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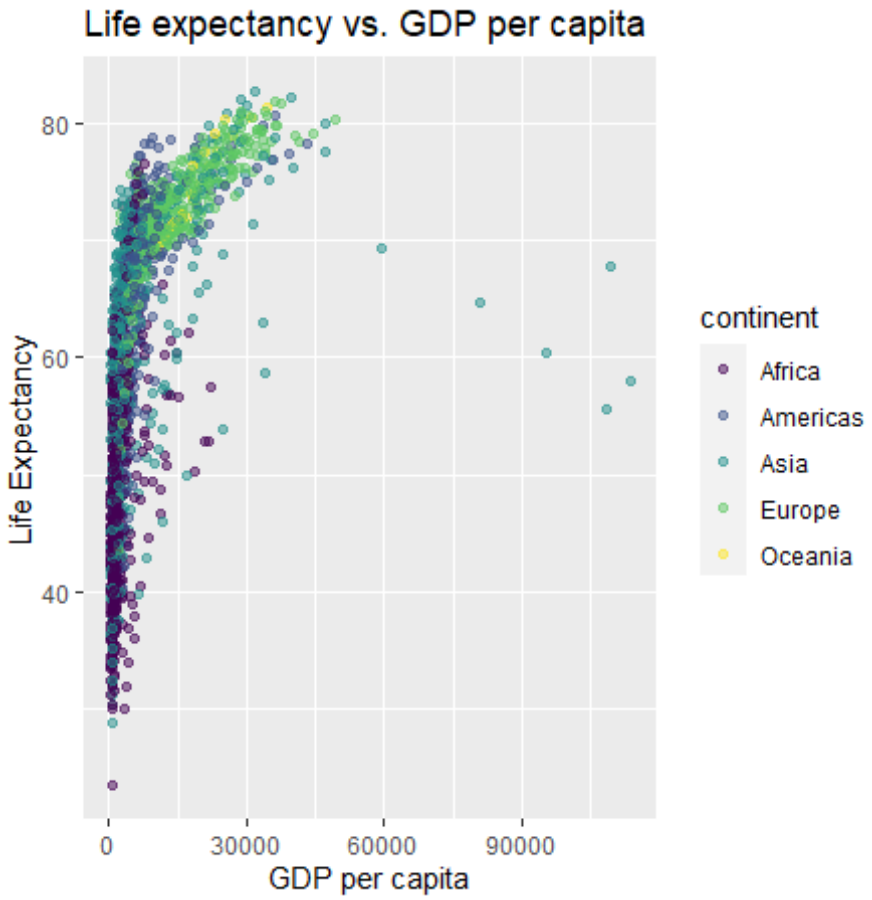
Gapminder

Question 1) Explore other relationships in the gapminder data. You could consider other variables in the data set, use an alternative geometry, or facet with other variables. Just make one figure, but using effectively as many of the concepts you learned as possible. For example, It seems to make sense that the life expectancy over time to also affected by income. (5 points)

Using the gap minder data I made this graph:



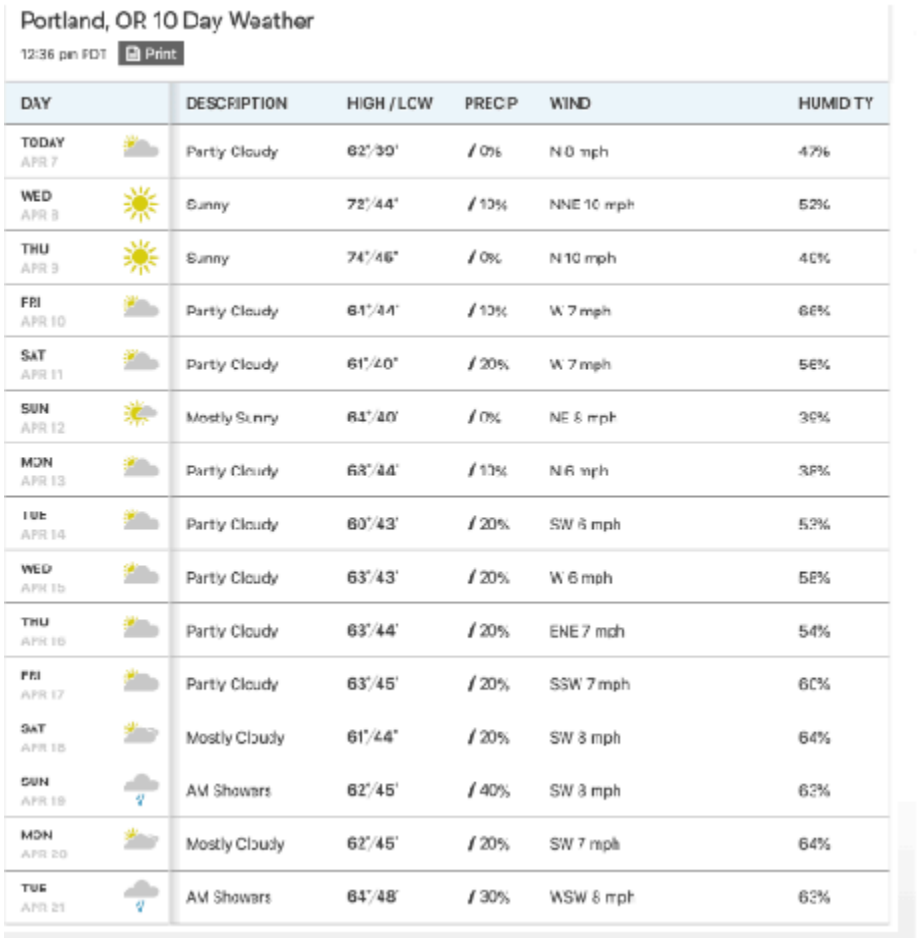
This is the graph's code:

```
ggplot(data = gapminder, aes(x = gdpPercap, y = lifeExp, color = continent)) +
xlab("GDP per capita") + ylab("Life Expectancy") + ggtitle("Life expectancy vs.
GDP per capita") + geom_point(alpha = 0.5) + scale_color_viridis_d()
```

