B	F	Millenial	Tamara NA
## 837	e	B	F	Millenial	Tracey NA
## 838	e	B	F	Millenial	Colleen NA
## 839	e	B	F	Millenial	Sherri NA
## 840	e	B	F	Millenial	Heidi NA
## 841	e	C	M	Boomer	Theodore NA
## 842	e	C	M	Boomer	Bernard NA
## 843	e	C	M	Boomer	Gene NA
## 844	e	C	M	Boomer	Herbert NA
## 845	e	C	M	Boomer	Ray NA
## 846	e	C	M	Boomer	Tom NA
## 847	e	C	M	Boomer	Lee NA
## 848	e	C	M	Boomer	Alfred NA
## 849	e	C	M	Boomer	Leroy NA
## 850	e	C	M	Boomer	Eddie NA
## 851	e	C	M	GenX	Marc NA
## 852	e	C	M	GenX	Jamie NA
## 853	e	C	M	GenX	Greg NA
## 854	e	C	M	GenX	Darryl NA
## 855	e	C	M	GenX	Tim NA
## 856	e	C	M	GenX	Dean NA
## 857	e	C	M	GenX	Jon NA
## 858	e	C	M	GenX	Chris NA
## 859	e	C	M	GenX	Troy NA
## 860	e	C	M	GenX	Jeff NA
## 861	e	C	M	Millenial	Zachary NA
## 862	e	C	M	Millenial	Dylan NA
## 863	e	C	M	Millenial	Christian NA
## 864	e	C	M	Millenial	Wesley NA
## 865	e	C	M	Millenial	Seth NA
## 866	e	C	M	Millenial	Austin NA
## 867	e	C	M	Millenial	Gabriel NA
## 868	e	C	M	Millenial	Evan NA
## 869	e	C	M	Millenial	Casey NA
## 870	e	C	M	Millenial	Luis NA
## 871	e	C	F	Boomer	Gloria NA
## 872	e	C	F	Boomer	Joan NA
## 873	e	C	F	Boomer	Dorothy NA
## 874	e	C	F	Boomer	Shirley NA
## 875	e	C	F	Boomer	Betty NA
## 876	e	C	F	Boomer	Dianne NA
## 877	e	C	F	Boomer	Kay NA
## 878	e	C	F	Boomer	Marjorie NA
## 879	e	C	F	Boomer	Lorraine NA
## 880	e	C	F	Boomer	Mildred NA
## 881	e	C	F	GenX	Tracy NA
## 882	e	C	F	GenX	Dawn NA
## 883	e	C	F	GenX	Tina NA
## 884	e	C	F	GenX	Tammy NA
## 885	e	C	F	GenX	Melinda NA
## 886	e	C	F	GenX	Tamara NA
## 887	e	C	F	GenX	Tracey NA
## 888	e	C	F	GenX	Colleen NA
## 889	e	C	F	GenX	Sherri NA

## 890	e	C	F	GenX	Heidi NA
## 891	e	C	F	Millenial	Tracy NA
## 892	e	C	F	Millenial	Dawn NA
## 893	e	C	F	Millenial	Tina NA
## 894	e	C	F	Millenial	Tammy NA
## 895	e	C	F	Millenial	Melinda NA
## 896	e	C	F	Millenial	Tamara NA
## 897	e	C	F	Millenial	Tracey NA
## 898	e	C	F	Millenial	Colleen NA
## 899	e	C	F	Millenial	Sherri NA
## 900	e	C	F	Millenial	Heidi NA
## 901	f	A	M	Boomer	Theodore NA
## 902	f	A	M	Boomer	Bernard NA
## 903	f	A	M	Boomer	Gene NA
## 904	f	A	M	Boomer	Herbert NA
## 905	f	A	M	Boomer	Ray NA
## 906	f	A	M	Boomer	Tom NA
## 907	f	A	M	Boomer	Lee NA
## 908	f	A	M	Boomer	Alfred NA
## 909	f	A	M	Boomer	Leroy NA
## 910	f	A	M	Boomer	Eddie NA
## 911	f	A	M	GenX	Marc NA
## 912	f	A	M	GenX	Jamie NA
## 913	f	A	M	GenX	Greg NA
## 914	f	A	M	GenX	Darryl NA
## 915	f	A	M	GenX	Tim NA
## 916	f	A	M	GenX	Dean NA
## 917	f	A	M	GenX	Jon NA
## 918	f	A	M	GenX	Chris NA
## 919	f	A	M	GenX	Troy NA
## 920	f	A	M	GenX	Jeff NA
## 921	f	A	M	Millenial	Zachary NA
## 922	f	A	M	Millenial	Dylan NA
## 923	f	A	M	Millenial	Christian NA
## 924	f	A	M	Millenial	Wesley NA
## 925	f	A	M	Millenial	Seth NA
## 926	f	A	M	Millenial	Austin NA
## 927	f	A	M	Millenial	Gabriel NA
## 928	f	A	M	Millenial	Evan NA
## 929	f	A	M	Millenial	Casey NA
## 930	f	A	M	Millenial	Luis NA
## 931	f	A	F	Boomer	Gloria NA
## 932	f	A	F	Boomer	Joan NA
## 933	f	A	F	Boomer	Dorothy NA
## 934	f	A	F	Boomer	Shirley NA
## 935	f	A	F	Boomer	Betty NA
## 936	f	A	F	Boomer	Dianne NA
## 937	f	A	F	Boomer	Kay NA
## 938	f	A	F	Boomer	Marjorie NA
## 939	f	A	F	Boomer	Lorraine NA
## 940	f	A	F	Boomer	Mildred NA
## 941	f	A	F	GenX	Tracy NA
## 942	f	A	F	GenX	Dawn NA
## 943	f	A	F	GenX	Tina NA

## 944	f	A	F	GenX	Tammy NA
## 945	f	A	F	GenX	Melinda NA
## 946	f	A	F	GenX	Tamara NA
## 947	f	A	F	GenX	Tracey NA
## 948	f	A	F	GenX	Colleen NA
## 949	f	A	F	GenX	Sherri NA
## 950	f	A	F	GenX	Heidi NA
## 951	f	A	F	Millenial	Tracy NA
## 952	f	A	F	Millenial	Dawn NA
## 953	f	A	F	Millenial	Tina NA
## 954	f	A	F	Millenial	Tammy NA
## 955	f	A	F	Millenial	Melinda NA
## 956	f	A	F	Millenial	Tamara NA
## 957	f	A	F	Millenial	Tracey NA
## 958	f	A	F	Millenial	Colleen NA
## 959	f	A	F	Millenial	Sherri NA
## 960	f	A	F	Millenial	Heidi NA
## 961	f	B	M	Boomer	Theodore NA
## 962	f	B	M	Boomer	Bernard NA
## 963	f	B	M	Boomer	Gene NA
## 964	f	B	M	Boomer	Herbert NA
## 965	f	B	M	Boomer	Ray NA
## 966	f	B	M	Boomer	Tom NA
## 967	f	B	M	Boomer	Lee NA
## 968	f	B	M	Boomer	Alfred NA
## 969	f	B	M	Boomer	Leroy NA
## 970	f	B	M	Boomer	Eddie NA
## 971	f	B	M	GenX	Marc NA
## 972	f	B	M	GenX	Jamie NA
## 973	f	B	M	GenX	Greg NA
## 974	f	B	M	GenX	Darryl NA
## 975	f	B	M	GenX	Tim NA
## 976	f	B	M	GenX	Dean NA
## 977	f	B	M	GenX	Jon NA
## 978	f	B	M	GenX	Chris NA
## 979	f	B	M	GenX	Troy NA
## 980	f	B	M	GenX	Jeff NA
## 981	f	B	M	Millenial	Zachary NA
## 982	f	B	M	Millenial	Dylan NA
## 983	f	B	M	Millenial	Christian NA
## 984	f	B	M	Millenial	Wesley NA
## 985	f	B	M	Millenial	Seth NA
## 986	f	B	M	Millenial	Austin NA
## 987	f	B	M	Millenial	Gabriel NA
## 988	f	B	M	Millenial	Evan NA
## 989	f	B	M	Millenial	Casey NA
## 990	f	B	M	Millenial	Luis NA
## 991	f	B	F	Boomer	Gloria NA
## 992	f	B	F	Boomer	Joan NA
## 993	f	B	F	Boomer	Dorothy NA
## 994	f	B	F	Boomer	Shirley NA
## 995	f	B	F	Boomer	Betty NA
## 996	f	B	F	Boomer	Dianne NA
## 997	f	B	F	Boomer	Kay NA

## 998	f	B	F	Boomer	Marjorie	NA
## 999	f	B	F	Boomer	Lorraine	NA
## 1000	f	B	F	Boomer	Mildred	NA
## 1001	f	B	F	GenX	Tracy	NA
## 1002	f	B	F	GenX	Dawn	NA
## 1003	f	B	F	GenX	Tina	NA
## 1004	f	B	F	GenX	Tammy	NA
## 1005	f	B	F	GenX	Melinda	NA
## 1006	f	B	F	GenX	Tamara	NA
## 1007	f	B	F	GenX	Tracey	NA
## 1008	f	B	F	GenX	Colleen	NA
## 1009	f	B	F	GenX	Sherri	NA
## 1010	f	B	F	GenX	Heidi	NA
## 1011	f	B	F	Millenial	Tracy	NA
## 1012	f	B	F	Millenial	Dawn	NA
## 1013	f	B	F	Millenial	Tina	NA
## 1014	f	B	F	Millenial	Tammy	NA
## 1015	f	B	F	Millenial	Melinda	NA
## 1016	f	B	F	Millenial	Tamara	NA
## 1017	f	B	F	Millenial	Tracey	NA
## 1018	f	B	F	Millenial	Colleen	NA
## 1019	f	B	F	Millenial	Sherri	NA
## 1020	f	B	F	Millenial	Heidi	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	NA
## 1036	f	C	M	GenX	Dean	NA
## 1037	f	C	M	GenX	Jon	NA
## 1038	f	C	M	GenX	Chris	NA
## 1039	f	C	M	GenX	Troy	NA
## 1040	f	C	M	GenX	Jeff	NA
## 1041	f	C	M	Millenial	Zachary	NA
## 1042	f	C	M	Millenial	Dylan	NA
## 1043	f	C	M	Millenial	Christian	NA
## 1044	f	C	M	Millenial	Wesley	NA
## 1045	f	C	M	Millenial	Seth	NA
## 1046	f	C	M	Millenial	Austin	NA
## 1047	f	C	M	Millenial	Gabriel	NA
## 1048	f	C	M	Millenial	Evan	NA
## 1049	f	C	M	Millenial	Casey	NA
## 1050	f	C	M	Millenial	Luis	NA
## 1051	f	C	F	Boomer	Gloria	NA

## 1052	f	C	F	Boomer	Joan NA
## 1053	f	C	F	Boomer	Dorothy NA
## 1054	f	C	F	Boomer	Shirley NA
## 1055	f	C	F	Boomer	Betty NA
## 1056	f	C	F	Boomer	Dianne NA
## 1057	f	C	F	Boomer	Kay NA
## 1058	f	C	F	Boomer	Marjorie NA
## 1059	f	C	F	Boomer	Lorraine NA
## 1060	f	C	F	Boomer	Mildred NA
## 1061	f	C	F	GenX	Tracy NA
## 1062	f	C	F	GenX	Dawn NA
## 1063	f	C	F	GenX	Tina NA
## 1064	f	C	F	GenX	Tammy NA
## 1065	f	C	F	GenX	Melinda NA
## 1066	f	C	F	GenX	Tamara NA
## 1067	f	C	F	GenX	Tracey NA
## 1068	f	C	F	GenX	Colleen NA
## 1069	f	C	F	GenX	Sherri NA
## 1070	f	C	F	GenX	Heidi NA
## 1071	f	C	F	Millenial	Tracy NA
## 1072	f	C	F	Millenial	Dawn NA
## 1073	f	C	F	Millenial	Tina NA
## 1074	f	C	F	Millenial	Tammy NA
## 1075	f	C	F	Millenial	Melinda NA
## 1076	f	C	F	Millenial	Tamara NA
## 1077	f	C	F	Millenial	Tracey NA
## 1078	f	C	F	Millenial	Colleen NA
## 1079	f	C	F	Millenial	Sherri NA
## 1080	f	C	F	Millenial	Heidi NA
## 1081	g	A	M	Boomer	Theodore NA
## 1082	g	A	M	Boomer	Bernard NA
## 1083	g	A	M	Boomer	Gene NA
## 1084	g	A	M	Boomer	Herbert NA
## 1085	g	A	M	Boomer	Ray NA
## 1086	g	A	M	Boomer	Tom NA
## 1087	g	A	M	Boomer	Lee NA
## 1088	g	A	M	Boomer	Alfred NA
## 1089	g	A	M	Boomer	Leroy NA
## 1090	g	A	M	Boomer	Eddie NA
## 1091	g	A	M	GenX	Marc NA
## 1092	g	A	M	GenX	Jamie NA
## 1093	g	A	M	GenX	Greg NA
## 1094	g	A	M	GenX	Darryl NA
## 1095	g	A	M	GenX	Tim NA
## 1096	g	A	M	GenX	Dean NA
## 1097	g	A	M	GenX	Jon NA
## 1098	g	A	M	GenX	Chris NA
## 1099	g	A	M	GenX	Troy NA
## 1100	g	A	M	GenX	Jeff NA
## 1101	g	A	M	Millenial	Zachary NA
## 1102	g	A	M	Millenial	Dylan NA
## 1103	g	A	M	Millenial	Christian NA
## 1104	g	A	M	Millenial	Wesley NA
## 1105	g	A	M	Millenial	Seth NA

