Module 4 Assignment 3

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2022-12-02

```
## Rows: 200 Columns: 4
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## chr (1): plant_type
## dbl (3): site, percent_plant_cover, penguin_density_m2
##
## 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.
```

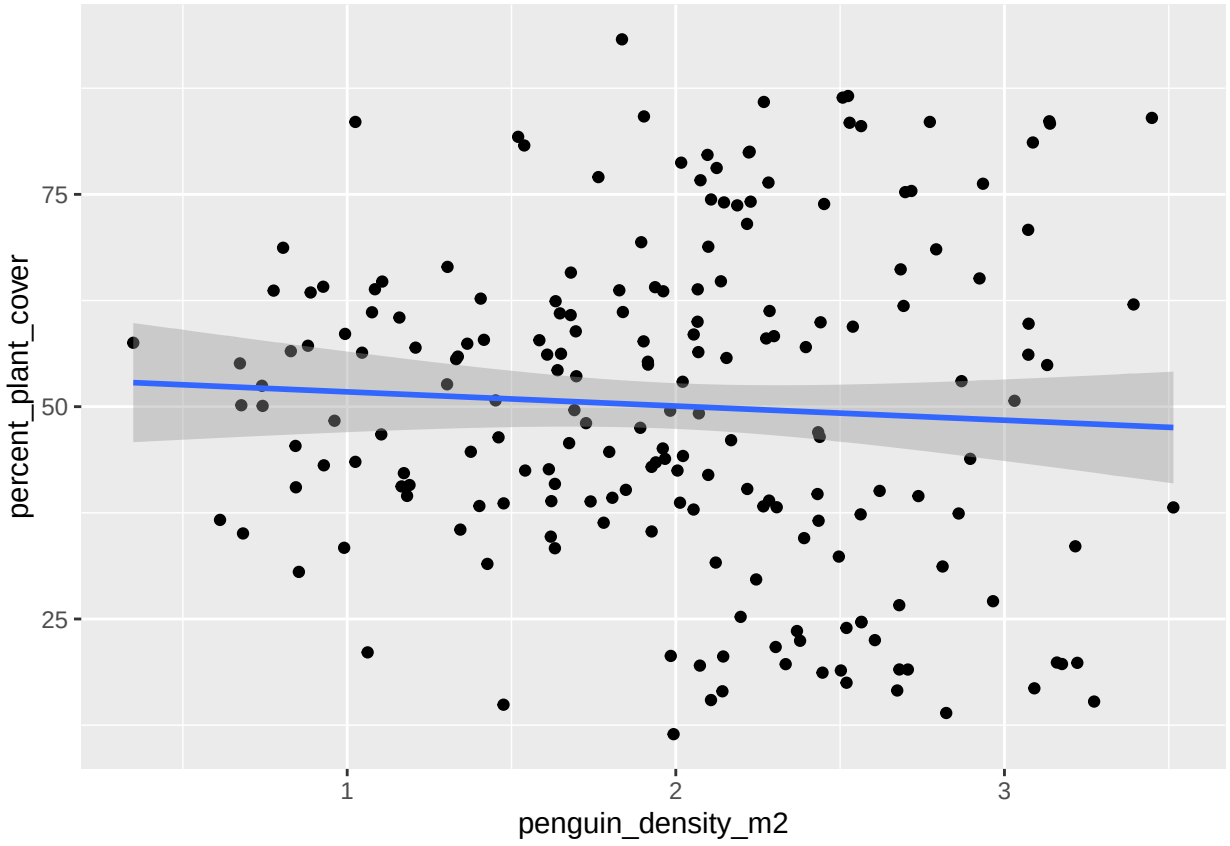
3.

```
## # A tibble: 6 x 4
##    site plant_type percent_plant_cover penguin_density_m2
##   <dbl> <chr>                    <dbl>              <dbl>
## 1     1 moss                      47.5              1.89
## 2     2 moss                      39.5              1.18
## 3     3 moss                      39.3              1.81
## 4     4 moss                      40.9              1.63
## 5     5 moss                      45.4              0.843
## 6     6 moss                      36.7              0.613
```

```
## # A tibble: 6 x 4
##    site plant_type percent_plant_cover penguin_density_m2
##   <dbl> <chr>                    <dbl>              <dbl>
## 1   195 liverwort                22.4               2.38
## 2   196 liverwort                24.6               2.56
## 3   197 liverwort                19.1               2.68
## 4   198 liverwort                31.6               2.12
## 5   199 liverwort                20.6               1.98
## 6   200 liverwort                11.4               1.99
```

