Advent of Code 2021 - Day 8

Gus Lipkin ~ github.com/guslipkin/AdventOfCode2021

```
library(stringr)
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --

## v ggplot2 3.3.5     v purrr   0.3.4
## v tibble  3.1.6     v dplyr   1.0.7
## v tidyr   1.1.4     v forcats 0.5.1
## v readr   2.1.1

## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(data.table)
```

```
##
## Attaching package: 'data.table'

## The following objects are masked from 'package:dplyr':
##
##     between, first, last

## The following object is masked from 'package:purrr':
##
##     transpose
```

```
dt <- data.table::fread("input.txt", header = FALSE)
```

```
# part 1
dt2 <- data.table("output" = dt$V2)
dt2 <- as.character(unlist(strsplit(dt2$output, " ")))
length(dt2[nchar(dt2) %in% c(2, 3, 4, 7)])
```

```
## [1] 392
```

This is how I laid out my positions

	1	1	
2			3
2			3
	4	4	
5			6
5			6
	7	7	

```
# part 2
df <- data.table::fread("input.txt", header = FALSE)
dt1 <- data.table("input" = df$V1)
dt1 <- data.table(str_split(dt1$input, " ", simplify = TRUE))
dt2 <- data.table("output" = df$V2)
dt2 <- data.table(str_split(dt2$output, " ", simplify = TRUE))
df <- cbind(dt1, dt2)

sortV <- function(x) {
  sapply(lapply(strsplit(x, NULL), sort), paste, collapse="")
}

getNumber <- function(x1) {
  display <- c("p1" = "",
               "p2" = "",
               "p3" = "",
               "p4" = "",
               "p5" = "",
               "p6" = "",
               "p7" = "")
  x <- as.character(x1[1:10])
  one <- ""
  four <- ""
  seven <- ""
  eight <- ""

  for (i in 1:10) {
    if (nchar(x[i]) == 2) one <- x[i]
    if (nchar(x[i]) == 3) seven <- x[i]
    if (nchar(x[i]) == 4) four <- x[i]
    if (nchar(x[i]) == 7) eight <- x[i]
  }

  # determine p1
  display["p1"] <- str_split(seven, "", simplify = TRUE)[
    !(str_split(seven, "", simplify = TRUE) %in%
        str_split(one, "", simplify = TRUE))]

  # determine p57
  p57 <- paste0(seven, four, collapse = "")
```

```
p57 <- str_split(p57, "", simplify = TRUE)
p27 <- as.character(unlist(str_split(x[nchar(x) == 5], "")))
p27 <- p27[!(p27 %in% p57)]
display["p5"] <- names(sort(table(p27)))[1]
display["p7"] <- names(sort(table(p27)))[2]

# determine p36
p24 <- str_split(eight, "", simplify = TRUE)[
  !(str_split(eight, "", simplify = TRUE) %in%
      str_split(one, "", simplify = TRUE))]
p24 <- p24[!(p24 %in% display)]
p <- as.character(unlist(str_split(x[nchar(x) == 6], "")))
p <- p[!(p %in% p24)]
p <- sort(table(p))
p36 <- p[(names(p) %in% str_split(one, "", simplify = TRUE))]
display["p3"] <- names(p36)[1]
display["p6"] <- names(p36)[2]

# determine p24
p24 <- unlist(str_split(x[nchar(x) == 5], ""))
p24 <- sort(table(p24[!(p24 %in% display)]))
display["p2"] <- names(p24)[1]
display["p4"] <- names(p24)[2]
display

zero <- paste0(sort(display[c(1:3,5:7)]), collapse = "")
one <- paste0(sort(display[c(3,6)]), collapse = "")
two <- paste0(sort(display[c(1,3,4:5,7)]), collapse = "")
three <- paste0(sort(display[c(1,3:4,6:7)]), collapse = "")
four <- paste0(sort(display[c(2:4,6)]), collapse = "")
five <- paste0(sort(display[c(1:2,4,6:7)]), collapse = "")
six <- paste0(sort(display[c(1:2,4:7)]), collapse = "")
seven <- paste0(sort(display[c(1,3,6)]), collapse = "")
eight <- paste0(sort(display[c(1:7)]), collapse = "")
nine <- paste0(sort(display[c(1:4,6:7)]), collapse = "")

x <- as.character(x1[11:14])
x <- sapply(x, sortV)

returnNumber <- function(x) {
  return(case_when(
    x == zero ~ 0,
    x == one ~ 1,
    x == two ~ 2,
    x == three ~ 3,
    x == four ~ 4,
    x == five ~ 5,
    x == six ~ 6,
    x == seven ~ 7,
    x == eight ~ 8,
    x == nine ~ 9
  ))
}
```

```
  x <- paste0(sapply(x, returnNumber), collapse = "")
  return(as.numeric(x))
}

sum(apply(df, 1, getNumber))
```

```
## [1] 1004688
```