## 1106	g	A	M	Millenial	Austin NA
## 1107	g	A	M	Millenial	Gabriel NA
## 1108	g	A	M	Millenial	Evan NA
## 1109	g	A	M	Millenial	Casey NA
## 1110	g	A	M	Millenial	Luis NA
## 1111	g	A	F	Boomer	Gloria NA
## 1112	g	A	F	Boomer	Joan NA
## 1113	g	A	F	Boomer	Dorothy NA
## 1114	g	A	F	Boomer	Shirley NA
## 1115	g	A	F	Boomer	Betty NA
## 1116	g	A	F	Boomer	Dianne NA
## 1117	g	A	F	Boomer	Kay NA
## 1118	g	A	F	Boomer	Marjorie NA
## 1119	g	A	F	Boomer	Lorraine NA
## 1120	g	A	F	Boomer	Mildred NA
## 1121	g	A	F	GenX	Tracy NA
## 1122	g	A	F	GenX	Dawn NA
## 1123	g	A	F	GenX	Tina NA
## 1124	g	A	F	GenX	Tammy NA
## 1125	g	A	F	GenX	Melinda NA
## 1126	g	A	F	GenX	Tamara NA
## 1127	g	A	F	GenX	Tracey NA
## 1128	g	A	F	GenX	Colleen NA
## 1129	g	A	F	GenX	Sherri NA
## 1130	g	A	F	GenX	Heidi NA
## 1131	g	A	F	Millenial	Tracy NA
## 1132	g	A	F	Millenial	Dawn NA
## 1133	g	A	F	Millenial	Tina NA
## 1134	g	A	F	Millenial	Tammy NA
## 1135	g	A	F	Millenial	Melinda NA
## 1136	g	A	F	Millenial	Tamara NA
## 1137	g	A	F	Millenial	Tracey NA
## 1138	g	A	F	Millenial	Colleen NA
## 1139	g	A	F	Millenial	Sherri NA
## 1140	g	A	F	Millenial	Heidi NA
## 1141	g	B	M	Boomer	Theodore NA
## 1142	g	B	M	Boomer	Bernard NA
## 1143	g	B	M	Boomer	Gene NA
## 1144	g	B	M	Boomer	Herbert NA
## 1145	g	B	M	Boomer	Ray NA
## 1146	g	B	M	Boomer	Tom NA
## 1147	g	B	M	Boomer	Lee NA
## 1148	g	B	M	Boomer	Alfred NA
## 1149	g	B	M	Boomer	Leroy NA
## 1150	g	B	M	Boomer	Eddie NA
## 1151	g	B	M	GenX	Marc NA
## 1152	g	B	M	GenX	Jamie NA
## 1153	g	B	M	GenX	Greg NA
## 1154	g	B	M	GenX	Darryl NA
## 1155	g	B	M	GenX	Tim NA
## 1156	g	B	M	GenX	Dean NA
## 1157	g	B	M	GenX	Jon NA
## 1158	g	B	M	GenX	Chris NA
## 1159	g	B	M	GenX	Troy NA

## 1160	g	B	M	GenX	Jeff NA
## 1161	g	B	M	Millenial	Zachary NA
## 1162	g	B	M	Millenial	Dylan NA
## 1163	g	B	M	Millenial	Christian NA
## 1164	g	B	M	Millenial	Wesley NA
## 1165	g	B	M	Millenial	Seth NA
## 1166	g	B	M	Millenial	Austin NA
## 1167	g	B	M	Millenial	Gabriel NA
## 1168	g	B	M	Millenial	Evan NA
## 1169	g	B	M	Millenial	Casey NA
## 1170	g	B	M	Millenial	Luis NA
## 1171	g	B	F	Boomer	Gloria NA
## 1172	g	B	F	Boomer	Joan NA
## 1173	g	B	F	Boomer	Dorothy NA
## 1174	g	B	F	Boomer	Shirley NA
## 1175	g	B	F	Boomer	Betty NA
## 1176	g	B	F	Boomer	Dianne NA
## 1177	g	B	F	Boomer	Kay NA
## 1178	g	B	F	Boomer	Marjorie NA
## 1179	g	B	F	Boomer	Lorraine NA
## 1180	g	B	F	Boomer	Mildred NA
## 1181	g	B	F	GenX	Tracy NA
## 1182	g	B	F	GenX	Dawn NA
## 1183	g	B	F	GenX	Tina NA
## 1184	g	B	F	GenX	Tammy NA
## 1185	g	B	F	GenX	Melinda NA
## 1186	g	B	F	GenX	Tamara NA
## 1187	g	B	F	GenX	Tracey NA
## 1188	g	B	F	GenX	Colleen NA
## 1189	g	B	F	GenX	Sherri NA
## 1190	g	B	F	GenX	Heidi NA
## 1191	g	B	F	Millenial	Tracy NA
## 1192	g	B	F	Millenial	Dawn NA
## 1193	g	B	F	Millenial	Tina NA
## 1194	g	B	F	Millenial	Tammy NA
## 1195	g	B	F	Millenial	Melinda NA
## 1196	g	B	F	Millenial	Tamara NA
## 1197	g	B	F	Millenial	Tracey NA
## 1198	g	B	F	Millenial	Colleen NA
## 1199	g	B	F	Millenial	Sherri NA
## 1200	g	B	F	Millenial	Heidi NA
## 1201	g	C	M	Boomer	Theodore NA
## 1202	g	C	M	Boomer	Bernard NA
## 1203	g	C	M	Boomer	Gene NA
## 1204	g	C	M	Boomer	Herbert NA
## 1205	g	C	M	Boomer	Ray NA
## 1206	g	C	M	Boomer	Tom NA
## 1207	g	C	M	Boomer	Lee NA
## 1208	g	C	M	Boomer	Alfred NA
## 1209	g	C	M	Boomer	Leroy NA
## 1210	g	C	M	Boomer	Eddie NA
## 1211	g	C	M	GenX	Marc NA
## 1212	g	C	M	GenX	Jamie NA
## 1213	g	C	M	GenX	Greg NA

## 1214	g	C	M	GenX	Darryl NA
## 1215	g	C	M	GenX	Tim NA
## 1216	g	C	M	GenX	Dean NA
## 1217	g	C	M	GenX	Jon NA
## 1218	g	C	M	GenX	Chris NA
## 1219	g	C	M	GenX	Troy NA
## 1220	g	C	M	GenX	Jeff NA
## 1221	g	C	M	Millenial	Zachary NA
## 1222	g	C	M	Millenial	Dylan NA
## 1223	g	C	M	Millenial	Christian NA
## 1224	g	C	M	Millenial	Wesley NA
## 1225	g	C	M	Millenial	Seth NA
## 1226	g	C	M	Millenial	Austin NA
## 1227	g	C	M	Millenial	Gabriel NA
## 1228	g	C	M	Millenial	Evan NA
## 1229	g	C	M	Millenial	Casey NA
## 1230	g	C	M	Millenial	Luis NA
## 1231	g	C	F	Boomer	Gloria NA
## 1232	g	C	F	Boomer	Joan NA
## 1233	g	C	F	Boomer	Dorothy NA
## 1234	g	C	F	Boomer	Shirley NA
## 1235	g	C	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	GenX	Tracy NA
## 1242	g	C	F	GenX	Dawn NA
## 1243	g	C	F	GenX	Tina NA
## 1244	g	C	F	GenX	Tammy NA
## 1245	g	C	F	GenX	Melinda NA
## 1246	g	C	F	GenX	Tamara NA
## 1247	g	C	F	GenX	Tracey NA
## 1248	g	C	F	GenX	Colleen NA
## 1249	g	C	F	GenX	Sherri NA
## 1250	g	C	F	GenX	Heidi NA
## 1251	g	C	F	Millenial	Tracy NA
## 1252	g	C	F	Millenial	Dawn NA
## 1253	g	C	F	Millenial	Tina NA
## 1254	g	C	F	Millenial	Tammy NA
## 1255	g	C	F	Millenial	Melinda NA
## 1256	g	C	F	Millenial	Tamara NA
## 1257	g	C	F	Millenial	Tracey NA
## 1258	g	C	F	Millenial	Colleen NA
## 1259	g	C	F	Millenial	Sherri NA
## 1260	g	C	F	Millenial	Heidi NA
## 1261	h	A	M	Boomer	Theodore NA
## 1262	h	A	M	Boomer	Bernard NA
## 1263	h	A	M	Boomer	Gene NA
## 1264	h	A	M	Boomer	Herbert NA
## 1265	h	A	M	Boomer	Ray NA
## 1266	h	A	M	Boomer	Tom NA
## 1267	h	A	M	Boomer	Lee NA

## 1268	h	A	M	Boomer	Alfred NA
## 1269	h	A	M	Boomer	Leroy NA
## 1270	h	A	M	Boomer	Eddie NA
## 1271	h	A	M	GenX	Marc NA
## 1272	h	A	M	GenX	Jamie NA
## 1273	h	A	M	GenX	Greg NA
## 1274	h	A	M	GenX	Darryl NA
## 1275	h	A	M	GenX	Tim NA
## 1276	h	A	M	GenX	Dean NA
## 1277	h	A	M	GenX	Jon NA
## 1278	h	A	M	GenX	Chris NA
## 1279	h	A	M	GenX	Troy NA
## 1280	h	A	M	GenX	Jeff NA
## 1281	h	A	M	Millennial	Zachary NA
## 1282	h	A	M	Millennial	Dylan NA
## 1283	h	A	M	Millennial	Christian NA
## 1284	h	A	M	Millennial	Wesley NA
## 1285	h	A	M	Millennial	Seth NA
## 1286	h	A	M	Millennial	Austin NA
## 1287	h	A	M	Millennial	Gabriel NA
## 1288	h	A	M	Millennial	Evan NA
## 1289	h	A	M	Millennial	Casey NA
## 1290	h	A	M	Millennial	Luis NA
## 1291	h	A	F	Boomer	Gloria NA
## 1292	h	A	F	Boomer	Joan NA
## 1293	h	A	F	Boomer	Dorothy NA
## 1294	h	A	F	Boomer	Shirley NA
## 1295	h	A	F	Boomer	Betty NA
## 1296	h	A	F	Boomer	Dianne NA
## 1297	h	A	F	Boomer	Kay NA
## 1298	h	A	F	Boomer	Marjorie NA
## 1299	h	A	F	Boomer	Lorraine NA
## 1300	h	A	F	Boomer	Mildred NA
## 1301	h	A	F	GenX	Tracy NA
## 1302	h	A	F	GenX	Dawn NA
## 1303	h	A	F	GenX	Tina NA
## 1304	h	A	F	GenX	Tammy NA
## 1305	h	A	F	GenX	Melinda NA
## 1306	h	A	F	GenX	Tamara NA
## 1307	h	A	F	GenX	Tracey NA
## 1308	h	A	F	GenX	Colleen NA
## 1309	h	A	F	GenX	Sherri NA
## 1310	h	A	F	GenX	Heidi NA
## 1311	h	A	F	Millennial	Tracy NA
## 1312	h	A	F	Millennial	Dawn NA
## 1313	h	A	F	Millennial	Tina NA
## 1314	h	A	F	Millennial	Tammy NA
## 1315	h	A	F	Millennial	Melinda NA
## 1316	h	A	F	Millennial	Tamara NA
## 1317	h	A	F	Millennial	Tracey NA
## 1318	h	A	F	Millennial	Colleen NA
## 1319	h	A	F	Millennial	Sherri NA
## 1320	h	A	F	Millennial	Heidi NA
## 1321	h	B	M	Boomer	Theodore NA

