

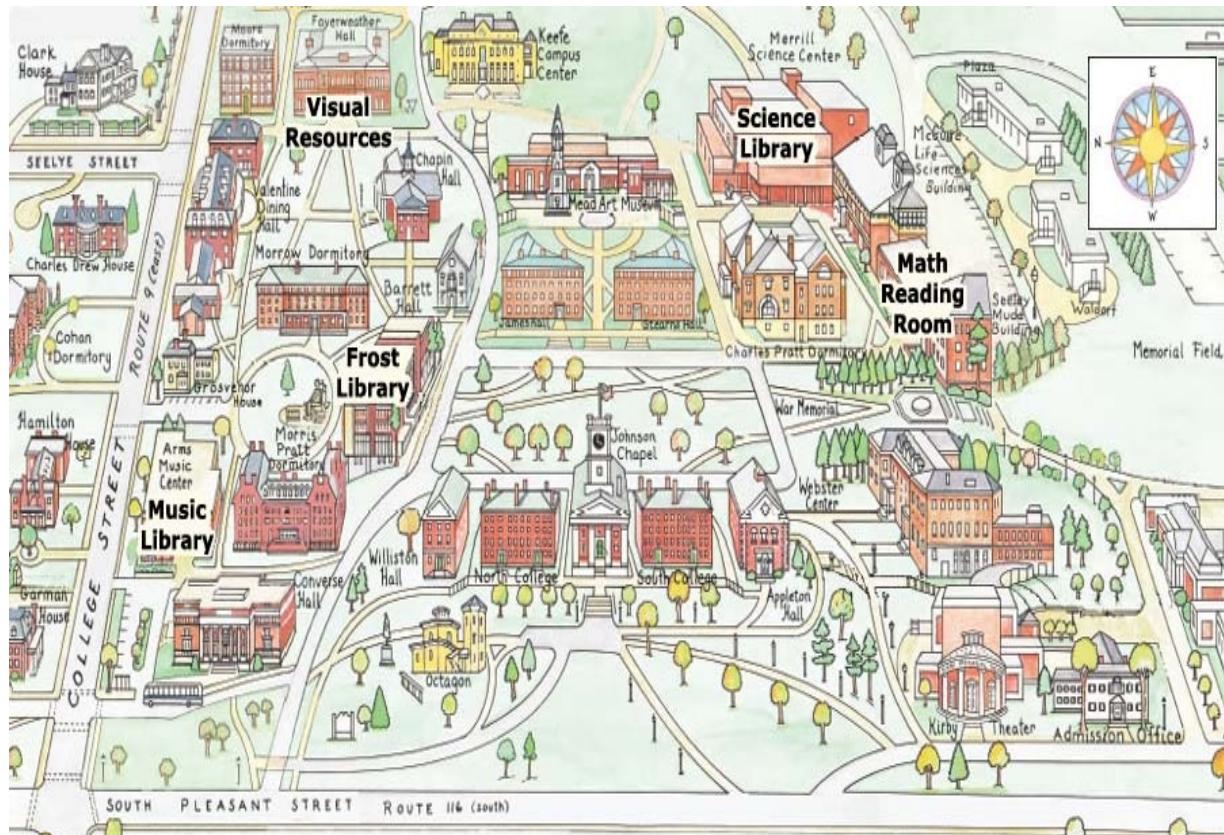
# campus map example

kat

3/9/2021

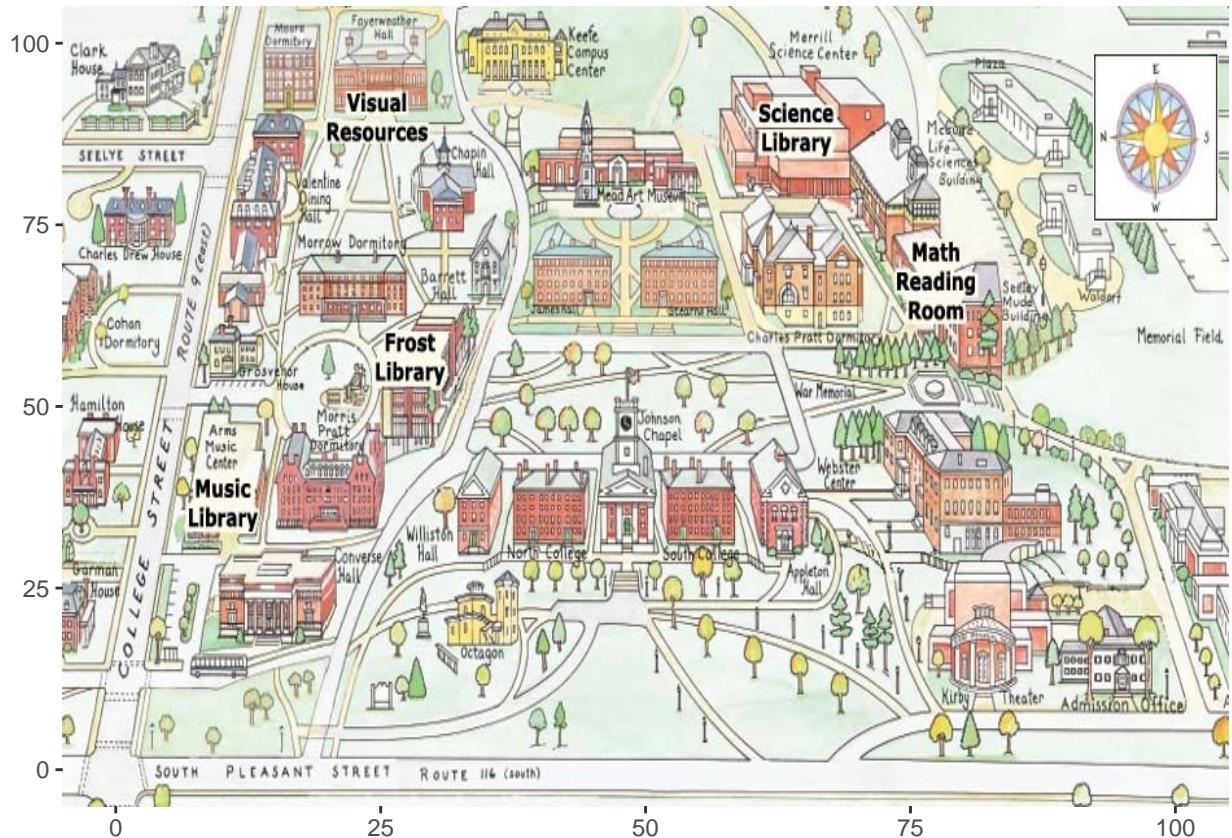
## blank map

```
#campus map image from:  
# https://www.amherst.edu/system/files/styles/original/private/media/0971/campus%2520map%2520of%2520lib  
  
# update path to the location of the file on your computer  
path <- "C:/Users/kcorreia/Dropbox (Amherst College)/Teaching/Spring 2021/STAT231/Calendar Assignment"  
# update campus_map to the name of the file  
img <- readJPEG(paste0(path,"/campus_map.jpg"))  
  
ggplot() +  
  background_image(img)
```



