Notas Clase 1

Eduardo Martínez y Modificado por Fernando Alvarado

Introducción a lectura de datos csv, xls y xlsx

- La librería por excelencia para leer archivo de Excel es {readxl}

```
#install.packages("readxl")
library(readxl) # Para leer archivos de Excel
```

```
## Warning: package 'readxl' was built under R version 4.4.2
```

```
library(dplyr)
```

```
##
## Adjuntando el paquete: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(ggplot2)
library(lubridate) # Sirve para manejar algunas variables de fecha
```

```
## Warning: package 'lubridate' was built under R version 4.4.2

##
## Adjuntando el paquete: 'lubridate'

## The following objects are masked from 'package:base':
##
##     date, intersect, setdiff, union
```

- Empecemos cargando el dataset del archivo "VentasNum2024.xlsx"
- En principio (pero se puede cambiar) este archivo xlsx debe estar en la misma carpeta que este notebook
- La sintaxis básica es la siguiente

```r
datos_ventas <- readxl::read_xlsx("./Data/VentasNum2024.xlsx", sheet = "Ventas")
datos_ventas
```

```
## # A tibble: 2,356 x 18
##    IDVenta          Unidades Ingresos por productos (MX~1 Cargo por venta e im~2
##    <chr>               <dbl>                        <dbl>                  <dbl>
##  1 2000003804728445        1                          177                  -65.3
##  2 2000003804533537        1                          177                  -65.3
##  3 2000003802321913        1                          281                  -88.9
##  4 2000004172052306        1                          177                  -65.3
##  5 2000003801421707        1                          185                  -83.9
##  6 2000003793601559        1                          185                  -67.1
##  7 2000004169612598        1                          166.                 -62.8
##  8 2000003800676271        1                          185                  -67.1
##  9 2000003800625109        2                          530.                -171.
## 10 2000003799264629        1                          280.                 -88.8
## # i 2,346 more rows
## # i abbreviated names: 1: `Ingresos por productos (MXN)`,
## #   2: `Cargo por venta e impuestos`
## # i 14 more variables: `Costos de envío` <dbl>, `Total (MXN)` <dbl>,
## #   `Venta por publicidad` <chr>, IDproducto <chr>, `Canal de venta` <chr>,
## #   `Precio unitario de venta de la publicación (MXN)` <dbl>,
## #   `Municipio/Alcaldía` <chr>, Estado <chr>, `Código postal` <dbl>, ...
```

- Como siempre nos gusta saber un poquito de la estructura de este objeto (que es un dataframe)

```r
datos_ventas |> str() #Pasamos los datos obtenidos a la funcion str()
```

```
## tibble [2,356 x 18] (S3: tbl_df/tbl/data.frame)
##  $ IDVenta                                        : chr [1:2356] "2000003804728445" "20000038045335
##  $ Unidades                                       : num [1:2356] 1 1 1 1 1 1 1 1 2 1 ...
##  $ Ingresos por productos (MXN)                   : num [1:2356] 177 177 281 177 185 ...
##  $ Cargo por venta e impuestos                    : num [1:2356] -65.3 -65.3 -88.9 -65.3 -83.9 ...
##  $ Costos de envío                                : num [1:2356] 0 0 0 -98 0 ...
##  $ Total (MXN)                                    : num [1:2356] 112 112 192 112 101 ...
##  $ Venta por publicidad                           : chr [1:2356] "Sí" "Sí" "Sí" "Sí" ...
##  $ IDproducto                                     : chr [1:2356] "MLM797896213" "MLM797896213" "MLM
##  $ Canal de venta                                 : chr [1:2356] "Mercado Libre" "Mercado Libre" "M
##  $ Precio unitario de venta de la publicación (MXN): num [1:2356] 177 177 281 177 185 ...
##  $ Municipio/Alcaldía                             : chr [1:2356] "Nezahualcoyotl" "Tultepec" "Villa
##  $ Estado                                         : chr [1:2356] "Estado De México" "Estado De Méxi
##  $ Código postal                                  : num [1:2356] 57000 54980 28989 91020 58350 ...
##  $ Forma de entrega                               : chr [1:2356] "Mercado Envíos Full" "Mercado Envi
##  $ Transportista                                  : chr [1:2356] "Mercado Envios" "Mercado Envios"
##  $ Fecha Venta                                    : chr [1:2356] "08/09/2022" "08/09/2022" "07/09/2
##  $ FechaCamino                                    : POSIXct[1:2356], format: "2022-09-09" "2022-09-
##  $ FechaEntrega                                   : POSIXct[1:2356], format: "2022-09-09" "2022-09-
```

- Otra forma de entender un poco más a profundidad lo que contiene ese dataframe es mediante la función `skim()` de la librería {skimr}

```r
#install.packages("skimr")
library(skimr)
```

```
## Warning: package 'skimr' was built under R version 4.4.2
```

- Aplico la función skim a mi dataframe

```r
skim(datos_ventas) # Funcion en R para resumir y explorar datos de una manera mas rapida y estructurada
```

Table 1: Data summary

Name	datos_ventas
Number of rows	2356
Number of columns	18
_____	
Column type frequency:	
character	9
numeric	7
POSIXct	2
_____	
Group variables	None

Variable type: character

skim_variable	n_missing	complete_rate	min	max	empty	n_unique	whitespace
IDVenta	0	1	10	16	0	2356	0
Venta por publicidad	0	1	2	2	0	2	0
IDproducto	0	1	12	13	0	36	0
Canal de venta	0	1	13	13	0	2	0
Municipio/Alcaldía	0	1	4	36	0	494	0
Estado	0	1	6	19	0	32	0
Forma de entrega	0	1	19	27	0	2	0
Transportista	0	1	3	14	0	5	0
Fecha Venta	0	1	10	10	0	354	0

Variable type: numeric

skim_variable	n_missing	complete_rate	mean	sd	p0	p25	p50	p75	p100	hist
Unidades	0	1	1.30	0.65	1.00	1.00	1.0	1.00	8.00	
Ingresos por productos (MXN)	0	1	260.52	151.90	85.69	166.25	185.0	315.00	2475.00	
Cargo por venta e impuestos	0	1	-92.28	71.52	-2277.88	-117.03	-67.1	-62.84	-11.18	
Costos de envío	0	1	-40.25	47.99	-512.50	-94.00	0.0	0.00	0.00	
Total (MXN)	0	1	162.99	108.69	-1402.88	103.41	117.9	202.87	1399.22	

skim_variable	n_missing	complete_rate	mean	sd	p0	p25	p50	p75	p100	hist
Precio unitario de venta de la publicación (MXN)	0	1	206.09	97.60	85.69	166.25	175.0	185.00	887.25	
Código postal	0	1	52221.63	25713.41	1080.00	32971.00	54005.0	73932.75	99904.00	

Variable type: POSIXct

skim_variable	n_missing	complete_rate	min	max	median	n_unique
FechaCamino	0	1	2021-01-01	2022-09-09	2022-01-28	357
FechaEntrega	0	1	2021-01-02	2022-09-09	2022-01-28	352

- ¿Oye y cómo extraemos esta metadatos (i.e. datos de los datos)?

```
mi_metadata <- skim(datos_ventas) #generamos un resumen estructurado de nuestros datos
```

```
mi_metadata |> str()
```

```
## skim_df [18 x 21] (S3: skim_df/tbl_df/tbl/data.frame)
##  $ skim_type           : chr [1:18] "POSIXct" "POSIXct" "character" "character" ...
##  $ skim_variable       : chr [1:18] "FechaCamino" "FechaEntrega" "IDVenta" "Venta por publicidad" ..
##  $ n_missing           : int [1:18] 0 0 0 0 0 0 0 0 0 0 ...
##  $ complete_rate       : num [1:18] 1 1 1 1 1 1 1 1 1 1 ...
##  $ POSIXct.min         : POSIXct[1:18], format: "2021-01-01" "2021-01-02" ...
##  $ POSIXct.max         : POSIXct[1:18], format: "2022-09-09" "2022-09-09" ...
##  $ POSIXct.median      : POSIXct[1:18], format: "2022-01-28" "2022-01-28" ...
##  $ POSIXct.n_unique    : int [1:18] 357 352 NA NA NA NA NA NA NA NA ...
##  $ character.min       : int [1:18] NA NA 10 2 12 13 4 6 19 3 ...
##  $ character.max       : int [1:18] NA NA 16 2 13 13 36 19 27 14 ...
##  $ character.empty     : int [1:18] NA NA 0 0 0 0 0 0 0 0 ...
##  $ character.n_unique  : int [1:18] NA NA 2356 2 36 2 494 32 2 5 ...
##  $ character.whitespace: int [1:18] NA NA 0 0 0 0 0 0 0 0 ...
##  $ numeric.mean        : num [1:18] NA NA NA NA NA NA NA NA NA NA ...
##  $ numeric.sd          : num [1:18] NA NA NA NA NA NA NA NA NA NA ...
##  $ numeric.p0          : num [1:18] NA NA NA NA NA NA NA NA NA NA ...
##  $ numeric.p25         : num [1:18] NA NA NA NA NA NA NA NA NA NA ...
##  $ numeric.p50         : num [1:18] NA NA NA NA NA NA NA NA NA NA ...
##  $ numeric.p75         : num [1:18] NA NA NA NA NA NA NA NA NA NA ...
##  $ numeric.p100        : num [1:18] NA NA NA NA NA NA NA NA NA NA ...
##  $ numeric.hist        : chr [1:18] NA NA NA NA ...
##  - attr(*, "data_rows")= int 2356
##  - attr(*, "data_cols")= int 18
##  - attr(*, "df_name")= chr "`datos_ventas`"
##  - attr(*, "dt_key")= logi NA
##  - attr(*, "groups")= chr(0)
##  - attr(*, "base_skimmers")= chr [1:2] "n_missing" "complete_rate"
##  - attr(*, "skimmers_used")=List of 3
##   ..$ character: chr [1:5] "min" "max" "empty" "n_unique" ...
##   ..$ numeric  : chr [1:8] "mean" "sd" "p0" "p25" ...
##   ..$ POSIXct  : chr [1:4] "min" "max" "median" "n_unique"
```

- Por ejemplo,

```
mi_metadata$skim_type
```

```
##  [1] "POSIXct"   "POSIXct"   "character" "character" "character" "character"
##  [7] "character" "character" "character" "character" "character" "numeric"
## [13] "numeric"   "numeric"   "numeric"   "numeric"   "numeric"   "numeric"
```

- Este archivo "VentasNum2024.xlsx" tiene otra pestaña que se llama "Producto"

```
datos_productos <- readxl::read_xlsx("./Data/VentasNum2024.xlsx", sheet = "Producto")
datos_productos
```

```
## # A tibble: 2,357 x 2
##    IDproducto   `Título de la publicación`
##    <chr>        <chr>
##  1 MLM797896213 Carpeta Billetes Y Monedas  De 5, 10, 40 Pesos  Conmemorativos
##  2 MLM797896213 Carpeta Billetes Y Monedas  De 5, 10, 40 Pesos  Conmemorativos
##  3 MLM937274388 Paquete 20 Sobres Para Billetes Y Monedas Más Cartones 2x2
##  4 MLM797896213 Carpeta Billetes Y Monedas  De 5, 10, 40 Pesos  Conmemorativos
##  5 MLM797896213 Carpeta Billetes Y Monedas  De 5, 10, 40 Pesos  Conmemorativos
##  6 MLM797896213 Carpeta Billetes Y Monedas  De 5, 10, 40 Pesos  Conmemorativos
##  7 MLM775876787 Carpeta Monedas 5 Pesos Del Centenario Y Bicentenario
##  8 MLM797896213 Carpeta Billetes Y Monedas  De 5, 10, 40 Pesos  Conmemorativos
##  9 MLM759252135 Monedas 40 Pesos Conmemorativa, No Circuladas, Con Cápsula
## 10 MLM937274388 Paquete 20 Sobres Para Billetes Y Monedas Más Cartones 2x2
## # i 2,347 more rows
```

- Regresemos a nuestro dataset de ventas

```
datos_ventas |> head()
```

```
## # A tibble: 6 x 18
##   IDVenta          Unidades Ingresos por productos (MXN~1 Cargo por venta e im~2
##   <chr>               <dbl>                         <dbl>                  <dbl>
## 1 2000003804728445        1                           177                  -65.3
## 2 2000003804533537        1                           177                  -65.3
## 3 2000003802321913        1                           281                  -88.9
## 4 2000004172052306        1                           177                  -65.3
## 5 2000003801421707        1                           185                  -83.9
## 6 2000003793601559        1                           185                  -67.1
## # i abbreviated names: 1: `Ingresos por productos (MXN)`,
## #   2: `Cargo por venta e impuestos`
## # i 14 more variables: `Costos de envío` <dbl>, `Total (MXN)` <dbl>,
## #   `Venta por publicidad` <chr>, IDproducto <chr>, `Canal de venta` <chr>,
## #   `Precio unitario de venta de la publicación (MXN)` <dbl>,
## #   `Municipio/Alcaldía` <chr>, Estado <chr>, `Código postal` <dbl>,
## #   `Forma de entrega` <chr>, Transportista <chr>, `Fecha Venta` <chr>, ...
```

- Al parecer la columna `Fecha Venta` esta codificada como string, aunque nos huele a que querían expresar fechas allí... Vamos a arreglarla un poquito
- ¿Qué voy a hacer?

1. Convertir la columna a formato fecha
2. Extraer su día, su mes y año

```
datos_ventas %>%
  mutate(`Fecha Venta` = as.Date(`Fecha Venta`, format = "%d/%m/%Y")) %>% #Cambia el formato de String
  mutate(MesVenta = lubridate::month(`Fecha Venta`), #Extrae el mes de la venta usando el paquete lubri
         DiaVenta = lubridate::day(`Fecha Venta`),   #Extrae el dia de la venta
         DiaSemana = lubridate::wday(`Fecha Venta`)) # 1: lunes, 2: martes, 3:miercoles...
```

```
## # A tibble: 2,356 x 21
##    IDVenta          Unidades Ingresos por productos (MX~1 Cargo por venta e im~2
##    <chr>               <dbl>                        <dbl>                  <dbl>
##  1 2000003804728445        1                          177                  -65.3
##  2 2000003804533537        1                          177                  -65.3
##  3 2000003802321913        1                          281                  -88.9
##  4 2000004172052306        1                          177                  -65.3
##  5 2000003801421707        1                          185                  -83.9
##  6 2000003793601559        1                          185                  -67.1
##  7 2000004169612598        1                          166.                 -62.8
##  8 2000003800676271        1                          185                  -67.1
##  9 2000003800625109        2                          530.                -171.
## 10 2000003799264629        1                          280.                 -88.8
## # i 2,346 more rows
## # i abbreviated names: 1: `Ingresos por productos (MXN)`,
## #   2: `Cargo por venta e impuestos`
## # i 17 more variables: `Costos de envío` <dbl>, `Total (MXN)` <dbl>,
## #   `Venta por publicidad` <chr>, IDproducto <chr>, `Canal de venta` <chr>,
## #   `Precio unitario de venta de la publicación (MXN)` <dbl>,
## #   `Municipio/Alcaldía` <chr>, Estado <chr>, `Código postal` <dbl>, ...
```

- `Fecha Venta` ahora tiene formato date y creamos 3 nuevas columnas
- Vamos a guardar estos cambios

```
datos_ventas <- datos_ventas %>%
  mutate(`Fecha Venta` = as.Date(`Fecha Venta`, format = "%d/%m/%Y")) %>%
  mutate(MesVenta = lubridate::month(`Fecha Venta`),
         DiaVenta = lubridate::day(`Fecha Venta`),
         DiaSemana = lubridate::wday(`Fecha Venta`))
```

```
datos_ventas |> head()
```

```
## # A tibble: 6 x 21
##   IDVenta          Unidades Ingresos por productos (MXN~1 Cargo por venta e im~2
##   <chr>               <dbl>                        <dbl>                  <dbl>
## 1 2000003804728445        1                          177                  -65.3
## 2 2000003804533537        1                          177                  -65.3
## 3 2000003802321913        1                          281                  -88.9
## 4 2000004172052306        1                          177                  -65.3
## 5 2000003801421707        1                          185                  -83.9
## 6 2000003793601559        1                          185                  -67.1
## # i abbreviated names: 1: `Ingresos por productos (MXN)`,
```

```
## #   2: `Cargo por venta e impuestos`
## # i 17 more variables: `Costos de envío` <dbl>, `Total (MXN)` <dbl>,
## #   `Venta por publicidad` <chr>, IDproducto <chr>, `Canal de venta` <chr>,
## #   `Precio unitario de venta de la publicación (MXN)` <dbl>,
## #   `Municipio/Alcaldía` <chr>, Estado <chr>, `Código postal` <dbl>,
## #   `Forma de entrega` <chr>, Transportista <chr>, `Fecha Venta` <date>, ...
```

- Las variables Fecha VEnta, FechaCamino y FechaEntrega representan fechas, PEEEERO están codificadas en diferente formato. Vamos a homogeneizarlas

```
datos_ventas <- datos_ventas %>%
  mutate(FecEntrg = as.Date(FechaEntrega, format = "%d/%m/%Y"),
         FecSalida = as.Date(FechaCamino, format = "%d/%m/%Y"))

datos_ventas
```

```
## # A tibble: 2,356 x 23
##    IDVenta          Unidades Ingresos por productos (MX~1 Cargo por venta e im~2
##    <chr>               <dbl>                        <dbl>                  <dbl>
##  1 2000003804728445        1                          177                  -65.3
##  2 2000003804533537        1                          177                  -65.3
##  3 2000003802321913        1                          281                  -88.9
##  4 2000004172052306        1                          177                  -65.3
##  5 2000003801421707        1                          185                  -83.9
##  6 2000003793601559        1                          185                  -67.1
##  7 2000004169612598        1                          166.                 -62.8
##  8 2000003800676271        1                          185                  -67.1
##  9 2000003800625109        2                          530.                -171.
## 10 2000003799264629        1                          280.                 -88.8
## # i 2,346 more rows
## # i abbreviated names: 1: `Ingresos por productos (MXN)`,
## #   2: `Cargo por venta e impuestos`
## # i 19 more variables: `Costos de envío` <dbl>, `Total (MXN)` <dbl>,
## #   `Venta por publicidad` <chr>, IDproducto <chr>, `Canal de venta` <chr>,
## #   `Precio unitario de venta de la publicación (MXN)` <dbl>,
## #   `Municipio/Alcaldía` <chr>, Estado <chr>, `Código postal` <dbl>, ...
```

- Ya por fin `Fecha Venta`, `FecEntrg` y ‘`FecSalida` tiene formato `date`
- Vamos a construir tres nuevas columnas (i.e. 3 nuevas variables)

```
datos_ventas <- datos_ventas %>% mutate(TiempoEntrega = FecEntrg - `Fecha Venta`,
                        TiempoCalle = FecEntrg - FecSalida,
                        TiempoProces = FecSalida - `Fecha Venta`)
datos_ventas
```

```
## # A tibble: 2,356 x 26
##    IDVenta          Unidades Ingresos por productos (MX~1 Cargo por venta e im~2
##    <chr>               <dbl>                        <dbl>                  <dbl>
##  1 2000003804728445        1                          177                  -65.3
##  2 2000003804533537        1                          177                  -65.3
##  3 2000003802321913        1                          281                  -88.9
```

```
##  4 2000004172052306        1                        177                  -65.3
##  5 2000003801421707        1                        185                  -83.9
##  6 2000003793601559        1                        185                  -67.1
##  7 2000004169612598        1                        166.                 -62.8
##  8 2000003800676271        1                        185                  -67.1
##  9 2000003800625109        2                        530.                -171.
## 10 2000003799264629        1                        280.                 -88.8
## # i 2,346 more rows
## # i abbreviated names: 1: `Ingresos por productos (MXN)`,
## #   2: `Cargo por venta e impuestos`
## # i 22 more variables: `Costos de envío` <dbl>, `Total (MXN)` <dbl>,
## #   `Venta por publicidad` <chr>, IDproducto <chr>, `Canal de venta` <chr>,
## #   `Precio unitario de venta de la publicación (MXN)` <dbl>,
## #   `Municipio/Alcaldía` <chr>, Estado <chr>, `Código postal` <dbl>, ...
```

- Vamos a ver alguna grafiquita

##Repaso de Tidyverse

¿Para qué sirve group_by() en Tidyverse? La función group_by() en Tidyverse se usa para agrupar datos en función de una o más variables antes de aplicar operaciones de resumen, transformación o filtrado. Es especialmente útil cuando se combina con funciones como summarize(), mutate(), filter(), entre otras.

- Agrupa filas según valores de una columna sin alterar los datos visibles.
- Permite realizar cálculos dentro de cada grupo sin afectar a todo el data frame.
- Debe combinarse con otras funciones como summarize(), mutate(), filter(), etc.
- Los resultados mantienen la estructura del grupo hasta que se desagrupan (ungroup()).

La función summarize() (o su sinónimo summarise()) en Tidyverse se usa para agregar o resumir datos en un data frame, calculando métricas estadísticas como promedios, sumas, conteos, valores máximos o mínimos, entre otros.

Funciones útiles con summarize()

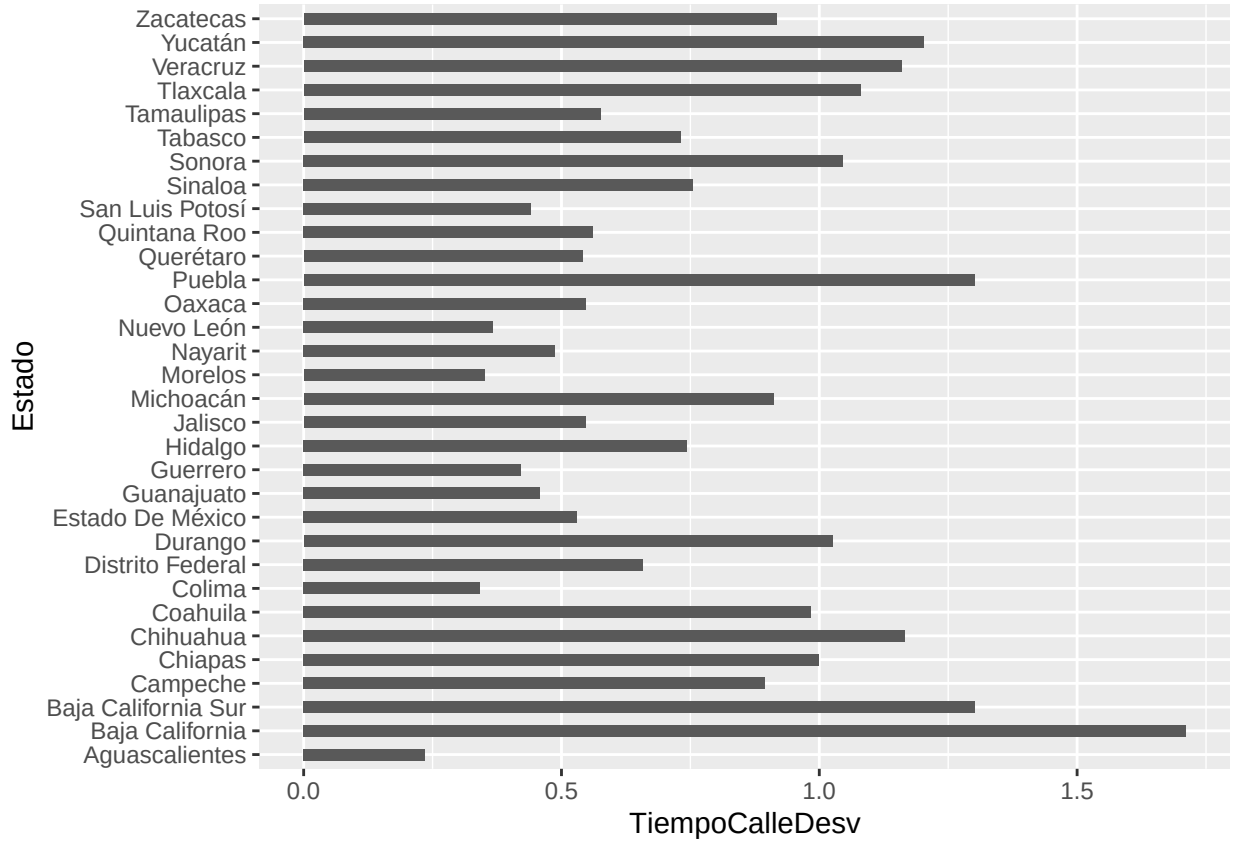
- mean(x) → Media (promedio)
- sum(x) → Suma
- n() → Conteo de elementos en un grupo
- min(x) → Valor mínimo
- max(x) → Valor máximo
- sd(x) → Desviación estándar
- median(x) → Mediana
- first(x), last(x) → Primer o último valor de una columna

```r
datos_ventas %>% group_by(Estado) %>% dplyr::filter(TiempoCalle > 0) %>%
  summarise(TiempoCalleMed = median(TiempoCalle),
            TiempoCalleProm = mean(TiempoCalle),
            TiempoCalleDesv = sd(TiempoCalle),
            TiempoCalleMax = max(TiempoCalle))
```

```
## # A tibble: 32 x 5
##    Estado          TiempoCalleMed TiempoCalleProm TiempoCalleDesv TiempoCalleMax
```

```
##    <chr>           <drtn>         <drtn>                  <dbl> <drtn>
##  1 Aguascalientes  1 days         1.055556 days           0.236  2 days
##  2 Baja California 1 days         1.682540 days           1.71  11 days
##  3 Baja Californi~ 1 days         1.842105 days           1.30   5 days
##  4 Campeche        2 days         2.000000 days           0.894  4 days
##  5 Chiapas         2 days         1.973684 days           1.00   6 days
##  6 Chihuahua       1 days         1.734043 days           1.17   9 days
##  7 Coahuila        1 days         1.430769 days           0.984  8 days
##  8 Colima          1 days         1.125000 days           0.342  2 days
##  9 Distrito Feder~ 1 days         1.117647 days           0.659  6 days
## 10 Durango         1 days         1.419355 days           1.03   5 days
## # i 22 more rows
```

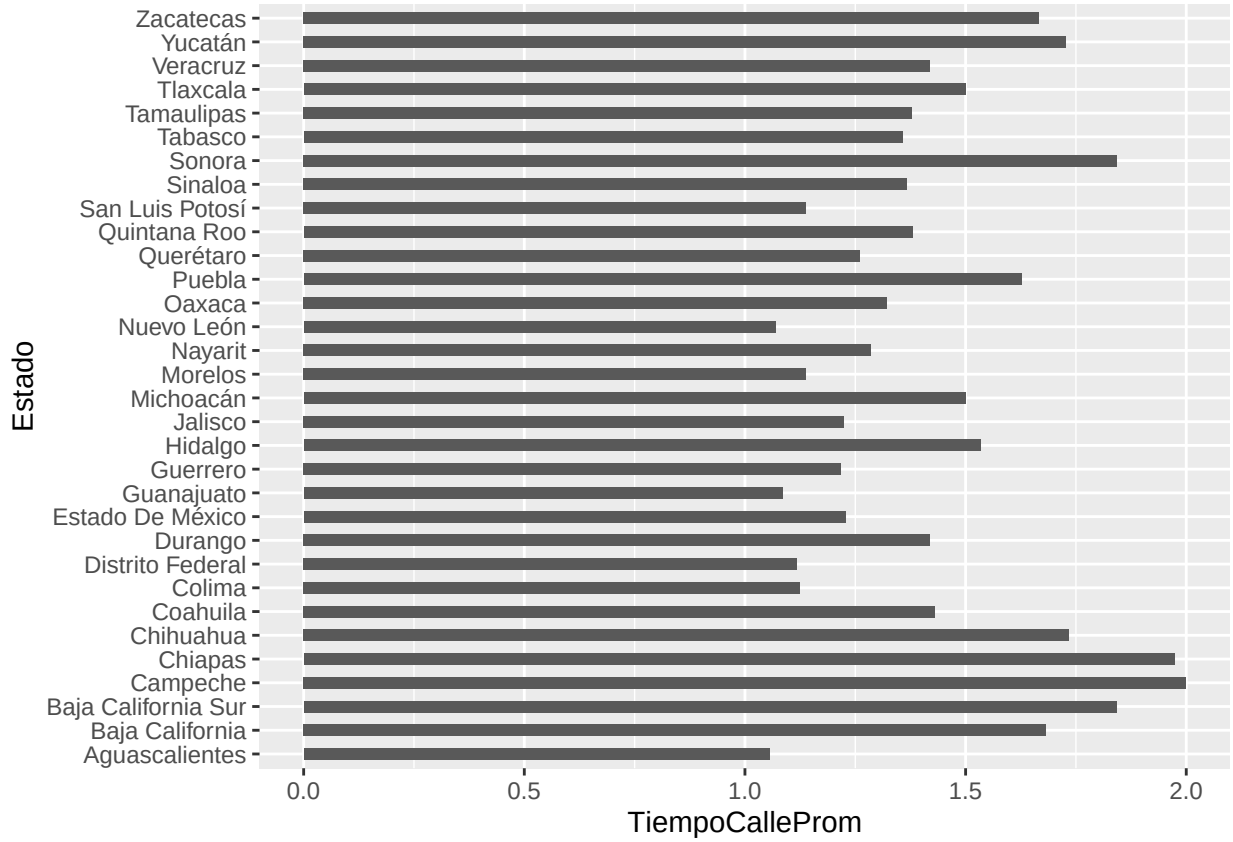
```
datos_ventas %>% group_by(Estado) %>% dplyr::filter(TiempoCalle > 0) %>%
  summarise(TiempoCalleMed = median(TiempoCalle),
            TiempoCalleProm = mean(TiempoCalle),
            TiempoCalleDesv = sd(TiempoCalle),
            TiempoCalleMax = max(TiempoCalle)) %>% ungroup() %>%
  ggplot() +
  geom_bar(aes(x = Estado, y = TiempoCalleDesv), stat="identity", width=0.5) +
  coord_flip() # invierte el eje x al y
```




```
datos_ventas %>% group_by(Estado) %>% dplyr::filter(TiempoCalle > 0) %>%
  summarise(TiempoCalleMed = median(TiempoCalle),
            TiempoCalleProm = mean(TiempoCalle),
```

```
            TiempoCalleDesv = sd(TiempoCalle),
            TiempoCalleMax = max(TiempoCalle)) %>% ungroup() %>%
  ggplot() +
  geom_bar(aes(x = Estado, y = TiempoCalleProm), stat="identity", width=0.5) +
  coord_flip() # invierte el eje x al y
```

```
## Don't know how to automatically pick scale for object of type <difftime>.
## Defaulting to continuous.
```



Explicacion de la grafica

- stat = "identity": Indica que los valores de TiempoCalleDesv se usarán tal cual (sin hacer conteos automáticos).
- width = 0.5: Ajusta el ancho de las barras (más delgado que el valor por defecto, que es 1).