## 1322	h	B	M	Boomer	Bernard NA
## 1323	h	B	M	Boomer	Gene NA
## 1324	h	B	M	Boomer	Herbert NA
## 1325	h	B	M	Boomer	Ray NA
## 1326	h	B	M	Boomer	Tom NA
## 1327	h	B	M	Boomer	Lee NA
## 1328	h	B	M	Boomer	Alfred NA
## 1329	h	B	M	Boomer	Leroy NA
## 1330	h	B	M	Boomer	Eddie NA
## 1331	h	B	M	GenX	Marc NA
## 1332	h	B	M	GenX	Jamie NA
## 1333	h	B	M	GenX	Greg NA
## 1334	h	B	M	GenX	Darryl NA
## 1335	h	B	M	GenX	Tim NA
## 1336	h	B	M	GenX	Dean NA
## 1337	h	B	M	GenX	Jon NA
## 1338	h	B	M	GenX	Chris NA
## 1339	h	B	M	GenX	Troy NA
## 1340	h	B	M	GenX	Jeff NA
## 1341	h	B	M	Millenial	Zachary NA
## 1342	h	B	M	Millenial	Dylan NA
## 1343	h	B	M	Millenial	Christian NA
## 1344	h	B	M	Millenial	Wesley NA
## 1345	h	B	M	Millenial	Seth NA
## 1346	h	B	M	Millenial	Austin NA
## 1347	h	B	M	Millenial	Gabriel NA
## 1348	h	B	M	Millenial	Evan NA
## 1349	h	B	M	Millenial	Casey NA
## 1350	h	B	M	Millenial	Luis NA
## 1351	h	B	F	Boomer	Gloria NA
## 1352	h	B	F	Boomer	Joan NA
## 1353	h	B	F	Boomer	Dorothy NA
## 1354	h	B	F	Boomer	Shirley NA
## 1355	h	B	F	Boomer	Betty NA
## 1356	h	B	F	Boomer	Dianne NA
## 1357	h	B	F	Boomer	Kay NA
## 1358	h	B	F	Boomer	Marjorie NA
## 1359	h	B	F	Boomer	Lorraine NA
## 1360	h	B	F	Boomer	Mildred NA
## 1361	h	B	F	GenX	Tracy NA
## 1362	h	B	F	GenX	Dawn NA
## 1363	h	B	F	GenX	Tina NA
## 1364	h	B	F	GenX	Tammy NA
## 1365	h	B	F	GenX	Melinda NA
## 1366	h	B	F	GenX	Tamara NA
## 1367	h	B	F	GenX	Tracey NA
## 1368	h	B	F	GenX	Colleen NA
## 1369	h	B	F	GenX	Sherri NA
## 1370	h	B	F	GenX	Heidi NA
## 1371	h	B	F	Millenial	Tracy NA
## 1372	h	B	F	Millenial	Dawn NA
## 1373	h	B	F	Millenial	Tina NA
## 1374	h	B	F	Millenial	Tammy NA
## 1375	h	B	F	Millenial	Melinda NA

## 1376	h	B	F	Millenial	Tamara NA
## 1377	h	B	F	Millenial	Tracey NA
## 1378	h	B	F	Millenial	Colleen NA
## 1379	h	B	F	Millenial	Sherri NA
## 1380	h	B	F	Millenial	Heidi NA
## 1381	h	C	M	Boomer	Theodore NA
## 1382	h	C	M	Boomer	Bernard NA
## 1383	h	C	M	Boomer	Gene NA
## 1384	h	C	M	Boomer	Herbert NA
## 1385	h	C	M	Boomer	Ray NA
## 1386	h	C	M	Boomer	Tom NA
## 1387	h	C	M	Boomer	Lee NA
## 1388	h	C	M	Boomer	Alfred NA
## 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	M	GenX	Troy NA
## 1400	h	C	M	GenX	Jeff NA
## 1401	h	C	M	Millenial	Zachary NA
## 1402	h	C	M	Millenial	Dylan NA
## 1403	h	C	M	Millenial	Christian NA
## 1404	h	C	M	Millenial	Wesley NA
## 1405	h	C	M	Millenial	Seth NA
## 1406	h	C	M	Millenial	Austin NA
## 1407	h	C	M	Millenial	Gabriel NA
## 1408	h	C	M	Millenial	Evan NA
## 1409	h	C	M	Millenial	Casey NA
## 1410	h	C	M	Millenial	Luis NA
## 1411	h	C	F	Boomer	Gloria NA
## 1412	h	C	F	Boomer	Joan NA
## 1413	h	C	F	Boomer	Dorothy NA
## 1414	h	C	F	Boomer	Shirley NA
## 1415	h	C	F	Boomer	Betty NA
## 1416	h	C	F	Boomer	Dianne NA
## 1417	h	C	F	Boomer	Kay NA
## 1418	h	C	F	Boomer	Marjorie NA
## 1419	h	C	F	Boomer	Lorraine NA
## 1420	h	C	F	Boomer	Mildred NA
## 1421	h	C	F	GenX	Tracy NA
## 1422	h	C	F	GenX	Dawn NA
## 1423	h	C	F	GenX	Tina NA
## 1424	h	C	F	GenX	Tammy NA
## 1425	h	C	F	GenX	Melinda NA
## 1426	h	C	F	GenX	Tamara NA
## 1427	h	C	F	GenX	Tracey NA
## 1428	h	C	F	GenX	Colleen NA
## 1429	h	C	F	GenX	Sherri NA

## 1430	h	C	F	GenX	Heidi NA
## 1431	h	C	F	Millenial	Tracy NA
## 1432	h	C	F	Millenial	Dawn NA
## 1433	h	C	F	Millenial	Tina NA
## 1434	h	C	F	Millenial	Tammy NA
## 1435	h	C	F	Millenial	Melinda NA
## 1436	h	C	F	Millenial	Tamara NA
## 1437	h	C	F	Millenial	Tracey NA
## 1438	h	C	F	Millenial	Colleen NA
## 1439	h	C	F	Millenial	Sherri NA
## 1440	h	C	F	Millenial	Heidi NA
## 1441	i	A	M	Boomer	Theodore NA
## 1442	i	A	M	Boomer	Bernard NA
## 1443	i	A	M	Boomer	Gene NA
## 1444	i	A	M	Boomer	Herbert NA
## 1445	i	A	M	Boomer	Ray NA
## 1446	i	A	M	Boomer	Tom NA
## 1447	i	A	M	Boomer	Lee NA
## 1448	i	A	M	Boomer	Alfred NA
## 1449	i	A	M	Boomer	Leroy NA
## 1450	i	A	M	Boomer	Eddie NA
## 1451	i	A	M	GenX	Marc NA
## 1452	i	A	M	GenX	Jamie NA
## 1453	i	A	M	GenX	Greg NA
## 1454	i	A	M	GenX	Darryl NA
## 1455	i	A	M	GenX	Tim NA
## 1456	i	A	M	GenX	Dean NA
## 1457	i	A	M	GenX	Jon NA
## 1458	i	A	M	GenX	Chris NA
## 1459	i	A	M	GenX	Troy NA
## 1460	i	A	M	GenX	Jeff NA
## 1461	i	A	M	Millenial	Zachary NA
## 1462	i	A	M	Millenial	Dylan NA
## 1463	i	A	M	Millenial	Christian NA
## 1464	i	A	M	Millenial	Wesley NA
## 1465	i	A	M	Millenial	Seth NA
## 1466	i	A	M	Millenial	Austin NA
## 1467	i	A	M	Millenial	Gabriel NA
## 1468	i	A	M	Millenial	Evan NA
## 1469	i	A	M	Millenial	Casey NA
## 1470	i	A	M	Millenial	Luis NA
## 1471	i	A	F	Boomer	Gloria NA
## 1472	i	A	F	Boomer	Joan NA
## 1473	i	A	F	Boomer	Dorothy NA
## 1474	i	A	F	Boomer	Shirley NA
## 1475	i	A	F	Boomer	Betty NA
## 1476	i	A	F	Boomer	Dianne NA
## 1477	i	A	F	Boomer	Kay NA
## 1478	i	A	F	Boomer	Marjorie NA
## 1479	i	A	F	Boomer	Lorraine NA
## 1480	i	A	F	Boomer	Mildred NA
## 1481	i	A	F	GenX	Tracy NA
## 1482	i	A	F	GenX	Dawn NA
## 1483	i	A	F	GenX	Tina NA

## 1484	i	A	F	GenX	Tammy NA
## 1485	i	A	F	GenX	Melinda NA
## 1486	i	A	F	GenX	Tamara NA
## 1487	i	A	F	GenX	Tracey NA
## 1488	i	A	F	GenX	Colleen NA
## 1489	i	A	F	GenX	Sherri NA
## 1490	i	A	F	GenX	Heidi NA
## 1491	i	A	F	Millenial	Tracy NA
## 1492	i	A	F	Millenial	Dawn NA
## 1493	i	A	F	Millenial	Tina NA
## 1494	i	A	F	Millenial	Tammy NA
## 1495	i	A	F	Millenial	Melinda NA
## 1496	i	A	F	Millenial	Tamara NA
## 1497	i	A	F	Millenial	Tracey NA
## 1498	i	A	F	Millenial	Colleen NA
## 1499	i	A	F	Millenial	Sherri NA
## 1500	i	A	F	Millenial	Heidi NA
## 1501	i	B	M	Boomer	Theodore NA
## 1502	i	B	M	Boomer	Bernard NA
## 1503	i	B	M	Boomer	Gene NA
## 1504	i	B	M	Boomer	Herbert NA
## 1505	i	B	M	Boomer	Ray NA
## 1506	i	B	M	Boomer	Tom NA
## 1507	i	B	M	Boomer	Lee NA
## 1508	i	B	M	Boomer	Alfred NA
## 1509	i	B	M	Boomer	Leroy NA
## 1510	i	B	M	Boomer	Eddie NA
## 1511	i	B	M	GenX	Marc NA
## 1512	i	B	M	GenX	Jamie NA
## 1513	i	B	M	GenX	Greg NA
## 1514	i	B	M	GenX	Darryl NA
## 1515	i	B	M	GenX	Tim NA
## 1516	i	B	M	GenX	Dean NA
## 1517	i	B	M	GenX	Jon NA
## 1518	i	B	M	GenX	Chris NA
## 1519	i	B	M	GenX	Troy NA
## 1520	i	B	M	GenX	Jeff NA
## 1521	i	B	M	Millenial	Zachary NA
## 1522	i	B	M	Millenial	Dylan NA
## 1523	i	B	M	Millenial	Christian NA
## 1524	i	B	M	Millenial	Wesley NA
## 1525	i	B	M	Millenial	Seth NA
## 1526	i	B	M	Millenial	Austin NA
## 1527	i	B	M	Millenial	Gabriel NA
## 1528	i	B	M	Millenial	Evan NA
## 1529	i	B	M	Millenial	Casey NA
## 1530	i	B	M	Millenial	Luis NA
## 1531	i	B	F	Boomer	Gloria NA
## 1532	i	B	F	Boomer	Joan NA
## 1533	i	B	F	Boomer	Dorothy NA
## 1534	i	B	F	Boomer	Shirley NA
## 1535	i	B	F	Boomer	Betty NA
## 1536	i	B	F	Boomer	Dianne NA
## 1537	i	B	F	Boomer	Kay NA

## 1538	i	B	F	Boomer	Marjorie	NA
## 1539	i	B	F	Boomer	Lorraine	NA
## 1540	i	B	F	Boomer	Mildred	NA
## 1541	i	B	F	GenX	Tracy	NA
## 1542	i	B	F	GenX	Dawn	NA
## 1543	i	B	F	GenX	Tina	NA
## 1544	i	B	F	GenX	Tammy	NA
## 1545	i	B	F	GenX	Melinda	NA
## 1546	i	B	F	GenX	Tamara	NA
## 1547	i	B	F	GenX	Tracey	NA
## 1548	i	B	F	GenX	Colleen	NA
## 1549	i	B	F	GenX	Sherri	NA
## 1550	i	B	F	GenX	Heidi	NA
## 1551	i	B	F	Millennial	Tracy	NA
## 1552	i	B	F	Millennial	Dawn	NA
## 1553	i	B	F	Millennial	Tina	NA
## 1554	i	B	F	Millennial	Tammy	NA
## 1555	i	B	F	Millennial	Melinda	NA
## 1556	i	B	F	Millennial	Tamara	NA
## 1557	i	B	F	Millennial	Tracey	NA
## 1558	i	B	F	Millennial	Colleen	NA
## 1559	i	B	F	Millennial	Sherri	NA
## 1560	i	B	F	Millennial	Heidi	NA
## 1561	i	C	M	Boomer	Theodore	NA
## 1562	i	C	M	Boomer	Bernard	NA
## 1563	i	C	M	Boomer	Gene	NA
## 1564	i	C	M	Boomer	Herbert	NA
## 1565	i	C	M	Boomer	Ray	NA
## 1566	i	C	M	Boomer	Tom	NA
## 1567	i	C	M	Boomer	Lee	NA
## 1568	i	C	M	Boomer	Alfred	NA
## 1569	i	C	M	Boomer	Leroy	NA
## 1570	i	C	M	Boomer	Eddie	NA
## 1571	i	C	M	GenX	Marc	NA
## 1572	i	C	M	GenX	Jamie	NA
## 1573	i	C	M	GenX	Greg	NA
## 1574	i	C	M	GenX	Darryl	NA
## 1575	i	C	M	GenX	Tim	NA
## 1576	i	C	M	GenX	Dean	NA
## 1577	i	C	M	GenX	Jon	NA
## 1578	i	C	M	GenX	Chris	NA
## 1579	i	C	M	GenX	Troy	NA
## 1580	i	C	M	GenX	Jeff	NA
## 1581	i	C	M	Millennial	Zachary	NA
## 1582	i	C	M	Millennial	Dylan	NA
## 1583	i	C	M	Millennial	Christian	NA
## 1584	i	C	M	Millennial	Wesley	NA
## 1585	i	C	M	Millennial	Seth	NA
## 1586	i	C	M	Millennial	Austin	NA
## 1587	i	C	M	Millennial	Gabriel	NA
## 1588	i	C	M	Millennial	Evan	NA
## 1589	i	C	M	Millennial	Casey	NA
## 1590	i	C	M	Millennial	Luis	NA
## 1591	i	C	F	Boomer	Gloria	NA

