colors.R

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```r
pacman::p_load(ggplot2, dplyr, tidyr)


scenario = c("base", "scen1", "scen2", "scen3")
comparison = c("BAU", "ALT", "ALT", "ALT")
auto = c(70,60,65,30)
auto_toll = c(5,0,0,42)
rail = c(10,30,15,11)
bus = c(9,4,15,8)
air = c(11,6,5,9)


data_example = data.frame(scenario, comparison, auto, auto_toll, rail, bus, air)

data_example = data_example %>% pivot_longer(cols = c(auto, auto_toll, rail, bus, air),
                                             values_to = "share", names_to = "Mode")

data_example = data_example %>% mutate(mode_scenario = paste(Mode, comparison, sep = "-"))

ld_mode_order = c("auto", "auto_toll", "bus", "rail", "air")
data_example$Mode = factor(data_example$Mode, levels = ld_mode_order)
data_example$comparison = factor(data_example$comparison, levels = c("BAU", "ALT"))


# colors_ld_modes  =c("auto" = "#C7C7C7", "auto_toll" = "#6D6D6D", "rail"  ="#F31111",
# "bus" = "#69E11C", "air" = "blue")
#
#
# ggplot(data_example, aes(x = scenario, y = share, fill = mode )) +
#   geom_bar(stat = "identity", position = "fill") +
#   scale_fill_manual(values = colors_ld_modes) + theme_bw()
#
# ggplot(data_example, aes(x = scenario, y = share, color = mode, group = mode)) +
#   geom_line(stat = "identity", size =  1.5) + geom_point(size = 3)  +
#   scale_color_manual(values = colors_ld_modes) + theme_bw()

# colors_ld_modes  =c("auto" = "#C7C7C7", "auto_toll" = "#3B3B3B", "rail"  ="#CA4D4D",
#                     "bus" = "#6EA46E", "air" = "#536077")
#
# ggplot(data_example, aes(x = scenario, y = share, fill = Mode)) +
#   geom_bar(stat = "identity", position = position_fill(reverse = T)) +
#   scale_fill_manual(values = colors_ld_modes) + theme_bw() +
```