Otro repaso de Dyplr

¿Cuándo se debe usar dplyr:: y cuándo no?

- Cuando NO es necesario usar dplyr::
- Si ya cargaste dplyr con library(dplyr), puedes usar las funciones directamente:

datos_ventas %>% group_by(Estado) %>% filter(TiempoCalle > 0) %>% summarise(TiempoCalleMed = median(TiempoCalle), TiempoCalleProm = mean(TiempoCalle), TiempoCalleDesv = sd(TiempoCalle), TiempoCalleMax = max(TiempoCalle)) %>% ungroup()

¿Cuándo SÍ debes usar dplyr::?

Debes especificar dplyr:: cuando:

- NO has cargado dplyr con library(dplyr) y solo quieres usar algunas de sus funciones sin afectar otras librerías.
- Hay conflictos con funciones de otros paquetes.
- Otro formato popular es el csv (valores separados por comas - comma separate values)
- La librería por excelencia para leer este tipo de archivos es {readr}

¿Por qué usar dplyr:: a veces en filter() pero no en group_by()?

- El problema principal ocurre con filter(), ya que hay una función filter() en el paquete stats, lo que puede generar confusión en ciertos casos.
- Si R no sabe cuál filter() usar, podría lanzar un error o elegir la opción equivocada.

Por eso, en tu código original ves esto:

dplyr::filter(TiempoCalle > 0)

Para asegurarte de que R usa el filter() de dplyr, y no el de stats.

```
library(readr) # para leer csv
library(ggrepel) # la ocuparemos para añadir unas etiquetas
```

```
## Warning: package 'ggrepel' was built under R version 4.4.2
```

```
data_superstore <- read_csv("./Data/Sample - Superstore.csv")
```

```
## Rows: 9994 Columns: 21
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## chr (16): Order ID, Order Date, Ship Date, Ship Mode, Customer ID, Customer ...
## dbl  (5): Row ID, Sales, Quantity, Discount, Profit
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
data_superstore |> head()
```

```
## # A tibble: 6 x 21
##   `Row ID` `Order ID`     `Order Date` `Ship Date` `Ship Mode`    `Customer ID`
##      <dbl> <chr>          <chr>        <chr>       <chr>          <chr>
## 1        1 CA-2016-152156 11/8/2016    11/11/2016  Second Class   CG-12520
## 2        2 CA-2016-152156 11/8/2016    11/11/2016  Second Class   CG-12520
## 3        3 CA-2016-138688 6/12/2016    6/16/2016   Second Class   DV-13045
## 4        4 US-2015-108966 10/11/2015   10/18/2015  Standard Class SO-20335
## 5        5 US-2015-108966 10/11/2015   10/18/2015  Standard Class SO-20335
## 6        6 CA-2014-115812 6/9/2014     6/14/2014   Standard Class BH-11710
## # i 15 more variables: `Customer Name` <chr>, Segment <chr>, Country <chr>,
```

```
## #   City <chr>, State <chr>, `Postal Code` <chr>, Region <chr>,
## #   `Product ID` <chr>, Category <chr>, `Sub-Category` <chr>,
## #   `Product Name` <chr>, Sales <dbl>, Quantity <dbl>, Discount <dbl>,
## #   Profit <dbl>
```

```
data_superstore |> skim()
```

```
## Warning: There was 1 warning in `dplyr::summarize()`.
## i In argument: `dplyr::across(tidyselect::any_of(variable_names),
##   mangled_skimmers$funs)`.
## i In group 0: .
## Caused by warning:
## ! There were 377 warnings in `dplyr::summarize()`.
## The first warning was:
## i In argument: `dplyr::across(tidyselect::any_of(variable_names),
##   mangled_skimmers$funs)`.
## Caused by warning in `grepl()`:
## ! unable to translate 'Roy Franz<f6>sisch' to a wide string
## i Run `dplyr::last_dplyr_warnings()` to see the 376 remaining warnings.
```

Table 5: Data summary

Name	data_superstore
Number of rows	9994
Number of columns	21
Column type frequency:	
character	16
numeric	5
Group variables	None

Variable type: character

skim_variable	n_missing	complete_rate	min	max	empty	n_unique	whitespace
Order ID	0	1	14	14	0	5009	0
Order Date	0	1	8	10	0	1237	0
Ship Date	0	1	8	10	0	1334	0
Ship Mode	0	1	8	14	0	4	0
Customer ID	0	1	8	8	0	793	0
Customer Name	0	1	7	22	0	793	0
Segment	0	1	8	11	0	3	0
Country	0	1	13	13	0	1	0
City	0	1	4	17	0	531	0
State	0	1	4	20	0	49	0
Postal Code	0	1	4	5	0	631	0
Region	0	1	4	7	0	4	0
Product ID	0	1	15	15	0	1862	0
Category	0	1	9	15	0	3	0
Sub-Category	0	1	3	11	0	17	0

skim_variable	n_missing	complete_rate	min	max	empty	n_unique	whitespace
Product Name	0	1	5	127	0	1850	0

Variable type: numeric

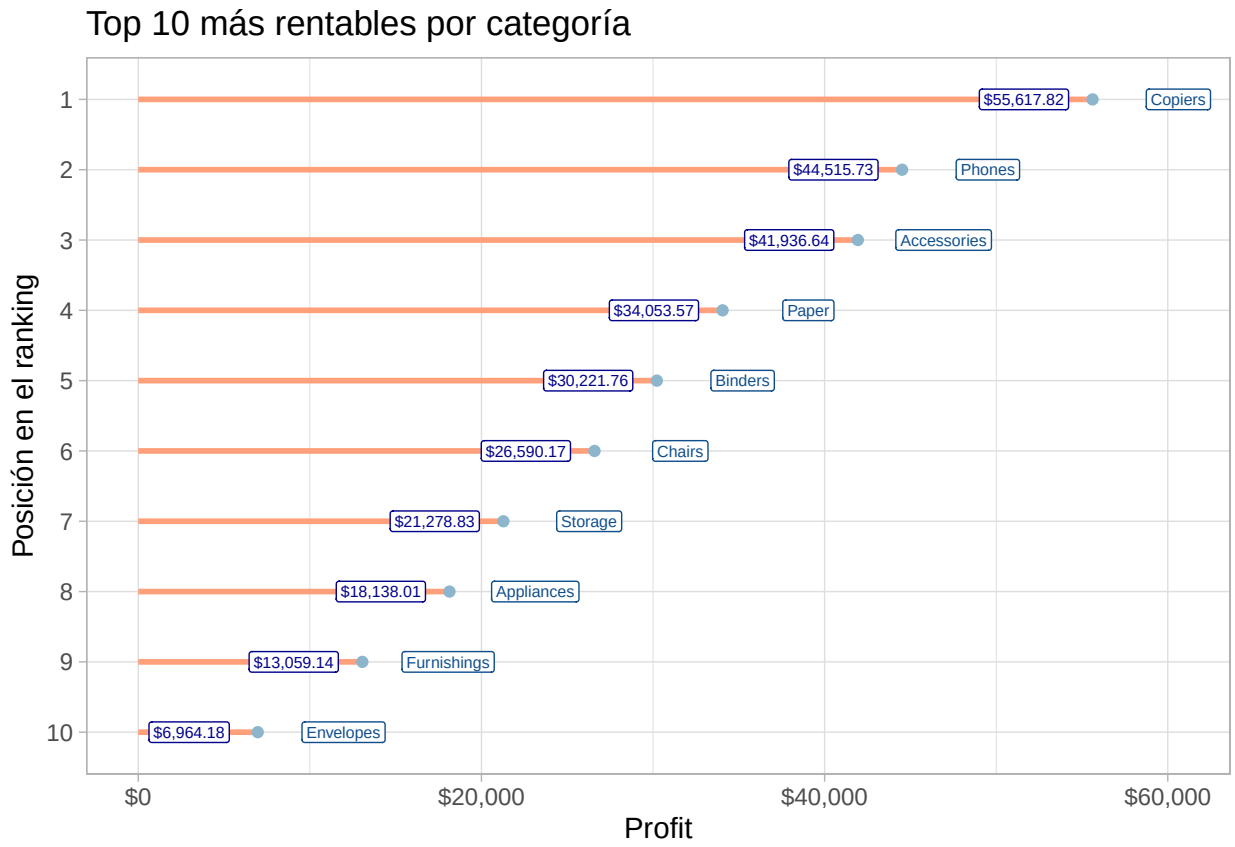
skim_variable	n_missing	complete_rate	mean	sd	p0	p25	p50	p75	p100	hist
Row ID	0	1	4997.50	2885.16	1.00	2499.25	4997.50	7495.75	9994.00	
Sales	0	1	229.86	623.25	0.44	17.28	54.49	209.94	22638.48	
Quantity	0	1	3.79	2.23	1.00	2.00	3.00	5.00	14.00	
Discount	0	1	0.16	0.21	0.00	0.00	0.20	0.20	0.80	
Profit	0	1	28.66	234.26	-6599.98	1.73	8.67	29.36	8399.98	

```
datos_top_10 <- data_superstore %>% dplyr::select(`Sub-Category`, Profit) %>% #Se pone en comillas inve
  group_by(`Sub-Category`) %>%
  summarise(ganancia = sum(Profit)) %>%
  ungroup() %>%
  top_n(10, wt = ganancia) %>% # obtengo el top 10 de profit por sub-categoría ---- arrange(desc(gananc
  arrange(desc(ganancia)) %>% # las ordeno de mayor a menor
  mutate(ranking = 10:1) # creo una nueva columna del 10 al 1

datos_top_10
```

```
## # A tibble: 10 x 3
##    `Sub-Category` ganancia ranking
##    <chr>             <dbl>   <int>
##  1 Copiers          55618.      10
##  2 Phones           44516.       9
##  3 Accessories      41937.       8
##  4 Paper            34054.       7
##  5 Binders          30222.       6
##  6 Chairs           26590.       5
##  7 Storage          21279.       4
##  8 Appliances       18138.       3
##  9 Furnishings      13059.       2
## 10 Envelopes         6964.       1
```

```
datos_top_10 %>%
  ggplot() +
  geom_segment(aes(x = 0, y = ranking, xend = ganancia, yend = ranking),
               linewidth = 1, color = "lightsalmon") +
  geom_point(aes(y = ranking, x = ganancia), color = "lightskyblue3") +
  geom_label(aes(y = ranking, x = ganancia + 5000,
                 label = `Sub-Category`),
             color = "dodgerblue4", size = 2) +
  geom_label(aes(y = ranking, x = ganancia - 4000,
                 label = scales::dollar(round(as.numeric(ganancia), 2))),
             color = "blue4", size = 2) +
  scale_y_discrete(limits=factor(10:1)) +
  scale_x_continuous(labels = scales::dollar) +
```

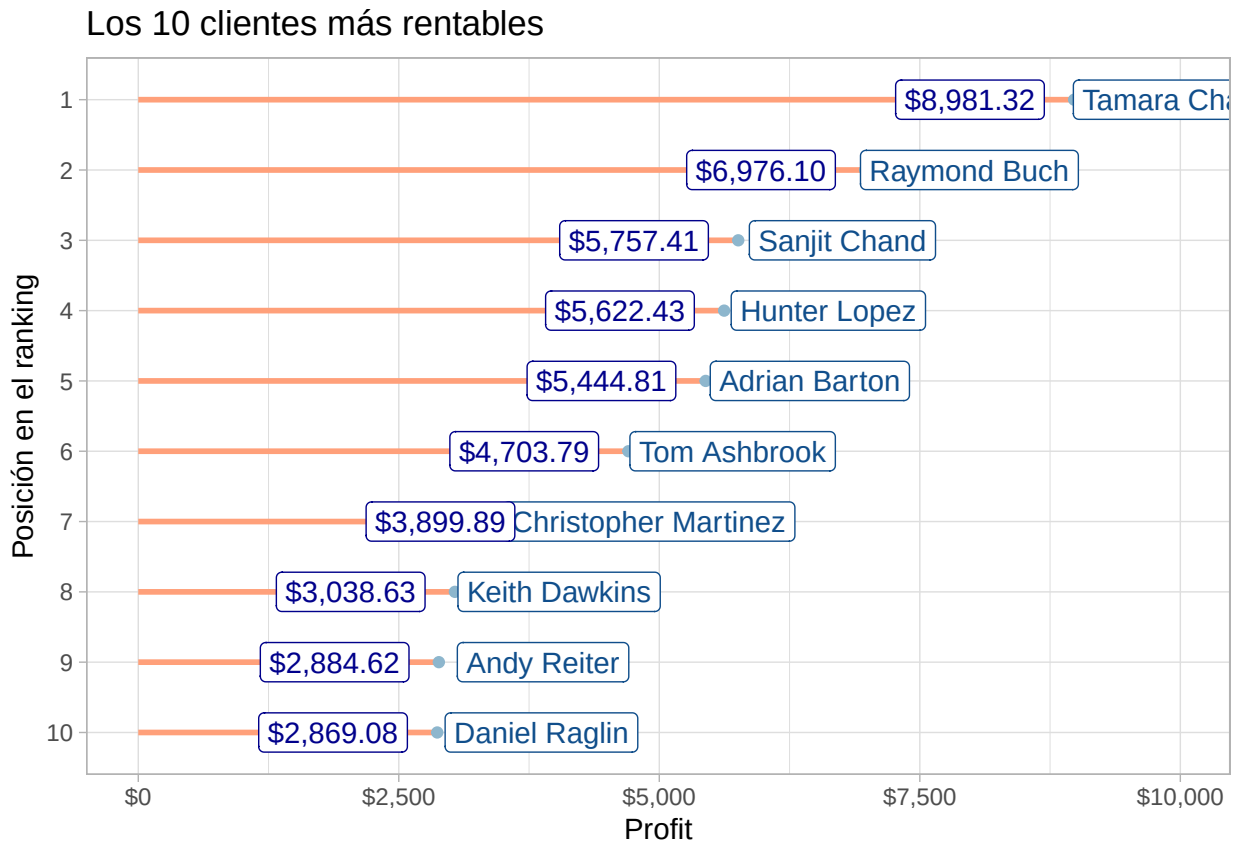
```
  theme_light() +
  xlab("Profit") + ylab("Posición en el ranking") +
  ggtitle("Top 10 más rentables por categoría")
```



+ Ahora quiero ver quienes son mis mejores 10 clientes

```
data_superstore %>% dplyr::select(`Customer Name`, Profit) %>%
  group_by(`Customer Name`) %>%
  summarise(ganancia = sum(Profit)) %>%
  ungroup() %>%
  top_n(10, wt = ganancia) %>%
  arrange(desc(ganancia)) %>%
  mutate(ranking = 10:1) %>%
  ggplot() +
  geom_segment(aes(x = 0, y = ranking, xend = ganancia, yend = ranking),
               linewidth = 1, color = "lightsalmon") +
  geom_point(aes(y = ranking, x = ganancia), color = "lightskyblue3") +
  geom_label(aes(y = ranking, x = ganancia + 1000,
                 label = `Customer Name`),
             color = "dodgerblue4", size = 4) +
  geom_label(aes(y = ranking, x = ganancia - 1000,
                 label = scales::dollar(round(as.numeric(ganancia), 2))),
             color = "blue4", size = 4) +
  scale_y_discrete(limits=factor(10:1)) +
  scale_x_continuous(labels = scales::dollar) +
  theme_light() +
```

```
  xlab("Profit") + ylab("Posición en el ranking") +
  ggtitle("Los 10 clientes más rentables")
```

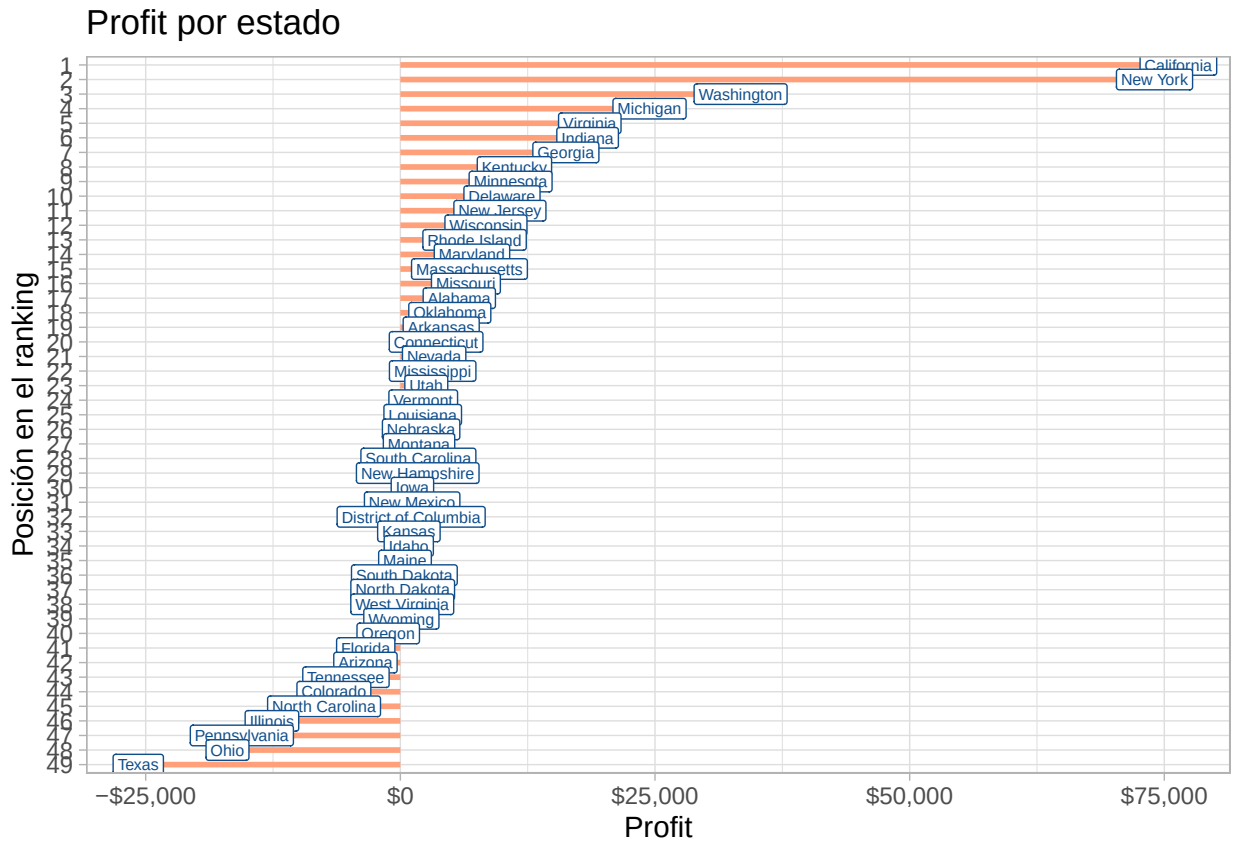



```
datos_por_estado <- data_superstore %>% dplyr::select(State, Profit) %>%
  group_by(State) %>%
  summarise(ganancia = sum(Profit)) %>%
  ungroup() %>%
  arrange(desc(ganancia))

datos_por_estado |> tail()
```

```
## # A tibble: 6 x 2
##   State          ganancia
##   <chr>             <dbl>
## 1 Colorado         -6528.
## 2 North Carolina   -7491.
## 3 Illinois        -12608.
## 4 Pennsylvania    -15560.
## 5 Ohio            -16971.
## 6 Texas           -25729.
```

```
n <- nrow(datos_por_estado)

datos_por_estado %>% mutate(ranking = n:1) %>%
```

```
ggplot() +
  geom_segment(aes(x = 0, y = ranking, xend = ganancia, yend = ranking),
               linewidth = 1, color = "lightsalmon") +
  geom_point(aes(y = ranking, x = ganancia), color = "lightskyblue3") +
  geom_label(aes(y = ranking, x = ganancia,
                 label = State),
             color = "dodgerblue4", size = 2) +
  scale_y_discrete(limits=factor(n:1)) +
  scale_x_continuous(labels = scales::dollar) +
  theme_light() +
  xlab("Profit") + ylab("Posición en el ranking") +
  ggtitle("Profit por estado")
```



+ El último formato clásico que nos falta es el xls

```
data_superstore <- readxl::read_xls("./Data/Sample - Superstore.xls")
```

```
## Warning: Coercing text to numeric in L2236 / R2236C12: '05408'

## Warning: Coercing text to numeric in L5276 / R5276C12: '05408'

## Warning: Coercing text to numeric in L8800 / R8800C12: '05408'

## Warning: Coercing text to numeric in L9148 / R9148C12: '05408'
```

```
## Warning: Coercing text to numeric in L9149 / R9149C12: '05408'

## Warning: Coercing text to numeric in L9150 / R9150C12: '05408'

## Warning: Coercing text to numeric in L9388 / R9388C12: '05408'

## Warning: Coercing text to numeric in L9389 / R9389C12: '05408'

## Warning: Coercing text to numeric in L9390 / R9390C12: '05408'

## Warning: Coercing text to numeric in L9391 / R9391C12: '05408'

## Warning: Coercing text to numeric in L9743 / R9743C12: '05408'
```

```
data_superstore |> head()
```

```
## # A tibble: 6 x 21
##   `Row ID` `Order ID`     `Order Date`        `Ship Date`         `Ship Mode`
##      <dbl> <chr>          <dttm>              <dttm>              <chr>
## 1        1 CA-2016-152156 2016-11-08 00:00:00 2016-11-11 00:00:00 Second Class
## 2        2 CA-2016-152156 2016-11-08 00:00:00 2016-11-11 00:00:00 Second Class
## 3        3 CA-2016-138688 2016-06-12 00:00:00 2016-06-16 00:00:00 Second Class
## 4        4 US-2015-108966 2015-10-11 00:00:00 2015-10-18 00:00:00 Standard Class
## 5        5 US-2015-108966 2015-10-11 00:00:00 2015-10-18 00:00:00 Standard Class
## 6        6 CA-2014-115812 2014-06-09 00:00:00 2014-06-14 00:00:00 Standard Class
## # i 16 more variables: `Customer ID` <chr>, `Customer Name` <chr>,
## #   Segment <chr>, Country <chr>, City <chr>, State <chr>, `Postal Code` <dbl>,
## #   Region <chr>, `Product ID` <chr>, Category <chr>, `Sub-Category` <chr>,
## #   `Product Name` <chr>, Sales <dbl>, Quantity <dbl>, Discount <dbl>,
## #   Profit <dbl>
```

- Otra librería popular (además de {skimr}) para analizar rápidamente la composición de nuestro dataset es {inspectdf}

```
library(inspectdf)  #Libreria que muestra la cantidad de variables numericas, categoricas, etc en un da
```

```
## Warning: package 'inspectdf' was built under R version 4.4.2
```

- ¿Cuántos na's tiene esta tabla?

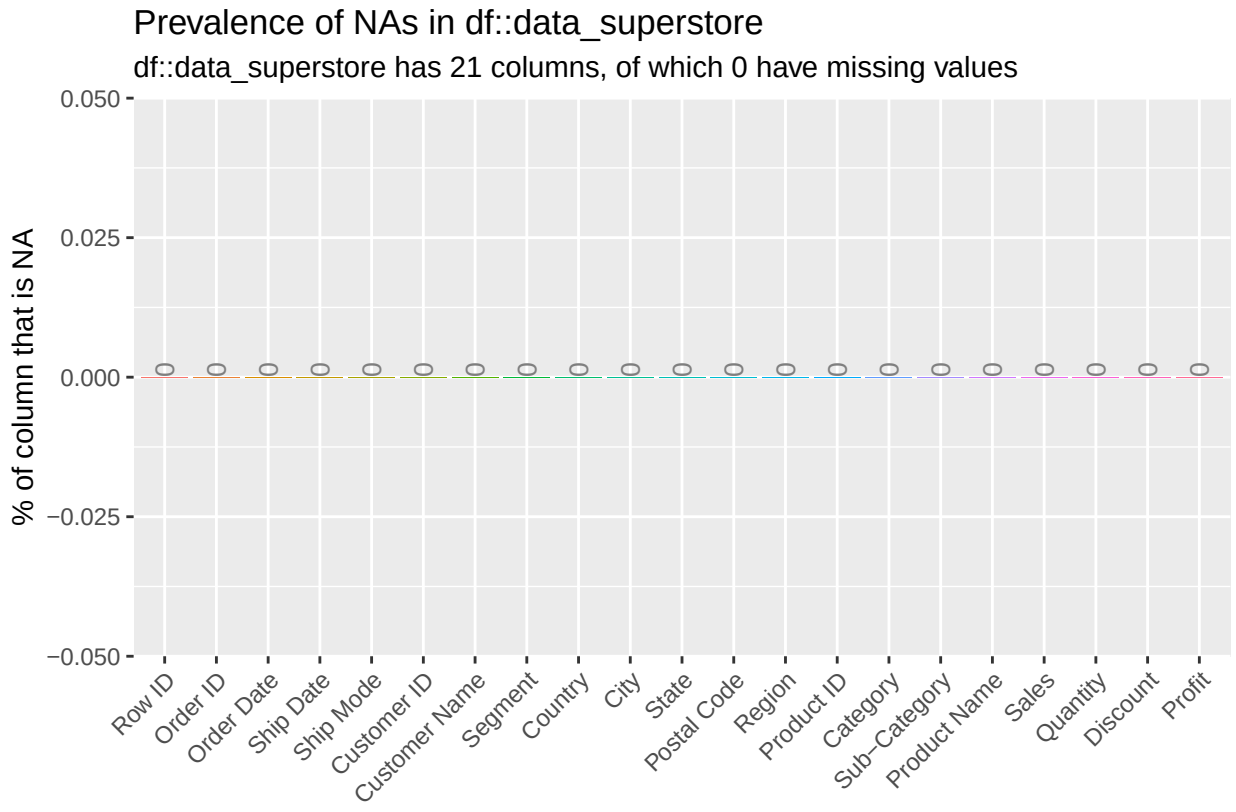
```
inspect_na(data_superstore)
```

```
## # A tibble: 21 x 3
##    col_name        cnt  pcnt
##    <chr>         <int> <dbl>
##  1 Row ID            0     0
##  2 Order ID          0     0
##  3 Order Date        0     0
##  4 Ship Date         0     0
##  5 Ship Mode         0     0
```

```
##  6 Customer ID       0     0
##  7 Customer Name     0     0
##  8 Segment           0     0
##  9 Country           0     0
## 10 City              0     0
## # i 11 more rows
```

- También podría ver una grafiquita

```
data_superstore |> inspect_na() |> show_plot()
```



- ¿Dime qué pasa con las variables categóricas?