## 1592	i	C	F	Boomer	Joan NA
## 1593	i	C	F	Boomer	Dorothy NA
## 1594	i	C	F	Boomer	Shirley NA
## 1595	i	C	F	Boomer	Betty NA
## 1596	i	C	F	Boomer	Dianne NA
## 1597	i	C	F	Boomer	Kay NA
## 1598	i	C	F	Boomer	Marjorie NA
## 1599	i	C	F	Boomer	Lorraine NA
## 1600	i	C	F	Boomer	Mildred NA
## 1601	i	C	F	GenX	Tracy NA
## 1602	i	C	F	GenX	Dawn NA
## 1603	i	C	F	GenX	Tina NA
## 1604	i	C	F	GenX	Tammy NA
## 1605	i	C	F	GenX	Melinda NA
## 1606	i	C	F	GenX	Tamara NA
## 1607	i	C	F	GenX	Tracey NA
## 1608	i	C	F	GenX	Colleen NA
## 1609	i	C	F	GenX	Sherri NA
## 1610	i	C	F	GenX	Heidi NA
## 1611	i	C	F	Millenial	Tracy NA
## 1612	i	C	F	Millenial	Dawn NA
## 1613	i	C	F	Millenial	Tina NA
## 1614	i	C	F	Millenial	Tammy NA
## 1615	i	C	F	Millenial	Melinda NA
## 1616	i	C	F	Millenial	Tamara NA
## 1617	i	C	F	Millenial	Tracey NA
## 1618	i	C	F	Millenial	Colleen NA
## 1619	i	C	F	Millenial	Sherri NA
## 1620	i	C	F	Millenial	Heidi NA
## 1621	j	A	M	Boomer	Theodore NA
## 1622	j	A	M	Boomer	Bernard NA
## 1623	j	A	M	Boomer	Gene NA
## 1624	j	A	M	Boomer	Herbert NA
## 1625	j	A	M	Boomer	Ray NA
## 1626	j	A	M	Boomer	Tom NA
## 1627	j	A	M	Boomer	Lee NA
## 1628	j	A	M	Boomer	Alfred NA
## 1629	j	A	M	Boomer	Leroy NA
## 1630	j	A	M	Boomer	Eddie NA
## 1631	j	A	M	GenX	Marc NA
## 1632	j	A	M	GenX	Jamie NA
## 1633	j	A	M	GenX	Greg NA
## 1634	j	A	M	GenX	Darryl NA
## 1635	j	A	M	GenX	Tim NA
## 1636	j	A	M	GenX	Dean NA
## 1637	j	A	M	GenX	Jon NA
## 1638	j	A	M	GenX	Chris NA
## 1639	j	A	M	GenX	Troy NA
## 1640	j	A	M	GenX	Jeff NA
## 1641	j	A	M	Millenial	Zachary NA
## 1642	j	A	M	Millenial	Dylan NA
## 1643	j	A	M	Millenial	Christian NA
## 1644	j	A	M	Millenial	Wesley NA
## 1645	j	A	M	Millenial	Seth NA

## 1646	j	A	M	Millenial	Austin NA
## 1647	j	A	M	Millenial	Gabriel NA
## 1648	j	A	M	Millenial	Evan NA
## 1649	j	A	M	Millenial	Casey NA
## 1650	j	A	M	Millenial	Luis NA
## 1651	j	A	F	Boomer	Gloria NA
## 1652	j	A	F	Boomer	Joan NA
## 1653	j	A	F	Boomer	Dorothy NA
## 1654	j	A	F	Boomer	Shirley NA
## 1655	j	A	F	Boomer	Betty NA
## 1656	j	A	F	Boomer	Dianne NA
## 1657	j	A	F	Boomer	Kay NA
## 1658	j	A	F	Boomer	Marjorie NA
## 1659	j	A	F	Boomer	Lorraine NA
## 1660	j	A	F	Boomer	Mildred NA
## 1661	j	A	F	GenX	Tracy NA
## 1662	j	A	F	GenX	Dawn NA
## 1663	j	A	F	GenX	Tina NA
## 1664	j	A	F	GenX	Tammy NA
## 1665	j	A	F	GenX	Melinda NA
## 1666	j	A	F	GenX	Tamara NA
## 1667	j	A	F	GenX	Tracey NA
## 1668	j	A	F	GenX	Colleen NA
## 1669	j	A	F	GenX	Sherri NA
## 1670	j	A	F	GenX	Heidi NA
## 1671	j	A	F	Millenial	Tracy NA
## 1672	j	A	F	Millenial	Dawn NA
## 1673	j	A	F	Millenial	Tina NA
## 1674	j	A	F	Millenial	Tammy NA
## 1675	j	A	F	Millenial	Melinda NA
## 1676	j	A	F	Millenial	Tamara NA
## 1677	j	A	F	Millenial	Tracey NA
## 1678	j	A	F	Millenial	Colleen NA
## 1679	j	A	F	Millenial	Sherri NA
## 1680	j	A	F	Millenial	Heidi NA
## 1681	j	B	M	Boomer	Theodore NA
## 1682	j	B	M	Boomer	Bernard NA
## 1683	j	B	M	Boomer	Gene NA
## 1684	j	B	M	Boomer	Herbert NA
## 1685	j	B	M	Boomer	Ray NA
## 1686	j	B	M	Boomer	Tom NA
## 1687	j	B	M	Boomer	Lee NA
## 1688	j	B	M	Boomer	Alfred NA
## 1689	j	B	M	Boomer	Leroy NA
## 1690	j	B	M	Boomer	Eddie NA
## 1691	j	B	M	GenX	Marc NA
## 1692	j	B	M	GenX	Jamie NA
## 1693	j	B	M	GenX	Greg NA
## 1694	j	B	M	GenX	Darryl NA
## 1695	j	B	M	GenX	Tim NA
## 1696	j	B	M	GenX	Dean NA
## 1697	j	B	M	GenX	Jon NA
## 1698	j	B	M	GenX	Chris NA
## 1699	j	B	M	GenX	Troy NA

## 1700	j	B	M	GenX	Jeff NA
## 1701	j	B	M	Millenial	Zachary NA
## 1702	j	B	M	Millenial	Dylan NA
## 1703	j	B	M	Millenial	Christian NA
## 1704	j	B	M	Millenial	Wesley NA
## 1705	j	B	M	Millenial	Seth NA
## 1706	j	B	M	Millenial	Austin NA
## 1707	j	B	M	Millenial	Gabriel NA
## 1708	j	B	M	Millenial	Evan NA
## 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 NA
## 1723	j	B	F	GenX	Tina NA
## 1724	j	B	F	GenX	Tammy NA
## 1725	j	B	F	GenX	Melinda NA
## 1726	j	B	F	GenX	Tamara NA
## 1727	j	B	F	GenX	Tracey NA
## 1728	j	B	F	GenX	Colleen NA
## 1729	j	B	F	GenX	Sherri NA
## 1730	j	B	F	GenX	Heidi NA
## 1731	j	B	F	Millenial	Tracy NA
## 1732	j	B	F	Millenial	Dawn NA
## 1733	j	B	F	Millenial	Tina NA
## 1734	j	B	F	Millenial	Tammy NA
## 1735	j	B	F	Millenial	Melinda NA
## 1736	j	B	F	Millenial	Tamara NA
## 1737	j	B	F	Millenial	Tracey NA
## 1738	j	B	F	Millenial	Colleen NA
## 1739	j	B	F	Millenial	Sherri NA
## 1740	j	B	F	Millenial	Heidi NA
## 1741	j	C	M	Boomer	Theodore NA
## 1742	j	C	M	Boomer	Bernard NA
## 1743	j	C	M	Boomer	Gene NA
## 1744	j	C	M	Boomer	Herbert NA
## 1745	j	C	M	Boomer	Ray NA
## 1746	j	C	M	Boomer	Tom NA
## 1747	j	C	M	Boomer	Lee NA
## 1748	j	C	M	Boomer	Alfred NA
## 1749	j	C	M	Boomer	Leroy NA
## 1750	j	C	M	Boomer	Eddie NA
## 1751	j	C	M	GenX	Marc NA
## 1752	j	C	M	GenX	Jamie NA
## 1753	j	C	M	GenX	Greg NA

## 1754	j	C	M	GenX	Darryl NA
## 1755	j	C	M	GenX	Tim NA
## 1756	j	C	M	GenX	Dean NA
## 1757	j	C	M	GenX	Jon NA
## 1758	j	C	M	GenX	Chris NA
## 1759	j	C	M	GenX	Troy NA
## 1760	j	C	M	GenX	Jeff NA
## 1761	j	C	M	Millenial	Zachary NA
## 1762	j	C	M	Millenial	Dylan NA
## 1763	j	C	M	Millenial	Christian NA
## 1764	j	C	M	Millenial	Wesley NA
## 1765	j	C	M	Millenial	Seth NA
## 1766	j	C	M	Millenial	Austin NA
## 1767	j	C	M	Millenial	Gabriel NA
## 1768	j	C	M	Millenial	Evan NA
## 1769	j	C	M	Millenial	Casey NA
## 1770	j	C	M	Millenial	Luis NA
## 1771	j	C	F	Boomer	Gloria NA
## 1772	j	C	F	Boomer	Joan NA
## 1773	j	C	F	Boomer	Dorothy NA
## 1774	j	C	F	Boomer	Shirley NA
## 1775	j	C	F	Boomer	Betty NA
## 1776	j	C	F	Boomer	Dianne NA
## 1777	j	C	F	Boomer	Kay NA
## 1778	j	C	F	Boomer	Marjorie NA
## 1779	j	C	F	Boomer	Lorraine NA
## 1780	j	C	F	Boomer	Mildred NA
## 1781	j	C	F	GenX	Tracy NA
## 1782	j	C	F	GenX	Dawn NA
## 1783	j	C	F	GenX	Tina NA
## 1784	j	C	F	GenX	Tammy NA
## 1785	j	C	F	GenX	Melinda NA
## 1786	j	C	F	GenX	Tamara NA
## 1787	j	C	F	GenX	Tracey NA
## 1788	j	C	F	GenX	Colleen NA
## 1789	j	C	F	GenX	Sherri NA
## 1790	j	C	F	GenX	Heidi NA
## 1791	j	C	F	Millenial	Tracy NA
## 1792	j	C	F	Millenial	Dawn NA
## 1793	j	C	F	Millenial	Tina NA
## 1794	j	C	F	Millenial	Tammy NA
## 1795	j	C	F	Millenial	Melinda NA
## 1796	j	C	F	Millenial	Tamara NA
## 1797	j	C	F	Millenial	Tracey NA
## 1798	j	C	F	Millenial	Colleen NA
## 1799	j	C	F	Millenial	Sherri NA
## 1800	j	C	F	Millenial	Heidi NA
## 1801	k	A	M	Boomer	Theodore NA
## 1802	k	A	M	Boomer	Bernard NA
## 1803	k	A	M	Boomer	Gene NA
## 1804	k	A	M	Boomer	Herbert NA
## 1805	k	A	M	Boomer	Ray NA
## 1806	k	A	M	Boomer	Tom NA
## 1807	k	A	M	Boomer	Lee NA

## 1808	k	A	M	Boomer	Alfred NA
## 1809	k	A	M	Boomer	Leroy NA
## 1810	k	A	M	Boomer	Eddie NA
## 1811	k	A	M	GenX	Marc NA
## 1812	k	A	M	GenX	Jamie NA
## 1813	k	A	M	GenX	Greg NA
## 1814	k	A	M	GenX	Darryl NA
## 1815	k	A	M	GenX	Tim NA
## 1816	k	A	M	GenX	Dean NA
## 1817	k	A	M	GenX	Jon NA
## 1818	k	A	M	GenX	Chris NA
## 1819	k	A	M	GenX	Troy NA
## 1820	k	A	M	GenX	Jeff NA
## 1821	k	A	M	Millenial	Zachary NA
## 1822	k	A	M	Millenial	Dylan NA
## 1823	k	A	M	Millenial	Christian NA
## 1824	k	A	M	Millenial	Wesley NA
## 1825	k	A	M	Millenial	Seth NA
## 1826	k	A	M	Millenial	Austin NA
## 1827	k	A	M	Millenial	Gabriel NA
## 1828	k	A	M	Millenial	Evan NA
## 1829	k	A	M	Millenial	Casey NA
## 1830	k	A	M	Millenial	Luis NA
## 1831	k	A	F	Boomer	Gloria NA
## 1832	k	A	F	Boomer	Joan NA
## 1833	k	A	F	Boomer	Dorothy NA
## 1834	k	A	F	Boomer	Shirley NA
## 1835	k	A	F	Boomer	Betty NA
## 1836	k	A	F	Boomer	Dianne NA
## 1837	k	A	F	Boomer	Kay NA
## 1838	k	A	F	Boomer	Marjorie NA
## 1839	k	A	F	Boomer	Lorraine NA
## 1840	k	A	F	Boomer	Mildred NA
## 1841	k	A	F	GenX	Tracy NA
## 1842	k	A	F	GenX	Dawn NA
## 1843	k	A	F	GenX	Tina NA
## 1844	k	A	F	GenX	Tammy NA
## 1845	k	A	F	GenX	Melinda NA
## 1846	k	A	F	GenX	Tamara NA
## 1847	k	A	F	GenX	Tracey NA
## 1848	k	A	F	GenX	Colleen NA
## 1849	k	A	F	GenX	Sherri NA
## 1850	k	A	F	GenX	Heidi NA
## 1851	k	A	F	Millenial	Tracy NA
## 1852	k	A	F	Millenial	Dawn NA
## 1853	k	A	F	Millenial	Tina NA
## 1854	k	A	F	Millenial	Tammy NA
## 1855	k	A	F	Millenial	Melinda NA
## 1856	k	A	F	Millenial	Tamara NA
## 1857	k	A	F	Millenial	Tracey NA
## 1858	k	A	F	Millenial	Colleen NA
## 1859	k	A	F	Millenial	Sherri NA
## 1860	k	A	F	Millenial	Heidi NA
## 1861	k	B	M	Boomer	Theodore NA

