df2ggplot

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01/12/2021

```r
library(tidyverse)

df2ggplot <- function(data, x, y = NULL, group = NULL, type = NULL) {
  #' @author Darren Liang
  #' @note Last updated: 01 DEC 2021
  #' @description Quickly creates a type of chart using ggplot using the data
  #' and variables from a typically organized data frame (columns are variables
  #' and rows are participants). since it is not typical to pivot tables in
  #' other programs, this function will extract and pivot only the required
  #' variables for ease of use in addition to providing basic titles and labels.
  #' @param data (list/ tibble/ data frame) A data object which contains columns
  #' and rows. Will be coerced into a data frame anyways.
  #' @param x (char) A character string which contains the name of a column
  #' which can be found in the data object. Plotted on the x-axis.
  #' @param y (char) OPTIONAL. A character string which contains the name of a
  #' column which can be found in the data object. Plotted on the y-axis.
  #' @param group (char) OPTIONAL. A character string which contains the name of
  #' a column which can be found in the data object. Will be used to color
  #' separate the group.
  #' @param type (char) OPTIONAL. A character string which contains the name of
  #' the type of chart you which to create. Refer to the ggplot2 cheat sheet for
  #' the most popular usage types (only include the type past geom*). Not all
  #' graph types are included in this function.
  #' @usage df2ggplot(data = data, x = "var1", y = "var2", group = "var3",
  #' type = "chart")
  #' @return A list object which can be viewed as a plot.
  #' @examples
  #' df2ggplot(data = mtcars, x = "mpg", y = "hp", group = "gear",
  #' type = "jitter")

  # create a new data frame by extracting variables from the input data
  data <- as.data.frame(data) %>%

    # clean all empty cells in case there are any
    compact() %>%

    # selects non-NULL variables if they exists to keep
    select(all_of(x), all_of(y), all_of(group)) %>%
    pivot_longer(!c(all_of(y), all_of(group)),
                 names_to = "scores", values_to = "values")

  # group_by() if applicable
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for (index in seq_along(group)) {
  group_by(data, group[[index]])
}

# plot the object using the specified features
plt <- data %>%
  ggplot(aes(x = values)) +
  theme_classic() +
  labs(x = x, title = paste(x))

if (!is.null(y)) {
  plt <- plt +
    aes(y = get(y)) +
    labs(x = x, y = y, title = paste(x, "vs.", y))
}

if (!is.null(group)) {
  plt <- plt +
    aes(color = get(group)) +
    labs(color = group)
}

# select type of graph based on type of data
# Some but not all popular geom* included from ggplot2 cheat sheet found at:
# https://raw.githubusercontent.com/rstudio/cheatsheets/main/data-visualization.pdf
if (is.null(type)) {
  message("Type not specified, default visualization selected.")
  if (is.null(y)) {
    plt <- plt +
      geom_histogram(binwidth = 5)
  } else {
    plt <- plt +
      geom_jitter()
  }
} else if (type == "area") {plt <- plt + geom_area()
} else if (type == "density") {plt <- plt + geom_density(kernel = "gaussian")
} else if (type == "dotplot") {plt <- plt + geom_dotplot()
} else if (type == "freqpoly") {plt <- plt + geom_freqpoly()
} else if (type == "histogram") {plt <- plt + geom_histogram(binwidth = 5)
} else if (type == "bar") {plt <- plt + geom_bar()
} else if (type == "point") {plt <- plt + geom_point()
} else if (type == "rug") {plt <- plt + geom_rug(sides = "bl")
} else if (type == "smooth") {plt <- plt + geom_smooth(method = lm)
} else if (type == "col") {plt <- plt + geom_col()
} else if (type == "boxplot") {plt <- plt + geom_boxplot()
} else if (type == "violin") {plt <- plt + geom_violin(scale = "area")
} else if (type == "count") {plt <- plt + geom_count()
} else if (type == "jitter") {plt <- plt + geom_jitter()
} else if (type == "line") {plt <- plt + geom_line()
} else {stop("Graph type not included. Try ggplot geom_* instead.")
}

return(plt)
```
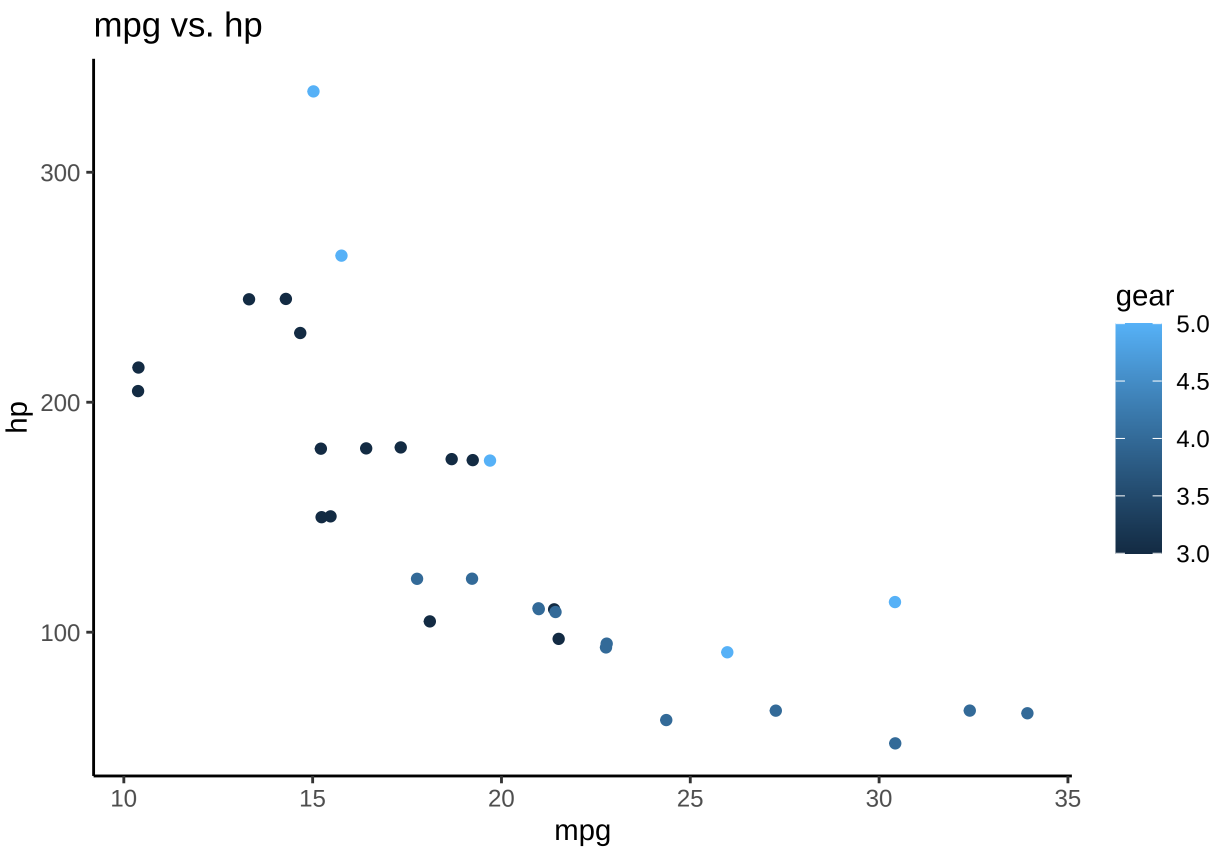

```
}
```

```
df2ggplot(data = mtcars, x = "mpg", y = "hp", group = "gear", type = "jitter")
```


mpg vs. hp
hp
mpg
gear