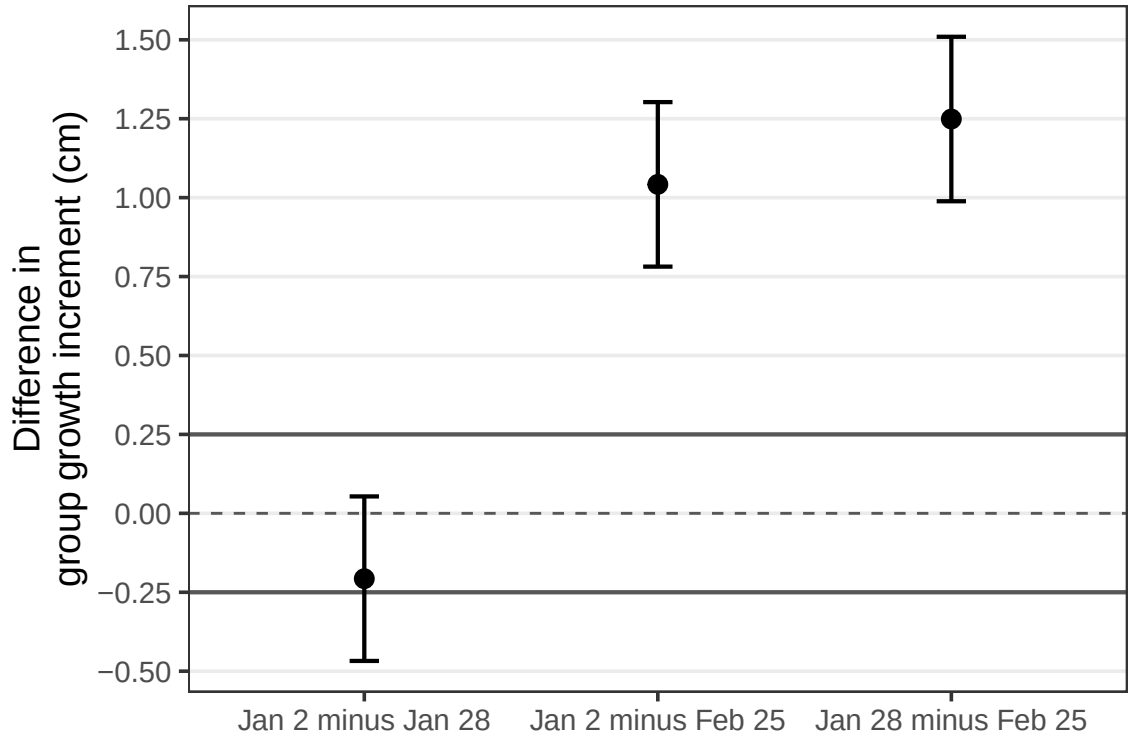
FES 524 Winter 2022 Lab 3

Bonus graphics

I was inspired by a post on Stack Overflow several years ago to edit the "results" figure from Lab 3, putting the results in a horizontal format instead of a vertical format.

The figure from Lab 3 is named `g1` and the summary table is named `sumtable`.

This is what the figure looked like at the end of Lab 3:

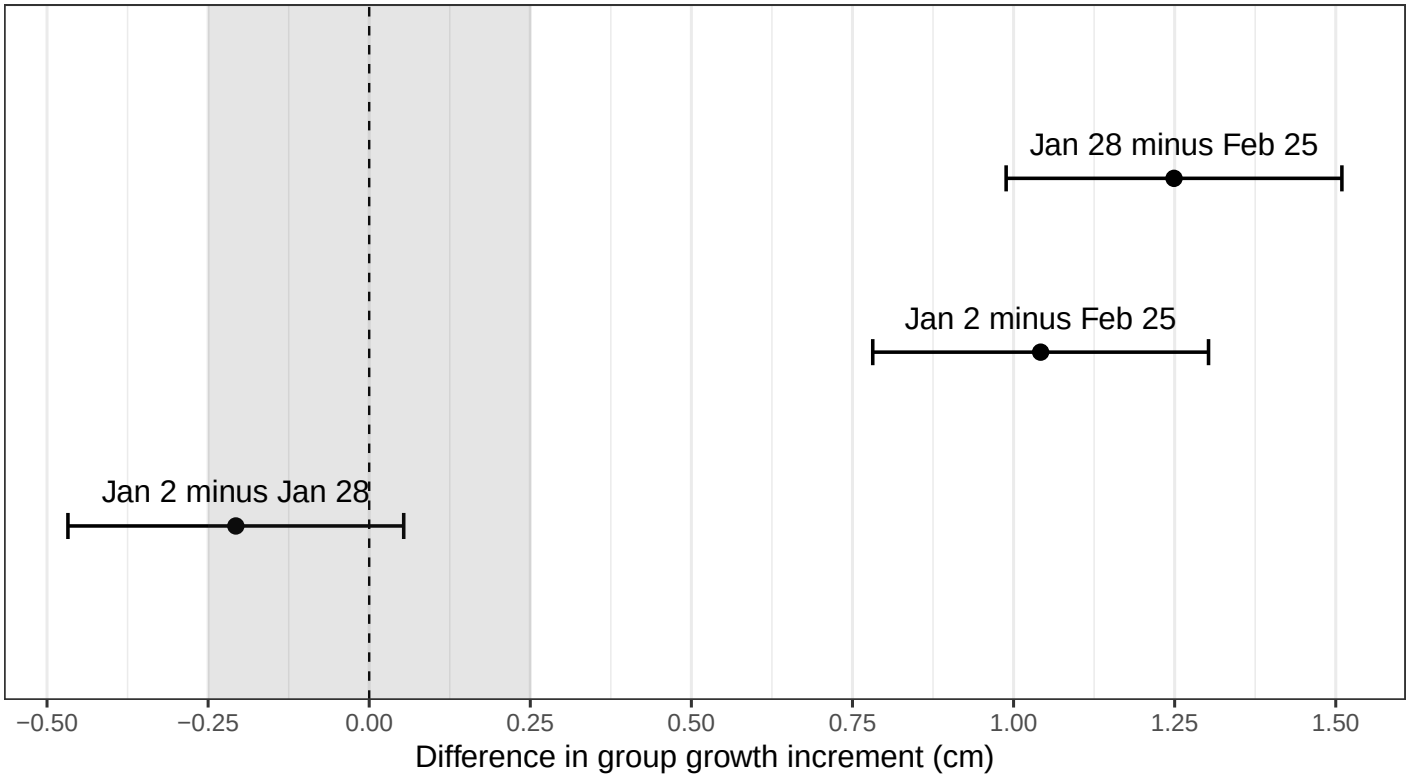


Another way to display these results is to flip the axes, putting the information currently on the x-axis on the y-axis and *vice versa*. I do this by switching `x` and `y`.

I decided to suppress the axis text and ticks and moved the axis labels inside the graphic using `geom_text()`. I added a shaded rectangle that shows the area of "No practical difference" rather then using lines because I find it visually appealing. This was done with `geom_rect()`, drawing a shaded polygon over the area instead of using `geom_vline()` to draw vertical lines.

```
( g2 = ggplot(em_dat, aes(x = estimate, y = contrast) ) +
    # Indicate dataset name and what's on each axis
    geom_vline(xintercept = 0, lty = 2) +  # Add horizontal line at 0 for reference
    geom_errorbar(width = .15, lwd = .75, aes(xmin = lower.CL, xmax = upper.CL) ) +
    # Add error bars with from lower and upper CI; change line end width
    geom_point(size = 3) + # Add point estimate, change point size
    geom_rect(alpha = .05, aes(xmin = -.25, xmax = .25, ymin = 0, ymax = 4) ) +
    # Add rectangle of no practical difference
    theme_bw(base_size = 14) +  # Change graph to black and white for printing
    labs(x = "Difference in group growth increment (cm)",
        y = NULL) + # Change labels on axes, leave y axis blank
    theme(axis.ticks.y = element_blank(),
```

```
        axis.text.y = element_blank(),  # Remove axis labels and tick marks
        panel.grid.major.y = element_blank() ) + # Removes horiz gridlines
    geom_text(aes(x = estimate, y = contrast, label = contrast),
              size = 5, position = position_nudge(y = .2) ) + # Add a text label for each estimate
    scale_x_continuous(breaks = seq(-.5, 1.5, .25) ) ) # Put in more tick labels/grid lines on x axis
```



I used `tableGrob()` from the package **gridExtra** to transform the table `sumtable` into a graphical object in order to add it to `g2`. The aesthetics of the table are the same as last week, with a black box around the outside of the table and a black line between the column names and the rest of the table added using `gtable_add_grob()` from **gtable**.