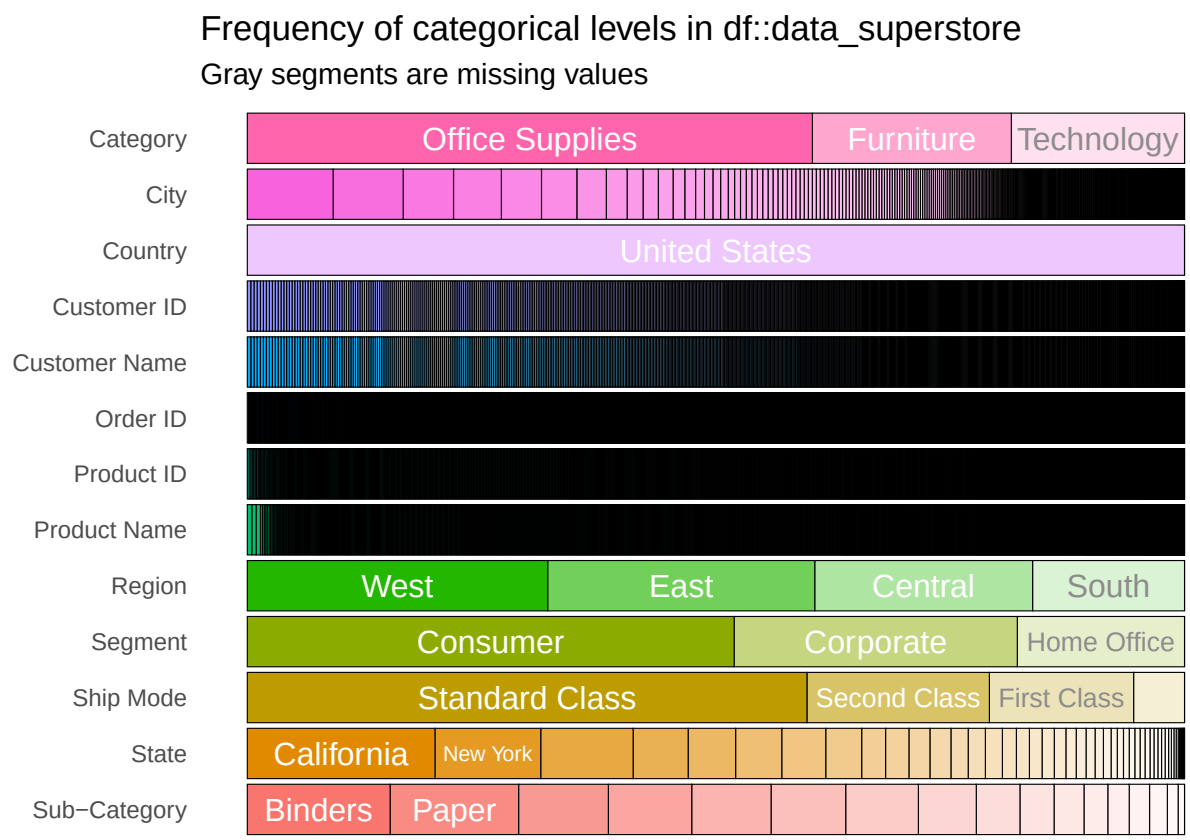
```
data_superstore |> inspect_cat()
```

```
## # A tibble: 13 x 5
##    col_name        cnt common          common_pcnt levels
##    <chr>         <int> <chr>                 <dbl> <named list>
##  1 Category          3 Office Supplies      60.3   <tibble [3 x 3]>
##  2 City            531 New York City         9.16  <tibble [531 x 3]>
##  3 Country           1 United States       100     <tibble [1 x 3]>
##  4 Customer ID     793 WB-21850              0.370 <tibble [793 x 3]>
##  5 Customer Name   793 William Brown         0.370 <tibble [793 x 3]>
##  6 Order ID       5009 CA-2017-100111        0.140 <tibble [5,009 x 3]>
```

```
##  7 Product ID     1862 OFF-PA-10001970       0.190 <tibble [1,862 x 3]>
##  8 Product Name   1850 Staple envelope       0.480 <tibble [1,850 x 3]>
##  9 Region            4 West                 32.0   <tibble [4 x 3]>
## 10 Segment           3 Consumer             51.9   <tibble [3 x 3]>
## 11 Ship Mode         4 Standard Class       59.7   <tibble [4 x 3]>
## 12 State            49 California           20.0   <tibble [49 x 3]>
## 13 Sub-Category     17 Binders              15.2   <tibble [17 x 3]>
```

- Podemos ver una gráfica sencilla

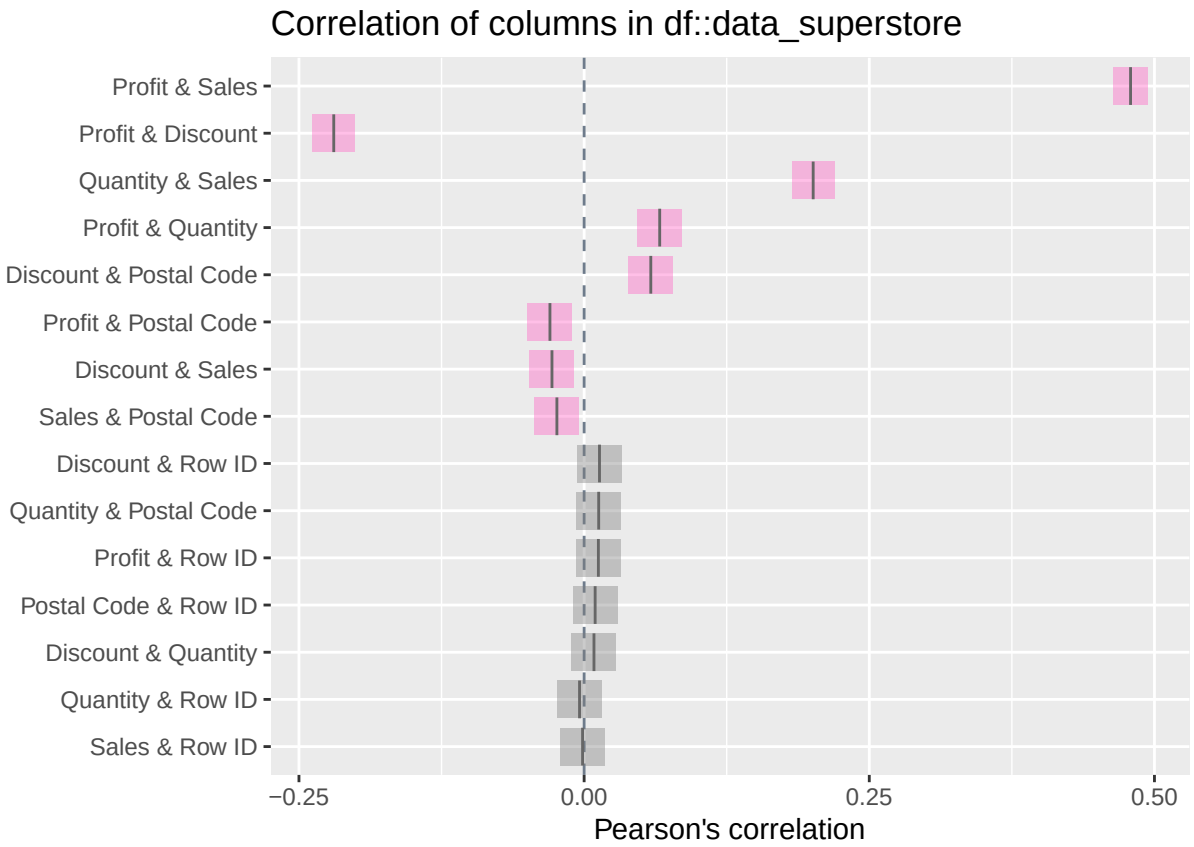
```
data_superstore |> inspect_cat() |> show_plot()
```



+ Muestrame la correlación entre las variables numéricas

```
data_superstore |> inspect_cor() |> show_plot()
```

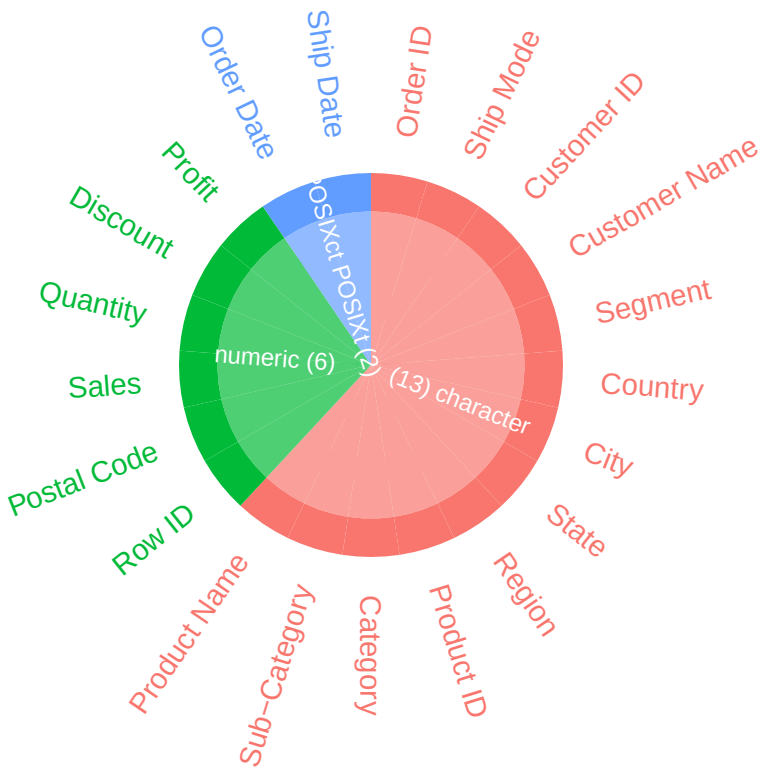
```
## Warning: Columns with 0 variance found: Discount
```




```
data_superstore |> inspect_types()
```

```
## # A tibble: 3 x 4
##   type             cnt  pcnt col_name
##   <chr>          <int> <dbl> <named list>
## 1 character         13 61.9  <chr [13]>
## 2 numeric            6 28.6  <chr [6]>
## 3 POSIXct POSIXt     2  9.52 <chr [2]>
```

```
data_superstore |> inspect_types() |> show_plot()
```




```
data_superstore |> inspect_num()
```

```
## # A tibble: 6 x 10
##   col_name          min       q1  median    mean      q3     max      sd pcnt_na
##   <chr>           <dbl>    <dbl>   <dbl>   <dbl>   <dbl>   <dbl>   <dbl>   <dbl>
## 1 Row ID          1      2499.    5.00e+3 5.00e+3  7496.   9994   2.89e+3       0
## 2 Postal Code  1040     23223     5.64e+4 5.52e+4 90008   99301   3.21e+4       0
## 3 Sales           0.444    17.3  5.45e+1 2.30e+2   210.  22638.  6.23e+2       0
## 4 Quantity        1         2    3   e+0 3.79e+0     5      14   2.23e+0       0
## 5 Discount        0         0    2   e-1 1.56e-1     0.2     0.8 2.06e-1       0
## 6 Profit      -6600.        1.73 8.67e+0 2.87e+1    29.4  8400.   2.34e+2       0
## # i 1 more variable: hist <named list>
```

```
data_superstore |> inspect_num() |> show_plot()
```

Libreria Maps

La librería maps en R se utiliza para trazar mapas geográficos básicos de diferentes regiones del mundo, incluyendo países, estados y condados. Es útil para visualizar datos espaciales de manera sencilla.

```
library(maps)
```

```
## Warning: package 'maps' was built under R version 4.4.2
```

```
data_por_estado <- data_superstore %>% dplyr::select(State, Profit) %>%
  group_by(State) %>%
  summarise(ganancia = sum(Profit)) %>%
  ungroup() %>%
  mutate(region = tolower(State))
```

```
MainStates <- map_data("state")
```

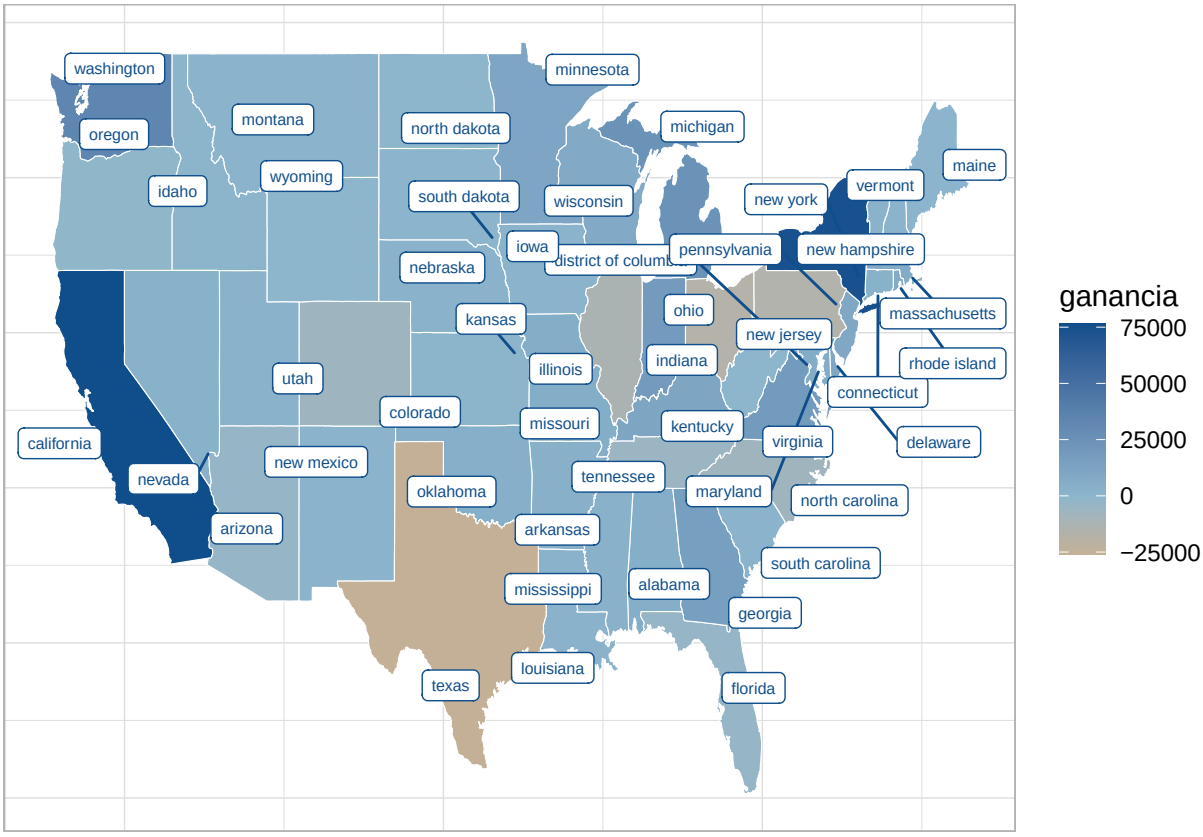
```
data_por_estado <- data_por_estado %>% inner_join(MainStates, by = "region")
```

```
df_para_etiquetas <- MainStates %>% group_by(region) %>%
  summarise(long = median(long), lat = median(lat))
```

```
data_por_estado %>% ggplot() +
  geom_polygon(aes(x=long, y=lat, group=group, fill = ganancia),
               color="white", linewidth = 0.2) +
```

```
  scale_fill_gradient2(low = "orange",
                       mid = "lightskyblue3", high = "dodgerblue4", midpoint = 0) +
  geom_label_repel(data = df_para_etiquetas, aes(x=long, y=lat, label = region),
            color = "dodgerblue4", size = 2) +
  theme_light() +
  theme(axis.text.x = element_blank(),
        axis.title.x = element_blank(),
        axis.ticks.x = element_blank(),
        axis.title.y = element_blank(),
        axis.ticks.y = element_blank(),
        axis.text.y = element_blank(),
        plot.title = element_text(face = "bold", size = 9))
```

```
## Warning: ggrepel: 1 unlabeled data points (too many overlaps). Consider
## increasing max.overlaps
```



Bases de datos más estructuradas

```
library(DBI)
library(dbplyr)
```

```
##
```

```
## Adjuntando el paquete: 'dbplyr'

## The following objects are masked from 'package:dplyr':
##
##     ident, sql
```

```
library(RSQLite)
```

```
## Warning: package 'RSQLite' was built under R version 4.4.2
```

```
library(Lahman)
```

```
## Warning: package 'Lahman' was built under R version 4.4.2
```

- SQLite es un sistema de administración de bases de datos relacionales (RDBMS, Relational Database Management System)
- Es ligero, serverless (sin servidor), self-contained (autónomo) e integrado (embedded)

Se utiliza para el almacenamiento local de datos en aplicaciones, prototipos y proyectos pequeños o medianos

Ligero (y rápido):

- SQLite está diseñado para ser ligero y eficiente, lo que lo hace ideal para aplicaciones con tráfico bajo o moderado, o para su uso en sistemas integrados.
- Funciona bien para aplicaciones pequeñas, pero puede no ser adecuado para sistemas de alta concurrencia o a gran escala.

Serverless:

- A diferencia de bases de datos tradicionales como MySQL o PostgreSQL, SQLite no requiere un proceso de servidor separado para funcionar.
- La base de datos se almacena en un solo archivo en el disco, y la biblioteca lee y escribe directamente en ese archivo.

Self-Contained:

- Es un sistema autónomo, lo que significa que no tiene dependencias externas. Todo el motor de la base de datos está contenido dentro de una sola biblioteca.

Configuración cero

- No requiere configuración ni administración. No es necesario instalar un servidor, configurar usuarios o administrarar permisos.

Base de datos en un solo archivo:

- Toda la base de datos (tablas, índices y datos) se almacena en un solo archivo en el disco (por ejemplo, mibasededatos.db). Por lo tanto es muy fácil copiar, mover o compartir la base de datos.

Adicionales:

- SQLite es multiplataforma y funciona en varios sistemas operativos, incluyendo Windows, macOS, Linux, iOS y Android.
- Admite propiedades ACID (Atomicidad, Consistencia, Aislamiento, Durabilidad), lo que garantiza transacciones confiables incluso en caso de fallos del sistema.
- Es open-source y se publica bajo dominio público, lo que significa que es gratis para cualquier uso sin restricciones de licencia.

Empecenmos...

- Una de las formas más fáciles es con DBI utilizando la función `dbGetQuery()`
- Se hace copy/paste de código SQL en la función de R como un string entre comillas
- Esta forma se conoce como pass through SQL code

```
conn <- DBI::dbConnect(RSQLite::SQLite(), "./Data/CarsDB.db")
```

```
dbListTables(conn)
```

```
## [1] "cars_data"   "otros_autos"
```

```
mtcars |> head()
```

```
##                   mpg cyl disp  hp drat    wt  qsec vs am gear carb
## Mazda RX4         21.0   6  160 110 3.90 2.620 16.46  0  1    4    4
## Mazda RX4 Wag     21.0   6  160 110 3.90 2.875 17.02  0  1    4    4
## Datsun 710        22.8   4  108  93 3.85 2.320 18.61  1  1    4    1
## Hornet 4 Drive    21.4   6  258 110 3.08 3.215 19.44  1  0    3    1
## Hornet Sportabout 18.7   8  360 175 3.15 3.440 17.02  0  0    3    2
## Valiant           18.1   6  225 105 2.76 3.460 20.22  1  0    3    1
```

```
datos <- mtcars
datos$car_names <- rownames(datos)
rownames(datos) <- c()
head(datos)
```

```
##    mpg cyl disp  hp drat    wt  qsec vs am gear carb         car_names
## 1 21.0   6  160 110 3.90 2.620 16.46  0  1    4    4         Mazda RX4
## 2 21.0   6  160 110 3.90 2.875 17.02  0  1    4    4     Mazda RX4 Wag
## 3 22.8   4  108  93 3.85 2.320 18.61  1  1    4    1        Datsun 710
## 4 21.4   6  258 110 3.08 3.215 19.44  1  0    3    1    Hornet 4 Drive
## 5 18.7   8  360 175 3.15 3.440 17.02  0  0    3    2 Hornet Sportabout
## 6 18.1   6  225 105 2.76 3.460 20.22  1  0    3    1           Valiant
```

```r
dbWriteTable(conn, "cars_data", datos, overwrite = TRUE)
```

```r
dbListTables(conn)
```

```
## [1] "cars_data"   "otros_autos"
```

```r
dbGetQuery(conn, "SELECT * FROM cars_data")
```

```
##     mpg cyl  disp  hp drat    wt  qsec vs am gear carb          car_names
## 1  21.0   6 160.0 110 3.90 2.620 16.46  0  1    4    4          Mazda RX4
## 2  21.0   6 160.0 110 3.90 2.875 17.02  0  1    4    4      Mazda RX4 Wag
## 3  22.8   4 108.0  93 3.85 2.320 18.61  1  1    4    1         Datsun 710
## 4  21.4   6 258.0 110 3.08 3.215 19.44  1  0    3    1     Hornet 4 Drive
## 5  18.7   8 360.0 175 3.15 3.440 17.02  0  0    3    2  Hornet Sportabout
## 6  18.1   6 225.0 105 2.76 3.460 20.22  1  0    3    1            Valiant
## 7  14.3   8 360.0 245 3.21 3.570 15.84  0  0    3    4         Duster 360
## 8  24.4   4 146.7  62 3.69 3.190 20.00  1  0    4    2          Merc 240D
## 9  22.8   4 140.8  95 3.92 3.150 22.90  1  0    4    2           Merc 230
## 10 19.2   6 167.6 123 3.92 3.440 18.30  1  0    4    4           Merc 280
## 11 17.8   6 167.6 123 3.92 3.440 18.90  1  0    4    4          Merc 280C
## 12 16.4   8 275.8 180 3.07 4.070 17.40  0  0    3    3         Merc 450SE
## 13 17.3   8 275.8 180 3.07 3.730 17.60  0  0    3    3         Merc 450SL
## 14 15.2   8 275.8 180 3.07 3.780 18.00  0  0    3    3        Merc 450SLC
## 15 10.4   8 472.0 205 2.93 5.250 17.98  0  0    3    4 Cadillac Fleetwood
## 16 10.4   8 460.0 215 3.00 5.424 17.82  0  0    3    4 Lincoln Continental
## 17 14.7   8 440.0 230 3.23 5.345 17.42  0  0    3    4  Chrysler Imperial
## 18 32.4   4  78.7  66 4.08 2.200 19.47  1  1    4    1           Fiat 128
## 19 30.4   4  75.7  52 4.93 1.615 18.52  1  1    4    2        Honda Civic
## 20 33.9   4  71.1  65 4.22 1.835 19.90  1  1    4    1     Toyota Corolla
## 21 21.5   4 120.1  97 3.70 2.465 20.01  1  0    3    1      Toyota Corona
## 22 15.5   8 318.0 150 2.76 3.520 16.87  0  0    3    2   Dodge Challenger
## 23 15.2   8 304.0 150 3.15 3.435 17.30  0  0    3    2        AMC Javelin
## 24 13.3   8 350.0 245 3.73 3.840 15.41  0  0    3    4         Camaro Z28
## 25 19.2   8 400.0 175 3.08 3.845 17.05  0  0    3    2   Pontiac Firebird
## 26 27.3   4  79.0  66 4.08 1.935 18.90  1  1    4    1          Fiat X1-9
## 27 26.0   4 120.3  91 4.43 2.140 16.70  0  1    5    2      Porsche 914-2
## 28 30.4   4  95.1 113 3.77 1.513 16.90  1  1    5    2        Lotus Europa
## 29 15.8   8 351.0 264 4.22 3.170 14.50  0  1    5    4      Ford Pantera L
## 30 19.7   6 145.0 175 3.62 2.770 15.50  0  1    5    6        Ferrari Dino
## 31 15.0   8 301.0 335 3.54 3.570 14.60  0  1    5    8       Maserati Bora
## 32 21.4   4 121.0 109 4.11 2.780 18.60  1  1    4    2          Volvo 142E
```

```r
dbGetQuery(conn, "SELECT * FROM cars_data LIMIT 10")
```

```
##     mpg cyl  disp  hp drat    wt  qsec vs am gear carb         car_names
## 1  21.0   6 160.0 110 3.90 2.620 16.46  0  1    4    4         Mazda RX4
## 2  21.0   6 160.0 110 3.90 2.875 17.02  0  1    4    4     Mazda RX4 Wag
## 3  22.8   4 108.0  93 3.85 2.320 18.61  1  1    4    1        Datsun 710
## 4  21.4   6 258.0 110 3.08 3.215 19.44  1  0    3    1    Hornet 4 Drive
## 5  18.7   8 360.0 175 3.15 3.440 17.02  0  0    3    2 Hornet Sportabout
## 6  18.1   6 225.0 105 2.76 3.460 20.22  1  0    3    1           Valiant
```

```
## 7  14.3   8 360.0 245 3.21 3.570 15.84  0  0    3    4        Duster 360
## 8  24.4   4 146.7  62 3.69 3.190 20.00  1  0    4    2         Merc 240D
## 9  22.8   4 140.8  95 3.92 3.150 22.90  1  0    4    2          Merc 230
## 10 19.2   6 167.6 123 3.92 3.440 18.30  1  0    4    4          Merc 280
```

```
# Obtener los car names y caballos de fuerza (hp) que 8 cilindros
dbGetQuery(conn,"SELECT car_names, hp, cyl FROM cars_data
                 WHERE cyl = 8")
```

```
##              car_names  hp cyl
## 1    Hornet Sportabout 175   8
## 2            Duster 360 245   8
## 3            Merc 450SE 180   8
## 4            Merc 450SL 180   8
## 5           Merc 450SLC 180   8
## 6   Cadillac Fleetwood 205   8
## 7  Lincoln Continental 215   8
## 8    Chrysler Imperial 230   8
## 9     Dodge Challenger 150   8
## 10         AMC Javelin 150   8
## 11          Camaro Z28 245   8
## 12    Pontiac Firebird 175   8
## 13      Ford Pantera L 264   8
## 14       Maserati Bora 335   8
```

```
# Obtener los car names y caballos de fuerza (hp) que empiezan con 'M' y que tienen 6 o 8 cilindros
dbGetQuery(conn,"SELECT car_names, hp, cyl FROM cars_data
                 WHERE car_names LIKE 'M%' AND cyl IN (6,8)")
```

```
##       car_names  hp cyl
## 1     Mazda RX4 110   6
## 2 Mazda RX4 Wag 110   6
## 3      Merc 280 123   6
## 4     Merc 280C 123   6
## 5    Merc 450SE 180   8
## 6    Merc 450SL 180   8
## 7   Merc 450SLC 180   8
## 8 Maserati Bora 335   8
```

```
# Obtener los caballos de fuerza (hp) promedio y millas por galón (mpg) promedio por número de cilindro
dbGetQuery(conn,"SELECT cyl, AVG(hp) AS 'average_hp', AVG(mpg) AS 'average_mpg' FROM cars_data
                 GROUP BY cyl
                 ORDER BY average_hp")
```

```
##   cyl average_hp average_mpg
## 1   4   82.63636    26.66364
## 2   6  122.28571    19.74286
## 3   8  209.21429    15.10000
```

```
resumen <- dbGetQuery(conn,"SELECT cyl, AVG(hp) AS 'average_hp'FROM cars_data
                 GROUP BY cyl
                 ORDER BY average_hp")
```

```r
class(resumen)
```

```
## [1] "data.frame"
```

```r
autos <- c('Camaro', 'California', 'Mustang', 'Explorer')
fabricante <- c('Chevrolet','Ferrari','Ford','Ford')
df1 <- data.frame(autos, fabricante)
df1
```

```
##        autos fabricante
## 1     Camaro  Chevrolet
## 2 California    Ferrari
## 3    Mustang       Ford
## 4   Explorer       Ford
```

```r
autos <- c('Corolla', 'Lancer', 'Sportage', 'XE')
fabricante <- c('Toyota','Mitsubishi','Kia','Jaguar')
df2 <- data.frame(autos, fabricante)
df2
```

```
##      autos fabricante
## 1  Corolla     Toyota
## 2   Lancer Mitsubishi
## 3 Sportage        Kia
## 4       XE     Jaguar
```

```r
lista_dfs <- list(df1,df2)
lista_dfs
```

```
## [[1]]
##        autos fabricante
## 1     Camaro  Chevrolet
## 2 California    Ferrari
## 3    Mustang       Ford
## 4   Explorer       Ford
##
## [[2]]
##      autos fabricante
## 1  Corolla     Toyota
## 2   Lancer Mitsubishi
## 3 Sportage        Kia
## 4       XE     Jaguar
```

```r
# Se escribe una nueva tabla haciendo appending de los dataframes de la lista
for(k in 1:length(lista_dfs)){
    dbWriteTable(conn,"otros_autos", lista_dfs[[k]], append = TRUE)
}
```

```r
dbListTables(conn)
```

```
## [1] "cars_data"   "otros_autos"
```

```
dbGetQuery(conn, "SELECT * FROM otros_autos")
```

```
##         autos fabricante
## 1      Camaro  Chevrolet
## 2  California    Ferrari
## 3     Mustang       Ford
## 4    Explorer       Ford
## 5     Corolla     Toyota
## 6      Lancer Mitsubishi
## 7    Sportage        Kia
## 8          XE     Jaguar
## 9      Camaro  Chevrolet
## 10 California    Ferrari
## 11    Mustang       Ford
## 12   Explorer       Ford
## 13    Corolla     Toyota
## 14     Lancer Mitsubishi
## 15   Sportage        Kia
## 16         XE     Jaguar
## 17     Camaro  Chevrolet
## 18 California    Ferrari
## 19    Mustang       Ford
## 20   Explorer       Ford
## 21    Corolla     Toyota
## 22     Lancer Mitsubishi
## 23   Sportage        Kia
## 24         XE     Jaguar
## 25     Camaro  Chevrolet
## 26 California    Ferrari
## 27    Mustang       Ford
## 28   Explorer       Ford
## 29    Corolla     Toyota
## 30     Lancer Mitsubishi
## 31   Sportage        Kia
## 32         XE     Jaguar
```