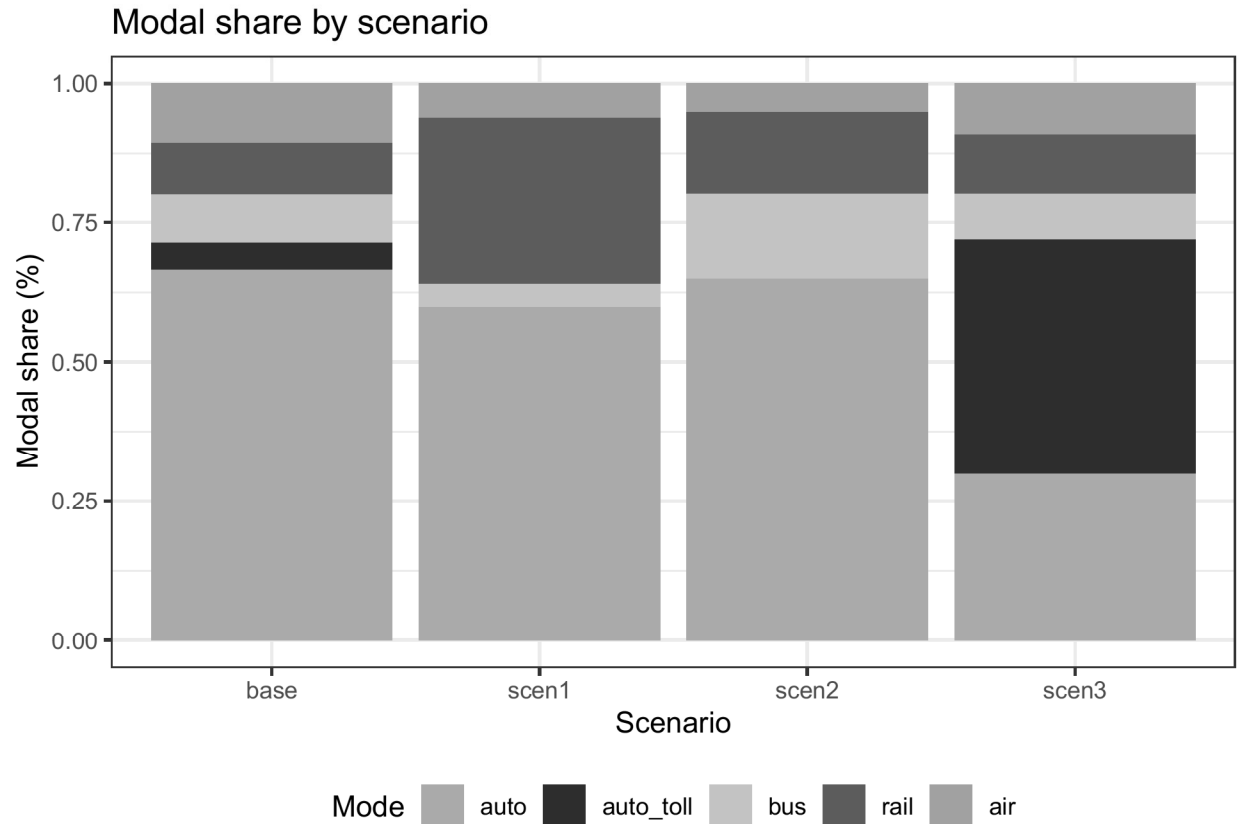
```
#   xlab("Scenario") + ylab("Modal share (%)") +
#   theme(legend.position = "bottom") +
#   ggtitle("Option 1 - Self explanatory colors")
#
#
# ggplot(data_example %>% filter(scenario == "base" | scenario == "scen1"),
#        aes(x = Mode, y = share, alpha = comparison, fill = Mode, color = Mode)) +
#   geom_bar(stat = "identity", position = position_dodge2(), size = 1) +
#   scale_fill_manual(values = colors_ld_modes, name = "Mode") +
#   scale_color_manual(values = colors_ld_modes, name = "Mode") +
#   scale_alpha_manual(values = c("BAU" = 1, "ALT" = 0.5), guide = "none") +
#   theme_bw() +
#   xlab("Scenario") + ylab("Modal share (%)") +
#   theme(legend.position = "bottom") +
#   ggtitle("Option 1 - Self explanatory colors")
#
#
# linetype_ld_modes  =c("auto" = "solid", "auto_toll" = "dotted", "rail"  ="solid",
#                       "bus" = "solid", "air" = "solid")
#
#
# ggplot(data_example, aes(x = scenario, y = share, color = Mode, group = Mode, linetype = Mode)) +
#   geom_line(stat = "identity", size = 1.5)  + geom_point(size = 4) +
#   scale_color_manual(values = colors_ld_modes) +
#   scale_linetype_manual(values = linetype_ld_modes) +
#   theme_bw() +
#   guides(color = guide_legend(override.aes = list(size = 1) ) ) +
#   theme(legend.position = "bottom")+
#   xlab("Scenario") + ylab("Modal share (%)") +
#   ggtitle("Option 1 - Self explanatory colors")
#
#