## add coordinates

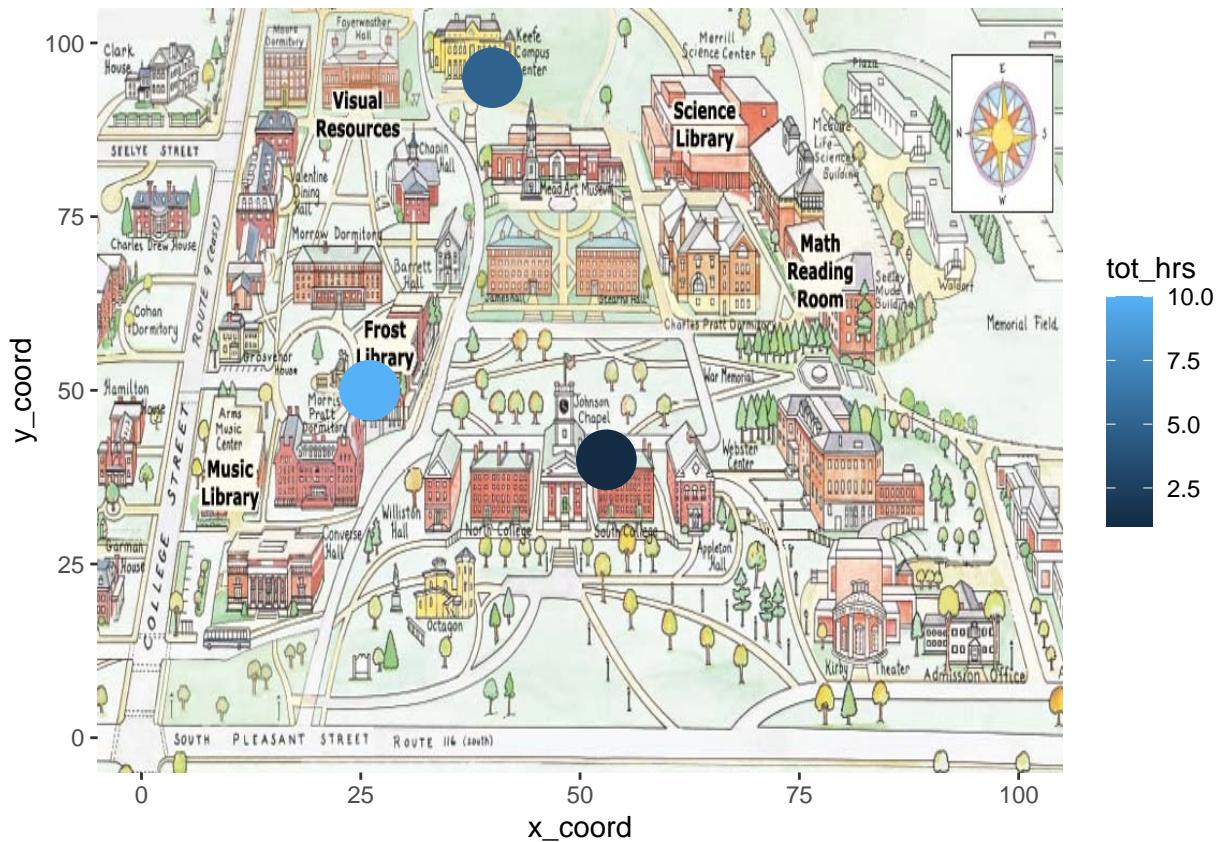
```
ggplot() +  
  background_image(img) +  
  xlim(0, 100) +  
  ylim(0, 100)
```