- Podemos parametrizar con objetos de R, las queries

Lets assume that there is some user input that asks us to look only into cars that have over 18 miles per gallon (mpg)

and more than 6 cylinders

```
# Definimos nuestros parámetros
millas <-  18
cilindros <- 6
mi_df_query <- dbGetQuery(conn,
                      'SELECT car_names, mpg, cyl FROM cars_data WHERE mpg >= ? AND cyl >= ?',
```

```
                    params = c(millas, cilindros))
mi_df_query
```

```
##           car_names  mpg cyl
## 1         Mazda RX4 21.0   6
## 2     Mazda RX4 Wag 21.0   6
## 3    Hornet 4 Drive 21.4   6
## 4 Hornet Sportabout 18.7   8
## 5           Valiant 18.1   6
## 6          Merc 280 19.2   6
## 7  Pontiac Firebird 19.2   8
## 8      Ferrari Dino 19.7   6
```

```
dbDisconnect(conn)
```

```
lahman_s <- dbplyr::lahman_sqlite()
```

```
## Creating table: AllstarFull

## Creating table: Appearances

## Creating table: AwardsManagers

## Creating table: AwardsPlayers

## Creating table: AwardsShareManagers

## Creating table: AwardsSharePlayers

## Creating table: Batting

## Creating table: BattingPost

## Creating table: CollegePlaying

## Creating table: Fielding

## Creating table: FieldingOF

## Creating table: FieldingOFsplit

## Creating table: FieldingPost

## Creating table: HallOfFame

## Creating table: HomeGames

## Creating table: LahmanData
```

```
## Creating table: Managers

## Creating table: ManagersHalf

## Creating table: Parks

## Creating table: People

## Creating table: Pitching

## Creating table: PitchingPost

## Creating table: Salaries

## Creating table: Schools

## Creating table: SeriesPost

## Creating table: Teams

## Creating table: TeamsFranchises

## Creating table: TeamsHalf
```

```
bateo <- tbl(lahman_s, "Batting")
```

```
bateo |> class()
```

```
## [1] "tbl_SQLiteConnection" "tbl_dbi"              "tbl_sql"
## [4] "tbl_lazy"             "tbl"
```

```
bateo %>% show_query()
```

```
## <SQL>
## SELECT *
## FROM `Batting`
```

```
bateo |> dplyr::filter(playerID == "mcguide01")
```

```
## # Source:   SQL [?? x 22]
## # Database: sqlite 3.47.1 [C:\Users\ferna\AppData\Local\Temp\RtmpAjDQHo\lahman.sqlite]
##    playerID  yearID stint teamID lgID      G    AB     R     H   X2B   X3B    HR
##    <chr>      <int> <int> <chr>  <chr> <int> <int> <int> <int> <int> <int> <int>
##  1 mcguide01   1884     1 TL1    AA       45   151    12    28     7     0     1
##  2 mcguide01   1885     1 DTN    NL       34   121    11    23     4     2     0
##  3 mcguide01   1886     1 PHI    NL       50   167    25    33     7     1     2
##  4 mcguide01   1887     1 PHI    NL       41   150    22    46     6     6     2
##  5 mcguide01   1888     1 PHI    NL       12    51     7    17     4     2     0
##  6 mcguide01   1888     2 DTN    NL        3    13     0     0     0     0     0
```

```
##  7 mcguide01   1888     3 CL3    AA       26    94    15    24     1     3     1
##  8 mcguide01   1890     1 RC2    AA       87   331    46    99    16     4     4
##  9 mcguide01   1891     1 WS9    AA      114   413    55   125    22    10     3
## 10 mcguide01   1892     1 WAS    NL       97   315    46    73    14     4     4
## # i more rows
## # i 10 more variables: RBI <int>, SB <int>, CS <int>, BB <int>, SO <int>,
## #   IBB <int>, HBP <int>, SH <int>, SF <int>, GIDP <int>
```

```
bateo |> dplyr::filter(playerID == "mcguide01") |> show_query()
```

```
## <SQL>
## SELECT `Batting`.*
## FROM `Batting`
## WHERE (`playerID` = 'mcguide01')
```

```
bateo |> dplyr::filter(playerID == "mcguide01") |>
  dplyr::select(yearID,R) |>
  show_query()
```

```
## <SQL>
## SELECT `yearID`, `R`
## FROM `Batting`
## WHERE (`playerID` = 'mcguide01')
```

```
bateo |> dplyr::filter(playerID == "mcguide01") |>
  mutate(era = if_else(yearID <= 1888, "vieja era", "nueva era")) |>
  dplyr::select(playerID, yearID, era, teamID) |>
  show_query()
```

```
## <SQL>
## SELECT
##   `playerID`,
##   `yearID`,
##   CASE WHEN (`yearID` <= 1888.0) THEN 'vieja era' WHEN NOT (`yearID` <= 1888.0) THEN 'nueva era' END
##   `teamID`
## FROM `Batting`
## WHERE (`playerID` = 'mcguide01')
```

```
con <- dbConnect(RSQLite::SQLite(), dbname = "./Data/titanic.db")
```

```
dbListTables(con)
```

```
## [1] "titanic"
```

```
primer_query <- dbGetQuery(con, "SELECT * FROM titanic")
primer_query
```

```
##     PassengerId Survived Pclass
## 1             1        0      3
## 2             2        1      1
```

```
## 3             3        1      3
## 4             4        1      1
## 5             5        0      3
## 6             6        0      3
## 7             7        0      1
## 8             8        0      3
## 9             9        1      3
## 10           10        1      2
## 11           11        1      3
## 12           12        1      1
## 13           13        0      3
## 14           14        0      3
## 15           15        0      3
## 16           16        1      2
## 17           17        0      3
## 18           18        1      2
## 19           19        0      3
## 20           20        1      3
## 21           21        0      2
## 22           22        1      2
## 23           23        1      3
## 24           24        1      1
## 25           25        0      3
## 26           26        1      3
## 27           27        0      3
## 28           28        0      1
## 29           29        1      3
## 30           30        0      3
## 31           31        0      1
## 32           32        1      1
## 33           33        1      3
## 34           34        0      2
## 35           35        0      1
## 36           36        0      1
## 37           37        1      3
## 38           38        0      3
## 39           39        0      3
## 40           40        1      3
## 41           41        0      3
## 42           42        0      2
## 43           43        0      3
## 44           44        1      2
## 45           45        1      3
## 46           46        0      3
## 47           47        0      3
## 48           48        1      3
## 49           49        0      3
## 50           50        0      3
## 51           51        0      3
## 52           52        0      3
## 53           53        1      1
## 54           54        1      2
## 55           55        0      1
## 56           56        1      1
```

```
## 57          57        1       2
## 58          58        0       3
## 59          59        1       2
## 60          60        0       3
## 61          61        0       3
## 62          62        1       1
## 63          63        0       1
## 64          64        0       3
## 65          65        0       1
## 66          66        1       3
## 67          67        1       2
## 68          68        0       3
## 69          69        1       3
## 70          70        0       3
## 71          71        0       2
## 72          72        0       3
## 73          73        0       2
## 74          74        0       3
## 75          75        1       3
## 76          76        0       3
## 77          77        0       3
## 78          78        0       3
## 79          79        1       2
## 80          80        1       3
## 81          81        0       3
## 82          82        1       3
## 83          83        1       3
## 84          84        0       1
## 85          85        1       2
## 86          86        1       3
## 87          87        0       3
## 88          88        0       3
## 89          89        1       1
## 90          90        0       3
## 91          91        0       3
## 92          92        0       3
## 93          93        0       1
## 94          94        0       3
## 95          95        0       3
## 96          96        0       3
## 97          97        0       1
## 98          98        1       1
## 99          99        1       2
## 100        100        0       2
## 101        101        0       3
## 102        102        0       3
## 103        103        0       1
## 104        104        0       3
## 105        105        0       3
## 106        106        0       3
## 107        107        1       3
## 108        108        1       3
## 109        109        0       3
## 110        110        1       3
```

```
## 111          111         0       1
## 112          112         0       3
## 113          113         0       3
## 114          114         0       3
## 115          115         0       3
## 116          116         0       3
## 117          117         0       3
## 118          118         0       2
## 119          119         0       1
## 120          120         0       3
## 121          121         0       2
## 122          122         0       3
## 123          123         0       2
## 124          124         1       2
## 125          125         0       1
## 126          126         1       3
## 127          127         0       3
## 128          128         1       3
## 129          129         1       3
## 130          130         0       3
## 131          131         0       3
## 132          132         0       3
## 133          133         0       3
## 134          134         1       2
## 135          135         0       2
## 136          136         0       2
## 137          137         1       1
## 138          138         0       1
## 139          139         0       3
## 140          140         0       1
## 141          141         0       3
## 142          142         1       3
## 143          143         1       3
## 144          144         0       3
## 145          145         0       2
## 146          146         0       2
## 147          147         1       3
## 148          148         0       3
## 149          149         0       2
## 150          150         0       2
## 151          151         0       2
## 152          152         1       1
## 153          153         0       3
## 154          154         0       3
## 155          155         0       3
## 156          156         0       1
## 157          157         1       3
## 158          158         0       3
## 159          159         0       3
## 160          160         0       3
## 161          161         0       3
## 162          162         1       2
## 163          163         0       3
## 164          164         0       3
```

```
## 165          165         0       3
## 166          166         1       3
## 167          167         1       1
## 168          168         0       3
## 169          169         0       1
## 170          170         0       3
## 171          171         0       1
## 172          172         0       3
## 173          173         1       3
## 174          174         0       3
## 175          175         0       1
## 176          176         0       3
## 177          177         0       3
## 178          178         0       1
## 179          179         0       2
## 180          180         0       3
## 181          181         0       3
## 182          182         0       2
## 183          183         0       3
## 184          184         1       2
## 185          185         1       3
## 186          186         0       1
## 187          187         1       3
## 188          188         1       1
## 189          189         0       3
## 190          190         0       3
## 191          191         1       2
## 192          192         0       2
## 193          193         1       3
## 194          194         1       2
## 195          195         1       1
## 196          196         1       1
## 197          197         0       3
## 198          198         0       3
## 199          199         1       3
## 200          200         0       2
## 201          201         0       3
## 202          202         0       3
## 203          203         0       3
## 204          204         0       3
## 205          205         1       3
## 206          206         0       3
## 207          207         0       3
## 208          208         1       3
## 209          209         1       3
## 210          210         1       1
## 211          211         0       3
## 212          212         1       2
## 213          213         0       3
## 214          214         0       2
## 215          215         0       3
## 216          216         1       1
## 217          217         1       3
## 218          218         0       2
```

```
## 219          219         1       1
## 220          220         0       2
## 221          221         1       3
## 222          222         0       2
## 223          223         0       3
## 224          224         0       3
## 225          225         1       1
## 226          226         0       3
## 227          227         1       2
## 228          228         0       3
## 229          229         0       2
## 230          230         0       3
## 231          231         1       1
## 232          232         0       3
## 233          233         0       2
## 234          234         1       3
## 235          235         0       2
## 236          236         0       3
## 237          237         0       2
## 238          238         1       2
## 239          239         0       2
## 240          240         0       2
## 241          241         0       3
## 242          242         1       3
## 243          243         0       2
## 244          244         0       3
## 245          245         0       3
## 246          246         0       1
## 247          247         0       3
## 248          248         1       2
## 249          249         1       1
## 250          250         0       2
## 251          251         0       3
## 252          252         0       3
## 253          253         0       1
## 254          254         0       3
## 255          255         0       3
## 256          256         1       3
## 257          257         1       1
## 258          258         1       1
## 259          259         1       1
## 260          260         1       2
## 261          261         0       3
## 262          262         1       3
## 263          263         0       1
## 264          264         0       1
## 265          265         0       3
## 266          266         0       2
## 267          267         0       3
## 268          268         1       3
## 269          269         1       1
## 270          270         1       1
## 271          271         0       1
## 272          272         1       3
```

```
## 273         273         1       2
## 274         274         0       1
## 275         275         1       3
## 276         276         1       1
## 277         277         0       3
## 278         278         0       2
## 279         279         0       3
## 280         280         1       3
## 281         281         0       3
## 282         282         0       3
## 283         283         0       3
## 284         284         1       3
## 285         285         0       1
## 286         286         0       3
## 287         287         1       3
## 288         288         0       3
## 289         289         1       2
## 290         290         1       3
## 291         291         1       1
## 292         292         1       1
## 293         293         0       2
## 294         294         0       3
## 295         295         0       3
## 296         296         0       1
## 297         297         0       3
## 298         298         0       1
## 299         299         1       1
## 300         300         1       1
## 301         301         1       3
## 302         302         1       3
## 303         303         0       3
## 304         304         1       2
## 305         305         0       3
## 306         306         1       1
## 307         307         1       1
## 308         308         1       1
## 309         309         0       2
## 310         310         1       1
## 311         311         1       1
## 312         312         1       1
## 313         313         0       2
## 314         314         0       3
## 315         315         0       2
## 316         316         1       3
## 317         317         1       2
## 318         318         0       2
## 319         319         1       1
## 320         320         1       1
## 321         321         0       3
## 322         322         0       3
## 323         323         1       2
## 324         324         1       2
## 325         325         0       3
## 326         326         1       1
```

```
## 327          327         0       3
## 328          328         1       2
## 329          329         1       3
## 330          330         1       1
## 331          331         1       3
## 332          332         0       1
## 333          333         0       1
## 334          334         0       3
## 335          335         1       1
## 336          336         0       3
## 337          337         0       1
## 338          338         1       1
## 339          339         1       3
## 340          340         0       1
## 341          341         1       2
## 342          342         1       1
## 343          343         0       2
## 344          344         0       2
## 345          345         0       2
## 346          346         1       2
## 347          347         1       2
## 348          348         1       3
## 349          349         1       3
## 350          350         0       3
## 351          351         0       3
## 352          352         0       1
## 353          353         0       3
## 354          354         0       3
## 355          355         0       3
## 356          356         0       3
## 357          357         1       1
## 358          358         0       2
## 359          359         1       3
## 360          360         1       3
## 361          361         0       3
## 362          362         0       2
## 363          363         0       3
## 364          364         0       3
## 365          365         0       3
## 366          366         0       3
## 367          367         1       1
## 368          368         1       3
## 369          369         1       3
## 370          370         1       1
## 371          371         1       1
## 372          372         0       3
## 373          373         0       3
## 374          374         0       1
## 375          375         0       3
## 376          376         1       1
## 377          377         1       3
## 378          378         0       1
## 379          379         0       3
## 380          380         0       3
```

```
## 381         381         1       1
## 382         382         1       3
## 383         383         0       3
## 384         384         1       1
## 385         385         0       3
## 386         386         0       2
## 387         387         0       3
## 388         388         1       2
## 389         389         0       3
## 390         390         1       2
## 391         391         1       1
## 392         392         1       3
## 393         393         0       3
## 394         394         1       1
## 395         395         1       3
## 396         396         0       3
## 397         397         0       3
## 398         398         0       2
## 399         399         0       2
## 400         400         1       2
## 401         401         1       3
## 402         402         0       3
## 403         403         0       3
## 404         404         0       3
## 405         405         0       3
## 406         406         0       2
## 407         407         0       3
## 408         408         1       2
## 409         409         0       3
## 410         410         0       3
## 411         411         0       3
## 412         412         0       3
## 413         413         1       1
## 414         414         0       2
## 415         415         1       3
## 416         416         0       3
## 417         417         1       2
## 418         418         1       2
## 419         419         0       2
## 420         420         0       3
## 421         421         0       3
## 422         422         0       3
## 423         423         0       3
## 424         424         0       3
## 425         425         0       3
## 426         426         0       3
## 427         427         1       2
## 428         428         1       2
## 429         429         0       3
## 430         430         1       3
## 431         431         1       1
## 432         432         1       3
## 433         433         1       2
## 434         434         0       3
```

```
## 435         435         0       1
## 436         436         1       1
## 437         437         0       3
## 438         438         1       2
## 439         439         0       1
## 440         440         0       2
## 441         441         1       2
## 442         442         0       3
## 443         443         0       3
## 444         444         1       2
## 445         445         1       3
## 446         446         1       1
## 447         447         1       2
## 448         448         1       1
## 449         449         1       3
## 450         450         1       1
## 451         451         0       2
## 452         452         0       3
## 453         453         0       1
## 454         454         1       1
## 455         455         0       3
## 456         456         1       3
## 457         457         0       1
## 458         458         1       1
## 459         459         1       2
## 460         460         0       3
## 461         461         1       1
## 462         462         0       3
## 463         463         0       1
## 464         464         0       2
## 465         465         0       3
## 466         466         0       3
## 467         467         0       2
## 468         468         0       1
## 469         469         0       3
## 470         470         1       3
## 471         471         0       3
## 472         472         0       3
## 473         473         1       2
## 474         474         1       2
## 475         475         0       3
## 476         476         0       1
## 477         477         0       2
## 478         478         0       3
## 479         479         0       3
## 480         480         1       3
## 481         481         0       3
## 482         482         0       2
## 483         483         0       3
## 484         484         1       3
## 485         485         1       1
## 486         486         0       3
## 487         487         1       1
## 488         488         0       1
```

```
## 489         489         0       3
## 490         490         1       3
## 491         491         0       3
## 492         492         0       3
## 493         493         0       1
## 494         494         0       1
## 495         495         0       3
## 496         496         0       3
## 497         497         1       1
## 498         498         0       3
## 499         499         0       1
## 500         500         0       3
## 501         501         0       3
## 502         502         0       3
## 503         503         0       3
## 504         504         0       3
## 505         505         1       1
## 506         506         0       1
## 507         507         1       2
## 508         508         1       1
## 509         509         0       3
## 510         510         1       3
## 511         511         1       3
## 512         512         0       3
## 513         513         1       1
## 514         514         1       1
## 515         515         0       3
## 516         516         0       1
## 517         517         1       2
## 518         518         0       3
## 519         519         1       2
## 520         520         0       3
## 521         521         1       1
## 522         522         0       3
## 523         523         0       3
## 524         524         1       1
## 525         525         0       3
## 526         526         0       3
## 527         527         1       2
## 528         528         0       1
## 529         529         0       3
## 530         530         0       2
## 531         531         1       2
## 532         532         0       3
## 533         533         0       3
## 534         534         1       3
## 535         535         0       3
## 536         536         1       2
## 537         537         0       1
## 538         538         1       1
## 539         539         0       3
## 540         540         1       1
## 541         541         1       1
## 542         542         0       3
```

```
## 543         543         0       3
## 544         544         1       2
## 545         545         0       1
## 546         546         0       1
## 547         547         1       2
## 548         548         1       2
## 549         549         0       3
## 550         550         1       2
## 551         551         1       1
## 552         552         0       2
## 553         553         0       3
## 554         554         1       3
## 555         555         1       3
## 556         556         0       1
## 557         557         1       1
## 558         558         0       1
## 559         559         1       1
## 560         560         1       3
## 561         561         0       3
## 562         562         0       3
## 563         563         0       2
## 564         564         0       3
## 565         565         0       3
## 566         566         0       3
## 567         567         0       3
## 568         568         0       3
## 569         569         0       3
## 570         570         1       3
## 571         571         1       2
## 572         572         1       1
## 573         573         1       1
## 574         574         1       3
## 575         575         0       3
## 576         576         0       3
## 577         577         1       2
## 578         578         1       1
## 579         579         0       3
## 580         580         1       3
## 581         581         1       2
## 582         582         1       1
## 583         583         0       2
## 584         584         0       1
## 585         585         0       3
## 586         586         1       1
## 587         587         0       2
## 588         588         1       1
## 589         589         0       3
## 590         590         0       3
## 591         591         0       3
## 592         592         1       1
## 593         593         0       3
## 594         594         0       3
## 595         595         0       2
## 596         596         0       3
```

```
## 597         597         1       2
## 598         598         0       3
## 599         599         0       3
## 600         600         1       1
## 601         601         1       2
## 602         602         0       3
## 603         603         0       1
## 604         604         0       3
## 605         605         1       1
## 606         606         0       3
## 607         607         0       3
## 608         608         1       1
## 609         609         1       2
## 610         610         1       1
## 611         611         0       3
## 612         612         0       3
## 613         613         1       3
## 614         614         0       3
## 615         615         0       3
## 616         616         1       2
## 617         617         0       3
## 618         618         0       3
## 619         619         1       2
## 620         620         0       2
## 621         621         0       3
## 622         622         1       1
## 623         623         1       3
## 624         624         0       3
## 625         625         0       3
## 626         626         0       1
## 627         627         0       2
## 628         628         1       1
## 629         629         0       3
## 630         630         0       3
## 631         631         1       1
## 632         632         0       3
## 633         633         1       1
## 634         634         0       1
## 635         635         0       3
## 636         636         1       2
## 637         637         0       3
## 638         638         0       2
## 639         639         0       3
## 640         640         0       3
## 641         641         0       3
## 642         642         1       1
## 643         643         0       3
## 644         644         1       3
## 645         645         1       3
## 646         646         1       1
## 647         647         0       3
## 648         648         1       1
## 649         649         0       3
## 650         650         1       3
```

```
## 651         651         0       3
## 652         652         1       2
## 653         653         0       3
## 654         654         1       3
## 655         655         0       3
## 656         656         0       2
## 657         657         0       3
## 658         658         0       3
## 659         659         0       2
## 660         660         0       1
## 661         661         1       1
## 662         662         0       3
## 663         663         0       1
## 664         664         0       3
## 665         665         1       3
## 666         666         0       2
## 667         667         0       2
## 668         668         0       3
## 669         669         0       3
## 670         670         1       1
## 671         671         1       2
## 672         672         0       1
## 673         673         0       2
## 674         674         1       2
## 675         675         0       2
## 676         676         0       3
## 677         677         0       3
## 678         678         1       3
## 679         679         0       3
## 680         680         1       1
## 681         681         0       3
## 682         682         1       1
## 683         683         0       3
## 684         684         0       3
## 685         685         0       2
## 686         686         0       2
## 687         687         0       3
## 688         688         0       3
## 689         689         0       3
## 690         690         1       1
## 691         691         1       1
## 692         692         1       3
## 693         693         1       3
## 694         694         0       3
## 695         695         0       1
## 696         696         0       2
## 697         697         0       3
## 698         698         1       3
## 699         699         0       1
## 700         700         0       3
## 701         701         1       1
## 702         702         1       1
## 703         703         0       3
## 704         704         0       3
```

```
## 705          705         0       3
## 706          706         0       2
## 707          707         1       2
## 708          708         1       1
## 709          709         1       1
## 710          710         1       3
## 711          711         1       1
## 712          712         0       1
## 713          713         1       1
## 714          714         0       3
## 715          715         0       2
## 716          716         0       3
## 717          717         1       1
## 718          718         1       2
## 719          719         0       3
## 720          720         0       3
## 721          721         1       2
## 722          722         0       3
## 723          723         0       2
## 724          724         0       2
## 725          725         1       1
## 726          726         0       3
## 727          727         1       2
## 728          728         1       3
## 729          729         0       2
## 730          730         0       3
## 731          731         1       1
## 732          732         0       3
## 733          733         0       2
## 734          734         0       2
## 735          735         0       2
## 736          736         0       3
## 737          737         0       3
## 738          738         1       1
## 739          739         0       3
## 740          740         0       3
## 741          741         1       1
## 742          742         0       1
## 743          743         1       1
## 744          744         0       3
## 745          745         1       3
## 746          746         0       1
## 747          747         0       3
## 748          748         1       2
## 749          749         0       1
## 750          750         0       3
## 751          751         1       2
## 752          752         1       3
## 753          753         0       3
## 754          754         0       3
## 755          755         1       2
## 756          756         1       2
## 757          757         0       3
## 758          758         0       2
```

```
## 759         759         0       3
## 760         760         1       1
## 761         761         0       3
## 762         762         0       3
## 763         763         1       3
## 764         764         1       1
## 765         765         0       3
## 766         766         1       1
## 767         767         0       1
## 768         768         0       3
## 769         769         0       3
## 770         770         0       3
## 771         771         0       3
## 772         772         0       3
## 773         773         0       2
## 774         774         0       3
## 775         775         1       2
## 776         776         0       3
## 777         777         0       3
## 778         778         1       3
## 779         779         0       3
## 780         780         1       1
## 781         781         1       3
## 782         782         1       1
## 783         783         0       1
## 784         784         0       3
## 785         785         0       3
## 786         786         0       3
## 787         787         1       3
## 788         788         0       3
## 789         789         1       3
## 790         790         0       1
## 791         791         0       3
## 792         792         0       2
## 793         793         0       3
## 794         794         0       1
## 795         795         0       3
## 796         796         0       2
## 797         797         1       1
## 798         798         1       3
## 799         799         0       3
## 800         800         0       3
## 801         801         0       2
## 802         802         1       2
## 803         803         1       1
## 804         804         1       3
## 805         805         1       3
## 806         806         0       3
## 807         807         0       1
## 808         808         0       3
## 809         809         0       2
## 810         810         1       1
## 811         811         0       3
## 812         812         0       3
```

```
## 813         813         0       2
## 814         814         0       3
## 815         815         0       3
## 816         816         0       1
## 817         817         0       3
## 818         818         0       2
## 819         819         0       3
## 820         820         0       3
## 821         821         1       1
## 822         822         1       3
## 823         823         0       1
## 824         824         1       3
## 825         825         0       3
## 826         826         0       3
## 827         827         0       3
## 828         828         1       2
## 829         829         1       3
## 830         830         1       1
## 831         831         1       3
## 832         832         1       2
## 833         833         0       3
## 834         834         0       3
## 835         835         0       3
## 836         836         1       1
## 837         837         0       3
## 838         838         0       3
## 839         839         1       3
## 840         840         1       1
## 841         841         0       3
## 842         842         0       2
## 843         843         1       1
## 844         844         0       3
## 845         845         0       3
## 846         846         0       3
## 847         847         0       3
## 848         848         0       3
## 849         849         0       2
## 850         850         1       1
## 851         851         0       3
## 852         852         0       3
## 853         853         0       3
## 854         854         1       1
## 855         855         0       2
## 856         856         1       3
## 857         857         1       1
## 858         858         1       1
## 859         859         1       3
## 860         860         0       3
## 861         861         0       3
## 862         862         0       2
## 863         863         1       1
## 864         864         0       3
## 865         865         0       2
## 866         866         1       2
```

```