colors_ld_modes  =c("auto" = "#aaaaaa", "auto_toll" = "#2d2d2d", "rail"  ="#764c6e",
                    "bus" = "#bdc9bb", "air" = "#83adb5")

ggplot(data_example, aes(x = scenario, y = share, fill = Mode )) +
  geom_bar(stat = "identity", position = position_fill(reverse = T)) +
  scale_fill_manual(values = colors_ld_modes) + theme_bw()+
  xlab("Scenario") + ylab("Modal share (%)")  + theme(legend.position = "bottom") +
  ggtitle("Modal share by scenario")
```
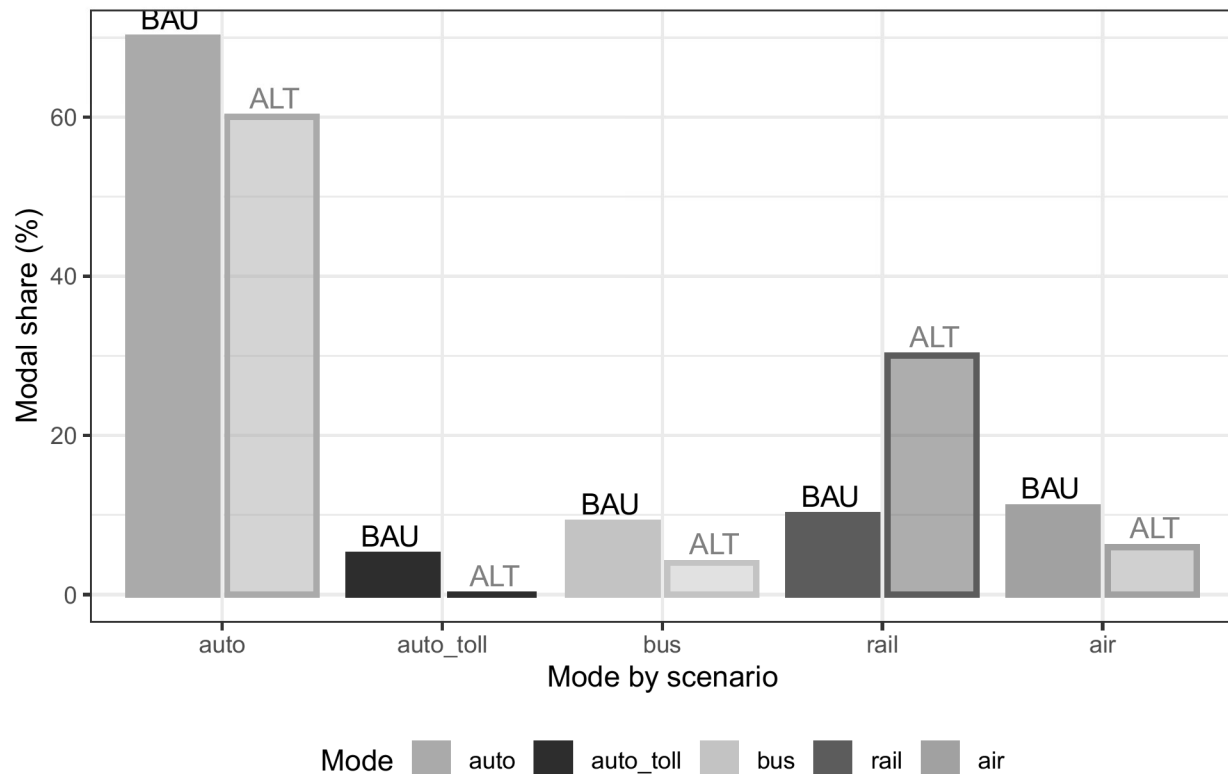
Modal share by scenario


```
ggplot(data_example %>% filter(scenario == "base" | scenario == "scen1"),
       aes(x = Mode, y = share, alpha = comparison, fill = Mode, color = Mode, label = comparison)) +
  geom_bar(stat = "identity", position = position_dodge2(), size = 1) +
  scale_fill_manual(values = colors_ld_modes, name = "Mode") +
  scale_color_manual(values = colors_ld_modes, guide = "none") +
  scale_alpha_manual(values = c("BAU" = 1, "ALT" = 0.5), guide = "none") +
  theme_bw() +
  xlab("Mode by scenario") + ylab("Modal share (%)") +
  theme(legend.position = "bottom") +
  ggtitle("Modal share by scenario - before/after comparison") +
  geom_text(position = position_dodge2(width = 0.95), color = "black", vjust = -0.4, hjust = "middle")
```

Modal share by scenario – before/after comparison

Mode by scenario

Modal share (%)

Mode: auto · auto_toll · bus · rail · air

```
linetype_ld_modes  =c("auto" = "dotted", "auto_toll" = "dotted", "rail"  ="solid",
                      "bus" = "solid", "air" = "solid")



# ggplot(data_example, aes(x = scenario, y = share, color = Mode, group = Mode, linetype = Mode)) +
#   geom_line(stat = "identity", size =  1.5) + geom_point(size = 4)  +
#   scale_color_manual(values = colors_ld_modes) +
#   scale_linetype_manual(values = linetype_ld_modes) +
#   theme_bw() +
#   guides(color = guide_legend(override.aes = list(size = 1) ) ) +
#   theme(legend.position = "bottom")+
#   xlab("Scenario") + ylab("Modal share (%)")+
#   ggtitle("Option 2a – Serious colors")



linetype_ld_modes  =c("auto" = "solid", "auto_toll" = "solid", "rail"  ="dotted",
                      "bus" = "dotted", "air" = "dotted")

ggplot(data_example, aes(x = scenario, y = share, color = Mode, group = Mode, linetype = Mode)) +
  geom_line(stat = "identity", size =  1.5) + geom_point(size = 4)  +
  scale_color_manual(values = colors_ld_modes) +
  scale_linetype_manual(values = linetype_ld_modes) +
  theme_bw() +
```

```
guides(color = guide_legend(override.aes = list(size = 1) ) ) +
theme(legend.position = "bottom")+
xlab("Scenario") + ylab("Modal share (%)") +
ggtitle("Line plot")
```


Line plot