Question 3) Construct a factor variable (without using factor, as.factor, or related functions) that contain the weather forecast for Portland over the next 14 days (i.e., excluding today). (2.5 points)

• There should be 5 levels - sun, partial clouds, clouds, rain, snow.

• Start with an integer vector and add the appropriate attributes in.



Portland, OR 10 Day Weather

12:36 pm PDT Print

DAY	DESCRIPTION	HIGH / LOW	PRECIP	WIND	HUMIDITY
TODAY APR 7	Partly Cloudy	62°/39°	/ 0%	N 0 mph	47%
WED APR 8	Sunny	72°/44°	/ 10%	NNE 10 mph	52%
THU APR 9	Sunny	74°/46°	/ 0%	N 10 mph	40%
FRI APR 10	Partly Cloudy	61°/44°	/ 10%	W 7 mph	66%
SAT APR 11	Partly Cloudy	61°/40°	/ 20%	W 7 mph	56%
SUN APR 12	Mostly Sunny	61°/40°	/ 0%	NE 6 mph	36%
MON APR 13	Partly Cloudy	63°/44°	/ 10%	N 6 mph	38%
TUE APR 14	Partly Cloudy	60°/43°	/ 20%	SW 6 mph	53%
WED APR 15	Partly Cloudy	63°/43°	/ 20%	W 6 mph	58%
THU APR 16	Partly Cloudy	63°/44°	/ 20%	ENE 7 mph	54%
FRI APR 17	Partly Cloudy	63°/45°	/ 20%	SSW 7 mph	60%
SAT APR 18	Mostly Cloudy	61°/44°	/ 20%	SW 8 mph	64%
SUN APR 19	AM Showers	62°/45°	/ 40%	SW 8 mph	63%
MON APR 20	Mostly Cloudy	62°/45°	/ 20%	SW 7 mph	64%
TUE APR 21	AM Showers	64°/48°	/ 30%	WSW 8 mph	63%

```
forecast <- c(1, 1, 2, 2, 1, 2, 2, 2, 2, 2, 3, 4, 3, 4)
weather_levels <- c("sun", "partial clouds", "clouds", "rain", "snow")

forecast_data <- data.frame(
  Day = 1:14,
  Weather = weather_levels[forecast],
  High = c(62, 72, 74, 64, 61, 64, 68, 60, 63, 63, 63, 61, 62, 62), # Start with 62
  Low = c(39, 44, 45, 44, 40, 40, 44, 43, 43, 44, 45, 44, 45, 45),    # Start with 39
```

```
  Precip = c(0, 0.10, 0, 0.10, 0.20, 0, 0.10, 0.20, 0.20, 0.20, 0.20, 0.20, 0.40, 0.20),
  Wind = c(8, 10, 10, 7, 7, 8, 6, 6, 6, 7, 7, 8, 8, 7),
  Humidity = c(47, 52, 49, 68, 56, 39, 38, 53, 58, 54, 60, 64, 63, 64)
)
> forecast_data
   Day        Weather High Low Precip Wind Humidity
1    1            sun   62  39    0.0    8       47
2    2            sun   72  44    0.1   10       52
3    3 partial clouds   74  45    0.0   10       49
4    4 partial clouds   64  44    0.1    7       68
5    5            sun   61  40    0.2    7       56
6    6 partial clouds   64  40    0.0    8       39
7    7 partial clouds   68  44    0.1    6       38
8    8 partial clouds   60  43    0.2    6       53
9    9 partial clouds   63  43    0.2    6       58
10  10 partial clouds   63  44    0.2    7       54
11  11         clouds   63  45    0.2    7       60
12  12           rain   61  44    0.2    8       64
13  13         clouds   62  45    0.4    8       63
14  14           rain   62  45    0.2    7       64
```