5.

```
## `geom_smooth()` using formula 'y ~ x'
```



6.

```
## [1] -0.05922145
```

7.

```
## [1] 0.00350718
```

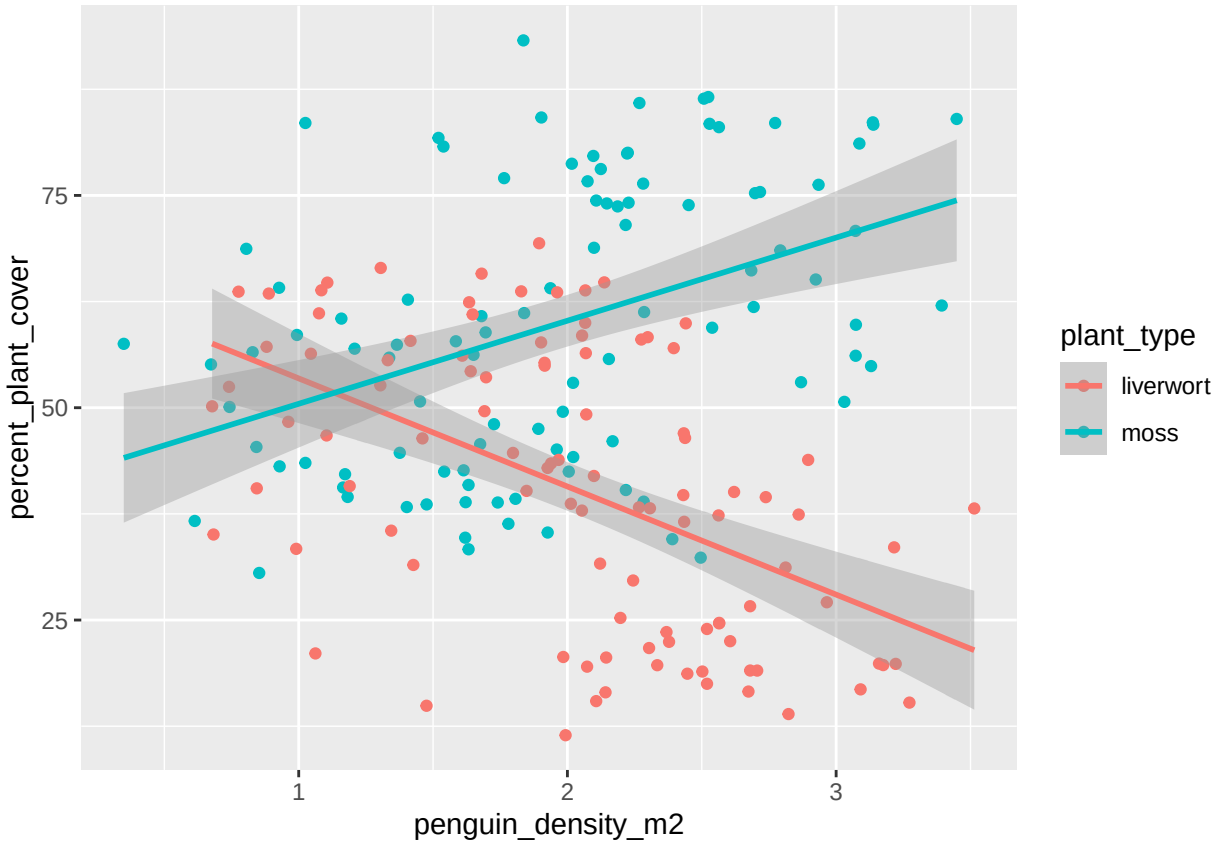
8.

```
##
## Call:
## lm(formula = percent_plant_cover ~ penguin_density_m2, data = plants)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -38.647 -12.154  -0.661  12.233  42.906
##
## Coefficients:
##                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)         53.413      4.212  12.682   <2e-16 ***
## penguin_density_m2  -1.670      2.001  -0.835    0.405
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## Residual standard error: 19.29 on 198 degrees of freedom
## Multiple R-squared:  0.003507,   Adjusted R-squared:  -0.001526
## F-statistic: 0.6969 on 1 and 198 DF,  p-value: 0.4048
```

9.

```
## `geom_smooth()` using formula 'y ~ x'
```



10.

```
##
## Call:
## lm(formula = percent_plant_cover ~ penguin_density_m2 * plant_type,
##     data = plants)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -32.757 -12.508   1.299  11.637  34.609
##
## Coefficients:
##                                Estimate Std. Error t value Pr(>|t|)
## (Intercept)                      66.183      4.776  13.858  < 2e-16 ***
## penguin_density_m2              -12.730      2.238  -5.688 4.62e-08 ***
```

```
## plant_typemoss                      -25.508      6.508  -3.920 0.000123 ***
## penguin_density_m2:plant_typemoss    22.516      3.089   7.289 7.51e-12 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 14.86 on 196 degrees of freedom
## Multiple R-squared:  0.4151, Adjusted R-squared:  0.4061
## F-statistic: 46.37 on 3 and 196 DF,  p-value: < 2.2e-16
```