## 867         867        1      2
## 868         868        0      1
## 869         869        0      3
## 870         870        1      3
## 871         871        0      3
## 872         872        1      1
## 873         873        0      1
## 874         874        0      3
## 875         875        1      2
## 876         876        1      3
## 877         877        0      3
## 878         878        0      3
## 879         879        0      3
## 880         880        1      1
## 881         881        1      2
## 882         882        0      3
## 883         883        0      3
## 884         884        0      2
## 885         885        0      3
## 886         886        0      3
## 887         887        0      2
## 888         888        1      1
## 889         889        0      3
## 890         890        1      1
## 891         891        0      3
##                                                                Name
## 1                                                 Braund, Mr. Owen Harris
## 2       Cumings, Mrs. John Bradley (Florence Briggs Thayer)
## 3                                                  Heikkinen, Miss. Laina
## 4                                 Futrelle, Mrs. Jacques Heath (Lily May Peel)
## 5                                               Allen, Mr. William Henry
## 6                                                       Moran, Mr. James
## 7                                                McCarthy, Mr. Timothy J
## 8                                         Palsson, Master. Gosta Leonard
## 9                                 Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)
## 10                                      Nasser, Mrs. Nicholas (Adele Achem)
## 11                                    Sandstrom, Miss. Marguerite Rut
## 12                                           Bonnell, Miss. Elizabeth
## 13                                     Saundercock, Mr. William Henry
## 14                                        Andersson, Mr. Anders Johan
## 15                                Vestrom, Miss. Hulda Amanda Adolfina
## 16                                    Hewlett, Mrs. (Mary D Kingcome)
## 17                                                Rice, Master. Eugene
## 18                                      Williams, Mr. Charles Eugene
## 19                  Vander Planke, Mrs. Julius (Emelia Maria Vandemoortele)
## 20                                            Masselmani, Mrs. Fatima
## 21                                               Fynney, Mr. Joseph J
## 22                                             Beesley, Mr. Lawrence
## 23                                       McGowan, Miss. Anna "Annie"
## 24                                      Sloper, Mr. William Thompson
## 25                                     Palsson, Miss. Torborg Danira
## 26                Asplund, Mrs. Carl Oscar (Selma Augusta Emilia Johansson)
## 27                                            Emir, Mr. Farred Chehab
## 28                                     Fortune, Mr. Charles Alexander
```

```
## 29                                                 O'Dwyer, Miss. Ellen "Nellie"
## 30                                                          Todoroff, Mr. Lalio
## 31                                                    Uruchurtu, Don. Manuel E
## 32                                 Spencer, Mrs. William Augustus (Marie Eugenie)
## 33                                                    Glynn, Miss. Mary Agatha
## 34                                                       Wheadon, Mr. Edward H
## 35                                                     Meyer, Mr. Edgar Joseph
## 36                                                Holverson, Mr. Alexander Oskar
## 37                                                             Mamee, Mr. Hanna
## 38                                                   Cann, Mr. Ernest Charles
## 39                                                Vander Planke, Miss. Augusta Maria
## 40                                                      Nicola-Yarred, Miss. Jamila
## 41                                 Ahlin, Mrs. Johan (Johanna Persdotter Larsson)
## 42                 Turpin, Mrs. William John Robert (Dorothy Ann Wonnacott)
## 43                                                          Kraeff, Mr. Theodor
## 44                                      Laroche, Miss. Simonne Marie Anne Andree
## 45                                                  Devaney, Miss. Margaret Delia
## 46                                                       Rogers, Mr. William John
## 47                                                              Lennon, Mr. Denis
## 48                                                  O'Driscoll, Miss. Bridget
## 49                                                           Samaan, Mr. Youssef
## 50                                  Arnold-Franchi, Mrs. Josef (Josefine Franchi)
## 51                                                     Panula, Master. Juha Niilo
## 52                                                   Nosworthy, Mr. Richard Cater
## 53                                        Harper, Mrs. Henry Sleeper (Myna Haxtun)
## 54                                 Faunthorpe, Mrs. Lizzie (Elizabeth Anne Wilkinson)
## 55                                                 Ostby, Mr. Engelhart Cornelius
## 56                                                        Woolner, Mr. Hugh
## 57                                                          Rugg, Miss. Emily
## 58                                                        Novel, Mr. Mansouer
## 59                                                 West, Miss. Constance Mirium
## 60                                               Goodwin, Master. William Frederick
## 61                                                     Sirayanian, Mr. Orsen
## 62                                                       Icard, Miss. Amelie
## 63                                                  Harris, Mr. Henry Birkhardt
## 64                                                         Skoog, Master. Harald
## 65                                                      Stewart, Mr. Albert A
## 66                                                   Moubarek, Master. Gerios
## 67                                                 Nye, Mrs. (Elizabeth Ramell)
## 68                                                     Crease, Mr. Ernest James
## 69                                               Andersson, Miss. Erna Alexandra
## 70                                                           Kink, Mr. Vincenz
## 71                                                Jenkin, Mr. Stephen Curnow
## 72                                                Goodwin, Miss. Lillian Amy
## 73                                                       Hood, Mr. Ambrose Jr
## 74                                                Chronopoulos, Mr. Apostolos
## 75                                                             Bing, Mr. Lee
## 76                                                    Moen, Mr. Sigurd Hansen
## 77                                                          Staneff, Mr. Ivan
## 78                                                    Moutal, Mr. Rahamin Haim
## 79                                                Caldwell, Master. Alden Gates
## 80                                                     Dowdell, Miss. Elizabeth
## 81                                                         Waelens, Mr. Achille
## 82                                                  Sheerlinck, Mr. Jan Baptist
```

```
## 83                                                 McDermott, Miss. Brigdet Delia
## 84                                                       Carrau, Mr. Francisco M
## 85                                                           Ilett, Miss. Bertha
## 86                 Backstrom, Mrs. Karl Alfred (Maria Mathilda Gustafsson)
## 87                                                       Ford, Mr. William Neal
## 88                                                  Slocovski, Mr. Selman Francis
## 89                                                     Fortune, Miss. Mabel Helen
## 90                                                       Celotti, Mr. Francesco
## 91                                                        Christmann, Mr. Emil
## 92                                                   Andreasson, Mr. Paul Edvin
## 93                                                  Chaffee, Mr. Herbert Fuller
## 94                                                      Dean, Mr. Bertram Frank
## 95                                                             Coxon, Mr. Daniel
## 96                                                  Shorney, Mr. Charles Joseph
## 97                                                   Goldschmidt, Mr. George B
## 98                                                Greenfield, Mr. William Bertram
## 99                                              Doling, Mrs. John T (Ada Julia Bone)
## 100                                                          Kantor, Mr. Sinai
## 101                                                      Petranec, Miss. Matilda
## 102                                           Petroff, Mr. Pastcho ("Pentcho")
## 103                                                     White, Mr. Richard Frasar
## 104                                                  Johansson, Mr. Gustaf Joel
## 105                                                Gustafsson, Mr. Anders Vilhelm
## 106                                                       Mionoff, Mr. Stoytcho
## 107                                              Salkjelsvik, Miss. Anna Kristine
## 108                                                      Moss, Mr. Albert Johan
## 109                                                             Rekic, Mr. Tido
## 110                                                        Moran, Miss. Bertha
## 111                                                 Porter, Mr. Walter Chamberlain
## 112                                                        Zabour, Miss. Hileni
## 113                                                      Barton, Mr. David John
## 114                                                     Jussila, Miss. Katriina
## 115                                                      Attalah, Miss. Malake
## 116                                                      Pekoniemi, Mr. Edvard
## 117                                                       Connors, Mr. Patrick
## 118                                                 Turpin, Mr. William John Robert
## 119                                                       Baxter, Mr. Quigg Edmond
## 120                                              Andersson, Miss. Ellis Anna Maria
## 121                                                    Hickman, Mr. Stanley George
## 122                                                  Moore, Mr. Leonard Charles
## 123                                                        Nasser, Mr. Nicholas
## 124                                                       Webber, Miss. Susan
## 125                                                  White, Mr. Percival Wayland
## 126                                                Nicola-Yarred, Master. Elias
## 127                                                       McMahon, Mr. Martin
## 128                                                   Madsen, Mr. Fridtjof Arne
## 129                                                          Peter, Miss. Anna
## 130                                                        Ekstrom, Mr. Johan
## 131                                                      Drazenoic, Mr. Jozef
## 132                                                Coelho, Mr. Domingos Fernandeo
## 133                                Robins, Mrs. Alexander A (Grace Charity Laury)
## 134                                 Weisz, Mrs. Leopold (Mathilde Francoise Pede)
## 135                                                  Sobey, Mr. Samuel James Hayden
## 136                                                          Richard, Mr. Emile
```

```
## 137                                                 Newsom, Miss. Helen Monypeny
## 138                                                  Futrelle, Mr. Jacques Heath
## 139                                                          Osen, Mr. Olaf Elon
## 140                                                           Giglio, Mr. Victor
## 141                                                Boulos, Mrs. Joseph (Sultana)
## 142                                                     Nysten, Miss. Anna Sofia
## 143                          Hakkarainen, Mrs. Pekka Pietari (Elin Matilda Dolck)
## 144                                                        Burke, Mr. Jeremiah
## 145                                                     Andrew, Mr. Edgardo Samuel
## 146                                                   Nicholls, Mr. Joseph Charles
## 147                                 Andersson, Mr. August Edvard ("Wennerstrom")
## 148                                          Ford, Miss. Robina Maggie "Ruby"
## 149                                      Navratil, Mr. Michel ("Louis M Hoffman")
## 150                                             Byles, Rev. Thomas Roussel Davids
## 151                                                    Bateman, Rev. Robert James
## 152                                                Pears, Mrs. Thomas (Edith Wearne)
## 153                                                          Meo, Mr. Alfonzo
## 154                                                van Billiard, Mr. Austin Blyler
## 155                                                         Olsen, Mr. Ole Martin
## 156                                                      Williams, Mr. Charles Duane
## 157                                                   Gilnagh, Miss. Katherine "Katie"
## 158                                                             Corn, Mr. Harry
## 159                                                         Smiljanic, Mr. Mile
## 160                                                       Sage, Master. Thomas Henry
## 161                                                        Cribb, Mr. John Hatfield
## 162                                  Watt, Mrs. James (Elizabeth "Bessie" Inglis Milne)
## 163                                                     Bengtsson, Mr. John Viktor
## 164                                                              Calic, Mr. Jovo
## 165                                                    Panula, Master. Eino Viljami
## 166                                 Goldsmith, Master. Frank John William "Frankie"
## 167                                           Chibnall, Mrs. (Edith Martha Bowerman)
## 168                                 Skoog, Mrs. William (Anna Bernhardina Karlsson)
## 169                                                      Baumann, Mr. John D
## 170                                                                Ling, Mr. Lee
## 171                                                   Van der hoef, Mr. Wyckoff
## 172                                                        Rice, Master. Arthur
## 173                                                  Johnson, Miss. Eleanor Ileen
## 174                                                     Sivola, Mr. Antti Wilhelm
## 175                                                       Smith, Mr. James Clinch
## 176                                                      Klasen, Mr. Klas Albin
## 177                                                 Lefebre, Master. Henry Forbes
## 178                                                     Isham, Miss. Ann Elizabeth
## 179                                                              Hale, Mr. Reginald
## 180                                                           Leonard, Mr. Lionel
## 181                                                  Sage, Miss. Constance Gladys
## 182                                                              Pernot, Mr. Rene
## 183                                          Asplund, Master. Clarence Gustaf Hugo
## 184                                                       Becker, Master. Richard F
## 185                                            Kink-Heilmann, Miss. Luise Gretchen
## 186                                                           Rood, Mr. Hugh Roscoe
## 187                                 O'Brien, Mrs. Thomas (Johanna "Hannah" Godfrey)
## 188                                   Romaine, Mr. Charles Hallace ("Mr C Rolmane")
## 189                                                              Bourke, Mr. John
## 190                                                           Turcin, Mr. Stjepan
```

```
## 191                                                  Pinsky, Mrs. (Rosa)
## 192                                                Carbines, Mr. William
## 193                 Andersen-Jensen, Miss. Carla Christine Nielsine
## 194                                     Navratil, Master. Michel M
## 195           Brown, Mrs. James Joseph (Margaret Tobin)
## 196                                    Lurette, Miss. Elise
## 197                                     Mernagh, Mr. Robert
## 198                           Olsen, Mr. Karl Siegwart Andreas
## 199                           Madigan, Miss. Margaret "Maggie"
## 200                      Yrois, Miss. Henriette ("Mrs Harbeck")
## 201                             Vande Walle, Mr. Nestor Cyriel
## 202                                     Sage, Mr. Frederick
## 203                                Johanson, Mr. Jakob Alfred
## 204                                      Youseff, Mr. Gerious
## 205                                  Cohen, Mr. Gurshon "Gus"
## 206                                Strom, Miss. Telma Matilda
## 207                                Backstrom, Mr. Karl Alfred
## 208                              Albimona, Mr. Nassef Cassem
## 209                                  Carr, Miss. Helen "Ellen"
## 210                                           Blank, Mr. Henry
## 211                                             Ali, Mr. Ahmed
## 212                                Cameron, Miss. Clear Annie
## 213                                    Perkin, Mr. John Henry
## 214                              Givard, Mr. Hans Kristensen
## 215                                           Kiernan, Mr. Philip
## 216                                  Newell, Miss. Madeleine
## 217                                   Honkanen, Miss. Eliina
## 218                              Jacobsohn, Mr. Sidney Samuel
## 219                                    Bazzani, Miss. Albina
## 220                                       Harris, Mr. Walter
## 221                            Sunderland, Mr. Victor Francis
## 222                                           Bracken, Mr. James H
## 223                                  Green, Mr. George Henry
## 224                                     Nenkoff, Mr. Christo
## 225                                Hoyt, Mr. Frederick Maxfield
## 226                                Berglund, Mr. Karl Ivar Sven
## 227                                   Mellors, Mr. William John
## 228                              Lovell, Mr. John Hall ("Henry")
## 229                                   Fahlstrom, Mr. Arne Jonas
## 230                                     Lefebre, Miss. Mathilde
## 231          Harris, Mrs. Henry Birkhardt (Irene Wallach)
## 232                                    Larsson, Mr. Bengt Edvin
## 233                                  Sjostedt, Mr. Ernst Adolf
## 234                                Asplund, Miss. Lillian Gertrud
## 235                             Leyson, Mr. Robert William Norman
## 236                                  Harknett, Miss. Alice Phoebe
## 237                                           Hold, Mr. Stephen
## 238                                Collyer, Miss. Marjorie "Lottie"
## 239                                 Pengelly, Mr. Frederick William
## 240                                           Hunt, Mr. George Henry
## 241                                    Zabour, Miss. Thamine
## 242                                 Murphy, Miss. Katherine "Kate"
## 243                                 Coleridge, Mr. Reginald Charles
## 244                                   Maenpaa, Mr. Matti Alexanteri
```

```
## 245                                                Attalah, Mr. Sleiman
## 246                                              Minahan, Dr. William Edward
## 247                                          Lindahl, Miss. Agda Thorilda Viktoria
## 248                                                Hamalainen, Mrs. William (Anna)
## 249                                              Beckwith, Mr. Richard Leonard
## 250                                              Carter, Rev. Ernest Courtenay
## 251                                                     Reed, Mr. James George
## 252                                     Strom, Mrs. Wilhelm (Elna Matilda Persson)
## 253                                                  Stead, Mr. William Thomas
## 254                                                   Lobb, Mr. William Arthur
## 255                                       Rosblom, Mrs. Viktor (Helena Wilhelmina)
## 256                                        Touma, Mrs. Darwis (Hanne Youssef Razi)
## 257                                               Thorne, Mrs. Gertrude Maybelle
## 258                                                       Cherry, Miss. Gladys
## 259                                                           Ward, Miss. Anna
## 260                                                 Parrish, Mrs. (Lutie Davis)
## 261                                                       Smith, Mr. Thomas
## 262                                           Asplund, Master. Edvin Rojj Felix
## 263                                                       Taussig, Mr. Emil
## 264                                                     Harrison, Mr. William
## 265                                                        Henry, Miss. Delia
## 266                                                       Reeves, Mr. David
## 267                                                  Panula, Mr. Ernesti Arvid
## 268                                                   Persson, Mr. Ernst Ulrik
## 269                                  Graham, Mrs. William Thompson (Edith Junkins)
## 270                                                  Bissette, Miss. Amelia
## 271                                                    Cairns, Mr. Alexander
## 272                                               Tornquist, Mr. William Henry
## 273                                   Mellinger, Mrs. (Elizabeth Anne Maidment)
## 274                                                   Natsch, Mr. Charles H
## 275                                                Healy, Miss. Hanora "Nora"
## 276                                          Andrews, Miss. Kornelia Theodosia
## 277                                          Lindblom, Miss. Augusta Charlotta
## 278                                                Parkes, Mr. Francis "Frank"
## 279                                                        Rice, Master. Eric
## 280                                                Abbott, Mrs. Stanton (Rosa Hunt)
## 281                                                          Duane, Mr. Frank
## 282                                          Olsson, Mr. Nils Johan Goransson
## 283                                                 de Pelsmaeker, Mr. Alfons
## 284                                                Dorking, Mr. Edward Arthur
## 285                                                Smith, Mr. Richard William
## 286                                                       Stankovic, Mr. Ivan
## 287                                                   de Mulder, Mr. Theodore
## 288                                                      Naidenoff, Mr. Penko
## 289                                                      Hosono, Mr. Masabumi
## 290                                                      Connolly, Miss. Kate
## 291                                             Barber, Miss. Ellen "Nellie"
## 292                                          Bishop, Mrs. Dickinson H (Helen Walton)
## 293                                                    Levy, Mr. Rene Jacques
## 294                                                       Haas, Miss. Aloisia
## 295                                                          Mineff, Mr. Ivan
## 296                                                        Lewy, Mr. Ervin G
## 297                                                       Hanna, Mr. Mansour
## 298                                                Allison, Miss. Helen Loraine
```

```
## 299                                                    Saalfeld, Mr. Adolphe
## 300                                  Baxter, Mrs. James (Helene DeLaudeniere Chaput)
## 301                                         Kelly, Miss. Anna Katherine "Annie Kate"
## 302                                                        McCoy, Mr. Bernard
## 303                                               Johnson, Mr. William Cahoone Jr
## 304                                                  Keane, Miss. Nora A
## 305                                              Williams, Mr. Howard Hugh "Harry"
## 306                                                 Allison, Master. Hudson Trevor
## 307                                                       Fleming, Miss. Margaret
## 308 Penasco y Castellana, Mrs. Victor de Satode (Maria Josefa Perez de Soto y Vallejo)
## 309                                                       Abelson, Mr. Samuel
## 310                                               Francatelli, Miss. Laura Mabel
## 311                                               Hays, Miss. Margaret Bechstein
## 312                                                   Ryerson, Miss. Emily Borie
## 313                                           Lahtinen, Mrs. William (Anna Sylfven)
## 314                                                    Hendekovic, Mr. Ignjac
## 315                                                        Hart, Mr. Benjamin
## 316                                               Nilsson, Miss. Helmina Josefina
## 317                                             Kantor, Mrs. Sinai (Miriam Sternin)
## 318                                                     Moraweck, Dr. Ernest
## 319                                                  Wick, Miss. Mary Natalie
## 320                          Spedden, Mrs. Frederic Oakley (Margaretta Corning Stone)
## 321                                                       Dennis, Mr. Samuel
## 322                                                         Danoff, Mr. Yoto
## 323                                                  Slayter, Miss. Hilda Mary
## 324                               Caldwell, Mrs. Albert Francis (Sylvia Mae Harbaugh)
## 325                                                   Sage, Mr. George John Jr
## 326                                                  Young, Miss. Marie Grice
## 327                                                  Nysveen, Mr. Johan Hansen
## 328                                                    Ball, Mrs. (Ada E Hall)
## 329                                Goldsmith, Mrs. Frank John (Emily Alice Brown)
## 330                                           Hippach, Miss. Jean Gertrude
## 331                                                       McCoy, Miss. Agnes
## 332                                                     Partner, Mr. Austen
## 333                                                  Graham, Mr. George Edward
## 334                                               Vander Planke, Mr. Leo Edmondus
## 335                                Frauenthal, Mrs. Henry William (Clara Heinsheimer)
## 336                                                       Denkoff, Mr. Mitto
## 337                                                  Pears, Mr. Thomas Clinton
## 338                                               Burns, Miss. Elizabeth Margaret
## 339                                                        Dahl, Mr. Karl Edwart
## 340                                                  Blackwell, Mr. Stephen Weart
## 341                                                 Navratil, Master. Edmond Roger
## 342                                                 Fortune, Miss. Alice Elizabeth
## 343                                                    Collander, Mr. Erik Gustaf
## 344                                        Sedgwick, Mr. Charles Frederick Waddington
## 345                                                       Fox, Mr. Stanley Hubert
## 346                                                 Brown, Miss. Amelia "Mildred"
## 347                                                    Smith, Miss. Marion Elsie
## 348                                          Davison, Mrs. Thomas Henry (Mary E Finck)
## 349                                             Coutts, Master. William Loch "William"
## 350                                                           Dimic, Mr. Jovan
## 351                                                       Odahl, Mr. Nils Martin
## 352                                             Williams-Lambert, Mr. Fletcher Fellows
```

```
## 353                                                 Elias, Mr. Tannous
## 354                                               Arnold-Franchi, Mr. Josef
## 355                                                       Yousif, Mr. Wazli
## 356                                             Vanden Steen, Mr. Leo Peter
## 357                                             Bowerman, Miss. Elsie Edith
## 358                                               Funk, Miss. Annie Clemmer
## 359                                                    McGovern, Miss. Mary
## 360                                          Mockler, Miss. Helen Mary "Ellie"
## 361                                                   Skoog, Mr. Wilhelm
## 362                                               del Carlo, Mr. Sebastiano
## 363                                            Barbara, Mrs. (Catherine David)
## 364                                                     Asim, Mr. Adola
## 365                                                   O'Brien, Mr. Thomas
## 366                                             Adahl, Mr. Mauritz Nils Martin
## 367                                 Warren, Mrs. Frank Manley (Anna Sophia Atkinson)
## 368                                               Moussa, Mrs. (Mantoura Boulos)
## 369                                                    Jermyn, Miss. Annie
## 370                                              Aubart, Mme. Leontine Pauline
## 371                                               Harder, Mr. George Achilles
## 372                                                 Wiklund, Mr. Jakob Alfred
## 373                                               Beavan, Mr. William Thomas
## 374                                                      Ringhini, Mr. Sante
## 375                                               Palsson, Miss. Stina Viola
## 376                                          Meyer, Mrs. Edgar Joseph (Leila Saks)
## 377                                           Landergren, Miss. Aurora Adelia
## 378                                                 Widener, Mr. Harry Elkins
## 379                                                      Betros, Mr. Tannous
## 380                                               Gustafsson, Mr. Karl Gideon
## 381                                                     Bidois, Miss. Rosalie
## 382                                               Nakid, Miss. Maria ("Mary")
## 383                                                       Tikkanen, Mr. Juho
## 384                          Holverson, Mrs. Alexander Oskar (Mary Aline Towner)
## 385                                                  Plotcharsky, Mr. Vasil
## 386                                                Davies, Mr. Charles Henry
## 387                                             Goodwin, Master. Sidney Leonard
## 388                                                      Buss, Miss. Kate
## 389                                                    Sadlier, Mr. Matthew
## 390                                                   Lehmann, Miss. Bertha
## 391                                                Carter, Mr. William Ernest
## 392                                                    Jansson, Mr. Carl Olof
## 393                                               Gustafsson, Mr. Johan Birger
## 394                                                     Newell, Miss. Marjorie
## 395                          Sandstrom, Mrs. Hjalmar (Agnes Charlotta Bengtsson)
## 396                                                   Johansson, Mr. Erik
## 397                                                     Olsson, Miss. Elina
## 398                                                  McKane, Mr. Peter David
## 399                                                        Pain, Dr. Alfred
## 400                                             Trout, Mrs. William H (Jessie L)
## 401                                                   Niskanen, Mr. Juha
## 402                                                      Adams, Mr. John
## 403                                                 Jussila, Miss. Mari Aina
## 404                                               Hakkarainen, Mr. Pekka Pietari
## 405                                                 Oreskovic, Miss. Marija
## 406                                                      Gale, Mr. Shadrach
```

```
## 407                                                 Widegren, Mr. Carl/Charles Peter
## 408                                                   Richards, Master. William Rowe
## 409                                                Birkeland, Mr. Hans Martin Monsen
## 410                                                          Lefebre, Miss. Ida
## 411                                                          Sdycoff, Mr. Todor
## 412                                                             Hart, Mr. Henry
## 413                                                       Minahan, Miss. Daisy E
## 414                                                  Cunningham, Mr. Alfred Fleming
## 415                                                       Sundman, Mr. Johan Julian
## 416                                             Meek, Mrs. Thomas (Annie Louise Rowley)
## 417                                 Drew, Mrs. James Vivian (Lulu Thorne Christian)
## 418                                                  Silven, Miss. Lyyli Karoliina
## 419                                                     Matthews, Mr. William John
## 420                                                   Van Impe, Miss. Catharina
## 421                                                      Gheorgheff, Mr. Stanio
## 422                                                         Charters, Mr. David
## 423                                                          Zimmerman, Mr. Leo
## 424                             Danbom, Mrs. Ernst Gilbert (Anna Sigrid Maria Brogren)
## 425                                                 Rosblom, Mr. Viktor Richard
## 426                                                      Wiseman, Mr. Phillippe
## 427                                       Clarke, Mrs. Charles V (Ada Maria Winfield)
## 428                 Phillips, Miss. Kate Florence ("Mrs Kate Louise Phillips Marshall")
## 429                                                           Flynn, Mr. James
## 430                                           Pickard, Mr. Berk (Berk Trembisky)
## 431                                     Bjornstrom-Steffansson, Mr. Mauritz Hakan
## 432                                  Thorneycroft, Mrs. Percival (Florence Kate White)
## 433                              Louch, Mrs. Charles Alexander (Alice Adelaide Slow)
## 434                                                 Kallio, Mr. Nikolai Erland
## 435                                                  Silvey, Mr. William Baird
## 436                                                  Carter, Miss. Lucile Polk
## 437                                        Ford, Miss. Doolina Margaret "Daisy"
## 438                                       Richards, Mrs. Sidney (Emily Hocking)
## 439                                                       Fortune, Mr. Mark
## 440                                      Kvillner, Mr. Johan Henrik Johannesson
## 441                                    Hart, Mrs. Benjamin (Esther Ada Bloomfield)
## 442                                                         Hampe, Mr. Leon
## 443                                                  Petterson, Mr. Johan Emil
## 444                                                  Reynaldo, Ms. Encarnacion
## 445                                       Johannesen-Bratthammer, Mr. Bernt
## 446                                                  Dodge, Master. Washington
## 447                                       Mellinger, Miss. Madeleine Violet
## 448                                             Seward, Mr. Frederic Kimber
## 449                                          Baclini, Miss. Marie Catherine
## 450                                          Peuchen, Major. Arthur Godfrey
## 451                                                    West, Mr. Edwy Arthur
## 452                                         Hagland, Mr. Ingvald Olai Olsen
## 453                                         Foreman, Mr. Benjamin Laventall
## 454                                                 Goldenberg, Mr. Samuel L
## 455                                                       Peduzzi, Mr. Joseph
## 456                                                        Jalsevac, Mr. Ivan
## 457                                                  Millet, Mr. Francis Davis
## 458                                       Kenyon, Mrs. Frederick R (Marion)
## 459                                                       Toomey, Miss. Ellen
## 460                                                     O'Connor, Mr. Maurice
```

```