## 1862	k	B	M	Boomer	Bernard NA
## 1863	k	B	M	Boomer	Gene NA
## 1864	k	B	M	Boomer	Herbert NA
## 1865	k	B	M	Boomer	Ray NA
## 1866	k	B	M	Boomer	Tom NA
## 1867	k	B	M	Boomer	Lee NA
## 1868	k	B	M	Boomer	Alfred NA
## 1869	k	B	M	Boomer	Leroy NA
## 1870	k	B	M	Boomer	Eddie NA
## 1871	k	B	M	GenX	Marc NA
## 1872	k	B	M	GenX	Jamie NA
## 1873	k	B	M	GenX	Greg NA
## 1874	k	B	M	GenX	Darryl NA
## 1875	k	B	M	GenX	Tim NA
## 1876	k	B	M	GenX	Dean NA
## 1877	k	B	M	GenX	Jon NA
## 1878	k	B	M	GenX	Chris NA
## 1879	k	B	M	GenX	Troy NA
## 1880	k	B	M	GenX	Jeff NA
## 1881	k	B	M	Millenial	Zachary NA
## 1882	k	B	M	Millenial	Dylan NA
## 1883	k	B	M	Millenial	Christian NA
## 1884	k	B	M	Millenial	Wesley NA
## 1885	k	B	M	Millenial	Seth NA
## 1886	k	B	M	Millenial	Austin NA
## 1887	k	B	M	Millenial	Gabriel NA
## 1888	k	B	M	Millenial	Evan NA
## 1889	k	B	M	Millenial	Casey NA
## 1890	k	B	M	Millenial	Luis NA
## 1891	k	B	F	Boomer	Gloria NA
## 1892	k	B	F	Boomer	Joan NA
## 1893	k	B	F	Boomer	Dorothy NA
## 1894	k	B	F	Boomer	Shirley NA
## 1895	k	B	F	Boomer	Betty NA
## 1896	k	B	F	Boomer	Dianne NA
## 1897	k	B	F	Boomer	Kay NA
## 1898	k	B	F	Boomer	Marjorie NA
## 1899	k	B	F	Boomer	Lorraine NA
## 1900	k	B	F	Boomer	Mildred NA
## 1901	k	B	F	GenX	Tracy NA
## 1902	k	B	F	GenX	Dawn NA
## 1903	k	B	F	GenX	Tina NA
## 1904	k	B	F	GenX	Tammy NA
## 1905	k	B	F	GenX	Melinda NA
## 1906	k	B	F	GenX	Tamara NA
## 1907	k	B	F	GenX	Tracey NA
## 1908	k	B	F	GenX	Colleen NA
## 1909	k	B	F	GenX	Sherri NA
## 1910	k	B	F	GenX	Heidi NA
## 1911	k	B	F	Millenial	Tracy NA
## 1912	k	B	F	Millenial	Dawn NA
## 1913	k	B	F	Millenial	Tina NA
## 1914	k	B	F	Millenial	Tammy NA
## 1915	k	B	F	Millenial	Melinda NA

## 1916	k	B	F	Millenial	Tamara NA
## 1917	k	B	F	Millenial	Tracey NA
## 1918	k	B	F	Millenial	Colleen NA
## 1919	k	B	F	Millenial	Sherri NA
## 1920	k	B	F	Millenial	Heidi NA
## 1921	k	C	M	Boomer	Theodore NA
## 1922	k	C	M	Boomer	Bernard NA
## 1923	k	C	M	Boomer	Gene NA
## 1924	k	C	M	Boomer	Herbert NA
## 1925	k	C	M	Boomer	Ray NA
## 1926	k	C	M	Boomer	Tom NA
## 1927	k	C	M	Boomer	Lee NA
## 1928	k	C	M	Boomer	Alfred NA
## 1929	k	C	M	Boomer	Leroy NA
## 1930	k	C	M	Boomer	Eddie NA
## 1931	k	C	M	GenX	Marc NA
## 1932	k	C	M	GenX	Jamie NA
## 1933	k	C	M	GenX	Greg NA
## 1934	k	C	M	GenX	Darryl NA
## 1935	k	C	M	GenX	Tim NA
## 1936	k	C	M	GenX	Dean NA
## 1937	k	C	M	GenX	Jon NA
## 1938	k	C	M	GenX	Chris NA
## 1939	k	C	M	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	Christian NA
## 1944	k	C	M	Millenial	Wesley NA
## 1945	k	C	M	Millenial	Seth NA
## 1946	k	C	M	Millenial	Austin NA
## 1947	k	C	M	Millenial	Gabriel NA
## 1948	k	C	M	Millenial	Evan NA
## 1949	k	C	M	Millenial	Casey NA
## 1950	k	C	M	Millenial	Luis NA
## 1951	k	C	F	Boomer	Gloria NA
## 1952	k	C	F	Boomer	Joan NA
## 1953	k	C	F	Boomer	Dorothy NA
## 1954	k	C	F	Boomer	Shirley NA
## 1955	k	C	F	Boomer	Betty NA
## 1956	k	C	F	Boomer	Dianne NA
## 1957	k	C	F	Boomer	Kay NA
## 1958	k	C	F	Boomer	Marjorie NA
## 1959	k	C	F	Boomer	Lorraine NA
## 1960	k	C	F	Boomer	Mildred NA
## 1961	k	C	F	GenX	Tracy NA
## 1962	k	C	F	GenX	Dawn NA
## 1963	k	C	F	GenX	Tina NA
## 1964	k	C	F	GenX	Tammy NA
## 1965	k	C	F	GenX	Melinda NA
## 1966	k	C	F	GenX	Tamara NA
## 1967	k	C	F	GenX	Tracey NA
## 1968	k	C	F	GenX	Colleen NA
## 1969	k	C	F	GenX	Sherri NA

## 1970	k	C	F	GenX	Heidi NA
## 1971	k	C	F	Millenial	Tracy NA
## 1972	k	C	F	Millenial	Dawn NA
## 1973	k	C	F	Millenial	Tina NA
## 1974	k	C	F	Millenial	Tammy NA
## 1975	k	C	F	Millenial	Melinda NA
## 1976	k	C	F	Millenial	Tamara NA
## 1977	k	C	F	Millenial	Tracey NA
## 1978	k	C	F	Millenial	Colleen NA
## 1979	k	C	F	Millenial	Sherri NA
## 1980	k	C	F	Millenial	Heidi NA
## 1981	l	A	M	Boomer	Theodore NA
## 1982	l	A	M	Boomer	Bernard NA
## 1983	l	A	M	Boomer	Gene NA
## 1984	l	A	M	Boomer	Herbert NA
## 1985	l	A	M	Boomer	Ray NA
## 1986	l	A	M	Boomer	Tom NA
## 1987	l	A	M	Boomer	Lee NA
## 1988	l	A	M	Boomer	Alfred NA
## 1989	l	A	M	Boomer	Leroy NA
## 1990	l	A	M	Boomer	Eddie NA
## 1991	l	A	M	GenX	Marc NA
## 1992	l	A	M	GenX	Jamie NA
## 1993	l	A	M	GenX	Greg NA
## 1994	l	A	M	GenX	Darryl NA
## 1995	l	A	M	GenX	Tim NA
## 1996	l	A	M	GenX	Dean NA
## 1997	l	A	M	GenX	Jon NA
## 1998	l	A	M	GenX	Chris NA
## 1999	l	A	M	GenX	Troy NA
## 2000	l	A	M	GenX	Jeff NA
## 2001	l	A	M	Millenial	Zachary NA
## 2002	l	A	M	Millenial	Dylan NA
## 2003	l	A	M	Millenial	Christian NA
## 2004	l	A	M	Millenial	Wesley NA
## 2005	l	A	M	Millenial	Seth NA
## 2006	l	A	M	Millenial	Austin NA
## 2007	l	A	M	Millenial	Gabriel NA
## 2008	l	A	M	Millenial	Evan NA
## 2009	l	A	M	Millenial	Casey NA
## 2010	l	A	M	Millenial	Luis NA
## 2011	l	A	F	Boomer	Gloria NA
## 2012	l	A	F	Boomer	Joan NA
## 2013	l	A	F	Boomer	Dorothy NA
## 2014	l	A	F	Boomer	Shirley NA
## 2015	l	A	F	Boomer	Betty NA
## 2016	l	A	F	Boomer	Dianne NA
## 2017	l	A	F	Boomer	Kay NA
## 2018	l	A	F	Boomer	Marjorie NA
## 2019	l	A	F	Boomer	Lorraine NA
## 2020	l	A	F	Boomer	Mildred NA
## 2021	l	A	F	GenX	Tracy NA
## 2022	l	A	F	GenX	Dawn NA
## 2023	l	A	F	GenX	Tina NA

## 2024	1	A	F	GenX	Tammy NA
## 2025	1	A	F	GenX	Melinda NA
## 2026	1	A	F	GenX	Tamara NA
## 2027	1	A	F	GenX	Tracey NA
## 2028	1	A	F	GenX	Colleen NA
## 2029	1	A	F	GenX	Sherri NA
## 2030	1	A	F	GenX	Heidi NA
## 2031	1	A	F	Millenial	Tracy NA
## 2032	1	A	F	Millenial	Dawn NA
## 2033	1	A	F	Millenial	Tina NA
## 2034	1	A	F	Millenial	Tammy NA
## 2035	1	A	F	Millenial	Melinda NA
## 2036	1	A	F	Millenial	Tamara NA
## 2037	1	A	F	Millenial	Tracey NA
## 2038	1	A	F	Millenial	Colleen NA
## 2039	1	A	F	Millenial	Sherri NA
## 2040	1	A	F	Millenial	Heidi NA
## 2041	1	B	M	Boomer	Theodore NA
## 2042	1	B	M	Boomer	Bernard NA
## 2043	1	B	M	Boomer	Gene NA
## 2044	1	B	M	Boomer	Herbert NA
## 2045	1	B	M	Boomer	Ray NA
## 2046	1	B	M	Boomer	Tom NA
## 2047	1	B	M	Boomer	Lee NA
## 2048	1	B	M	Boomer	Alfred NA
## 2049	1	B	M	Boomer	Leroy NA
## 2050	1	B	M	Boomer	Eddie NA
## 2051	1	B	M	GenX	Marc NA
## 2052	1	B	M	GenX	Jamie NA
## 2053	1	B	M	GenX	Greg NA
## 2054	1	B	M	GenX	Darryl NA
## 2055	1	B	M	GenX	Tim NA
## 2056	1	B	M	GenX	Dean NA
## 2057	1	B	M	GenX	Jon NA
## 2058	1	B	M	GenX	Chris NA
## 2059	1	B	M	GenX	Troy NA
## 2060	1	B	M	GenX	Jeff NA
## 2061	1	B	M	Millenial	Zachary NA
## 2062	1	B	M	Millenial	Dylan NA
## 2063	1	B	M	Millenial	Christian NA
## 2064	1	B	M	Millenial	Wesley NA
## 2065	1	B	M	Millenial	Seth NA
## 2066	1	B	M	Millenial	Austin NA
## 2067	1	B	M	Millenial	Gabriel NA
## 2068	1	B	M	Millenial	Evan NA
## 2069	1	B	M	Millenial	Casey NA
## 2070	1	B	M	Millenial	Luis NA
## 2071	1	B	F	Boomer	Gloria NA
## 2072	1	B	F	Boomer	Joan NA
## 2073	1	B	F	Boomer	Dorothy NA
## 2074	1	B	F	Boomer	Shirley NA
## 2075	1	B	F	Boomer	Betty NA
## 2076	1	B	F	Boomer	Dianne NA
## 2077	1	B	F	Boomer	Kay NA