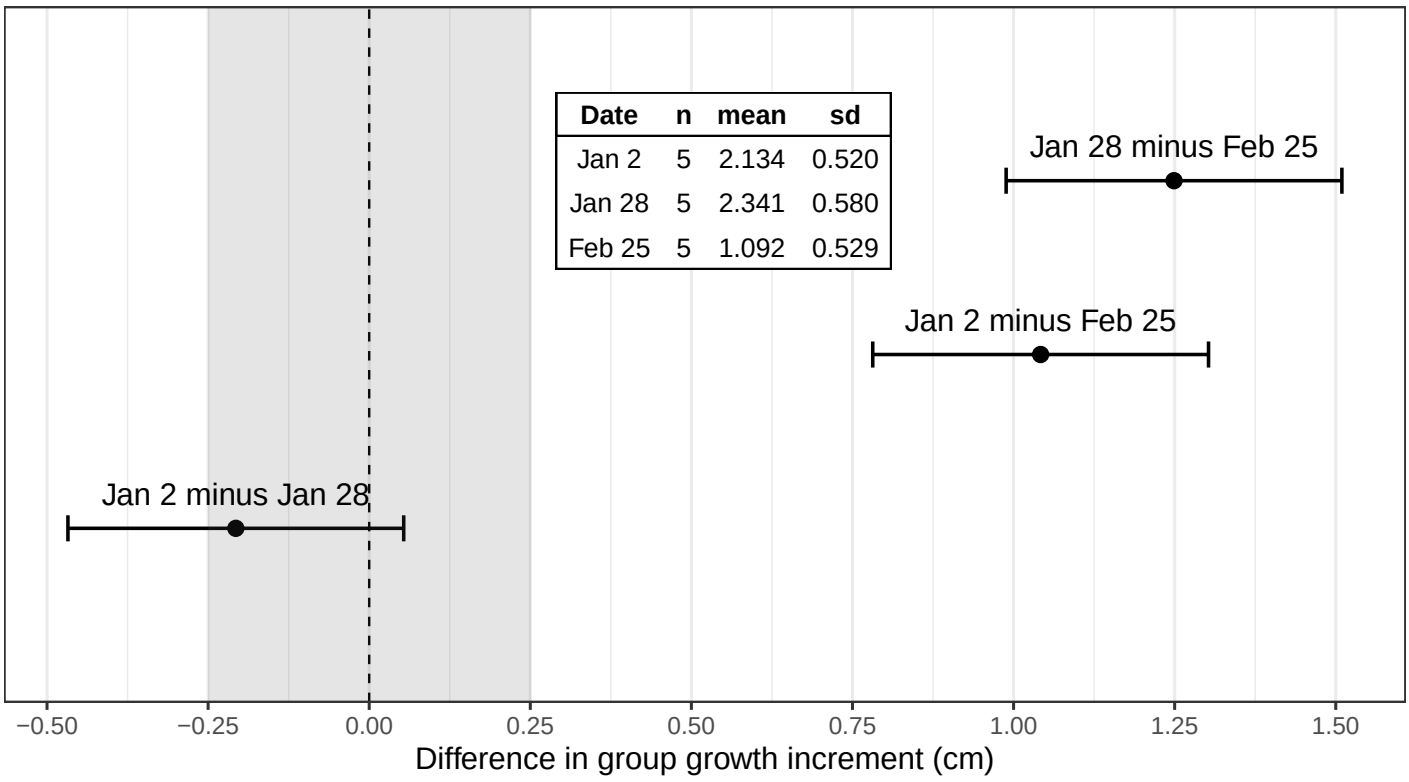
```
library(grid)
library(gridExtra)
library(gtable)

t1 = tableGrob(sumtable, rows = NULL,
               theme = ttheme_default(core = list(bg_params = list(fill = "white")),
                                      colhead = list(bg_params = list(fill = "white",
                                                                      col = "white"))))

# Add rectangle around table
t1 = gtable_add_grob(t1, grobs = rectGrob(gp = gpar(fill = NA, lwd = 2)),
                     t = 1,
                     b = nrow(t1),
                     r = ncol(t1),
                     l = 1)
# Add line under column names
t1 = gtable_add_grob(t1,
                     grobs = rectGrob(gp = gpar(fill = NA, lwd = 2)),
                     t = 1,
                     r = ncol(t1),
                     l = 1)
```

We will add the graphical object table `t1` to the grob `g2` using `annotation_custom()` and name it `gfin`.

```
( gfin = g2 +
    annotation_custom(grob = t1, xmin = .3, xmax = .8, ymin = 2.5, ymax = 3.5) )
```



If you wanted to save the final figure `gfin`, you could do so using `ggsave()`. In the example here we'll save it as a PNG file named `lab3figure` while using RStudio's default height and width as shown in the plotting pane (this is likely not an ideal size).

```
ggsave("lab3figure.png", plot = g1fin)
```