## 461                                                Anderson, Mr. Harry
## 462                                                Morley, Mr. William
## 463                                                  Gee, Mr. Arthur H
## 464                                       Milling, Mr. Jacob Christian
## 465                                                Maisner, Mr. Simon
## 466                                     Goncalves, Mr. Manuel Estanslas
## 467                                              Campbell, Mr. William
## 468                                          Smart, Mr. John Montgomery
## 469                                                Scanlan, Mr. James
## 470                                        Baclini, Miss. Helene Barbara
## 471                                                Keefe, Mr. Arthur
## 472                                                  Cacic, Mr. Luka
## 473                               West, Mrs. Edwy Arthur (Ada Mary Worth)
## 474                          Jerwan, Mrs. Amin S (Marie Marthe Thuillard)
## 475                                      Strandberg, Miss. Ida Sofia
## 476                                      Clifford, Mr. George Quincy
## 477                                          Renouf, Mr. Peter Henry
## 478                                        Braund, Mr. Lewis Richard
## 479                                        Karlsson, Mr. Nils August
## 480                                         Hirvonen, Miss. Hildur E
## 481                                      Goodwin, Master. Harold Victor
## 482                                    Frost, Mr. Anthony Wood "Archie"
## 483                                          Rouse, Mr. Richard Henry
## 484                                            Turkula, Mrs. (Hedwig)
## 485                                         Bishop, Mr. Dickinson H
## 486                                          Lefebre, Miss. Jeannie
## 487                       Hoyt, Mrs. Frederick Maxfield (Jane Anne Forby)
## 488                                          Kent, Mr. Edward Austin
## 489                                    Somerton, Mr. Francis William
## 490                                 Coutts, Master. Eden Leslie "Neville"
## 491                                  Hagland, Mr. Konrad Mathias Reiersen
## 492                                              Windelov, Mr. Einar
## 493                                     Molson, Mr. Harry Markland
## 494                                        Artagaveytia, Mr. Ramon
## 495                                     Stanley, Mr. Edward Roland
## 496                                          Yousseff, Mr. Gerious
## 497                                    Eustis, Miss. Elizabeth Mussey
## 498                                  Shellard, Mr. Frederick William
## 499                       Allison, Mrs. Hudson J C (Bessie Waldo Daniels)
## 500                                          Svensson, Mr. Olof
## 501                                            Calic, Mr. Petar
## 502                                          Canavan, Miss. Mary
## 503                                O'Sullivan, Miss. Bridget Mary
## 504                                   Laitinen, Miss. Kristina Sofia
## 505                                          Maioni, Miss. Roberta
## 506                          Penasco y Castellana, Mr. Victor de Satode
## 507                        Quick, Mrs. Frederick Charles (Jane Richards)
## 508                        Bradley, Mr. George ("George Arthur Brayton")
## 509                                  Olsen, Mr. Henry Margido
## 510                                              Lang, Mr. Fang
## 511                                   Daly, Mr. Eugene Patrick
## 512                                          Webber, Mr. James
## 513                                 McGough, Mr. James Robert
## 514                       Rothschild, Mrs. Martin (Elizabeth L. Barrett)
```

```
## 515                                                    Coleff, Mr. Satio
## 516                                                Walker, Mr. William Anderson
## 517                                                Lemore, Mrs. (Amelia Milley)
## 518                                                         Ryan, Mr. Patrick
## 519                          Angle, Mrs. William A (Florence "Mary" Agnes Hughes)
## 520                                                    Pavlovic, Mr. Stefo
## 521                                                  Perreault, Miss. Anne
## 522                                                        Vovk, Mr. Janko
## 523                                                    Lahoud, Mr. Sarkis
## 524                         Hippach, Mrs. Louis Albert (Ida Sophia Fischer)
## 525                                                    Kassem, Mr. Fared
## 526                                                    Farrell, Mr. James
## 527                                                  Ridsdale, Miss. Lucy
## 528                                                    Farthing, Mr. John
## 529                                                 Salonen, Mr. Johan Werner
## 530                                                Hocking, Mr. Richard George
## 531                                                   Quick, Miss. Phyllis May
## 532                                                        Toufik, Mr. Nakli
## 533                                                  Elias, Mr. Joseph Jr
## 534                                Peter, Mrs. Catherine (Catherine Rizk)
## 535                                                    Cacic, Miss. Marija
## 536                                                  Hart, Miss. Eva Miriam
## 537                                       Butt, Major. Archibald Willingham
## 538                                                    LeRoy, Miss. Bertha
## 539                                                 Risien, Mr. Samuel Beard
## 540                                              Frolicher, Miss. Hedwig Margaritha
## 541                                                   Crosby, Miss. Harriet R
## 542                                            Andersson, Miss. Ingeborg Constanzia
## 543                                               Andersson, Miss. Sigrid Elisabeth
## 544                                                        Beane, Mr. Edward
## 545                                                 Douglas, Mr. Walter Donald
## 546                                               Nicholson, Mr. Arthur Ernest
## 547                                            Beane, Mrs. Edward (Ethel Clarke)
## 548                                                   Padro y Manent, Mr. Julian
## 549                                                    Goldsmith, Mr. Frank John
## 550                                               Davies, Master. John Morgan Jr
## 551                                                  Thayer, Mr. John Borland Jr
## 552                                                  Sharp, Mr. Percival James R
## 553                                                         O'Brien, Mr. Timothy
## 554                                            Leeni, Mr. Fahim ("Philip Zenni")
## 555                                                          Ohman, Miss. Velin
## 556                                                        Wright, Mr. George
## 557                Duff Gordon, Lady. (Lucille Christiana Sutherland) ("Mrs Morgan")
## 558                                                      Robbins, Mr. Victor
## 559                                          Taussig, Mrs. Emil (Tillie Mandelbaum)
## 560                                 de Messemaeker, Mrs. Guillaume Joseph (Emma)
## 561                                                  Morrow, Mr. Thomas Rowan
## 562                                                          Sivic, Mr. Husein
## 563                                                Norman, Mr. Robert Douglas
## 564                                                        Simmons, Mr. John
## 565                                               Meanwell, Miss. (Marion Ogden)
## 566                                                        Davies, Mr. Alfred J
## 567                                                      Stoytcheff, Mr. Ilia
## 568                                   Palsson, Mrs. Nils (Alma Cornelia Berglund)
```

```
## 569                                                    Doharr, Mr. Tannous
## 570                                                      Jonsson, Mr. Carl
## 571                                                     Harris, Mr. George
## 572                          Appleton, Mrs. Edward Dale (Charlotte Lamson)
## 573                                        Flynn, Mr. John Irwin ("Irving")
## 574                                                     Kelly, Miss. Mary
## 575                                         Rush, Mr. Alfred George John
## 576                                                   Patchett, Mr. George
## 577                                                   Garside, Miss. Ethel
## 578                              Silvey, Mrs. William Baird (Alice Munger)
## 579                                        Caram, Mrs. Joseph (Maria Elias)
## 580                                                   Jussila, Mr. Eiriik
## 581                                                Christy, Miss. Julie Rachel
## 582                      Thayer, Mrs. John Borland (Marian Longstreth Morris)
## 583                                                Downton, Mr. William James
## 584                                                   Ross, Mr. John Hugo
## 585                                                   Paulner, Mr. Uscher
## 586                                                   Taussig, Miss. Ruth
## 587                                                 Jarvis, Mr. John Denzil
## 588                                          Frolicher-Stehli, Mr. Maxmillian
## 589                                                  Gilinski, Mr. Eliezer
## 590                                                    Murdlin, Mr. Joseph
## 591                                                   Rintamaki, Mr. Matti
## 592                           Stephenson, Mrs. Walter Bertram (Martha Eustis)
## 593                                                Elsbury, Mr. William James
## 594                                                    Bourke, Miss. Mary
## 595                                                 Chapman, Mr. John Henry
## 596                                               Van Impe, Mr. Jean Baptiste
## 597                                               Leitch, Miss. Jessie Wills
## 598                                                   Johnson, Mr. Alfred
## 599                                                     Boulos, Mr. Hanna
## 600                                 Duff Gordon, Sir. Cosmo Edmund ("Mr Morgan")
## 601                           Jacobsohn, Mrs. Sidney Samuel (Amy Frances Christy)
## 602                                                  Slabenoff, Mr. Petco
## 603                                                Harrington, Mr. Charles H
## 604                                                Torber, Mr. Ernst William
## 605                                              Homer, Mr. Harry ("Mr E Haven")
## 606                                              Lindell, Mr. Edvard Bengtsson
## 607                                                    Karaic, Mr. Milan
## 608                                              Daniel, Mr. Robert Williams
## 609                        Laroche, Mrs. Joseph (Juliette Marie Louise Lafargue)
## 610                                                 Shutes, Miss. Elizabeth W
## 611                  Andersson, Mrs. Anders Johan (Alfrida Konstantia Brogren)
## 612                                                  Jardin, Mr. Jose Neto
## 613                                               Murphy, Miss. Margaret Jane
## 614                                                      Horgan, Mr. John
## 615                                              Brocklebank, Mr. William Alfred
## 616                                                      Herman, Miss. Alice
## 617                                                Danbom, Mr. Ernst Gilbert
## 618                           Lobb, Mrs. William Arthur (Cordelia K Stanlick)
## 619                                               Becker, Miss. Marion Louise
## 620                                                      Gavey, Mr. Lawrence
## 621                                                   Yasbeck, Mr. Antoni
## 622                                                Kimball, Mr. Edwin Nelson Jr
```

```
## 623                                                    Nakid, Mr. Sahid
## 624                                          Hansen, Mr. Henry Damsgaard
## 625                                          Bowen, Mr. David John "Dai"
## 626                                                  Sutton, Mr. Frederick
## 627                                        Kirkland, Rev. Charles Leonard
## 628                                          Longley, Miss. Gretchen Fiske
## 629                                              Bostandyeff, Mr. Guentcho
## 630                                               O'Connell, Mr. Patrick D
## 631                                    Barkworth, Mr. Algernon Henry Wilson
## 632                                            Lundahl, Mr. Johan Svensson
## 633                                              Stahelin-Maeglin, Dr. Max
## 634                                          Parr, Mr. William Henry Marsh
## 635                                                    Skoog, Miss. Mabel
## 636                                                    Davis, Miss. Mary
## 637                                               Leinonen, Mr. Antti Gustaf
## 638                                                    Collyer, Mr. Harvey
## 639                                  Panula, Mrs. Juha (Maria Emilia Ojala)
## 640                                               Thorneycroft, Mr. Percival
## 641                                                  Jensen, Mr. Hans Peder
## 642                                                  Sagesser, Mlle. Emma
## 643                                          Skoog, Miss. Margit Elizabeth
## 644                                                       Foo, Mr. Choong
## 645                                                  Baclini, Miss. Eugenie
## 646                                                Harper, Mr. Henry Sleeper
## 647                                                       Cor, Mr. Liudevit
## 648                                        Simonius-Blumer, Col. Oberst Alfons
## 649                                                    Willey, Mr. Edward
## 650                                          Stanley, Miss. Amy Zillah Elsie
## 651                                                    Mitkoff, Mr. Mito
## 652                                                   Doling, Miss. Elsie
## 653                                          Kalvik, Mr. Johannes Halvorsen
## 654                                          O'Leary, Miss. Hanora "Norah"
## 655                                          Hegarty, Miss. Hanora "Nora"
## 656                                             Hickman, Mr. Leonard Mark
## 657                                                  Radeff, Mr. Alexander
## 658                                          Bourke, Mrs. John (Catherine)
## 659                                          Eitemiller, Mr. George Floyd
## 660                                             Newell, Mr. Arthur Webster
## 661                                          Frauenthal, Dr. Henry William
## 662                                                    Badt, Mr. Mohamed
## 663                                             Colley, Mr. Edward Pomeroy
## 664                                                  Coleff, Mr. Peju
## 665                                            Lindqvist, Mr. Eino William
## 666                                                  Hickman, Mr. Lewis
## 667                                            Butler, Mr. Reginald Fenton
## 668                                           Rommetvedt, Mr. Knud Paust
## 669                                                     Cook, Mr. Jacob
## 670                          Taylor, Mrs. Elmer Zebley (Juliet Cummins Wright)
## 671               Brown, Mrs. Thomas William Solomon (Elizabeth Catherine Ford)
## 672                                                 Davidson, Mr. Thornton
## 673                                            Mitchell, Mr. Henry Michael
## 674                                                  Wilhelms, Mr. Charles
## 675                                             Watson, Mr. Ennis Hastings
## 676                                          Edvardsson, Mr. Gustaf Hjalmar
```

```
## 677                                                Sawyer, Mr. Frederick Charles
## 678                                                      Turja, Miss. Anna Sofia
## 679                                          Goodwin, Mrs. Frederick (Augusta Tyler)
## 680                                               Cardeza, Mr. Thomas Drake Martinez
## 681                                                          Peters, Miss. Katie
## 682                                                           Hassab, Mr. Hammad
## 683                                                 Olsvigen, Mr. Thor Anderson
## 684                                                 Goodwin, Mr. Charles Edward
## 685                                               Brown, Mr. Thomas William Solomon
## 686                                            Laroche, Mr. Joseph Philippe Lemercier
## 687                                                      Panula, Mr. Jaako Arnold
## 688                                                           Dakic, Mr. Branko
## 689                                                Fischer, Mr. Eberhard Thelander
## 690                                               Madill, Miss. Georgette Alexandra
## 691                                                      Dick, Mr. Albert Adrian
## 692                                                        Karun, Miss. Manca
## 693                                                              Lam, Mr. Ali
## 694                                                         Saad, Mr. Khalil
## 695                                                          Weir, Col. John
## 696                                                 Chapman, Mr. Charles Henry
## 697                                                          Kelly, Mr. James
## 698                                               Mullens, Miss. Katherine "Katie"
## 699                                                     Thayer, Mr. John Borland
## 700                                          Humblen, Mr. Adolf Mathias Nicolai Olsen
## 701                                Astor, Mrs. John Jacob (Madeleine Talmadge Force)
## 702                                          Silverthorne, Mr. Spencer Victor
## 703                                                    Barbara, Miss. Saiide
## 704                                                  Gallagher, Mr. Martin
## 705                                                 Hansen, Mr. Henrik Juul
## 706                                Morley, Mr. Henry Samuel ("Mr Henry Marshall")
## 707                                              Kelly, Mrs. Florence "Fannie"
## 708                                          Calderhead, Mr. Edward Pennington
## 709                                                      Cleaver, Miss. Alice
## 710                                Moubarek, Master. Halim Gonios ("William George")
## 711                                 Mayne, Mlle. Berthe Antonine ("Mrs de Villiers")
## 712                                                        Klaber, Mr. Herman
## 713                                                    Taylor, Mr. Elmer Zebley
## 714                                                  Larsson, Mr. August Viktor
## 715                                                      Greenberg, Mr. Samuel
## 716                                Soholt, Mr. Peter Andreas Lauritz Andersen
## 717                                                  Endres, Miss. Caroline Louise
## 718                                          Troutt, Miss. Edwina Celia "Winnie"
## 719                                                       McEvoy, Mr. Michael
## 720                                                Johnson, Mr. Malkolm Joackim
## 721                                              Harper, Miss. Annie Jessie "Nina"
## 722                                                       Jensen, Mr. Svend Lauritz
## 723                                                Gillespie, Mr. William Henry
## 724                                                      Hodges, Mr. Henry Price
## 725                                                Chambers, Mr. Norman Campbell
## 726                                                       Oreskovic, Mr. Luka
## 727                                    Renouf, Mrs. Peter Henry (Lillian Jefferys)
## 728                                                       Mannion, Miss. Margareth
## 729                                                Bryhl, Mr. Kurt Arnold Gottfrid
## 730                                                  Ilmakangas, Miss. Pieta Sofia
```

```
## 731                                                Allen, Miss. Elisabeth Walton
## 732                                                     Hassan, Mr. Houssein G N
## 733                                                         Knight, Mr. Robert J
## 734                                                    Berriman, Mr. William John
## 735                                                  Troupiansky, Mr. Moses Aaron
## 736                                                          Williams, Mr. Leslie
## 737                                          Ford, Mrs. Edward (Margaret Ann Watson)
## 738                                                       Lesurer, Mr. Gustave J
## 739                                                           Ivanoff, Mr. Kanio
## 740                                                          Nankoff, Mr. Minko
## 741                                                  Hawksford, Mr. Walter James
## 742                                                Cavendish, Mr. Tyrell William
## 743                                           Ryerson, Miss. Susan Parker "Suzette"
## 744                                                         McNamee, Mr. Neal
## 745                                                       Stranden, Mr. Juho
## 746                                                  Crosby, Capt. Edward Gifford
## 747                                                   Abbott, Mr. Rossmore Edward
## 748                                                         Sinkkonen, Miss. Anna
## 749                                                  Marvin, Mr. Daniel Warner
## 750                                                    Connaghton, Mr. Michael
## 751                                                         Wells, Miss. Joan
## 752                                                        Moor, Master. Meier
## 753                                              Vande Velde, Mr. Johannes Joseph
## 754                                                         Jonkoff, Mr. Lalio
## 755                                              Herman, Mrs. Samuel (Jane Laver)
## 756                                                     Hamalainen, Master. Viljo
## 757                                                  Carlsson, Mr. August Sigfrid
## 758                                                      Bailey, Mr. Percy Andrew
## 759                                                 Theobald, Mr. Thomas Leonard
## 760                 Rothes, the Countess. of (Lucy Noel Martha Dyer-Edwards)
## 761                                                       Garfirth, Mr. John
## 762                                                Nirva, Mr. Iisakki Antino Aijo
## 763                                                       Barah, Mr. Hanna Assi
## 764                                    Carter, Mrs. William Ernest (Lucile Polk)
## 765                                                      Eklund, Mr. Hans Linus
## 766                                          Hogeboom, Mrs. John C (Anna Andrews)
## 767                                                 Brewe, Dr. Arthur Jackson
## 768                                                         Mangan, Miss. Mary
## 769                                                       Moran, Mr. Daniel J
## 770                                              Gronnestad, Mr. Daniel Danielsen
## 771                                                       Lievens, Mr. Rene Aime
## 772                                                    Jensen, Mr. Niels Peder
## 773                                                           Mack, Mrs. (Mary)
## 774                                                         Elias, Mr. Dibo
## 775                                            Hocking, Mrs. Elizabeth (Eliza Needs)
## 776                                          Myhrman, Mr. Pehr Fabian Oliver Malkolm
## 777                                                          Tobin, Mr. Roger
## 778                                                Emanuel, Miss. Virginia Ethel
## 779                                                      Kilgannon, Mr. Thomas J
## 780                   Robert, Mrs. Edward Scott (Elisabeth Walton McMillan)
## 781                                                        Ayoub, Miss. Banoura
## 782                                    Dick, Mrs. Albert Adrian (Vera Gillespie)
## 783                                                       Long, Mr. Milton Clyde
## 784                                                       Johnston, Mr. Andrew G
```

```
## 785                                                 Ali, Mr. William
## 786                                     Harmer, Mr. Abraham (David Lishin)
## 787                                             Sjoblom, Miss. Anna Sofia
## 788                                             Rice, Master. George Hugh
## 789                                            Dean, Master. Bertram Vere
## 790                                              Guggenheim, Mr. Benjamin
## 791                                              Keane, Mr. Andrew "Andy"
## 792                                                   Gaskell, Mr. Alfred
## 793                                              Sage, Miss. Stella Anna
## 794                                             Hoyt, Mr. William Fisher
## 795                                                Dantcheff, Mr. Ristiu
## 796                                                    Otter, Mr. Richard
## 797                                           Leader, Dr. Alice (Farnham)
## 798                                                   Osman, Mrs. Mara
## 799                                         Ibrahim Shawah, Mr. Yousseff
## 800                Van Impe, Mrs. Jean Baptiste (Rosalie Paula Govaert)
## 801                                                Ponesell, Mr. Martin
## 802                      Collyer, Mrs. Harvey (Charlotte Annie Tate)
## 803                             Carter, Master. William Thornton II
## 804                                 Thomas, Master. Assad Alexander
## 805                                           Hedman, Mr. Oskar Arvid
## 806                                         Johansson, Mr. Karl Johan
## 807                                           Andrews, Mr. Thomas Jr
## 808                                       Pettersson, Miss. Ellen Natalia
## 809                                                   Meyer, Mr. August
## 810                      Chambers, Mrs. Norman Campbell (Bertha Griggs)
## 811                                           Alexander, Mr. William
## 812                                                Lester, Mr. James
## 813                                         Slemen, Mr. Richard James
## 814                                  Andersson, Miss. Ebba Iris Alfrida
## 815                                         Tomlin, Mr. Ernest Portage
## 816                                                  Fry, Mr. Richard
## 817                                     Heininen, Miss. Wendla Maria
## 818                                                 Mallet, Mr. Albert
## 819                                  Holm, Mr. John Fredrik Alexander
## 820                                     Skoog, Master. Karl Thorsten
## 821           Hays, Mrs. Charles Melville (Clara Jennings Gregg)
## 822                                                  Lulic, Mr. Nikola
## 823                                Reuchlin, Jonkheer. John George
## 824                                                  Moor, Mrs. (Beila)
## 825                                     Panula, Master. Urho Abraham
## 826                                                 Flynn, Mr. John
## 827                                                    Lam, Mr. Len
## 828                                               Mallet, Master. Andre
## 829                                     McCormack, Mr. Thomas Joseph
## 830                          Stone, Mrs. George Nelson (Martha Evelyn)
## 831                            Yasbeck, Mrs. Antoni (Selini Alexander)
## 832                                   Richards, Master. George Sibley
## 833                                                   Saad, Mr. Amin
## 834                                         Augustsson, Mr. Albert
## 835                                         Allum, Mr. Owen George
## 836                                      Compton, Miss. Sara Rebecca
## 837                                                  Pasic, Mr. Jakob
## 838                                                 Sirota, Mr. Maurice
```

```
## 839                                                                 Chip, Mr. Chang
## 840                                                               Marechal, Mr. Pierre
## 841                                                      Alhomaki, Mr. Ilmari Rudolf
## 842                                                         Mudd, Mr. Thomas Charles
## 843                                                          Serepeca, Miss. Augusta
## 844                                                      Lemberopolous, Mr. Peter L
## 845                                                             Culumovic, Mr. Jeso
## 846                                                             Abbing, Mr. Anthony
## 847                                                      Sage, Mr. Douglas Bullen
## 848                                                              Markoff, Mr. Marin
## 849                                                               Harper, Rev. John
## 850                                   Goldenberg, Mrs. Samuel L (Edwiga Grabowska)
## 851                                        Andersson, Master. Sigvard Harald Elias
## 852                                                           Svensson, Mr. Johan
## 853                                                        Boulos, Miss. Nourelain
## 854                                                      Lines, Miss. Mary Conover
## 855                                   Carter, Mrs. Ernest Courtenay (Lilian Hughes)
## 856                                                       Aks, Mrs. Sam (Leah Rosen)
## 857                                      Wick, Mrs. George Dennick (Mary Hitchcock)
## 858                                                        Daly, Mr. Peter Denis
## 859                                    Baclini, Mrs. Solomon (Latifa Qurban)
## 860                                                             Razi, Mr. Raihed
## 861                                                      Hansen, Mr. Claus Peter
## 862                                                    Giles, Mr. Frederick Edward
## 863                           Swift, Mrs. Frederick Joel (Margaret Welles Barron)
## 864                                        Sage, Miss. Dorothy Edith "Dolly"
## 865                                                         Gill, Mr. John William
## 866                                                      Bystrom, Mrs. (Karolina)
## 867                                                 Duran y More, Miss. Asuncion
## 868                                               Roebling, Mr. Washington Augustus II
## 869                                                  van Melkebeke, Mr. Philemon
## 870                                               Johnson, Master. Harold Theodor
## 871                                                             Balkic, Mr. Cerin
## 872                                  Beckwith, Mrs. Richard Leonard (Sallie Monypeny)
## 873                                                       Carlsson, Mr. Frans Olof
## 874                                                    Vander Cruyssen, Mr. Victor
## 875                                               Abelson, Mrs. Samuel (Hannah Wizosky)
## 876                                                Najib, Miss. Adele Kiamie "Jane"
## 877                                                   Gustafsson, Mr. Alfred Ossian
## 878                                                            Petroff, Mr. Nedelio
## 879                                                              Laleff, Mr. Kristo
## 880                                 Potter, Mrs. Thomas Jr (Lily Alexenia Wilson)
## 881                                  Shelley, Mrs. William (Imanita Parrish Hall)
## 882                                                           Markun, Mr. Johann
## 883                                                    Dahlberg, Miss. Gerda Ulrika
## 884                                                   Banfield, Mr. Frederick James
## 885                                                          Sutehall, Mr. Henry Jr
## 886                                                Rice, Mrs. William (Margaret Norton)
## 887                                                          Montvila, Rev. Juozas
## 888                                                    Graham, Miss. Margaret Edith
## 889                                        Johnston, Miss. Catherine Helen "Carrie"
## 890                                                           Behr, Mr. Karl Howell
## 891                                                             Dooley, Mr. Patrick
##        Sex  Age SibSp Parch             Ticket     Fare           Cabin
```

```
## 1     male   22     1     0         A/5 21171     7.25           <NA>
## 2   female   38     1     0          PC 17599  71.2833            C85
## 3   female   26     0     0  STON/O2. 3101282   7.925           <NA>
## 4   female   35     1     0            113803    53.1           C123
## 5     male   35     0     0            373450    8.05           <NA>
## 6     male <NA>     0     0            330877  8.4583           <NA>
## 7     male   54     0     0             17463  51.8625            E46
## 8     male    2     3     1            349909   21.075           <NA>
## 9   female   27     0     2            347742  11.1333           <NA>
## 10  female   14     1     0            237736  30.0708           <NA>
## 11  female    4     1     1          PP 9549     16.7             G6
## 12  female   58     0     0            113783   26.55           C103
## 13    male   20     0     0         A/5. 2151     8.05           <NA>
## 14    male   39     1     5            347082   31.275           <NA>
## 15  female   14     0     0            350406   7.8542           <NA>
## 16  female   55     0     0            248706       16           <NA>
## 17    male    2     4     1            382652   29.125           <NA>
## 18    male <NA>     0     0            244373       13           <NA>
## 19  female   31     1     0            345763       18           <NA>
## 20  female <NA>     0     0              2649    7.225           <NA>
## 21    male   35     0     0            239865       26           <NA>
## 22    male   34     0     0            248698       13            D56
## 23  female   15     0     0            330923   8.0292           <NA>
## 24    male   28     0     0            113788     35.5             A6
## 25  female    8     3     1            349909   21.075           <NA>
## 26  female   38     1     5            347077  31.3875           <NA>
## 27    male <NA>     0     0              2631    7.225           <NA>
## 28    male   19     3     2             19950      263  C23 C25 C27
## 29  female <NA>     0     0            330959   7.8792           <NA>
## 30    male <NA>     0     0            349216   7.8958           <NA>
## 31    male   40     0     0          PC 17601  27.7208           <NA>
## 32  female <NA>     1     0          PC 17569 146.5208            B78
## 33  female <NA>     0     0            335677     7.75           <NA>
## 34    male   66     0     0        C.A. 24579     10.5           <NA>
## 35    male   28     1     0          PC 17604  82.1708           <NA>
## 36    male   42     1     0            113789       52           <NA>
## 37    male <NA>     0     0              2677   7.2292           <NA>
## 38    male   21     0     0        A./5. 2152     8.05           <NA>
## 39  female   18     2     0            345764       18           <NA>
## 40  female   14     1     0              2651  11.2417           <NA>
## 41  female   40     1     0              7546    9.475           <NA>
## 42  female   27     1     0             11668       21           <NA>
## 43    male <NA>     0     0            349253   7.8958           <NA>
## 44  female    3     1     2     SC/Paris 2123  41.5792           <NA>
## 45  female   19     0     0            330958   7.8792           <NA>
## 46    male <NA>     0     0   S.C./A.4. 23567     8.05           <NA>
## 47    male <NA>     1     0            370371     15.5           <NA>
## 48  female <NA>     0     0             14311     7.75           <NA>
## 49    male <NA>     2     0              2662  21.6792           <NA>
## 50  female   18     1     0            349237     17.8           <NA>
## 51    male    7     4     1           3101295  39.6875           <NA>
## 52    male   21     0     0        A/4. 39886      7.8           <NA>
## 53  female   49     1     0          PC 17572  76.7292            D33
## 54  female   29     1     0              2926       26           <NA>
```

```