## add (fake) data

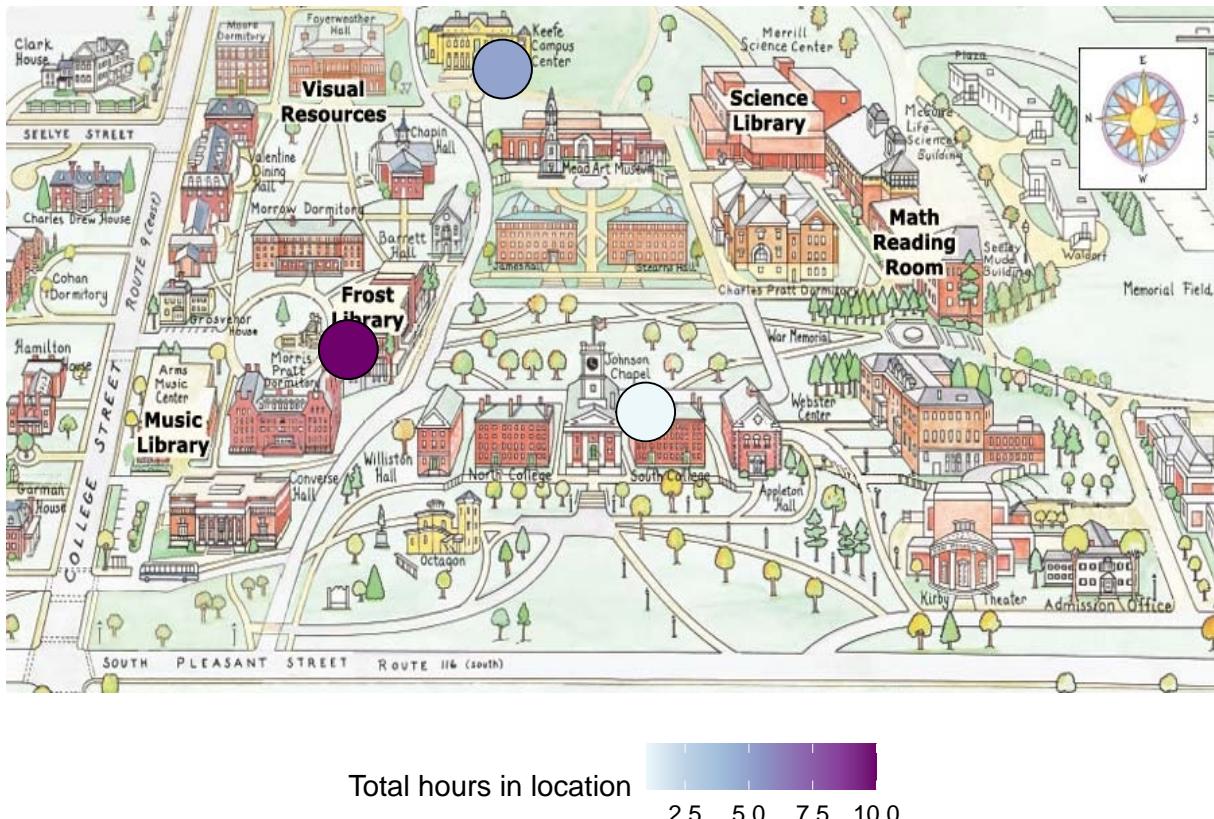
```
fake_data <- data.frame(location = c("Frost Library", "Johnson Chapel", "Keefe Campus Center"),
                        , tot_hrs = c(10,1,5)
                        # will need to change this based on the map you use
                        , x_coord = c(26, 53, 40)
                        , y_coord = c(50, 40, 95))

ggplot(data=fake_data, aes(x = x_coord, y = y_coord, color = tot_hrs)) +
  background_image(img) +
  geom_point(size = 10) +
  xlim(0, 100) +
  ylim(0, 100)
```



