COMP4010 - Week 5

2024-03-21

```
library(tidyverse)
```

```
## Warning: package 'ggplot2' was built under R version 4.3.3
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.4     v readr     2.1.5
## v forcats   1.0.0     v stringr   1.5.1
## v ggplot2   3.5.0     v tibble    3.2.1
## v lubridate 1.9.3     v tidyr     1.3.1
## v purrr     1.0.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library(scales)
```

```
##
## Attaching package: 'scales'
##
## The following object is masked from 'package:purrr':
##
##     discard
##
## The following object is masked from 'package:readr':
##
##     col_factor
```

```
library(showtext)
```

```
## Warning: package 'showtext' was built under R version 4.3.3
```

```
## Loading required package: sysfonts
```

```
## Warning: package 'sysfonts' was built under R version 4.3.3
```

```
## Loading required package: showtextdb
```

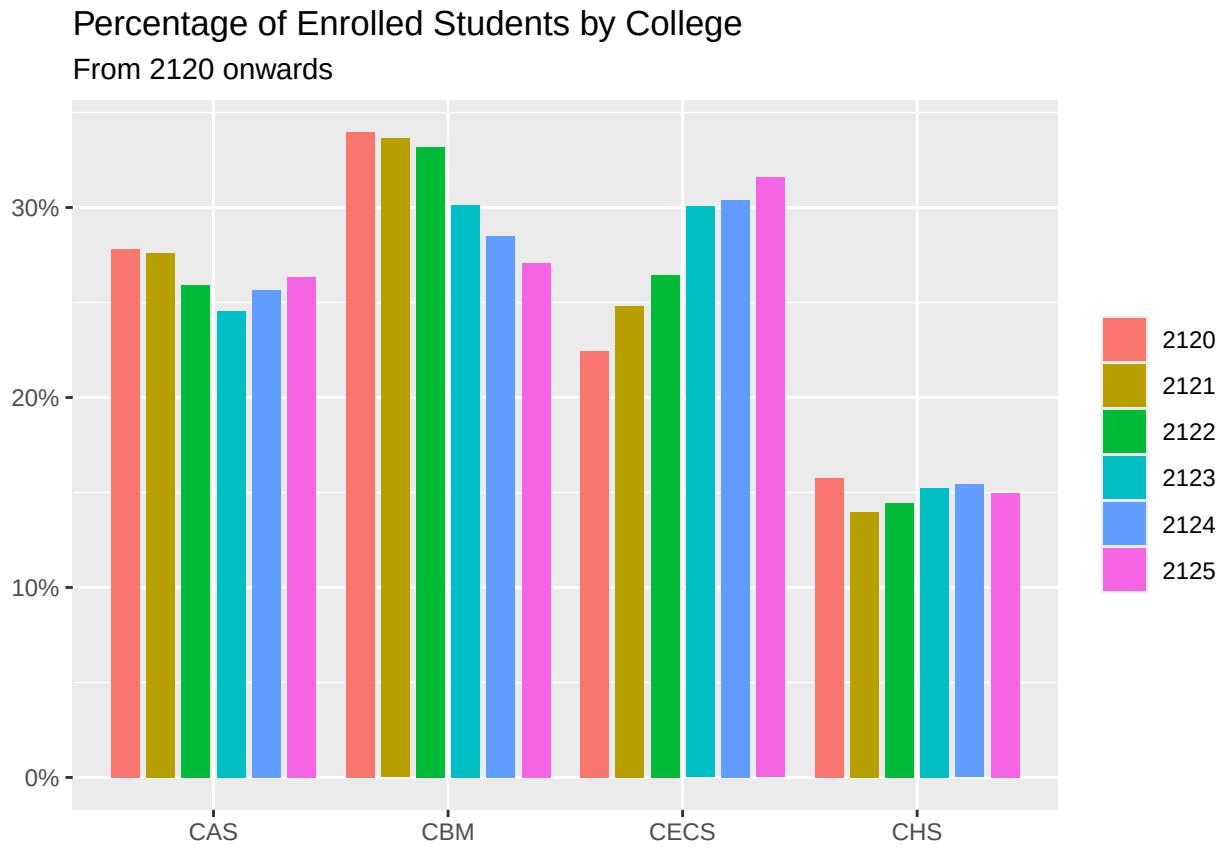
```
## Warning: package 'showtextdb' was built under R version 4.3.3
```

Task 1.

```r
# Load the data from the CSV file
data <- read_csv("college_data_normalized.csv")
```

```
## Rows: 84 Columns: 3
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## chr (1): college
## dbl (2): year, pct
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```r
# Filter the data for years 2120 onwards
filtered_data <- data %>%
  filter(year >= 2120)

# Create a dodged bar chart
college_plot <- ggplot(filtered_data, aes(x = college, y = pct, fill = as.factor(year))) +
  geom_col(position = position_dodge2(padding = 0.2)) +
  scale_y_continuous(labels = label_percent()) +
  labs(
    title = "Percentage of Enrolled Students by College",
    subtitle = "From 2120 onwards",
    x = NULL,
    y = NULL,
    fill = NULL
  )

college_plot
```