## 55    male   65     0     1            113509  61.9792            B30
## 56    male <NA>     0     0             19947     35.5            C52
## 57  female   21     0     0         C.A. 31026     10.5           <NA>
## 58    male 28.5     0     0              2697   7.2292           <NA>
## 59  female    5     1     2         C.A. 34651    27.75           <NA>
## 60    male   11     5     2            CA 2144     46.9           <NA>
## 61    male   22     0     0              2669   7.2292           <NA>
## 62  female   38     0     0            113572       80            B28
## 63    male   45     1     0             36973   83.475            C83
## 64    male    4     3     2            347088     27.9           <NA>
## 65    male <NA>     0     0          PC 17605  27.7208           <NA>
## 66    male <NA>     1     1              2661  15.2458           <NA>
## 67  female   29     0     0         C.A. 29395     10.5            F33
## 68    male   19     0     0          S.P. 3464   8.1583           <NA>
## 69  female   17     4     2            3101281    7.925           <NA>
## 70    male   26     2     0             315151   8.6625           <NA>
## 71    male   32     0     0         C.A. 33111     10.5           <NA>
## 72  female   16     5     2            CA 2144     46.9           <NA>
## 73    male   21     0     0       S.O.C. 14879     73.5           <NA>
## 74    male   26     1     0              2680  14.4542           <NA>
## 75    male   32     0     0              1601  56.4958           <NA>
## 76    male   25     0     0            348123     7.65          F G73
## 77    male <NA>     0     0            349208   7.8958           <NA>
## 78    male <NA>     0     0            374746     8.05           <NA>
## 79    male 0.83     0     2            248738       29           <NA>
## 80  female   30     0     0            364516   12.475           <NA>
## 81    male   22     0     0            345767        9           <NA>
## 82    male   29     0     0            345779      9.5           <NA>
## 83  female <NA>     0     0            330932   7.7875           <NA>
## 84    male   28     0     0            113059     47.1           <NA>
## 85  female   17     0     0         SO/C 14885     10.5           <NA>
## 86  female   33     3     0            3101278    15.85           <NA>
## 87    male   16     1     3         W./C. 6608   34.375           <NA>
## 88    male <NA>     0     0    SOTON/OQ 392086     8.05           <NA>
## 89  female   23     3     2              19950      263     C23 C25 C27
## 90    male   24     0     0            343275     8.05           <NA>
## 91    male   29     0     0            343276     8.05           <NA>
## 92    male   20     0     0            347466   7.8542           <NA>
## 93    male   46     1     0        W.E.P. 5734   61.175            E31
## 94    male   26     1     2          C.A. 2315   20.575           <NA>
## 95    male   59     0     0            364500     7.25           <NA>
## 96    male <NA>     0     0            374910     8.05           <NA>
## 97    male   71     0     0          PC 17754  34.6542             A5
## 98    male   23     0     1          PC 17759  63.3583        D10 D12
## 99  female   34     0     1            231919       23           <NA>
## 100   male   34     1     0            244367       26           <NA>
## 101 female   28     0     0            349245   7.8958           <NA>
## 102   male <NA>     0     0            349215   7.8958           <NA>
## 103   male   21     0     1             35281  77.2875            D26
## 104   male   33     0     0              7540   8.6542           <NA>
## 105   male   37     2     0            3101276    7.925           <NA>
## 106   male   28     0     0            349207   7.8958           <NA>
## 107 female   21     0     0            343120     7.65           <NA>
## 108   male <NA>     0     0            312991    7.775           <NA>
```

```
## 109   male   38     0     0            349249   7.8958           <NA>
## 110 female <NA>     1     0            371110    24.15           <NA>
## 111   male   47     0     0            110465       52           C110
## 112 female 14.5     1     0              2665  14.4542           <NA>
## 113   male   22     0     0            324669     8.05           <NA>
## 114 female   20     1     0              4136    9.825           <NA>
## 115 female   17     0     0              2627  14.4583           <NA>
## 116   male   21     0     0  STON/O 2. 3101294    7.925           <NA>
## 117   male 70.5     0     0            370369     7.75           <NA>
## 118   male   29     1     0             11668       21           <NA>
## 119   male   24     0     1          PC 17558 247.5208        B58 B60
## 120 female    2     4     2            347082   31.275           <NA>
## 121   male   21     2     0       S.O.C. 14879     73.5           <NA>
## 122   male <NA>     0     0          A4. 54510     8.05           <NA>
## 123   male 32.5     1     0            237736  30.0708           <NA>
## 124 female 32.5     0     0             27267       13           E101
## 125   male   54     0     1             35281  77.2875            D26
## 126   male   12     1     0              2651  11.2417           <NA>
## 127   male <NA>     0     0            370372     7.75           <NA>
## 128   male   24     0     0           C 17369   7.1417           <NA>
## 129 female <NA>     1     1              2668  22.3583          F E69
## 130   male   45     0     0            347061    6.975           <NA>
## 131   male   33     0     0            349241   7.8958           <NA>
## 132   male   20     0     0 SOTON/O.Q. 3101307     7.05           <NA>
## 133 female   47     1     0          A/5. 3337     14.5           <NA>
## 134 female   29     1     0            228414       26           <NA>
## 135   male   25     0     0         C.A. 29178       13           <NA>
## 136   male   23     0     0      SC/PARIS 2133  15.0458           <NA>
## 137 female   19     0     2             11752  26.2833            D47
## 138   male   37     1     0            113803     53.1           C123
## 139   male   16     0     0              7534   9.2167           <NA>
## 140   male   24     0     0           PC 17593     79.2            B86
## 141 female <NA>     0     2              2678  15.2458           <NA>
## 142 female   22     0     0            347081     7.75           <NA>
## 143 female   24     1     0   STON/O2. 3101279    15.85           <NA>
## 144   male   19     0     0            365222     6.75           <NA>
## 145   male   18     0     0            231945     11.5           <NA>
## 146   male   19     1     1         C.A. 33112    36.75           <NA>
## 147   male   27     0     0            350043   7.7958           <NA>
## 148 female    9     2     2         W./C. 6608   34.375           <NA>
## 149   male 36.5     0     2            230080       26             F2
## 150   male   42     0     0            244310       13           <NA>
## 151   male   51     0     0        S.O.P. 1166   12.525           <NA>
## 152 female   22     1     0            113776     66.6             C2
## 153   male 55.5     0     0         A.5. 11206     8.05           <NA>
## 154   male 40.5     0     2           A/5. 851     14.5           <NA>
## 155   male <NA>     0     0          Fa 265302   7.3125           <NA>
## 156   male   51     0     1           PC 17597  61.3792           <NA>
## 157 female   16     0     0              35851   7.7333           <NA>
## 158   male   30     0     0    SOTON/OQ 392090     8.05           <NA>
## 159   male <NA>     0     0            315037   8.6625           <NA>
## 160   male <NA>     8     2           CA. 2343    69.55           <NA>
## 161   male   44     0     1            371362     16.1           <NA>
## 162 female   40     0     0         C.A. 33595    15.75           <NA>
```

```
## 163   male   26     0     0            347068    7.775           <NA>
## 164   male   17     0     0            315093   8.6625           <NA>
## 165   male    1     4     1           3101295  39.6875           <NA>
## 166   male    9     0     2            363291   20.525           <NA>
## 167 female <NA>     0     1            113505       55            E33
## 168 female   45     1     4            347088     27.9           <NA>
## 169   male <NA>     0     0         PC 17318   25.925           <NA>
## 170   male   28     0     0             1601  56.4958           <NA>
## 171   male   61     0     0            111240     33.5            B19
## 172   male    4     4     1            382652   29.125           <NA>
## 173 female    1     1     1            347742  11.1333           <NA>
## 174   male   21     0     0 STON/O 2. 3101280    7.925           <NA>
## 175   male   56     0     0             17764  30.6958             A7
## 176   male   18     1     1            350404   7.8542           <NA>
## 177   male <NA>     3     1              4133  25.4667           <NA>
## 178 female   50     0     0         PC 17595  28.7125            C49
## 179   male   30     0     0            250653       13           <NA>
## 180   male   36     0     0              LINE        0           <NA>
## 181 female <NA>     8     2         CA. 2343    69.55           <NA>
## 182   male <NA>     0     0     SC/PARIS 2131    15.05           <NA>
## 183   male    9     4     2            347077  31.3875           <NA>
## 184   male    1     2     1            230136       39             F4
## 185 female    4     0     2            315153   22.025           <NA>
## 186   male <NA>     0     0            113767       50            A32
## 187 female <NA>     1     0            370365     15.5           <NA>
## 188   male   45     0     0            111428    26.55           <NA>
## 189   male   40     1     1            364849     15.5           <NA>
## 190   male   36     0     0            349247   7.8958           <NA>
## 191 female   32     0     0            234604       13           <NA>
## 192   male   19     0     0             28424       13           <NA>
## 193 female   19     1     0            350046   7.8542           <NA>
## 194   male    3     1     1            230080       26             F2
## 195 female   44     0     0         PC 17610  27.7208             B4
## 196 female   58     0     0         PC 17569 146.5208            B80
## 197   male <NA>     0     0            368703     7.75           <NA>
## 198   male   42     0     1              4579   8.4042           <NA>
## 199 female <NA>     0     0            370370     7.75           <NA>
## 200 female   24     0     0            248747       13           <NA>
## 201   male   28     0     0            345770      9.5           <NA>
## 202   male <NA>     8     2         CA. 2343    69.55           <NA>
## 203   male   34     0     0           3101264   6.4958           <NA>
## 204   male 45.5     0     0              2628    7.225           <NA>
## 205   male   18     0     0         A/5 3540     8.05           <NA>
## 206 female    2     0     1            347054  10.4625             G6
## 207   male   32     1     0           3101278    15.85           <NA>
## 208   male   26     0     0              2699  18.7875           <NA>
## 209 female   16     0     0            367231     7.75           <NA>
## 210   male   40     0     0            112277       31            A31
## 211   male   24     0     0 SOTON/O.Q. 3101311     7.05           <NA>
## 212 female   35     0     0       F.C.C. 13528       21           <NA>
## 213   male   22     0     0          A/5 21174     7.25           <NA>
## 214   male   30     0     0            250646       13           <NA>
## 215   male <NA>     1     0            367229     7.75           <NA>
## 216 female   31     1     0             35273  113.275            D36
```

```
## 217 female   27     0     0   STON/O2. 3101283    7.925           <NA>
## 218   male   42     1     0            243847       27           <NA>
## 219 female   32     0     0             11813  76.2917            D15
## 220   male   30     0     0         W/C 14208     10.5           <NA>
## 221   male   16     0     0    SOTON/OQ 392089     8.05           <NA>
## 222   male   27     0     0            220367       13           <NA>
## 223   male   51     0     0             21440     8.05           <NA>
## 224   male <NA>     0     0            349234   7.8958           <NA>
## 225   male   38     1     0             19943       90            C93
## 226   male   22     0     0           PP 4348     9.35           <NA>
## 227   male   19     0     0          SW/PP 751     10.5           <NA>
## 228   male 20.5     0     0          A/5 21173     7.25           <NA>
## 229   male   18     0     0            236171       13           <NA>
## 230 female <NA>     3     1              4133  25.4667           <NA>
## 231 female   35     1     0             36973   83.475            C83
## 232   male   29     0     0            347067    7.775           <NA>
## 233   male   59     0     0            237442     13.5           <NA>
## 234 female    5     4     2            347077  31.3875           <NA>
## 235   male   24     0     0         C.A. 29566     10.5           <NA>
## 236 female <NA>     0     0         W./C. 6609     7.55           <NA>
## 237   male   44     1     0             26707       26           <NA>
## 238 female    8     0     2         C.A. 31921    26.25           <NA>
## 239   male   19     0     0             28665     10.5           <NA>
## 240   male   33     0     0         SCO/W 1585   12.275           <NA>
## 241 female <NA>     1     0              2665  14.4542           <NA>
## 242 female <NA>     1     0            367230     15.5           <NA>
## 243   male   29     0     0        W./C. 14263     10.5           <NA>
## 244   male   22     0     0  STON/O 2. 3101275    7.125           <NA>
## 245   male   30     0     0              2694    7.225           <NA>
## 246   male   44     2     0             19928       90            C78
## 247 female   25     0     0            347071    7.775           <NA>
## 248 female   24     0     2            250649     14.5           <NA>
## 249   male   37     1     1             11751  52.5542            D35
## 250   male   54     1     0            244252       26           <NA>
## 251   male <NA>     0     0            362316     7.25           <NA>
## 252 female   29     1     1            347054  10.4625             G6
## 253   male   62     0     0            113514   26.55             C87
## 254   male   30     1     0          A/5. 3336     16.1           <NA>
## 255 female   41     0     2            370129  20.2125           <NA>
## 256 female   29     0     2              2650  15.2458           <NA>
## 257 female <NA>     0     0           PC 17585     79.2           <NA>
## 258 female   30     0     0            110152     86.5            B77
## 259 female   35     0     0           PC 17755 512.3292           <NA>
## 260 female   50     0     1            230433       26           <NA>
## 261   male <NA>     0     0            384461     7.75           <NA>
## 262   male    3     4     2            347077  31.3875           <NA>
## 263   male   52     1     1            110413    79.65            E67
## 264   male   40     0     0            112059        0            B94
## 265 female <NA>     0     0            382649     7.75           <NA>
## 266   male   36     0     0         C.A. 17248     10.5           <NA>
## 267   male   16     4     1            3101295  39.6875           <NA>
## 268   male   25     1     0            347083    7.775           <NA>
## 269 female   58     0     1           PC 17582 153.4625          C125
## 270 female   35     0     0           PC 17760 135.6333            C99
```

```
## 271   male <NA>     0     0            113798       31            <NA>
## 272   male   25     0     0              LINE        0            <NA>
## 273 female   41     0     1            250644     19.5            <NA>
## 274   male   37     0     1          PC 17596     29.7            C118
## 275 female <NA>     0     0            370375     7.75            <NA>
## 276 female   63     1     0             13502  77.9583             D7
## 277 female   45     0     0            347073     7.75            <NA>
## 278   male <NA>     0     0            239853        0            <NA>
## 279   male    7     4     1            382652   29.125            <NA>
## 280 female   35     1     1         C.A. 2673    20.25            <NA>
## 281   male   65     0     0            336439     7.75            <NA>
## 282   male   28     0     0            347464   7.8542            <NA>
## 283   male   16     0     0            345778      9.5            <NA>
## 284   male   19     0     0        A/5. 10482     8.05            <NA>
## 285   male <NA>     0     0            113056       26             A19
## 286   male   33     0     0            349239   8.6625            <NA>
## 287   male   30     0     0            345774      9.5            <NA>
## 288   male   22     0     0            349206   7.8958            <NA>
## 289   male   42     0     0            237798       13            <NA>
## 290 female   22     0     0            370373     7.75            <NA>
## 291 female   26     0     0             19877    78.85            <NA>
## 292 female   19     1     0             11967  91.0792             B49
## 293   male   36     0     0      SC/Paris 2163   12.875               D
## 294 female   24     0     0            349236     8.85            <NA>
## 295   male   24     0     0            349233   7.8958            <NA>
## 296   male <NA>     0     0          PC 17612  27.7208            <NA>
## 297   male 23.5     0     0              2693   7.2292            <NA>
## 298 female    2     1     2            113781   151.55         C22 C26
## 299   male <NA>     0     0             19988     30.5            C106
## 300 female   50     0     1          PC 17558 247.5208         B58 B60
## 301 female <NA>     0     0              9234     7.75            <NA>
## 302   male <NA>     2     0            367226    23.25            <NA>
## 303   male   19     0     0              LINE        0            <NA>
## 304 female <NA>     0     0            226593    12.35            E101
## 305   male <NA>     0     0          A/5 2466     8.05            <NA>
## 306   male 0.92     1     2            113781   151.55         C22 C26
## 307 female <NA>     0     0             17421 110.8833            <NA>
## 308 female   17     1     0          PC 17758    108.9             C65
## 309   male   30     1     0         P/PP 3381       24            <NA>
## 310 female   30     0     0          PC 17485  56.9292             E36
## 311 female   24     0     0             11767  83.1583             C54
## 312 female   18     2     2          PC 17608  262.375 B57 B59 B63 B66
## 313 female   26     1     1            250651       26            <NA>
## 314   male   28     0     0            349243   7.8958            <NA>
## 315   male   43     1     1       F.C.C. 13529    26.25            <NA>
## 316 female   26     0     0            347470   7.8542            <NA>
## 317 female   24     1     0            244367       26            <NA>
## 318   male   54     0     0             29011       14            <NA>
## 319 female   31     0     2             36928 164.8667              C7
## 320 female   40     1     1             16966    134.5             E34
## 321   male   22     0     0          A/5 21172     7.25            <NA>
## 322   male   27     0     0            349219   7.8958            <NA>
## 323 female   30     0     0            234818    12.35            <NA>
## 324 female   22     1     1            248738       29            <NA>
```

```
## 325   male <NA>     8     2           CA. 2343    69.55           <NA>
## 326 female   36     0     0          PC 17760 135.6333            C32
## 327   male   61     0     0            345364   6.2375           <NA>
## 328 female   36     0     0             28551       13              D
## 329 female   31     1     1            363291   20.525           <NA>
## 330 female   16     0     1            111361  57.9792            B18
## 331 female <NA>     2     0            367226    23.25           <NA>
## 332   male 45.5     0     0            113043     28.5           C124
## 333   male   38     0     1          PC 17582 153.4625            C91
## 334   male   16     2     0            345764       18           <NA>
## 335 female <NA>     1     0          PC 17611   133.65           <NA>
## 336   male <NA>     0     0            349225   7.8958           <NA>
## 337   male   29     1     0            113776     66.6             C2
## 338 female   41     0     0             16966    134.5            E40
## 339   male   45     0     0              7598     8.05           <NA>
## 340   male   45     0     0            113784     35.5              T
## 341   male    2     1     1            230080       26             F2
## 342 female   24     3     2             19950      263     C23 C25 C27
## 343   male   28     0     0            248740       13           <NA>
## 344   male   25     0     0            244361       13           <NA>
## 345   male   36     0     0            229236       13           <NA>
## 346 female   24     0     0            248733       13            F33
## 347 female   40     0     0             31418       13           <NA>
## 348 female <NA>     1     0            386525     16.1           <NA>
## 349   male    3     1     1         C.A. 37671     15.9           <NA>
## 350   male   42     0     0            315088   8.6625           <NA>
## 351   male   23     0     0              7267    9.225           <NA>
## 352   male <NA>     0     0            113510       35           C128
## 353   male   15     1     1              2695   7.2292           <NA>
## 354   male   25     1     0            349237     17.8           <NA>
## 355   male <NA>     0     0              2647    7.225           <NA>
## 356   male   28     0     0            345783      9.5           <NA>
## 357 female   22     0     1            113505       55            E33
## 358 female   38     0     0            237671       13           <NA>
## 359 female <NA>     0     0            330931   7.8792           <NA>
## 360 female <NA>     0     0            330980   7.8792           <NA>
## 361   male   40     1     4            347088     27.9           <NA>
## 362   male   29     1     0      SC/PARIS 2167  27.7208           <NA>
## 363 female   45     0     1              2691  14.4542           <NA>
## 364   male   35     0     0 SOTON/O.Q. 3101310     7.05           <NA>
## 365   male <NA>     1     0            370365     15.5           <NA>
## 366   male   30     0     0            C 7076     7.25           <NA>
## 367 female   60     1     0            110813    75.25            D37
## 368 female <NA>     0     0              2626   7.2292           <NA>
## 369 female <NA>     0     0             14313     7.75           <NA>
## 370 female   24     0     0          PC 17477     69.3            B35
## 371   male   25     1     0             11765  55.4417            E50
## 372   male   18     1     0           3101267   6.4958           <NA>
## 373   male   19     0     0            323951     8.05           <NA>
## 374   male   22     0     0          PC 17760 135.6333           <NA>
## 375 female    3     3     1            349909   21.075           <NA>
## 376 female <NA>     1     0          PC 17604  82.1708           <NA>
## 377 female   22     0     0            C 7077     7.25           <NA>
## 378   male   27     0     2            113503    211.5            C82
```

```
## 379   male   20     0     0              2648   4.0125           <NA>
## 380   male   19     0     0            347069    7.775           <NA>
## 381 female   42     0     0          PC 17757  227.525           <NA>
## 382 female    1     0     2              2653  15.7417           <NA>
## 383   male   32     0     0 STON/O 2. 3101293    7.925           <NA>
## 384 female   35     1     0            113789       52           <NA>
## 385   male <NA>     0     0            349227   7.8958           <NA>
## 386   male   18     0     0       S.O.C. 14879     73.5           <NA>
## 387   male    1     5     2           CA 2144     46.9           <NA>
## 388 female   36     0     0             27849       13           <NA>
## 389   male <NA>     0     0            367655   7.7292           <NA>
## 390 female   17     0     0           SC 1748       12           <NA>
## 391   male   36     1     2            113760      120        B96 B98
## 392   male   21     0     0            350034   7.7958           <NA>
## 393   male   28     2     0           3101277    7.925           <NA>
## 394 female   23     1     0             35273  113.275            D36
## 395 female   24     0     2           PP 9549     16.7             G6
## 396   male   22     0     0            350052   7.7958           <NA>
## 397 female   31     0     0            350407   7.8542           <NA>
## 398   male   46     0     0             28403       26           <NA>
## 399   male   23     0     0            244278     10.5           <NA>
## 400 female   28     0     0            240929    12.65           <NA>
## 401   male   39     0     0 STON/O 2. 3101289    7.925           <NA>
## 402   male   26     0     0            341826     8.05           <NA>
## 403 female   21     1     0              4137    9.825           <NA>
## 404   male   28     1     0  STON/O2. 3101279    15.85           <NA>
## 405 female   20     0     0            315096   8.6625           <NA>
## 406   male   34     1     0             28664       21           <NA>
## 407   male   51     0     0            347064     7.75           <NA>
## 408   male    3     1     1             29106    18.75           <NA>
## 409   male   21     0     0            312992    7.775           <NA>
## 410 female <NA>     3     1              4133  25.4667           <NA>
## 411   male <NA>     0     0            349222   7.8958           <NA>
## 412   male <NA>     0     0            394140   6.8583           <NA>
## 413 female   33     1     0             19928       90            C78
## 414   male <NA>     0     0            239853        0           <NA>
## 415   male   44     0     0 STON/O 2. 3101269    7.925           <NA>
## 416 female <NA>     0     0            343095     8.05           <NA>
## 417 female   34     1     1             28220     32.5           <NA>
## 418 female   18     0     2            250652       13           <NA>
## 419   male   30     0     0             28228       13           <NA>
## 420 female   10     0     2            345773    24.15           <NA>
## 421   male <NA>     0     0            349254   7.8958           <NA>
## 422   male   21     0     0         A/5. 13032   7.7333           <NA>
## 423   male   29     0     0            315082    7.875           <NA>
## 424 female   28     1     1            347080     14.4           <NA>
## 425   male   18     1     1            370129  20.2125           <NA>
## 426   male <NA>     0     0         A/4. 34244     7.25           <NA>
## 427 female   28     1     0              2003       26           <NA>
## 428 female   19     0     0            250655       26           <NA>
## 429   male <NA>     0     0            364851     7.75           <NA>
## 430   male   32     0     0 SOTON/O.Q. 392078     8.05            E10
## 431   male   28     0     0            110564    26.55            C52
## 432 female <NA>     1     0            376564     16.1           <NA>
```

```
## 433 female   42     1     0         SC/AH 3085       26           <NA>
## 434   male   17     0     0  STON/O 2. 3101274    7.125           <NA>
## 435   male   50     1     0             13507     55.9            E44
## 436 female   14     1     2            113760      120        B96 B98
## 437 female   21     2     2        W./C. 6608   34.375           <NA>
## 438 female   24     2     3             29106    18.75           <NA>
## 439   male   64     1     4             19950      263    C23 C25 C27
## 440   male   31     0     0        C.A. 18723     10.5           <NA>
## 441 female   45     1     1       F.C.C. 13529    26.25           <NA>
## 442   male   20     0     0            345769      9.5           <NA>
## 443   male   25     1     0            347076    7.775           <NA>
## 444 female   28     0     0            230434       13           <NA>
## 445   male <NA>     0     0             65306   8.1125           <NA>
## 446   male    4     0     2             33638  81.8583            A34
## 447 female   13     0     1            250644     19.5           <NA>
## 448   male   34     0     0            113794    26.55           <NA>
## 449 female    5     2     1              2666  19.2583           <NA>
## 450   male   52     0     0            113786     30.5           C104
## 451   male   36     1     2        C.A. 34651    27.75           <NA>
## 452   male <NA>     1     0             65303  19.9667           <NA>
## 453   male   30     0     0            113051    27.75           C111
## 454   male   49     1     0             17453  89.1042            C92
## 455   male <NA>     0     0           A/5 2817     8.05           <NA>
## 456   male   29     0     0            349240   7.8958           <NA>
## 457   male   65     0     0             13509    26.55            E38
## 458 female <NA>     1     0             17464  51.8625            D21
## 459 female   50     0     0       F.C.C. 13531     10.5           <NA>
## 460   male <NA>     0     0            371060     7.75           <NA>
## 461   male   48     0     0             19952    26.55            E12
## 462   male   34     0     0            364506     8.05           <NA>
## 463   male   47     0     0            111320     38.5            E63
## 464   male   48     0     0            234360       13           <NA>
## 465   male <NA>     0     0           A/S 2816     8.05           <NA>
## 466   male   38     0     0 SOTON/O.Q. 3101306     7.05           <NA>
## 467   male <NA>     0     0            239853        0           <NA>
## 468   male   56     0     0            113792    26.55           <NA>
## 469   male <NA>     0     0             36209    7.725           <NA>
## 470 female 0.75     2     1              2666  19.2583           <NA>
## 471   male <NA>     0     0            323592     7.25           <NA>
## 472   male   38     0     0            315089   8.6625           <NA>
## 473 female   33     1     2        C.A. 34651    27.75           <NA>
## 474 female   23     0     0    SC/AH Basle 541  13.7917              D
## 475 female   22     0     0              7553   9.8375           <NA>
## 476   male <NA>     0     0            110465       52            A14
## 477   male   34     1     0             31027       21           <NA>
## 478   male   29     1     0              3460   7.0458           <NA>
## 479   male   22     0     0            350060   7.5208           <NA>
## 480 female    2     0     1           3101298  12.2875           <NA>
## 481   male    9     5     2            CA 2144     46.9           <NA>
## 482   male <NA>     0     0            239854        0           <NA>
## 483   male   50     0     0           A/5 3594     8.05           <NA>
## 484 female   63     0     0              4134   9.5875           <NA>
## 485   male   25     1     0             11967  91.0792            B49
## 486 female <NA>     3     1              4133  25.4667           <NA>
```

```
## 487 female   35     1     0             19943       90            C93
## 488   male   58     0     0             11771     29.7            B37
## 489   male   30     0     0        A.5. 18509     8.05           <NA>
## 490   male    9     1     1        C.A. 37671     15.9           <NA>
## 491   male <NA>     1     0             65304  19.9667           <NA>
## 492   male   21     0     0   SOTON/OQ 3101317     7.25           <NA>
## 493   male   55     0     0            113787     30.5            C30
## 494   male   71     0     0          PC 17609  49.5042           <NA>
## 495   male   21     0     0         A/4 45380     8.05           <NA>
## 496   male <NA>     0     0              2627  14.4583           <NA>
## 497 female   54     1     0             36947  78.2667            D20
## 498   male <NA>     0     0         C.A. 6212     15.1           <NA>
## 499 female   25     1     2            113781   151.55         C22 C26
## 500   male   24     0     0            350035   7.7958           <NA>
## 501   male   17     0     0            315086   8.6625           <NA>
## 502 female   21     0     0            364846     7.75           <NA>
## 503 female <NA>     0     0            330909   7.6292           <NA>
## 504 female   37     0     0              4135   9.5875           <NA>
## 505 female   16     0     0            110152     86.5            B79
## 506   male   18     1     0          PC 17758    108.9            C65
## 507 female   33     0     2             26360       26           <NA>
## 508   male <NA>     0     0            111427    26.55           <NA>
## 509   male   28     0     0            C 4001   22.525           <NA>
## 510   male   26     0     0              1601  56.4958           <NA>
## 511   male   29     0     0            382651     7.75           <NA>
## 512   male <NA>     0     0   SOTON/OQ 3101316     8.05           <NA>
## 513   male   36     0     0          PC 17473  26.2875            E25
## 514 female   54     1     0          PC 17603     59.4           <NA>
## 515   male   24     0     0            349209   7.4958           <NA>
## 516   male   47     0     0             36967  34.0208            D46
## 517 female   34     0     0        C.A. 34260     10.5            F33
## 518   male <NA>     0     0            371110    24.15           <NA>
## 519 female   36     1     0            226875       26           <NA>
## 520   male   32     0     0            349242   7.8958           <NA>
## 521 female   30     0     0             12749     93.5            B73
## 522   male   22     0     0            349252   7.8958           <NA>
## 523   male <NA>     0     0              2624    7.225           <NA>
## 524 female   44     0     1            111361  57.9792            B18
## 525   male <NA>     0     0              2700   7.2292           <NA>
## 526   male 40.5     0     0            367232     7.75           <NA>
## 527 female   50     0     0       W./C. 14258     10.5           <NA>
## 528   male <NA>     0     0           PC 17483 221.7792            C95
## 529   male   39     0     0           3101296    7.925           <NA>
## 530   male   23     2     1             29104     11.5           <NA>
## 531 female    2     1     1             26360       26           <NA>
## 532   male <NA>     0     0              2641   7.2292           <NA>
## 533   male   17     1     1              2690   7.2292           <NA>
## 534 female <NA>     0     2              2668  22.3583           <NA>
## 535 female   30     0     0            315084   8.6625           <NA>
## 536 female    7     0     2      F.C.C. 13529    26.25           <NA>
## 537   male   45     0     0            113050    26.55            B38
## 538 female   30     0     0           PC 17761  106.425           <NA>
## 539   male <NA>     0     0            364498     14.5           <NA>
## 540 female   22     0     2             13568     49.5            B39
```

```
## 541 female   36     0     2          WE/P 5735       71            B22
## 542 female    9     4     2             347082   31.275           <NA>
## 543 female   11     4     2             347082   31.275           <NA>
## 544   male   32     1     0               2908       26           <NA>
## 545   male   50     1     0           PC 17761  106.425            C86
## 546   male   64     0     0                693       26           <NA>
## 547 female   19     1     0               2908       26           <NA>
## 548   male <NA>     0     0      SC/PARIS 2146  13.8625           <NA>
## 549   male   33     1     1             363291   20.525           <NA>
## 550   male    8     1     1         C.A. 33112    36.75           <NA>
## 551   male   17     0     2              17421 110.8833            C70
## 552   male   27     0     0             244358       26           <NA>
## 553   male <NA>     0     0             330979   7.8292           <NA>
## 554   male   22     0     0               2620    7.225           <NA>
## 555 female   22     0     0             347085    7.775           <NA>
## 556   male   62     0     0             113807    26.55           <NA>
## 557 female   48     1     0              11755     39.6            A16
## 558   male <NA>     0     0           PC 17757  227.525           <NA>
## 559 female   39     1     1             110413    79.65            E67
## 560 female   36     1     0             345572     17.4           <NA>
## 561   male <NA>     0     0             372622     7.75           <NA>
## 562   male   40     0     0             349251   7.8958           <NA>
## 563   male   28     0     0             218629     13.5           <NA>
## 564   male <NA>     0     0    SOTON/OQ 392082     8.05           <NA>
## 565 female <NA>     0     0 SOTON/O.Q. 392087     8.05           <NA>
## 566   male   24     2     0          A/4 48871    24.15           <NA>
## 567   male   19     0     0             349205   7.8958           <NA>
## 568 female   29     0     4             349909   21.075           <NA>
## 569   male <NA>     0     0               2686   7.2292           <NA>
## 570   male   32     0     0             350417   7.8542           <NA>
## 571   male   62     0     0        S.W./PP 752     10.5           <NA>
## 572 female   53     2     0              11769  51.4792           C101
## 573   male   36     0     0           PC 17474  26.3875            E25
## 574 female <NA>     0     0              14312     7.75           <NA>
## 575   male   16     0     0         A/4. 20589     8.05           <NA>
## 576   male   19     0     0             358585     14.5           <NA>
## 577 female   34     0     0             243880       13           <NA>
## 578 female   39     1     0              13507     55.9            E44
## 579 female <NA>     1     0               2689  14.4583           <NA>
## 580   male   32     0     0 STON/O 2. 3101286    7.925           <NA>
## 581 female   25     1     1             237789       30           <NA>
## 582 female   39     1     1              17421 110.8833            C68
## 583   male   54     0     0              28403       26           <NA>
## 584   male   36     0     0              13049   40.125            A10
## 585   male <NA>     0     0               3411   8.7125           <NA>
## 586 female   18     0     2             110413    79.65            E68
## 587   male   47     0     0             237565       15           <NA>
## 588   male   60     1     1              13567     79.2            B41
## 589   male   22     0     0              14973     8.05           <NA>
## 590   male <NA>     0     0         A./5. 3235     8.05           <NA>
## 591   male   35     0     0 STON/O 2. 3101273    7.125           <NA>
## 592 female   52     1     0              36947  78.2667            D20
## 593   male   47     0     0           A/5 3902     7.25           <NA>
## 594 female <NA>     0     2             364848     7.75           <NA>
```