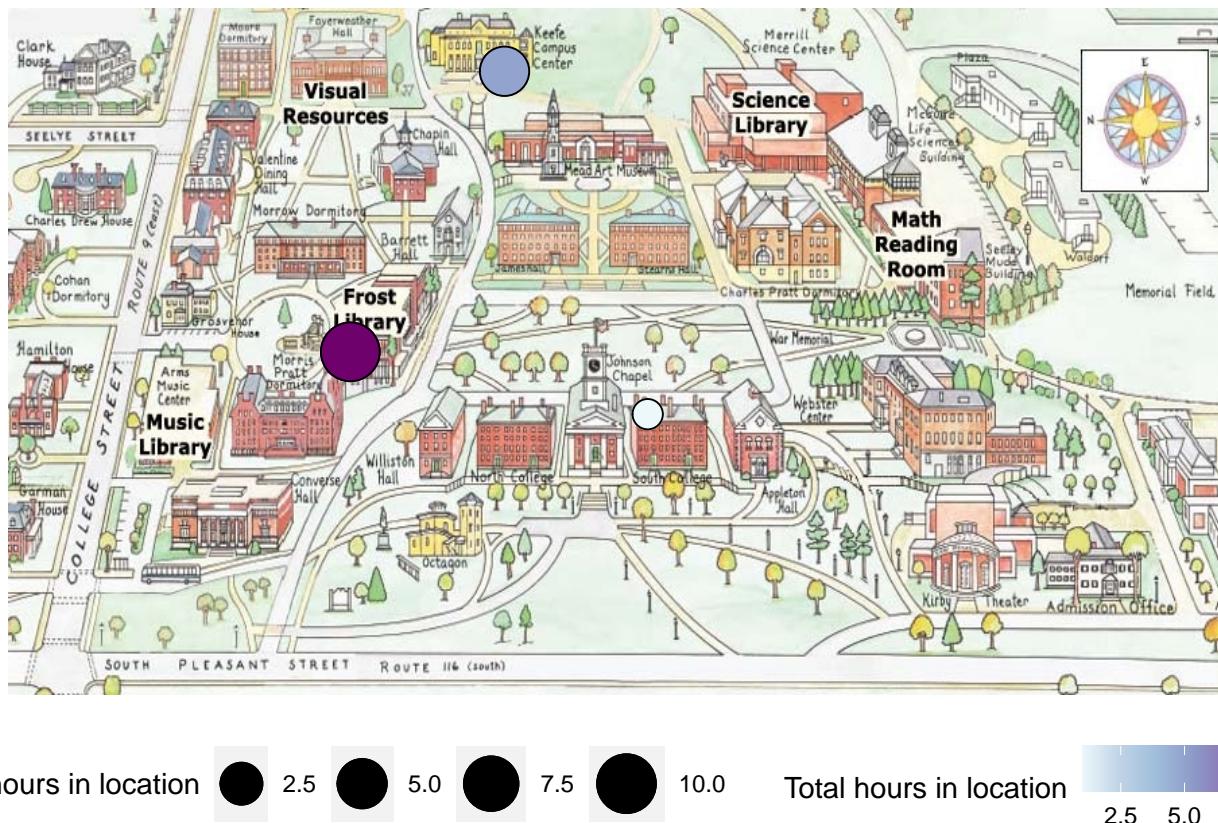
## clean up plot

```
ggplot(data=fake_data, aes(x = x_coord, y = y_coord, color = tot_hrs)) +  
  background_image(img) +  
  geom_point(size = 10) +  
  geom_point(shape = 1, size = 10, colour = "black") +  
  xlim(0, 100) +  
  ylim(0, 100) +  
  labs(color = "Total hours in location") +  
  # change color scheme to sequential palette in brewer (for continuous scale)  
  scale_color_distiller(type = "seq", palette = "BuPu", direction = 1) +  
  # remove x and y axis ticks and labels  
  theme(axis.title=element_blank(),  
        axis.text=element_blank(),  
        axis.ticks=element_blank(),  
        legend.position="bottom")
```



could map size and color as visual cues for total hours, but some (smaller and lighter) points may hard to see then

```
ggplot(data=fake_data, aes(x = x_coord, y = y_coord, color = tot_hrs
                           , size = tot_hrs)) +
  background_image(img) +
  geom_point() +
  geom_point(shape = 1, color = "black") +
  xlim(0, 100) +
  ylim(0, 100) +
  labs(color = "Total hours in location"
       , size = "Total hours in location") +
  # set minimum and maximum point sizes
  # (otherwise smallest point may be too hard to see)
  scale_size_continuous(range = c(5, 10)) +
  # change color scheme to sequential palette in brewer (for continuous scale)
  scale_color_distiller(type = "seq", palette = "BuPu", direction = 1) +
  # remove x and y axis ticks and labels
  theme(axis.title=element_blank(),
        axis.text=element_blank(),
        axis.ticks=element_blank(),
        legend.position="bottom")
```



You could imagine numerous variations of this if wanted to incorporate other information e.g. two points at each location with size relative to total hours spent there and color indicating weekday or weekend (one point

for weekday and one point for weekend), etc. . . .