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Lab9

*Worked with Jessica Bonin

1. Brown creeper presence/absence does not vary between the interior and the edge of forest stands.
2. The test resulted in a p-value of 1.386e-06, so the null can be rejected. With this result, Brown creepers do appear to have a significant habitat preference.

3. fit_species=

```
lm(  
  formula = body_mass_g ~ species,  
  data = penguins)
```

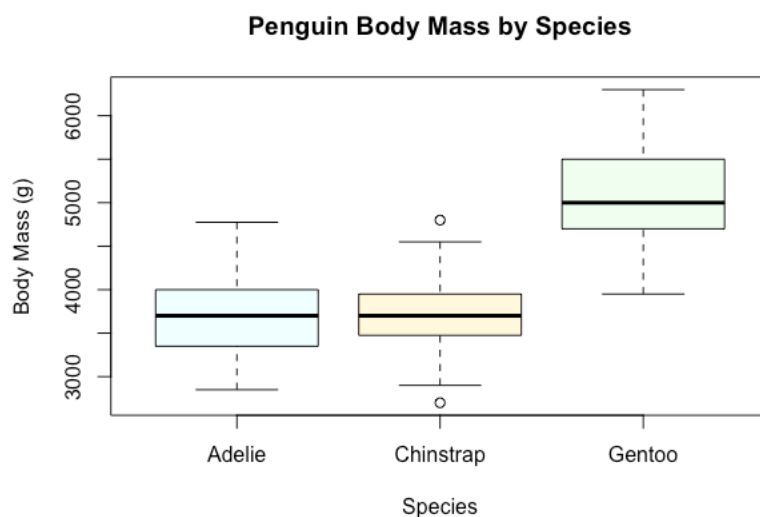
4. fit_sex=

```
lm(  
  formula = body_mass_g ~ sex,  
  data = penguins)
```

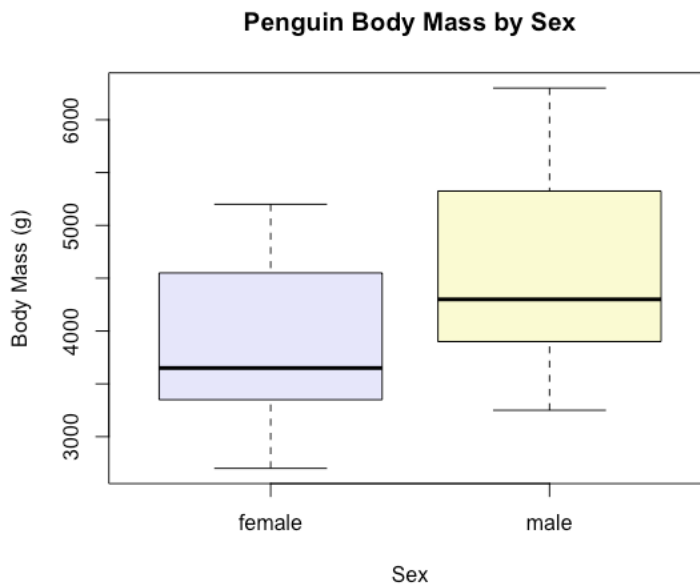
5. fit_both =

```
lm(  
  formula = body_mass_g ~ sex*species,  
  data = penguins)
```

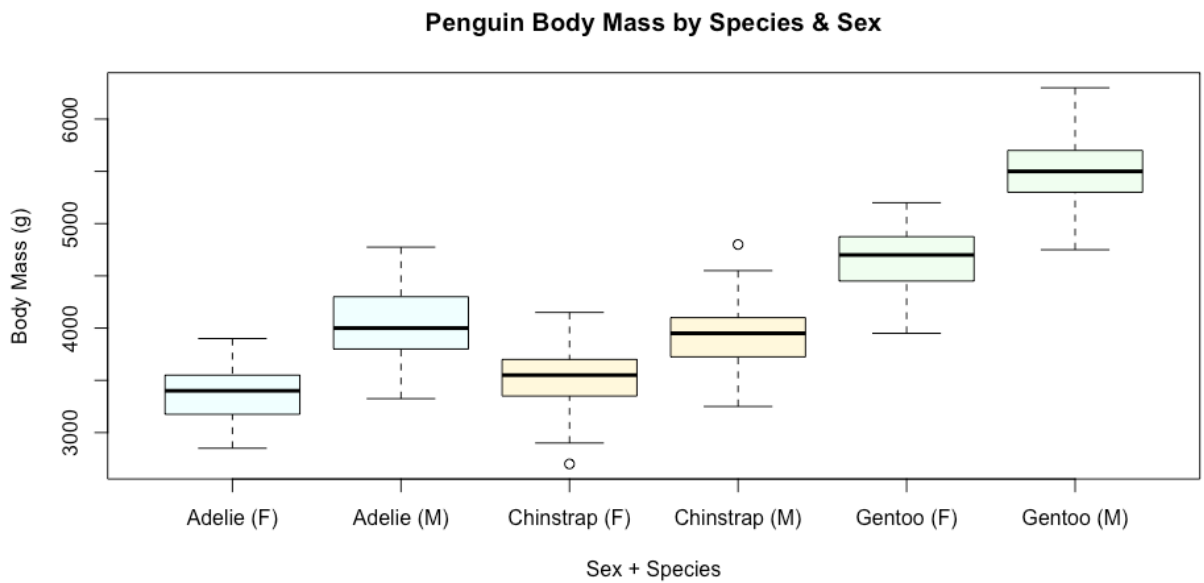
6.



7.



8.



9. Based on the shape of the boxes, body mass by species, and by sex may have problems fulfilling the homogeneity assumptions

10. The null hypothesis is that the variance is equal for all samples

11. P-value = 0.0501

12. P-value = 0.0319

13. P-value: 0.1741

14. Based on the Barlett test, the tests by species and by sex may have issues with heterogeneity. The test by species is on the line of rejecting the null with a p-value of 0.05, while the test by sex is significant and rejects the null with a p-value of 0.03. The test by species and sex together does not reject the null, and so does not have issues with heterogeneity.