```
## 595   male   37     1     0        SC/AH 29037       26           <NA>
## 596   male   36     1     1             345773    24.15           <NA>
## 597 female <NA>     0     0             248727       33           <NA>
## 598   male   49     0     0               LINE        0           <NA>
## 599   male <NA>     0     0               2664    7.225           <NA>
## 600   male   49     1     0           PC 17485  56.9292            A20
## 601 female   24     2     1             243847       27           <NA>
## 602   male <NA>     0     0             349214   7.8958           <NA>
## 603   male <NA>     0     0             113796     42.4           <NA>
## 604   male   44     0     0             364511     8.05           <NA>
## 605   male   35     0     0             111426    26.55           <NA>
## 606   male   36     1     0             349910    15.55           <NA>
## 607   male   30     0     0             349246   7.8958           <NA>
## 608   male   27     0     0             113804     30.5           <NA>
## 609 female   22     1     2      SC/Paris 2123  41.5792           <NA>
## 610 female   40     0     0           PC 17582 153.4625           C125
## 611 female   39     1     5             347082   31.275           <NA>
## 612   male <NA>     0     0 SOTON/O.Q. 3101305     7.05           <NA>
## 613 female <NA>     1     0             367230     15.5           <NA>
## 614   male <NA>     0     0             370377     7.75           <NA>
## 615   male   35     0     0             364512     8.05           <NA>
## 616 female   24     1     2             220845       65           <NA>
## 617   male   34     1     1             347080     14.4           <NA>
## 618 female   26     1     0          A/5. 3336     16.1           <NA>
## 619 female    4     2     1             230136       39             F4
## 620   male   26     0     0              31028     10.5           <NA>
## 621   male   27     1     0               2659  14.4542           <NA>
## 622   male   42     1     0              11753  52.5542            D19
## 623   male   20     1     1               2653  15.7417           <NA>
## 624   male   21     0     0             350029   7.8542           <NA>
## 625   male   21     0     0              54636     16.1           <NA>
## 626   male   61     0     0              36963  32.3208            D50
## 627   male   57     0     0             219533    12.35           <NA>
## 628 female   21     0     0              13502  77.9583             D9
## 629   male   26     0     0             349224   7.8958           <NA>
## 630   male <NA>     0     0             334912   7.7333           <NA>
## 631   male   80     0     0              27042       30            A23
## 632   male   51     0     0             347743   7.0542           <NA>
## 633   male   32     0     0              13214     30.5            B50
## 634   male <NA>     0     0             112052        0           <NA>
## 635 female    9     3     2             347088     27.9           <NA>
## 636 female   28     0     0             237668       13           <NA>
## 637   male   32     0     0  STON/O 2. 3101292    7.925           <NA>
## 638   male   31     1     1         C.A. 31921    26.25           <NA>
## 639 female   41     0     5            3101295  39.6875           <NA>
## 640   male <NA>     1     0             376564     16.1           <NA>
## 641   male   20     0     0             350050   7.8542           <NA>
## 642 female   24     0     0           PC 17477     69.3            B35
## 643 female    2     3     2             347088     27.9           <NA>
## 644   male <NA>     0     0               1601  56.4958           <NA>
## 645 female 0.75     2     1               2666  19.2583           <NA>
## 646   male   48     1     0           PC 17572  76.7292            D33
## 647   male   19     0     0             349231   7.8958           <NA>
## 648   male   56     0     0              13213     35.5            A26
```

```
## 649   male <NA>     0     0      S.O./P.P. 751     7.55           <NA>
## 650 female   23     0     0           CA. 2314     7.55           <NA>
## 651   male <NA>     0     0             349221   7.8958           <NA>
## 652 female   18     0     1             231919       23           <NA>
## 653   male   21     0     0               8475   8.4333           <NA>
## 654 female <NA>     0     0             330919   7.8292           <NA>
## 655 female   18     0     0             365226     6.75           <NA>
## 656   male   24     2     0       S.O.C. 14879     73.5           <NA>
## 657   male <NA>     0     0             349223   7.8958           <NA>
## 658 female   32     1     1             364849     15.5           <NA>
## 659   male   23     0     0              29751       13           <NA>
## 660   male   58     0     2              35273  113.275            D48
## 661   male   50     2     0           PC 17611   133.65           <NA>
## 662   male   40     0     0               2623    7.225           <NA>
## 663   male   47     0     0               5727  25.5875            E58
## 664   male   36     0     0             349210   7.4958           <NA>
## 665   male   20     1     0  STON/O 2. 3101285    7.925           <NA>
## 666   male   32     2     0       S.O.C. 14879     73.5           <NA>
## 667   male   25     0     0             234686       13           <NA>
## 668   male <NA>     0     0             312993    7.775           <NA>
## 669   male   43     0     0           A/5 3536     8.05           <NA>
## 670 female <NA>     1     0              19996       52           C126
## 671 female   40     1     1              29750       39           <NA>
## 672   male   31     1     0         F.C. 12750       52            B71
## 673   male   70     0     0         C.A. 24580     10.5           <NA>
## 674   male   31     0     0             244270       13           <NA>
## 675   male <NA>     0     0             239856        0           <NA>
## 676   male   18     0     0             349912    7.775           <NA>
## 677   male 24.5     0     0             342826     8.05           <NA>
## 678 female   18     0     0               4138   9.8417           <NA>
## 679 female   43     1     6            CA 2144     46.9           <NA>
## 680   male   36     0     1           PC 17755 512.3292    B51 B53 B55
## 681 female <NA>     0     0             330935   8.1375           <NA>
## 682   male   27     0     0           PC 17572  76.7292            D49
## 683   male   20     0     0               6563    9.225           <NA>
## 684   male   14     5     2            CA 2144     46.9           <NA>
## 685   male   60     1     1              29750       39           <NA>
## 686   male   25     1     2     SC/Paris 2123  41.5792           <NA>
## 687   male   14     4     1           3101295  39.6875           <NA>
## 688   male   19     0     0             349228  10.1708           <NA>
## 689   male   18     0     0             350036   7.7958           <NA>
## 690 female   15     0     1              24160 211.3375             B5
## 691   male   31     1     0              17474       57            B20
## 692 female    4     0     1             349256  13.4167           <NA>
## 693   male <NA>     0     0               1601  56.4958           <NA>
## 694   male   25     0     0               2672    7.225           <NA>
## 695   male   60     0     0             113800    26.55           <NA>
## 696   male   52     0     0             248731     13.5           <NA>
## 697   male   44     0     0             363592     8.05           <NA>
## 698 female <NA>     0     0              35852   7.7333           <NA>
## 699   male   49     1     1              17421 110.8833            C68
## 700   male   42     0     0             348121     7.65          F G63
## 701 female   18     1     0           PC 17757  227.525        C62 C64
## 702   male   35     0     0           PC 17475  26.2875            E24
```

```
## 703 female   18     0     1              2691  14.4542           <NA>
## 704   male   25     0     0             36864   7.7417           <NA>
## 705   male   26     1     0            350025   7.8542           <NA>
## 706   male   39     0     0            250655       26           <NA>
## 707 female   45     0     0            223596     13.5           <NA>
## 708   male   42     0     0          PC 17476  26.2875            E24
## 709 female   22     0     0            113781   151.55           <NA>
## 710   male <NA>     1     1              2661  15.2458           <NA>
## 711 female   24     0     0          PC 17482  49.5042            C90
## 712   male <NA>     0     0            113028    26.55           C124
## 713   male   48     1     0             19996       52           C126
## 714   male   29     0     0              7545   9.4833           <NA>
## 715   male   52     0     0            250647       13           <NA>
## 716   male   19     0     0            348124     7.65          F G73
## 717 female   38     0     0          PC 17757  227.525            C45
## 718 female   27     0     0             34218     10.5           E101
## 719   male <NA>     0     0             36568     15.5           <NA>
## 720   male   33     0     0            347062    7.775           <NA>
## 721 female    6     0     1            248727       33           <NA>
## 722   male   17     1     0            350048   7.0542           <NA>
## 723   male   34     0     0             12233       13           <NA>
## 724   male   50     0     0            250643       13           <NA>
## 725   male   27     1     0            113806     53.1             E8
## 726   male   20     0     0            315094   8.6625           <NA>
## 727 female   30     3     0             31027       21           <NA>
## 728 female <NA>     0     0             36866   7.7375           <NA>
## 729   male   25     1     0            236853       26           <NA>
## 730 female   25     1     0  STON/O2. 3101271    7.925           <NA>
## 731 female   29     0     0             24160 211.3375             B5
## 732   male   11     0     0              2699  18.7875           <NA>
## 733   male <NA>     0     0            239855        0           <NA>
## 734   male   23     0     0             28425       13           <NA>
## 735   male   23     0     0            233639       13           <NA>
## 736   male 28.5     0     0             54636     16.1           <NA>
## 737 female   48     1     3        W./C. 6608   34.375           <NA>
## 738   male   35     0     0          PC 17755 512.3292           B101
## 739   male <NA>     0     0            349201   7.8958           <NA>
## 740   male <NA>     0     0            349218   7.8958           <NA>
## 741   male <NA>     0     0             16988       30            D45
## 742   male   36     1     0             19877    78.85            C46
## 743 female   21     2     2          PC 17608  262.375 B57 B59 B63 B66
## 744   male   24     1     0            376566     16.1           <NA>
## 745   male   31     0     0 STON/O 2. 3101288    7.925           <NA>
## 746   male   70     1     1         WE/P 5735       71            B22
## 747   male   16     1     1         C.A. 2673    20.25           <NA>
## 748 female   30     0     0            250648       13           <NA>
## 749   male   19     1     0            113773     53.1            D30
## 750   male   31     0     0            335097     7.75           <NA>
## 751 female    4     1     1             29103       23           <NA>
## 752   male    6     0     1            392096   12.475           E121
## 753   male   33     0     0            345780      9.5           <NA>
## 754   male   23     0     0            349204   7.8958           <NA>
## 755 female   48     1     2            220845       65           <NA>
## 756   male 0.67     1     1            250649     14.5           <NA>
```

```
## 757   male   28     0     0            350042   7.7958           <NA>
## 758   male   18     0     0             29108     11.5           <NA>
## 759   male   34     0     0            363294     8.05           <NA>
## 760 female   33     0     0            110152     86.5            B77
## 761   male <NA>     0     0            358585     14.5           <NA>
## 762   male   41     0     0   SOTON/O2 3101272    7.125           <NA>
## 763   male   20     0     0              2663   7.2292           <NA>
## 764 female   36     1     2            113760      120        B96 B98
## 765   male   16     0     0            347074    7.775           <NA>
## 766 female   51     1     0             13502  77.9583            D11
## 767   male <NA>     0     0            112379     39.6           <NA>
## 768 female 30.5     0     0            364850     7.75           <NA>
## 769   male <NA>     1     0            371110    24.15           <NA>
## 770   male   32     0     0              8471   8.3625           <NA>
## 771   male   24     0     0            345781      9.5           <NA>
## 772   male   48     0     0            350047   7.8542           <NA>
## 773 female   57     0     0       S.O./P.P. 3     10.5            E77
## 774   male <NA>     0     0              2674    7.225           <NA>
## 775 female   54     1     3             29105       23           <NA>
## 776   male   18     0     0            347078     7.75           <NA>
## 777   male <NA>     0     0            383121     7.75            F38
## 778 female    5     0     0            364516   12.475           <NA>
## 779   male <NA>     0     0             36865   7.7375           <NA>
## 780 female   43     0     1             24160 211.3375              B3
## 781 female   13     0     0              2687   7.2292           <NA>
## 782 female   17     1     0             17474       57            B20
## 783   male   29     0     0            113501       30             D6
## 784   male <NA>     1     2        W./C. 6607    23.45           <NA>
## 785   male   25     0     0 SOTON/O.Q. 3101312     7.05           <NA>
## 786   male   25     0     0            374887     7.25           <NA>
## 787 female   18     0     0           3101265   7.4958           <NA>
## 788   male    8     4     1            382652   29.125           <NA>
## 789   male    1     1     2         C.A. 2315   20.575           <NA>
## 790   male   46     0     0          PC 17593     79.2        B82 B84
## 791   male <NA>     0     0             12460     7.75           <NA>
## 792   male   16     0     0            239865       26           <NA>
## 793 female <NA>     8     2          CA. 2343    69.55           <NA>
## 794   male <NA>     0     0          PC 17600  30.6958           <NA>
## 795   male   25     0     0            349203   7.8958           <NA>
## 796   male   39     0     0             28213       13           <NA>
## 797 female   49     0     0             17465  25.9292            D17
## 798 female   31     0     0            349244   8.6833           <NA>
## 799   male   30     0     0              2685   7.2292           <NA>
## 800 female   30     1     1            345773    24.15           <NA>
## 801   male   34     0     0            250647       13           <NA>
## 802 female   31     1     1        C.A. 31921    26.25           <NA>
## 803   male   11     1     2            113760      120        B96 B98
## 804   male 0.42     0     1              2625   8.5167           <NA>
## 805   male   27     0     0            347089    6.975           <NA>
## 806   male   31     0     0            347063    7.775           <NA>
## 807   male   39     0     0            112050        0            A36
## 808 female   18     0     0            347087    7.775           <NA>
## 809   male   39     0     0            248723       13           <NA>
## 810 female   33     1     0            113806     53.1             E8
```

```
## 811   male   26     0     0             3474   7.8875           <NA>
## 812   male   39     0     0         A/4 48871    24.15           <NA>
## 813   male   35     0     0            28206     10.5           <NA>
## 814 female    6     4     2           347082   31.275           <NA>
## 815   male 30.5     0     0           364499     8.05           <NA>
## 816   male <NA>     0     0           112058        0           B102
## 817 female   23     0     0   STON/O2. 3101290    7.925           <NA>
## 818   male   31     1     1    S.C./PARIS 2079  37.0042           <NA>
## 819   male   43     0     0            C 7075     6.45           <NA>
## 820   male   10     3     2           347088     27.9           <NA>
## 821 female   52     1     1            12749     93.5            B69
## 822   male   27     0     0           315098   8.6625           <NA>
## 823   male   38     0     0            19972        0           <NA>
## 824 female   27     0     1           392096   12.475           E121
## 825   male    2     4     1          3101295  39.6875           <NA>
## 826   male <NA>     0     0           368323     6.95           <NA>
## 827   male <NA>     0     0             1601  56.4958           <NA>
## 828   male    1     0     2    S.C./PARIS 2079  37.0042           <NA>
## 829   male <NA>     0     0           367228     7.75           <NA>
## 830 female   62     0     0           113572       80            B28
## 831 female   15     1     0             2659  14.4542           <NA>
## 832   male 0.83     1     1            29106    18.75           <NA>
## 833   male <NA>     0     0             2671   7.2292           <NA>
## 834   male   23     0     0           347468   7.8542           <NA>
## 835   male   18     0     0             2223      8.3           <NA>
## 836 female   39     1     1         PC 17756  83.1583            E49
## 837   male   21     0     0           315097   8.6625           <NA>
## 838   male <NA>     0     0           392092     8.05           <NA>
## 839   male   32     0     0             1601  56.4958           <NA>
## 840   male <NA>     0     0            11774     29.7            C47
## 841   male   20     0     0   SOTON/O2 3101287    7.925           <NA>
## 842   male   16     0     0        S.O./P.P. 3     10.5           <NA>
## 843 female   30     0     0           113798       31           <NA>
## 844   male 34.5     0     0             2683   6.4375           <NA>
## 845   male   17     0     0           315090   8.6625           <NA>
## 846   male   42     0     0        C.A. 5547     7.55           <NA>
## 847   male <NA>     8     2         CA. 2343    69.55           <NA>
## 848   male   35     0     0           349213   7.8958           <NA>
## 849   male   28     0     1           248727       33           <NA>
## 850 female <NA>     1     0            17453  89.1042            C92
## 851   male    4     4     2           347082   31.275           <NA>
## 852   male   74     0     0           347060    7.775           <NA>
## 853 female    9     1     1             2678  15.2458           <NA>
## 854 female   16     0     1         PC 17592     39.4            D28
## 855 female   44     1     0           244252       26           <NA>
## 856 female   18     0     1           392091     9.35           <NA>
## 857 female   45     1     1            36928 164.8667           <NA>
## 858   male   51     0     0           113055    26.55            E17
## 859 female   24     0     3             2666  19.2583           <NA>
## 860   male <NA>     0     0             2629   7.2292           <NA>
## 861   male   41     2     0           350026  14.1083           <NA>
## 862   male   21     1     0            28134     11.5           <NA>
## 863 female   48     0     0            17466  25.9292            D17
## 864 female <NA>     8     2         CA. 2343    69.55           <NA>
```

```
## 865   male   24     0     0            233866       13           <NA>
## 866 female   42     0     0            236852       13           <NA>
## 867 female   27     1     0      SC/PARIS 2149  13.8583           <NA>
## 868   male   31     0     0           PC 17590  50.4958            A24
## 869   male <NA>     0     0            345777      9.5           <NA>
## 870   male    4     1     1            347742  11.1333           <NA>
## 871   male   26     0     0            349248   7.8958           <NA>
## 872 female   47     1     1             11751  52.5542            D35
## 873   male   33     0     0               695        5     B51 B53 B55
## 874   male   47     0     0            345765        9           <NA>
## 875 female   28     1     0          P/PP 3381       24           <NA>
## 876 female   15     0     0              2667    7.225           <NA>
## 877   male   20     0     0              7534   9.8458           <NA>
## 878   male   19     0     0            349212   7.8958           <NA>
## 879   male <NA>     0     0            349217   7.8958           <NA>
## 880 female   56     0     1             11767  83.1583            C50
## 881 female   25     0     1            230433       26           <NA>
## 882   male   33     0     0            349257   7.8958           <NA>
## 883 female   22     0     0              7552  10.5167           <NA>
## 884   male   28     0     0   C.A./SOTON 34068     10.5           <NA>
## 885   male   25     0     0    SOTON/OQ 392076     7.05           <NA>
## 886 female   39     0     5            382652   29.125           <NA>
## 887   male   27     0     0            211536       13           <NA>
## 888 female   19     0     0            112053       30            B42
## 889 female <NA>     1     2         W./C. 6607    23.45           <NA>
## 890   male   26     0     0            111369       30           C148
## 891   male   32     0     0            370376     7.75           <NA>
##     Embarked
## 1          S
## 2          C
## 3          S
## 4          S
## 5          S
## 6          Q
## 7          S
## 8          S
## 9          S
## 10         C
## 11         S
## 12         S
## 13         S
## 14         S
## 15         S
## 16         S
## 17         Q
## 18         S
## 19         S
## 20         C
## 21         S
## 22         S
## 23         Q
## 24         S
## 25         S
## 26         S
```

```
## 27         C
## 28         S
## 29         Q
## 30         S
## 31         C
## 32         C
## 33         Q
## 34         S
## 35         C
## 36         S
## 37         C
## 38         S
## 39         S
## 40         C
## 41         S
## 42         S
## 43         C
## 44         C
## 45         Q
## 46         S
## 47         Q
## 48         Q
## 49         C
## 50         S
## 51         S
## 52         S
## 53         C
## 54         S
## 55         C
## 56         S
## 57         S
## 58         C
## 59         S
## 60         S
## 61         C
## 62      <NA>
## 63         S
## 64         S
## 65         C
## 66         C
## 67         S
## 68         S
## 69         S
## 70         S
## 71         S
## 72         S
## 73         S
## 74         C
## 75         S
## 76         S
## 77         S
## 78         S
## 79         S
## 80         S
```

```
## 81         S
## 82         S
## 83         Q
## 84         S
## 85         S
## 86         S
## 87         S
## 88         S
## 89         S
## 90         S
## 91         S
## 92         S
## 93         S
## 94         S
## 95         S
## 96         S
## 97         C
## 98         C
## 99         S
## 100        S
## 101        S
## 102        S
## 103        S
## 104        S
## 105        S
## 106        S
## 107        S
## 108        S
## 109        S
## 110        Q
## 111        S
## 112        C
## 113        S
## 114        S
## 115        C
## 116        S
## 117        Q
## 118        S
## 119        C
## 120        S
## 121        S
## 122        S
## 123        C
## 124        S
## 125        S
## 126        C
## 127        Q
## 128        S
## 129        C
## 130        S
## 131        C
## 132        S
## 133        S
## 134        S
```

```
## 135        S
## 136        C
## 137        S
## 138        S
## 139        S
## 140        C
## 141        C
## 142        S
## 143        S
## 144        Q
## 145        S
## 146        S
## 147        S
## 148        S
## 149        S
## 150        S
## 151        S
## 152        S
## 153        S
## 154        S
## 155        S
## 156        C
## 157        Q
## 158        S
## 159        S
## 160        S
## 161        S
## 162        S
## 163        S
## 164        S
## 165        S
## 166        S
## 167        S
## 168        S
## 169        S
## 170        S
## 171        S
## 172        Q
## 173        S
## 174        S
## 175        C
## 176        S
## 177        S
## 178        C
## 179        S
## 180        S
## 181        S
## 182        C
## 183        S
## 184        S
## 185        S
## 186        S
## 187        Q
## 188        S
```

```
## 189        Q
## 190        S
## 191        S
## 192        S
## 193        S
## 194        S
## 195        C
## 196        C
## 197        Q
## 198        S
## 199        Q
## 200        S
## 201        S
## 202        S
## 203        S
## 204        C
## 205        S
## 206        S
## 207        S
## 208        C
## 209        Q
## 210        C
## 211        S
## 212        S
## 213        S
## 214        S
## 215        Q
## 216        C
## 217        S
## 218        S
## 219        C
## 220        S
## 221        S
## 222        S
## 223        S
## 224        S
## 225        S
## 226        S
## 227        S
## 228        S
## 229        S
## 230        S
## 231        S
## 232        S
## 233        S
## 234        S
## 235        S
## 236        S
## 237        S
## 238        S
## 239        S
## 240        S
## 241        C
## 242        Q
```

```
## 243        S
## 244        S
## 245        C
## 246        Q
## 247        S
## 248        S
## 249        S
## 250        S
## 251        S
## 252        S
## 253        S
## 254        S
## 255        S
## 256        C
## 257        C
## 258        S
## 259        C
## 260        S
## 261        Q
## 262        S
## 263        S
## 264        S
## 265        Q
## 266        S
## 267        S
## 268        S
## 269        S
## 270        S
## 271        S
## 272        S
## 273        S
## 274        C
## 275        Q
## 276        S
## 277        S
## 278        S
## 279        Q
## 280        S
## 281        Q
## 282        S
## 283        S
## 284        S
## 285        S
## 286        C
## 287        S
## 288        S
## 289        S
## 290        Q
## 291        S
## 292        C
## 293        C
## 294        S
## 295        S
## 296        C
```

```
## 297        C
## 298        S
## 299        S
## 300        C
## 301        Q
## 302        Q
## 303        S
## 304        Q
## 305        S
## 306        S
## 307        C
## 308        C
## 309        C
## 310        C
## 311        C
## 312        C
## 313        S
## 314        S
## 315        S
## 316        S
## 317        S
## 318        S
## 319        S
## 320        C
## 321        S
## 322        S
## 323        Q
## 324        S
## 325        S
## 326        C
## 327        S
## 328        S
## 329        S
## 330        C
## 331        Q
## 332        S
## 333        S
## 334        S
## 335        S
## 336        S
## 337        S
## 338        C
## 339        S
## 340        S
## 341        S
## 342        S
## 343        S
## 344        S
## 345        S
## 346        S
## 347        S
## 348        S
## 349        S
## 350        S
```

```
## 351        S
## 352        S
## 353        C
## 354        S
## 355        C
## 356        S
## 357        S
## 358        S
## 359        Q
## 360        Q
## 361        S
## 362        C
## 363        C
## 364        S
## 365        Q
## 366        S
## 367        C
## 368        C
## 369        Q
## 370        C
## 371        C
## 372        S
## 373        S
## 374        C
## 375        S
## 376        C
## 377        S
## 378        C
## 379        C
## 380        S
## 381        C
## 382        C
## 383        S
## 384        S
## 385        S
## 386        S
## 387        S
## 388        S
## 389        Q
## 390        C
## 391        S
## 392        S
## 393        S
## 394        C
## 395        S
## 396        S
## 397        S
## 398        S
## 399        S
## 400        S
## 401        S
## 402        S
## 403        S
## 404        S
```

```
## 405        S
## 406        S
## 407        S
## 408        S
## 409        S
## 410        S
## 411        S
## 412        Q
## 413        Q
## 414        S
## 415        S
## 416        S
## 417        S
## 418        S
## 419        S
## 420        S
## 421        C
## 422        Q
## 423        S
## 424        S
## 425        S
## 426        S
## 427        S
## 428        S
## 429        Q
## 430        S
## 431        S
## 432        S
## 433        S
## 434        S
## 435        S
## 436        S
## 437        S
## 438        S
## 439        S
## 440        S
## 441        S
## 442        S
## 443        S
## 444        S
## 445        S
## 446        S
## 447        S
## 448        S
## 449        C
## 450        S
## 451        S
## 452        S
## 453        C
## 454        C
## 455        S
## 456        C
## 457        S
## 458        S
```

```
## 459        S
## 460        Q
## 461        S
## 462        S
## 463        S
## 464        S
## 465        S
## 466        S
## 467        S
## 468        S
## 469        Q
## 470        C
## 471        S
## 472        S
## 473        S
## 474        C
## 475        S
## 476        S
## 477        S
## 478        S
## 479        S
## 480        S
## 481        S
## 482        S
## 483        S
## 484        S
## 485        C
## 486        S
## 487        S
## 488        C
## 489        S
## 490        S
## 491        S
## 492        S
## 493        S
## 494        C
## 495        S
## 496        C
## 497        C
## 498        S
## 499        S
## 500        S
## 501        S
## 502        Q
## 503        Q
## 504        S
## 505        S
## 506        C
## 507        S
## 508        S
## 509        S
## 510        S
## 511        Q
## 512        S
```

```
## 513        S
## 514        C
## 515        S
## 516        S
## 517        S
## 518        Q
## 519        S
## 520        S
## 521        S
## 522        S
## 523        C
## 524        C
## 525        C
## 526        Q
## 527        S
## 528        S
## 529        S
## 530        S
## 531        S
## 532        C
## 533        C
## 534        C
## 535        S
## 536        S
## 537        S
## 538        C
## 539        S
## 540        C
## 541        S
## 542        S
## 543        S
## 544        S
## 545        C
## 546        S
## 547        S
## 548        C
## 549        S
## 550        S
## 551        C
## 552        S
## 553        Q
## 554        C
## 555        S
## 556        S
## 557        C
## 558        C
## 559        S
## 560        S
## 561        Q
## 562        S
## 563        S
## 564        S
## 565        S
## 566        S
```

```
## 567        S
## 568        S
## 569        C
## 570        S
## 571        S
## 572        S
## 573        S
## 574        Q
## 575        S
## 576        S
## 577        S
## 578        S
## 579        C
## 580        S
## 581        S
## 582        C
## 583        S
## 584        C
## 585        C
## 586        S
## 587        S
## 588        C
## 589        S
## 590        S
## 591        S
## 592        C
## 593        S
## 594        Q
## 595        S
## 596        S
## 597        S
## 598        S
## 599        C
## 600        C
## 601        S
## 602        S
## 603        S
## 604        S
## 605        C
## 606        S
## 607        S
## 608        S
## 609        C
## 610        S
## 611        S
## 612        S
## 613        Q
## 614        Q
## 615        S
## 616        S
## 617        S
## 618        S
## 619        S
## 620        S
```

```
## 621        C
## 622        S
## 623        C
## 624        S
## 625        S
## 626        S
## 627        Q
## 628        S
## 629        S
## 630        Q
## 631        S
## 632        S
## 633        C
## 634        S
## 635        S
## 636        S
## 637        S
## 638        S
## 639        S
## 640        S
## 641        S
## 642        C
## 643        S
## 644        S
## 645        C
## 646        C
## 647        S
## 648        C
## 649        S
## 650        S
## 651        S
## 652        S
## 653        S
## 654        Q
## 655        Q
## 656        S
## 657        S
## 658        Q
## 659        S
## 660        C
## 661        S
## 662        C
## 663        S
## 664        S
## 665        S
## 666        S
## 667        S
## 668        S
## 669        S
## 670        S
## 671        S
## 672        S
## 673        S
## 674        S
```

```
## 675        S
## 676        S
## 677        S
## 678        S
## 679        S
## 680        C
## 681        Q
## 682        C
## 683        S
## 684        S
## 685        S
## 686        C
## 687        S
## 688        S
## 689        S
## 690        S
## 691        S
## 692        C
## 693        S
## 694        C
## 695        S
## 696        S
## 697        S
## 698        Q
## 699        C
## 700        S
## 701        C
## 702        S
## 703        C
## 704        Q
## 705        S
## 706        S
## 707        S
## 708        S
## 709        S
## 710        C
## 711        C
## 712        S
## 713        S
## 714        S
## 715        S
## 716        S
## 717        C
## 718        S
## 719        Q
## 720        S
## 721        S
## 722        S
## 723        S
## 724        S
## 725        S
## 726        S
## 727        S
## 728        Q
```

```
## 729        S
## 730        S
## 731        S
## 732        C
## 733        S
## 734        S
## 735        S
## 736        S
## 737        S
## 738        C
## 739        S
## 740        S
## 741        S
## 742        S
## 743        C
## 744        S
## 745        S
## 746        S
## 747        S
## 748        S
## 749        S
## 750        Q
## 751        S
## 752        S
## 753        S
## 754        S
## 755        S
## 756        S
## 757        S
## 758        S
## 759        S
## 760        S
## 761        S
## 762        S
## 763        C
## 764        S
## 765        S
## 766        S
## 767        C
## 768        Q
## 769        Q
## 770        S
## 771        S
## 772        S
## 773        S
## 774        C
## 775        S
## 776        S
## 777        Q
## 778        S
## 779        Q
## 780        S
## 781        C
## 782        S
```

```
## 783        S
## 784        S
## 785        S
## 786        S
## 787        S
## 788        Q
## 789        S
## 790        C
## 791        Q
## 792        S
## 793        S
## 794        C
## 795        S
## 796        S
## 797        S
## 798        S
## 799        C
## 800        S
## 801        S
## 802        S
## 803        S
## 804        C
## 805        S
## 806        S
## 807        S
## 808        S
## 809        S
## 810        S
## 811        S
## 812        S
## 813        S
## 814        S
## 815        S
## 816        S
## 817        S
## 818        C
## 819        S
## 820        S
## 821        S
## 822        S
## 823        S
## 824        S
## 825        S
## 826        Q
## 827        S
## 828        C
## 829        Q
## 830     <NA>
## 831        C
## 832        S
## 833        C
## 834        S
## 835        S
## 836        C
```

```
## 837        S
## 838        S
## 839        S
## 840        C
## 841        S
## 842        S
## 843        C
## 844        C
## 845        S
## 846        S
## 847        S
## 848        C
## 849        S
## 850        C
## 851        S
## 852        S
## 853        C
## 854        S
## 855        S
## 856        S
## 857        S
## 858        S
## 859        C
## 860        C
## 861        S
## 862        S
## 863        S
## 864        S
## 865        S
## 866        S
## 867        C
## 868        S
## 869        S
## 870        S
## 871        S
## 872        S
## 873        S
## 874        S
## 875        C
## 876        C
## 877        S
## 878        S
## 879        S
## 880        C
## 881        S
## 882        S
## 883        S
## 884        S
## 885        S
## 886        Q
## 887        S
## 888        S
## 889        S
## 890        C
```

```
## 891        Q
```

```
primer_query |> class()
```

```
## [1] "data.frame"
```