Visualization Literacy Analysis

Laura Marusich

3/8/2022

Read in data files

```
#get the first 6? characters of each data file
#get unique values of these
# this is list of subject ids

raw_file_names <- list.files("Raw Data")
first_six <- substr(raw_file_names, 1, 6)
sub_ids <- unique(first_six)

length(sub_ids)
```

```
## [1] 122
```

```
states <- c("WaitingToReadyUp","ReadingQuestion","ProducingAnswer","WaitingToEnterAnswer")

fast_RTs <- data.frame(ParticipantId = character(),
                       TrialName = character(),
                       type = character(),
                       time = numeric()
)
# fast_index <- 1

for (i in 1:length(sub_ids)){
  # temp_hmd_file <- read.csv(paste0("Raw Data/", sub_ids[i], "_hmdandinputlog.csv"))
  #
  # trial_names <- unique(temp_hmd_file$TrialName)
  #
  # temp_hmd_file %>%
  #   mutate(TrialName = fct_inorder(factor(TrialName)),
  #     State = factor(State, levels = states)) %>%
  #   group_by(TrialName, State) %>%
  #   summarize(first_time = first(Time..ms.),
  #             last_time = last(Time..ms.))

  temp_main_file <- read_csv(paste0("Raw Data/", sub_ids[i], "_maindata.csv"))

  if (any(temp_main_file$TimeToReadQuestion < 2000, na.rm = T)){
    which_index <- which(temp_main_file$TimeToReadQuestion < 2000)
    for (j in which_index){
      fast_RTs <- add_row(fast_RTs, ParticipantId = sub_ids[i],
                          TrialName = temp_main_file$TrialName[j],
                          type = "TimeToReadQuestion",
```

```
                          time = temp_main_file$TimeToReadQuestion[j])
    }
  }

  if (any(temp_main_file$TimeToBeginInput < 2000, na.rm = T)){
    which_index <- which(temp_main_file$TimeToBeginInput < 2000)
    for (j in which_index) {
      fast_RTs <- add_row(fast_RTs, ParticipantId = sub_ids[i],
                          TrialName = temp_main_file$TrialName[j],
                          type = "TimeToBeginInput",
                          time = temp_main_file$TimeToBeginInput[j])
    }
  }



}

kable(fast_RTs, caption = "Fast RTs")
```

Table 1: Fast RTs

ParticipantId	TrialName	type	time
AA7062	LineChartQ3	TimeToReadQuestion	1844.0963
AA7062	SurfacePlotQ2	TimeToReadQuestion	1083.1256
AA7062	ScatterplotQ2	TimeToReadQuestion	1541.8894
AA7062	ScatterplotQ3	TimeToReadQuestion	1821.1526
AA7062	ScatterplotQ4	TimeToReadQuestion	1117.0356
AA7062	ScatterplotQ5	TimeToReadQuestion	848.7406
AA7062	BarChartQ1	TimeToReadQuestion	1363.8805
AN7725	BarChartQ2	TimeToReadQuestion	1340.4397
AO7880	ScatterplotQ3	TimeToReadQuestion	1552.3461
AO7880	ScatterplotQ5	TimeToReadQuestion	1463.6176
DA6527	ScatterplotQ4	TimeToReadQuestion	1508.4729
EO9447	LineChartQ1	TimeToReadQuestion	1622.9757
IB9297	BarChartQ1	TimeToReadQuestion	1988.7143
IB9297	BarChartQ4	TimeToReadQuestion	1374.8286
IR0779	BarChartQ3	TimeToReadQuestion	882.4353
IR0779	ScatterplotQ2	TimeToReadQuestion	738.0794
IR0779	ScatterplotQ3	TimeToReadQuestion	670.4283
IR0779	ScatterplotQ5	TimeToReadQuestion	302.2423
OI0406	LineChartQ4	TimeToReadQuestion	23.9377
OI0406	LineChartQ4	TimeToBeginInput	1597.2944
OO7105	LineChartQ3	TimeToReadQuestion	1173.4397
OO7105	LineChartQ4	TimeToReadQuestion	927.4842
OO7105	LineChartQ5	TimeToReadQuestion	760.6099
OO7105	ScatterplotQ2	TimeToReadQuestion	1006.1996
OO7105	ScatterplotQ3	TimeToReadQuestion	1240.4172
OO7105	ScatterplotQ4	TimeToReadQuestion	637.7220
OO7105	ScatterplotQ5	TimeToReadQuestion	604.2061
OO7105	SurfacePlotQ1	TimeToReadQuestion	793.1035
OO7105	SurfacePlotQ2	TimeToReadQuestion	625.4374
OO7105	SurfacePlotQ3	TimeToReadQuestion	1307.9685

ParticipantId	TrialName	type	time
OO7105	BarChartQ1	TimeToReadQuestion	458.0481
OO7105	BarChartQ2	TimeToReadQuestion	403.2758
OO7105	BarChartQ3	TimeToReadQuestion	604.5814
OO7105	BarChartQ4	TimeToReadQuestion	458.8864
RL9680	ScatterplotQ2	TimeToReadQuestion	1341.4270
RL9680	ScatterplotQ4	TimeToReadQuestion	1877.5769
UI1985	BarChartQ1	TimeToReadQuestion	1943.8489
UI1985	BarChartQ2	TimeToReadQuestion	1754.3328
YB5143	ScatterplotQ3	TimeToReadQuestion	1362.8709

Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.