## 2078	1	B	F	Boomer	Marjorie	NA
## 2079	1	B	F	Boomer	Lorraine	NA
## 2080	1	B	F	Boomer	Mildred	NA
## 2081	1	B	F	GenX	Tracy	NA
## 2082	1	B	F	GenX	Dawn	NA
## 2083	1	B	F	GenX	Tina	NA
## 2084	1	B	F	GenX	Tammy	NA
## 2085	1	B	F	GenX	Melinda	NA
## 2086	1	B	F	GenX	Tamara	NA
## 2087	1	B	F	GenX	Tracey	NA
## 2088	1	B	F	GenX	Colleen	NA
## 2089	1	B	F	GenX	Sherri	NA
## 2090	1	B	F	GenX	Heidi	NA
## 2091	1	B	F	Millennial	Tracy	NA
## 2092	1	B	F	Millennial	Dawn	NA
## 2093	1	B	F	Millennial	Tina	NA
## 2094	1	B	F	Millennial	Tammy	NA
## 2095	1	B	F	Millennial	Melinda	NA
## 2096	1	B	F	Millennial	Tamara	NA
## 2097	1	B	F	Millennial	Tracey	NA
## 2098	1	B	F	Millennial	Colleen	NA
## 2099	1	B	F	Millennial	Sherri	NA
## 2100	1	B	F	Millennial	Heidi	NA
## 2101	1	C	M	Boomer	Theodore	NA
## 2102	1	C	M	Boomer	Bernard	NA
## 2103	1	C	M	Boomer	Gene	NA
## 2104	1	C	M	Boomer	Herbert	NA
## 2105	1	C	M	Boomer	Ray	NA
## 2106	1	C	M	Boomer	Tom	NA
## 2107	1	C	M	Boomer	Lee	NA
## 2108	1	C	M	Boomer	Alfred	NA
## 2109	1	C	M	Boomer	Leroy	NA
## 2110	1	C	M	Boomer	Eddie	NA
## 2111	1	C	M	GenX	Marc	NA
## 2112	1	C	M	GenX	Jamie	NA
## 2113	1	C	M	GenX	Greg	NA
## 2114	1	C	M	GenX	Darryl	NA
## 2115	1	C	M	GenX	Tim	NA
## 2116	1	C	M	GenX	Dean	NA
## 2117	1	C	M	GenX	Jon	NA
## 2118	1	C	M	GenX	Chris	NA
## 2119	1	C	M	GenX	Troy	NA
## 2120	1	C	M	GenX	Jeff	NA
## 2121	1	C	M	Millennial	Zachary	NA
## 2122	1	C	M	Millennial	Dylan	NA
## 2123	1	C	M	Millennial	Christian	NA
## 2124	1	C	M	Millennial	Wesley	NA
## 2125	1	C	M	Millennial	Seth	NA
## 2126	1	C	M	Millennial	Austin	NA
## 2127	1	C	M	Millennial	Gabriel	NA
## 2128	1	C	M	Millennial	Evan	NA
## 2129	1	C	M	Millennial	Casey	NA
## 2130	1	C	M	Millennial	Luis	NA
## 2131	1	C	F	Boomer	Gloria	NA

## 2132	l	C	F	Boomer	Joan NA
## 2133	l	C	F	Boomer	Dorothy NA
## 2134	l	C	F	Boomer	Shirley NA
## 2135	l	C	F	Boomer	Betty NA
## 2136	l	C	F	Boomer	Dianne NA
## 2137	l	C	F	Boomer	Kay NA
## 2138	l	C	F	Boomer	Marjorie NA
## 2139	l	C	F	Boomer	Lorraine NA
## 2140	l	C	F	Boomer	Mildred NA
## 2141	l	C	F	GenX	Tracy NA
## 2142	l	C	F	GenX	Dawn NA
## 2143	l	C	F	GenX	Tina NA
## 2144	l	C	F	GenX	Tammy NA
## 2145	l	C	F	GenX	Melinda NA
## 2146	l	C	F	GenX	Tamara NA
## 2147	l	C	F	GenX	Tracey NA
## 2148	l	C	F	GenX	Colleen NA
## 2149	l	C	F	GenX	Sherri NA
## 2150	l	C	F	GenX	Heidi NA
## 2151	l	C	F	Millenial	Tracy NA
## 2152	l	C	F	Millenial	Dawn NA
## 2153	l	C	F	Millenial	Tina NA
## 2154	l	C	F	Millenial	Tammy NA
## 2155	l	C	F	Millenial	Melinda NA
## 2156	l	C	F	Millenial	Tamara NA
## 2157	l	C	F	Millenial	Tracey NA
## 2158	l	C	F	Millenial	Colleen NA
## 2159	l	C	F	Millenial	Sherri NA
## 2160	l	C	F	Millenial	Heidi NA
## 2161	m	A	M	Boomer	Theodore NA
## 2162	m	A	M	Boomer	Bernard NA
## 2163	m	A	M	Boomer	Gene NA
## 2164	m	A	M	Boomer	Herbert NA
## 2165	m	A	M	Boomer	Ray NA
## 2166	m	A	M	Boomer	Tom NA
## 2167	m	A	M	Boomer	Lee NA
## 2168	m	A	M	Boomer	Alfred NA
## 2169	m	A	M	Boomer	Leroy NA
## 2170	m	A	M	Boomer	Eddie NA
## 2171	m	A	M	GenX	Marc NA
## 2172	m	A	M	GenX	Jamie NA
## 2173	m	A	M	GenX	Greg NA
## 2174	m	A	M	GenX	Darryl NA
## 2175	m	A	M	GenX	Tim NA
## 2176	m	A	M	GenX	Dean NA
## 2177	m	A	M	GenX	Jon NA
## 2178	m	A	M	GenX	Chris NA
## 2179	m	A	M	GenX	Troy NA
## 2180	m	A	M	GenX	Jeff NA
## 2181	m	A	M	Millenial	Zachary NA
## 2182	m	A	M	Millenial	Dylan NA
## 2183	m	A	M	Millenial	Christian NA
## 2184	m	A	M	Millenial	Wesley NA
## 2185	m	A	M	Millenial	Seth NA

## 2186	m	A	M	Millenial	Austin	NA
## 2187	m	A	M	Millenial	Gabriel	NA
## 2188	m	A	M	Millenial	Evan	NA
## 2189	m	A	M	Millenial	Casey	NA
## 2190	m	A	M	Millenial	Luis	NA
## 2191	m	A	F	Boomer	Gloria	NA
## 2192	m	A	F	Boomer	Joan	NA
## 2193	m	A	F	Boomer	Dorothy	NA
## 2194	m	A	F	Boomer	Shirley	NA
## 2195	m	A	F	Boomer	Betty	NA
## 2196	m	A	F	Boomer	Dianne	NA
## 2197	m	A	F	Boomer	Kay	NA
## 2198	m	A	F	Boomer	Marjorie	NA
## 2199	m	A	F	Boomer	Lorraine	NA
## 2200	m	A	F	Boomer	Mildred	NA
## 2201	m	A	F	GenX	Tracy	NA
## 2202	m	A	F	GenX	Dawn	NA
## 2203	m	A	F	GenX	Tina	NA
## 2204	m	A	F	GenX	Tammy	NA
## 2205	m	A	F	GenX	Melinda	NA
## 2206	m	A	F	GenX	Tamara	NA
## 2207	m	A	F	GenX	Tracey	NA
## 2208	m	A	F	GenX	Colleen	NA
## 2209	m	A	F	GenX	Sherri	NA
## 2210	m	A	F	GenX	Heidi	NA
## 2211	m	A	F	Millenial	Tracy	NA
## 2212	m	A	F	Millenial	Dawn	NA
## 2213	m	A	F	Millenial	Tina	NA
## 2214	m	A	F	Millenial	Tammy	NA
## 2215	m	A	F	Millenial	Melinda	NA
## 2216	m	A	F	Millenial	Tamara	NA
## 2217	m	A	F	Millenial	Tracey	NA
## 2218	m	A	F	Millenial	Colleen	NA
## 2219	m	A	F	Millenial	Sherri	NA
## 2220	m	A	F	Millenial	Heidi	NA
## 2221	m	B	M	Boomer	Theodore	NA
## 2222	m	B	M	Boomer	Bernard	NA
## 2223	m	B	M	Boomer	Gene	NA
## 2224	m	B	M	Boomer	Herbert	NA
## 2225	m	B	M	Boomer	Ray	NA
## 2226	m	B	M	Boomer	Tom	NA
## 2227	m	B	M	Boomer	Lee	NA
## 2228	m	B	M	Boomer	Alfred	NA
## 2229	m	B	M	Boomer	Leroy	NA
## 2230	m	B	M	Boomer	Eddie	NA
## 2231	m	B	M	GenX	Marc	NA
## 2232	m	B	M	GenX	Jamie	NA
## 2233	m	B	M	GenX	Greg	NA
## 2234	m	B	M	GenX	Darryl	NA
## 2235	m	B	M	GenX	Tim	NA
## 2236	m	B	M	GenX	Dean	NA
## 2237	m	B	M	GenX	Jon	NA
## 2238	m	B	M	GenX	Chris	NA
## 2239	m	B	M	GenX	Troy	NA

## 2240	m	B	M	GenX	Jeff	NA
## 2241	m	B	M	Millenial	Zachary	NA
## 2242	m	B	M	Millenial	Dylan	NA
## 2243	m	B	M	Millenial	Christian	NA
## 2244	m	B	M	Millenial	Wesley	NA
## 2245	m	B	M	Millenial	Seth	NA
## 2246	m	B	M	Millenial	Austin	NA
## 2247	m	B	M	Millenial	Gabriel	NA
## 2248	m	B	M	Millenial	Evan	NA
## 2249	m	B	M	Millenial	Casey	NA
## 2250	m	B	M	Millenial	Luis	NA
## 2251	m	B	F	Boomer	Gloria	NA
## 2252	m	B	F	Boomer	Joan	NA
## 2253	m	B	F	Boomer	Dorothy	NA
## 2254	m	B	F	Boomer	Shirley	NA
## 2255	m	B	F	Boomer	Betty	NA
## 2256	m	B	F	Boomer	Dianne	NA
## 2257	m	B	F	Boomer	Kay	NA
## 2258	m	B	F	Boomer	Marjorie	NA
## 2259	m	B	F	Boomer	Lorraine	NA
## 2260	m	B	F	Boomer	Mildred	NA
## 2261	m	B	F	GenX	Tracy	NA
## 2262	m	B	F	GenX	Dawn	NA
## 2263	m	B	F	GenX	Tina	NA
## 2264	m	B	F	GenX	Tammy	NA
## 2265	m	B	F	GenX	Melinda	NA
## 2266	m	B	F	GenX	Tamara	NA
## 2267	m	B	F	GenX	Tracey	NA
## 2268	m	B	F	GenX	Colleen	NA
## 2269	m	B	F	GenX	Sherri	NA
## 2270	m	B	F	GenX	Heidi	NA
## 2271	m	B	F	Millenial	Tracy	NA
## 2272	m	B	F	Millenial	Dawn	NA
## 2273	m	B	F	Millenial	Tina	NA
## 2274	m	B	F	Millenial	Tammy	NA
## 2275	m	B	F	Millenial	Melinda	NA
## 2276	m	B	F	Millenial	Tamara	NA
## 2277	m	B	F	Millenial	Tracey	NA
## 2278	m	B	F	Millenial	Colleen	NA
## 2279	m	B	F	Millenial	Sherri	NA
## 2280	m	B	F	Millenial	Heidi	NA
## 2281	m	C	M	Boomer	Theodore	NA
## 2282	m	C	M	Boomer	Bernard	NA
## 2283	m	C	M	Boomer	Gene	NA
## 2284	m	C	M	Boomer	Herbert	NA
## 2285	m	C	M	Boomer	Ray	NA
## 2286	m	C	M	Boomer	Tom	NA
## 2287	m	C	M	Boomer	Lee	NA
## 2288	m	C	M	Boomer	Alfred	NA
## 2289	m	C	M	Boomer	Leroy	NA
## 2290	m	C	M	Boomer	Eddie	NA
## 2291	m	C	M	GenX	Marc	NA
## 2292	m	C	M	GenX	Jamie	NA
## 2293	m	C	M	GenX	Greg	NA