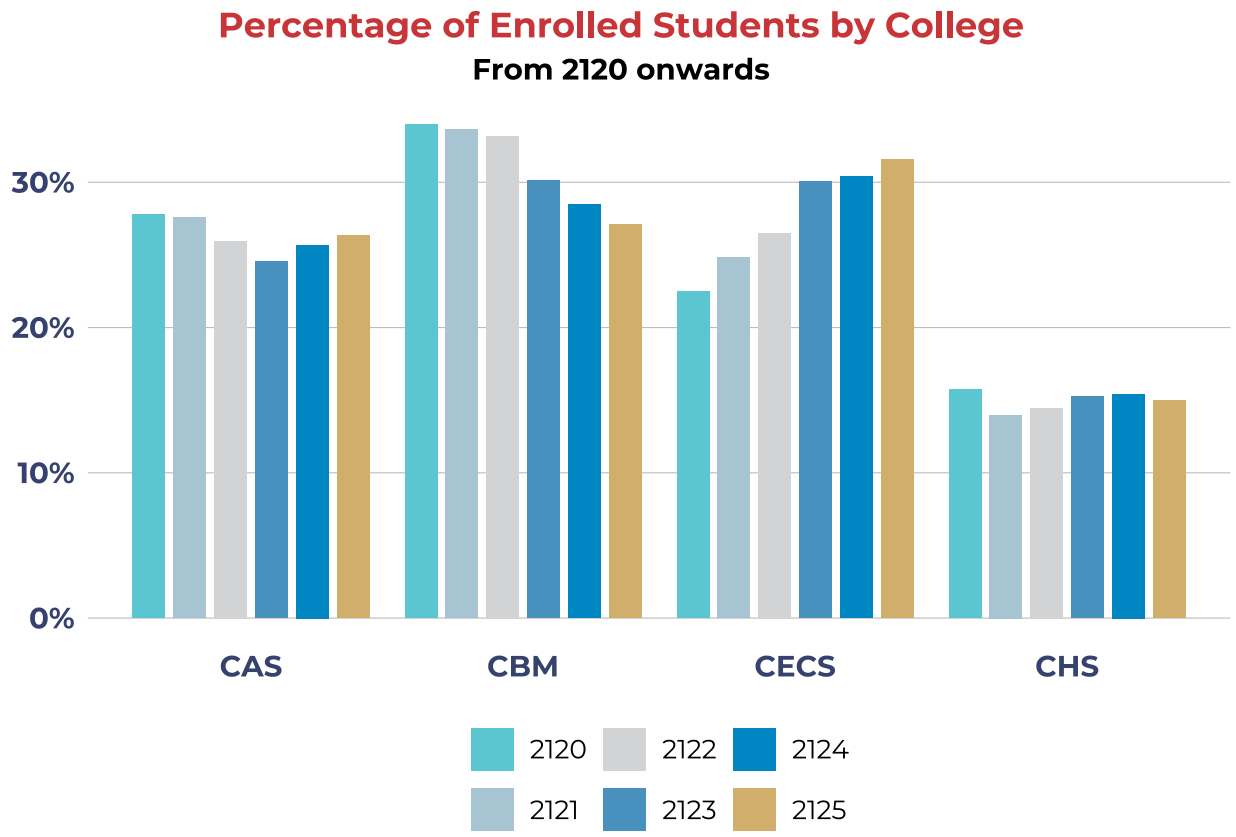


Task 2.

```
font_add_google("Montserrat", "Montserrat")

showtext_auto()

main_font = "Montserrat"

# vinuni color palette - accent colors
# based on branding guideline (page 13) - https://policy.vinuni.edu.vn/all-policies/brand-identity-manu
vinuni_palette_main <- c("#35426e", "#d2ae6d", "#c83538", "#2e548a")
vinuni_palette_accents <- c( "#5cc6d0", "#a7c4d2", "#d2d3d5",  "#4890bd", "#0087c3", "#d2ae6d")
```

```
college_plot +
  scale_fill_manual(values = vinuni_palette_accents) +
  theme_minimal(
    base_family = main_font,
    base_size = 11
  ) +
  theme(
    plot.title.position = "plot",
    plot.title = element_text(hjust = 0.5, face="bold", colour = vinuni_palette_main[3]),
    plot.subtitle = element_text(hjust = 0.5, face="bold"),
    legend.position = "bottom",
```

```
    panel.grid.major.x = element_blank(),
    panel.grid.minor.x = element_blank(),
    panel.grid.major.y = element_line(color = "grey", linewidth = 0.2),
    panel.grid.minor.y = element_blank(),
    axis.text = element_text(size = rel(1.0)),
    axis.text.x = element_text(face="bold", colour = vinuni_palette_main[1]),
    axis.text.y = element_text(face="bold", colour = vinuni_palette_main[1]),
    legend.text = element_text(size = rel(0.9))
  )
```

