

# Experimental Design and Data Analysis: Assignment 4

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May 6, 2015

## Exercise 1

1

```
sample_slices = sample(1:18, 18)
```

2

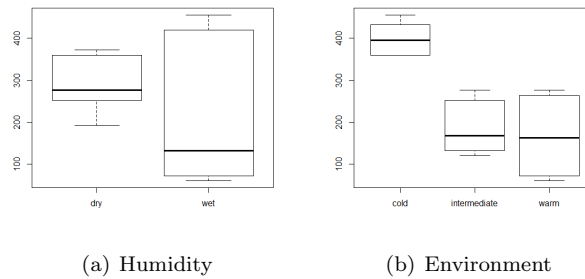


Figure 1: Boxplots of Hours with Humidity and Environment

3

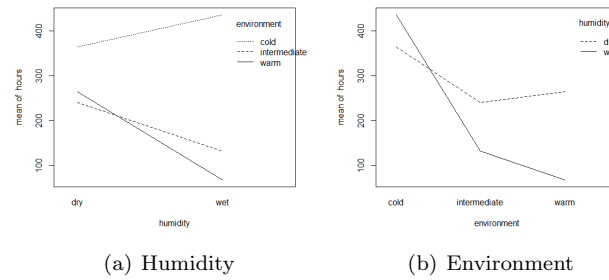


Figure 2: Interactionplots of Hours with Humidity and Environment

4

Analysis of variance on both factors:

Analysis of Variance Table

Response: hours

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
<b>environment</b>	2	201904	100952	23.1057	3.674e-05 ***
humidity	1	26912	26912	6.1596	0.02637 *
Residuals	14	61168	4369		

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1

Analysis of variance on humidity:

Analysis of Variance Table

Response: hours

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
humidity	1	26912	26912	1.6368	0.219
Residuals	16	263072	16442		

Analysis of variance on environment:

Analysis of Variance Table

Response: hours

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
<b>environment</b>	2	201904	100952	17.192	0.0001315 ***
Residuals	15	88080	5872		

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1

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## Exercise 2

1

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## Exercise 3

1

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## Exercise 4

1

2

3

4

## 1 R-Code

### 1.1 Exercise 1

**1.2 Exercise 2**

**1.3 Exercise 3**

**1.4 Exercise 4**