## 2294	m	C	M	GenX	Darryl NA
## 2295	m	C	M	GenX	Tim NA
## 2296	m	C	M	GenX	Dean NA
## 2297	m	C	M	GenX	Jon NA
## 2298	m	C	M	GenX	Chris NA
## 2299	m	C	M	GenX	Troy NA
## 2300	m	C	M	GenX	Jeff NA
## 2301	m	C	M	Millenial	Zachary NA
## 2302	m	C	M	Millenial	Dylan NA
## 2303	m	C	M	Millenial	Christian NA
## 2304	m	C	M	Millenial	Wesley NA
## 2305	m	C	M	Millenial	Seth NA
## 2306	m	C	M	Millenial	Austin NA
## 2307	m	C	M	Millenial	Gabriel NA
## 2308	m	C	M	Millenial	Evan NA
## 2309	m	C	M	Millenial	Casey NA
## 2310	m	C	M	Millenial	Luis NA
## 2311	m	C	F	Boomer	Gloria NA
## 2312	m	C	F	Boomer	Joan NA
## 2313	m	C	F	Boomer	Dorothy NA
## 2314	m	C	F	Boomer	Shirley NA
## 2315	m	C	F	Boomer	Betty NA
## 2316	m	C	F	Boomer	Dianne NA
## 2317	m	C	F	Boomer	Kay NA
## 2318	m	C	F	Boomer	Marjorie NA
## 2319	m	C	F	Boomer	Lorraine NA
## 2320	m	C	F	Boomer	Mildred NA
## 2321	m	C	F	GenX	Tracy NA
## 2322	m	C	F	GenX	Dawn NA
## 2323	m	C	F	GenX	Tina NA
## 2324	m	C	F	GenX	Tammy NA
## 2325	m	C	F	GenX	Melinda NA
## 2326	m	C	F	GenX	Tamara NA
## 2327	m	C	F	GenX	Tracey NA
## 2328	m	C	F	GenX	Colleen NA
## 2329	m	C	F	GenX	Sherri NA
## 2330	m	C	F	GenX	Heidi NA
## 2331	m	C	F	Millenial	Tracy NA
## 2332	m	C	F	Millenial	Dawn NA
## 2333	m	C	F	Millenial	Tina NA
## 2334	m	C	F	Millenial	Tammy NA
## 2335	m	C	F	Millenial	Melinda NA
## 2336	m	C	F	Millenial	Tamara NA
## 2337	m	C	F	Millenial	Tracey NA
## 2338	m	C	F	Millenial	Colleen NA
## 2339	m	C	F	Millenial	Sherri NA
## 2340	m	C	F	Millenial	Heidi NA
## 2341	n	A	M	Boomer	Theodore NA
## 2342	n	A	M	Boomer	Bernard NA
## 2343	n	A	M	Boomer	Gene NA
## 2344	n	A	M	Boomer	Herbert NA
## 2345	n	A	M	Boomer	Ray NA
## 2346	n	A	M	Boomer	Tom NA
## 2347	n	A	M	Boomer	Lee NA

## 2348	n	A	M	Boomer	Alfred	NA
## 2349	n	A	M	Boomer	Leroy	NA
## 2350	n	A	M	Boomer	Eddie	NA
## 2351	n	A	M	GenX	Marc	NA
## 2352	n	A	M	GenX	Jamie	NA
## 2353	n	A	M	GenX	Greg	NA
## 2354	n	A	M	GenX	Darryl	NA
## 2355	n	A	M	GenX	Tim	NA
## 2356	n	A	M	GenX	Dean	NA
## 2357	n	A	M	GenX	Jon	NA
## 2358	n	A	M	GenX	Chris	NA
## 2359	n	A	M	GenX	Troy	NA
## 2360	n	A	M	GenX	Jeff	NA
## 2361	n	A	M	Millennial	Zachary	NA
## 2362	n	A	M	Millennial	Dylan	NA
## 2363	n	A	M	Millennial	Christian	NA
## 2364	n	A	M	Millennial	Wesley	NA
## 2365	n	A	M	Millennial	Seth	NA
## 2366	n	A	M	Millennial	Austin	NA
## 2367	n	A	M	Millennial	Gabriel	NA
## 2368	n	A	M	Millennial	Evan	NA
## 2369	n	A	M	Millennial	Casey	NA
## 2370	n	A	M	Millennial	Luis	NA
## 2371	n	A	F	Boomer	Gloria	NA
## 2372	n	A	F	Boomer	Joan	NA
## 2373	n	A	F	Boomer	Dorothy	NA
## 2374	n	A	F	Boomer	Shirley	NA
## 2375	n	A	F	Boomer	Betty	NA
## 2376	n	A	F	Boomer	Dianne	NA
## 2377	n	A	F	Boomer	Kay	NA
## 2378	n	A	F	Boomer	Marjorie	NA
## 2379	n	A	F	Boomer	Lorraine	NA
## 2380	n	A	F	Boomer	Mildred	NA
## 2381	n	A	F	GenX	Tracy	NA
## 2382	n	A	F	GenX	Dawn	NA
## 2383	n	A	F	GenX	Tina	NA
## 2384	n	A	F	GenX	Tammy	NA
## 2385	n	A	F	GenX	Melinda	NA
## 2386	n	A	F	GenX	Tamara	NA
## 2387	n	A	F	GenX	Tracey	NA
## 2388	n	A	F	GenX	Colleen	NA
## 2389	n	A	F	GenX	Sherri	NA
## 2390	n	A	F	GenX	Heidi	NA
## 2391	n	A	F	Millennial	Tracy	NA
## 2392	n	A	F	Millennial	Dawn	NA
## 2393	n	A	F	Millennial	Tina	NA
## 2394	n	A	F	Millennial	Tammy	NA
## 2395	n	A	F	Millennial	Melinda	NA
## 2396	n	A	F	Millennial	Tamara	NA
## 2397	n	A	F	Millennial	Tracey	NA
## 2398	n	A	F	Millennial	Colleen	NA
## 2399	n	A	F	Millennial	Sherri	NA
## 2400	n	A	F	Millennial	Heidi	NA
## 2401	n	B	M	Boomer	Theodore	NA

## 2402	n	B	M	Boomer	Bernard NA
## 2403	n	B	M	Boomer	Gene NA
## 2404	n	B	M	Boomer	Herbert NA
## 2405	n	B	M	Boomer	Ray NA
## 2406	n	B	M	Boomer	Tom NA
## 2407	n	B	M	Boomer	Lee NA
## 2408	n	B	M	Boomer	Alfred NA
## 2409	n	B	M	Boomer	Leroy NA
## 2410	n	B	M	Boomer	Eddie NA
## 2411	n	B	M	GenX	Marc NA
## 2412	n	B	M	GenX	Jamie NA
## 2413	n	B	M	GenX	Greg NA
## 2414	n	B	M	GenX	Darryl NA
## 2415	n	B	M	GenX	Tim NA
## 2416	n	B	M	GenX	Dean NA
## 2417	n	B	M	GenX	Jon NA
## 2418	n	B	M	GenX	Chris NA
## 2419	n	B	M	GenX	Troy NA
## 2420	n	B	M	GenX	Jeff NA
## 2421	n	B	M	Millenial	Zachary NA
## 2422	n	B	M	Millenial	Dylan NA
## 2423	n	B	M	Millenial	Christian NA
## 2424	n	B	M	Millenial	Wesley NA
## 2425	n	B	M	Millenial	Seth NA
## 2426	n	B	M	Millenial	Austin NA
## 2427	n	B	M	Millenial	Gabriel NA
## 2428	n	B	M	Millenial	Evan NA
## 2429	n	B	M	Millenial	Casey NA
## 2430	n	B	M	Millenial	Luis NA
## 2431	n	B	F	Boomer	Gloria NA
## 2432	n	B	F	Boomer	Joan NA
## 2433	n	B	F	Boomer	Dorothy NA
## 2434	n	B	F	Boomer	Shirley NA
## 2435	n	B	F	Boomer	Betty NA
## 2436	n	B	F	Boomer	Dianne NA
## 2437	n	B	F	Boomer	Kay NA
## 2438	n	B	F	Boomer	Marjorie NA
## 2439	n	B	F	Boomer	Lorraine NA
## 2440	n	B	F	Boomer	Mildred NA
## 2441	n	B	F	GenX	Tracy NA
## 2442	n	B	F	GenX	Dawn NA
## 2443	n	B	F	GenX	Tina NA
## 2444	n	B	F	GenX	Tammy NA
## 2445	n	B	F	GenX	Melinda NA
## 2446	n	B	F	GenX	Tamara NA
## 2447	n	B	F	GenX	Tracey NA
## 2448	n	B	F	GenX	Colleen NA
## 2449	n	B	F	GenX	Sherri NA
## 2450	n	B	F	GenX	Heidi NA
## 2451	n	B	F	Millenial	Tracy NA
## 2452	n	B	F	Millenial	Dawn NA
## 2453	n	B	F	Millenial	Tina NA
## 2454	n	B	F	Millenial	Tammy NA
## 2455	n	B	F	Millenial	Melinda NA

## 2456	n	B	F	Millenial	Tamara NA
## 2457	n	B	F	Millenial	Tracey NA
## 2458	n	B	F	Millenial	Colleen NA
## 2459	n	B	F	Millenial	Sherri NA
## 2460	n	B	F	Millenial	Heidi 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	C	M	Boomer	Lee NA
## 2468	n	C	M	Boomer	Alfred NA
## 2469	n	C	M	Boomer	Leroy NA
## 2470	n	C	M	Boomer	Eddie NA
## 2471	n	C	M	GenX	Marc NA
## 2472	n	C	M	GenX	Jamie NA
## 2473	n	C	M	GenX	Greg NA
## 2474	n	C	M	GenX	Darryl NA
## 2475	n	C	M	GenX	Tim NA
## 2476	n	C	M	GenX	Dean NA
## 2477	n	C	M	GenX	Jon NA
## 2478	n	C	M	GenX	Chris NA
## 2479	n	C	M	GenX	Troy NA
## 2480	n	C	M	GenX	Jeff NA
## 2481	n	C	M	Millenial	Zachary NA
## 2482	n	C	M	Millenial	Dylan NA
## 2483	n	C	M	Millenial	Christian NA
## 2484	n	C	M	Millenial	Wesley NA
## 2485	n	C	M	Millenial	Seth NA
## 2486	n	C	M	Millenial	Austin NA
## 2487	n	C	M	Millenial	Gabriel NA
## 2488	n	C	M	Millenial	Evan NA
## 2489	n	C	M	Millenial	Casey NA
## 2490	n	C	M	Millenial	Luis NA
## 2491	n	C	F	Boomer	Gloria NA
## 2492	n	C	F	Boomer	Joan NA
## 2493	n	C	F	Boomer	Dorothy NA
## 2494	n	C	F	Boomer	Shirley NA
## 2495	n	C	F	Boomer	Betty NA
## 2496	n	C	F	Boomer	Dianne NA
## 2497	n	C	F	Boomer	Kay NA
## 2498	n	C	F	Boomer	Marjorie NA
## 2499	n	C	F	Boomer	Lorraine NA
## 2500	n	C	F	Boomer	Mildred NA
## 2501	n	C	F	GenX	Tracy NA
## 2502	n	C	F	GenX	Dawn NA
## 2503	n	C	F	GenX	Tina NA
## 2504	n	C	F	GenX	Tammy NA
## 2505	n	C	F	GenX	Melinda NA
## 2506	n	C	F	GenX	Tamara NA
## 2507	n	C	F	GenX	Tracey NA
## 2508	n	C	F	GenX	Colleen NA
## 2509	n	C	F	GenX	Sherri NA

```
## 2510      n      C      F      GenX      Heidi NA
## 2511      n      C      F Millennial      Tracy NA
## 2512      n      C      F Millennial      Dawn NA
## 2513      n      C      F Millennial      Tina NA
## 2514      n      C      F Millennial      Tammy NA
## 2515      n      C      F Millennial      Melinda NA
## 2516      n      C      F Millennial      Tamara NA
## 2517      n      C      F Millennial      Tracey NA
## 2518      n      C      F Millennial      Colleen NA
## 2519      n      C      F Millennial      Sherri NA
## 2520      n      C      F Millennial      Heidi NA
```

Packages

Install the package `pacman` using regular base R.

```
install.packages("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)
```

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:

```
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.

```
##' One nearest neighbor Classifier
##'
##' Classify and observation based on the label of the closest observation in the set of training observ
##'
##' @param Xinput      A matrix of features for training data observations
##' @param y_binary    The vector of training data labels
```

```

#' @param xtest      A test observations as a row vector
#' @return           The predicted label for 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:

```

# We are loading the data set called Iris
data(iris)

# Removing the Species column to add into the xinput parameter
iris_dataShakeUp = iris
iris_dataShakeUp$Species <- NULL
xInput <- iris_dataShakeUp

# Set the y_binary as the target feature
Y_binary <- iris$Species

#Testing the Iris Data
xTest <- c(7.0, 3.7, 2.1, 0.3)

nn_algorithm_predict(xInput, Y_binary, xTest)

```

```

## [1] setosa
## Levels: setosa versicolor virginica

```

```

xTest <- c(8.0, 4.7, 3.1, 1.3)
nn_algorithm_predict(xInput, Y_binary, xTest)

```

```

## [1] versicolor
## Levels: setosa versicolor virginica

```

```

xTest <- c(5.0, 2.7, 1.1, 0.8)
nn_algorithm_predict(xInput, Y_binary, xTest)

```

```

## [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.

```

#' One nearest neighbor Classifier
#'
#' Classify and observation based on the label of the closest observation in the set of training observations
#'
#' @param Xinput      A matrix of features for training data observations
#' @param y_binary    The vector of training data labels
#' @param xtest       A test observations as a row vector
#' @param d           A distance function which takes inputs of two different row vectors.
#' @return            The predicted label for 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	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	

The iris dataset is classifying 3 different species which is setosa, versicolor, virginica by the sepal length/width and petal length/width.