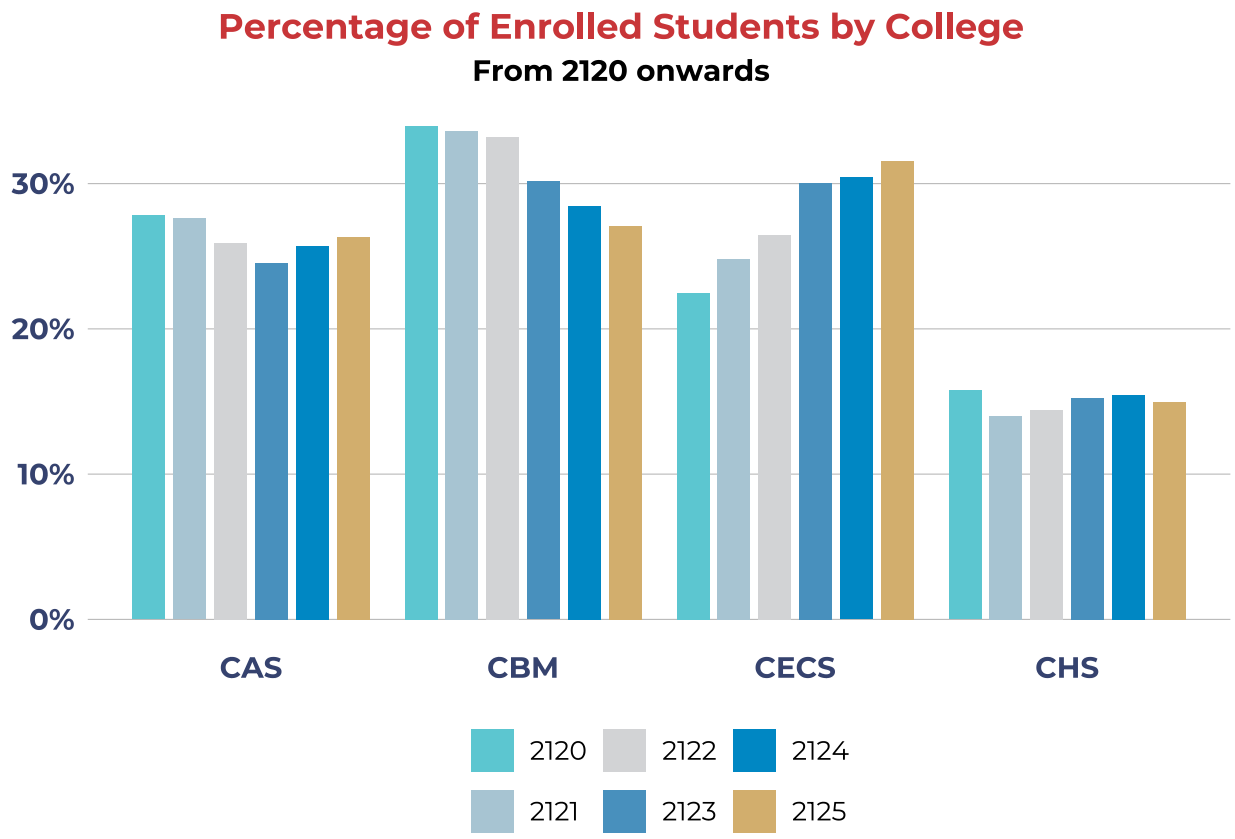


Task 3.

```
# Saving our theme as a function
theme_vinuni <- function(base_size = 11, base_family = main_font,
                         base_line_size = base_size / 22,
                         base_rect_size = base_size / 22) {
  # Base our theme on minimal theme
  theme_minimal(
    base_family = base_family,
    base_size = base_size,
    base_line_size = base_line_size,
    base_rect_size = base_rect_size
  ) +
```

```
  theme(
    plot.title.position = "plot",
    plot.title = element_text(hjust = 0.5, face="bold", colour = vinuni_palette_main[3]),
    plot.subtitle = element_text(hjust = 0.5, face="bold"),
    legend.position = "bottom",
    panel.grid.major.x = element_blank(),
    panel.grid.minor.x = element_blank(),
    panel.grid.major.y = element_line(color = "#bbbbbb", linewidth = 0.2),
    panel.grid.minor.y = element_blank(),
    axis.text = element_text(size = rel(1.0)),
    axis.text.x = element_text(face="bold", colour = vinuni_palette_main[1]),
    axis.text.y = element_text(face="bold", colour = vinuni_palette_main[1]),
    legend.text = element_text(size = rel(0.9))
  )
}
```

```
college_plot +
  scale_fill_manual(values = vinuni_palette_accents) +
  theme_vinuni()
```



Task 4:

```r
data |>
  mutate(
    college = fct_reorder2(.f = college, .x = year, .y = pct)
  ) |>
  ggplot(aes(x = year, y = pct, color = college)) +
  geom_point() +
  geom_line() +
  scale_x_continuous(limits = c(2105, 2125), breaks = seq(2105, 2125, 5)) +
  scale_y_continuous(labels = label_percent()) +
  labs(
    x = "Year",
    y = "Percent of students admitted",
    color = "College",
    title = "Percentage of Enrolled Students by College",
  ) +
  theme_vinuni() +
  theme(legend.position = "right") +
  scale_color_manual(values = vinuni_palette_main)
```