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 == "versicolor")
y
```

```
## [1] 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
## [38] 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
## [75] 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
```

- Write a function **mode** returning the sample mode.

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

```
mode(y)
```

```
## [1] "0"
```

- 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_by_parameter = matrix(NA, nrow = n, ncol = 2)
colnames(num_errors_by_parameter) = c("threshold_param", "num_errors")
for (i in 1 : n){
  threshold = iris$Sepal.Length[i]
```

```

num_errors = sum((iris$Sepal.Length > threshold) != y)
num_errors_by_parameter[i, ] = c(threshold, num_errors)
}

num_errors_by_parameter[order(num_errors_by_parameter[, "num_errors"]), ]

```

```

##      threshold_param num_errors
## [1,]           5.4           11
## [2,]           5.4           11
## [3,]           5.4           11
## [4,]           5.4           11
## [5,]           5.4           11
## [6,]           5.4           11
## [7,]           5.5           14
## [8,]           5.5           14
## [9,]           5.5           14
## [10,]          5.5           14
## [11,]          5.5           14
## [12,]          5.5           14
## [13,]          5.5           14
## [14,]          5.3           15
## [15,]          5.2           16
## [16,]          5.2           16
## [17,]          5.2           16
## [18,]          5.2           16
## [19,]          5.1           18
## [20,]          5.1           18
## [21,]          5.1           18
## [22,]          5.1           18
## [23,]          5.1           18
## [24,]          5.1           18
## [25,]          5.1           18
## [26,]          5.1           18
## [27,]          5.1           18
## [28,]          5.6           19
## [29,]          5.6           19
## [30,]          5.6           19
## [31,]          5.6           19
## [32,]          5.6           19
## [33,]          5.7           22
## [34,]          5.7           22
## [35,]          5.7           22
## [36,]          5.7           22
## [37,]          5.7           22
## [38,]          5.7           22
## [39,]          5.7           22
## [40,]          5.8           24
## [41,]          5.8           24
## [42,]          5.8           24
## [43,]          5.8           24
## [44,]          5.0           25
## [45,]          5.0           25
## [46,]          5.0           25

```


##	[47,]	5.0	25
##	[48,]	5.0	25
##	[49,]	5.0	25
##	[50,]	5.0	25
##	[51,]	5.0	25
##	[52,]	5.0	25
##	[53,]	5.0	25
##	[54,]	5.9	26
##	[55,]	5.9	26
##	[56,]	6.0	30
##	[57,]	6.0	30
##	[58,]	6.0	30
##	[59,]	6.0	30
##	[60,]	4.9	31
##	[61,]	4.9	31
##	[62,]	4.9	31
##	[63,]	4.9	31
##	[64,]	4.9	31
##	[65,]	4.8	34
##	[66,]	4.8	34
##	[67,]	4.8	34
##	[68,]	4.8	34
##	[69,]	4.8	34
##	[70,]	6.1	34
##	[71,]	6.1	34
##	[72,]	6.1	34
##	[73,]	6.1	34
##	[74,]	6.2	36
##	[75,]	6.2	36
##	[76,]	4.7	39
##	[77,]	4.7	39
##	[78,]	6.3	39
##	[79,]	6.3	39
##	[80,]	6.3	39
##	[81,]	4.6	41
##	[82,]	4.6	41
##	[83,]	4.6	41
##	[84,]	4.6	41
##	[85,]	6.4	41
##	[86,]	6.4	41
##	[87,]	6.5	42
##	[88,]	6.6	44
##	[89,]	6.6	44
##	[90,]	4.5	45
##	[91,]	4.4	46
##	[92,]	4.4	46
##	[93,]	4.4	46
##	[94,]	6.7	47
##	[95,]	6.7	47
##	[96,]	6.7	47
##	[97,]	6.8	48
##	[98,]	4.3	49
##	[99,]	6.9	49
##	[100,]	7.0	50

```
best_row = order(num_errors_by_parameter[, "num_errors"])[1]
threshold = c(num_errors_by_parameter[best_row, "threshold_param"], use.names = FALSE)
threshold
```

```
## [1] 5.4
```

What is the total number of errors this model makes?

```
totalNumberOfErrors = sum(num_errors_by_parameter[,2])
totalNumberOfErrors
```

```
## [1] 2796
```

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

```
threshold
```

```
## [1] 5.4
```

```
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
```

The threshold model's performance makes sense given the following summaries because the predicted length of 5.4 is between the means of setosa and versicolor, 5.4 is the median from 5.0 and 5.9

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

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

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:

```
##' TO-DO: The Perceptron Learning Algorithm
##'
##' TO-DO: The Perceptron learning Algorithm finds an optimal line of a set linearly separable data and
##'
##' @param Xinput      This part of the parameter is the input that is in the form of an matrix (n X p)
##' @param y_binary    This part of the parameter gives an output of 0 and 1 of the training data.
```

```

#' @param MAX_ITER      This part of the parameter is the amount of times the function will run.
#' @param w             This part of the parameter will initialize the vector it the dimensions of  $p + 1$ .
#'
#' @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){

  Xinput = as.matrix(cbind(1,Xinput))
  p = ncol(Xinput)
  w = rep(0, p)
  r = nrow(Xinput)

  for (iter in 1 : MAX_ITER){
    for (i in 1 : r) {
      x_i = Xinput[i, ]
      yhat_i = ifelse(sum(x_i * w) > 0, 1, 0)
      y_i = y_binary[i]
      for(j in 1:p){
        w[j] = w[j] + (y_i - yhat_i) * x_i[j]
      }
    }
  }
  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)
```

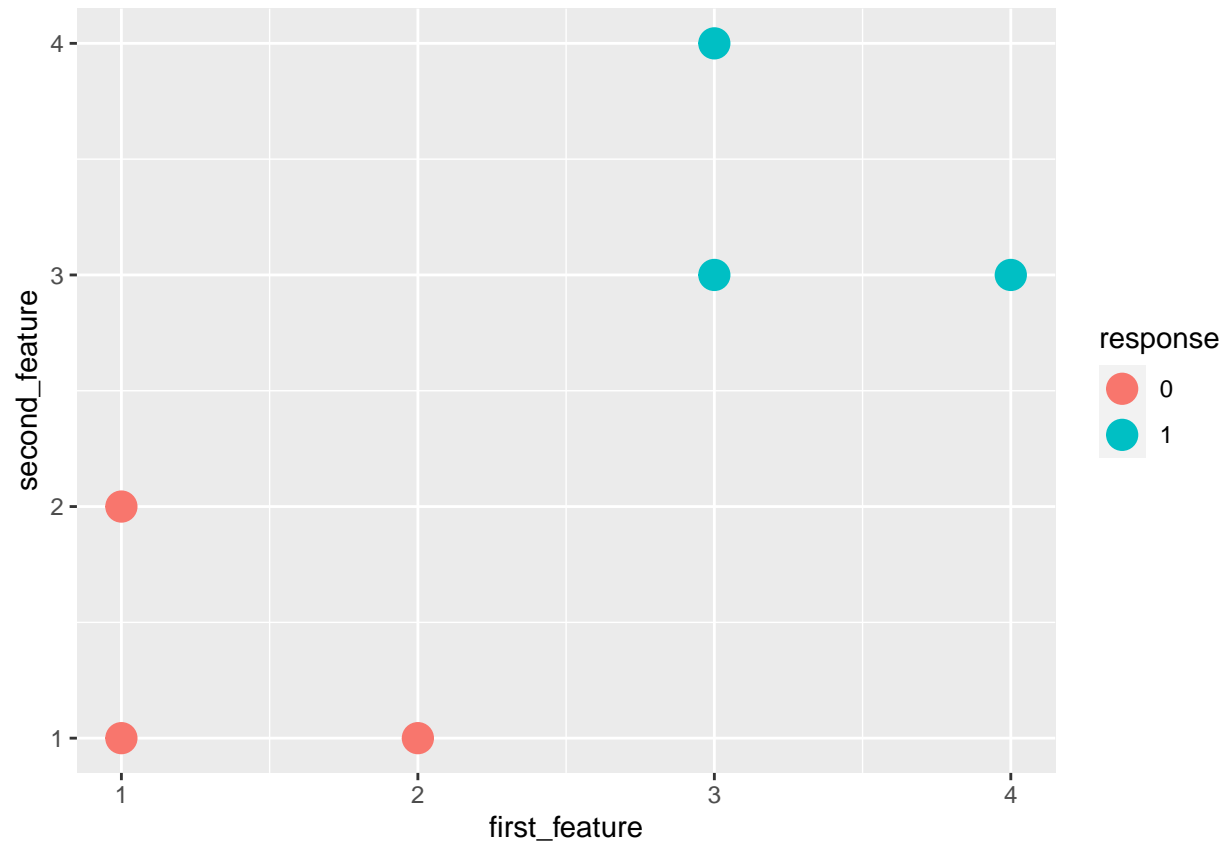
We are going to just get some plots and not talk about the code to generate them as we will have a whole unit on visualization using ggplot2 in the future.

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

```



The picture shows the plotted points of the first_feature which is colored orange and the second_feature plotted pointed which is colored green

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

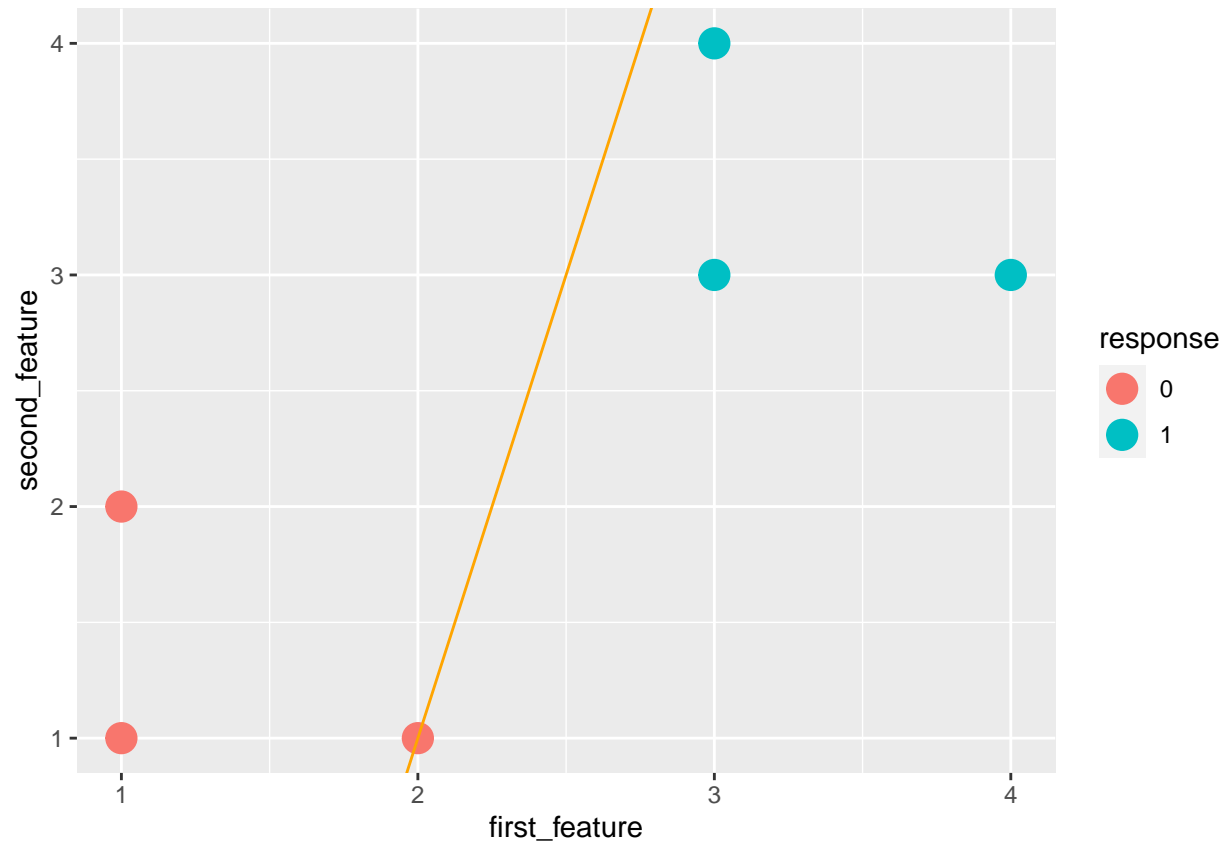
```
w_vec_simple_per = perceptron_learning_algorithm(
  cbind(Xy_simple$first_feature, Xy_simple$second_feature),
  as.numeric(Xy_simple$response == 1))
w_vec_simple_per
```

```
## [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 -7 is the y - intercept, 4 and -1 are the coefficient for $4 = x_1$ and $-1 = x_2$, the slope is 4

```
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 line of separation is not satisfying to us because it doesn't split the two feature groups into the ideal way this is not the most optimal solution.

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