Mental Accounting in College: Students' use of Free Money

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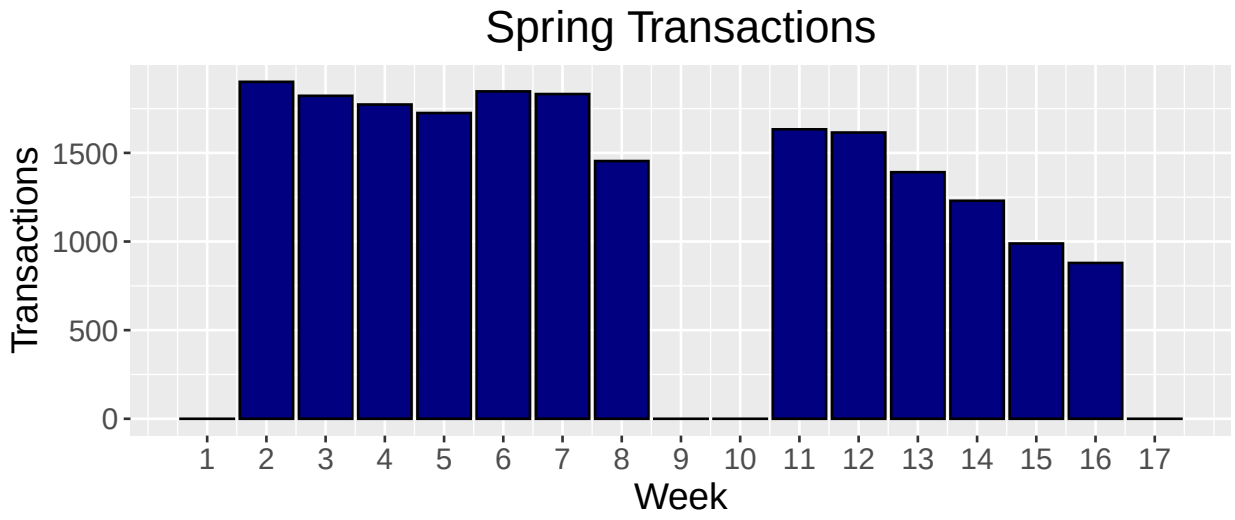
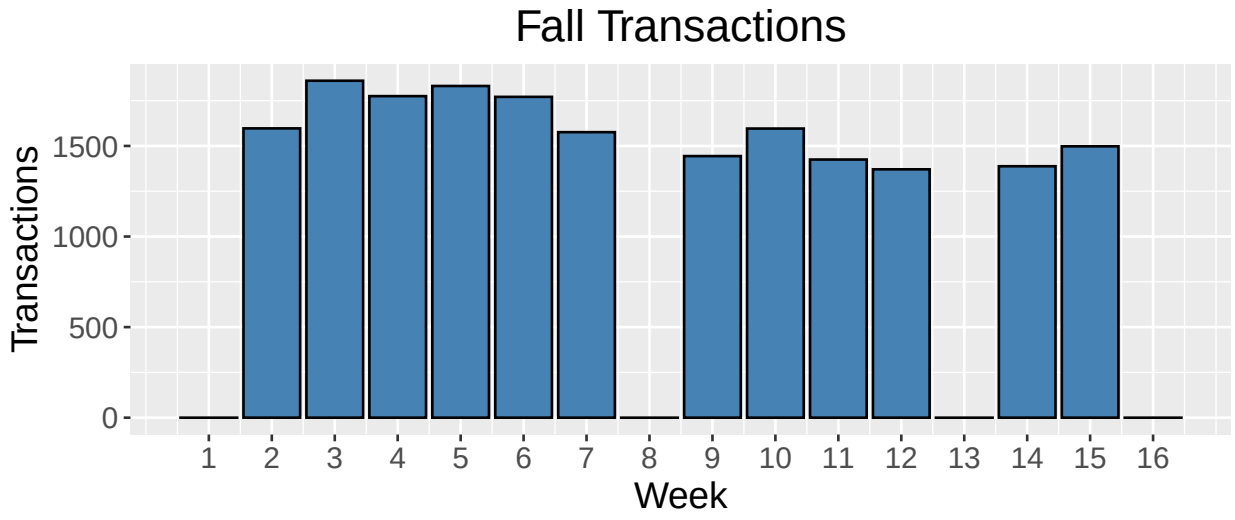
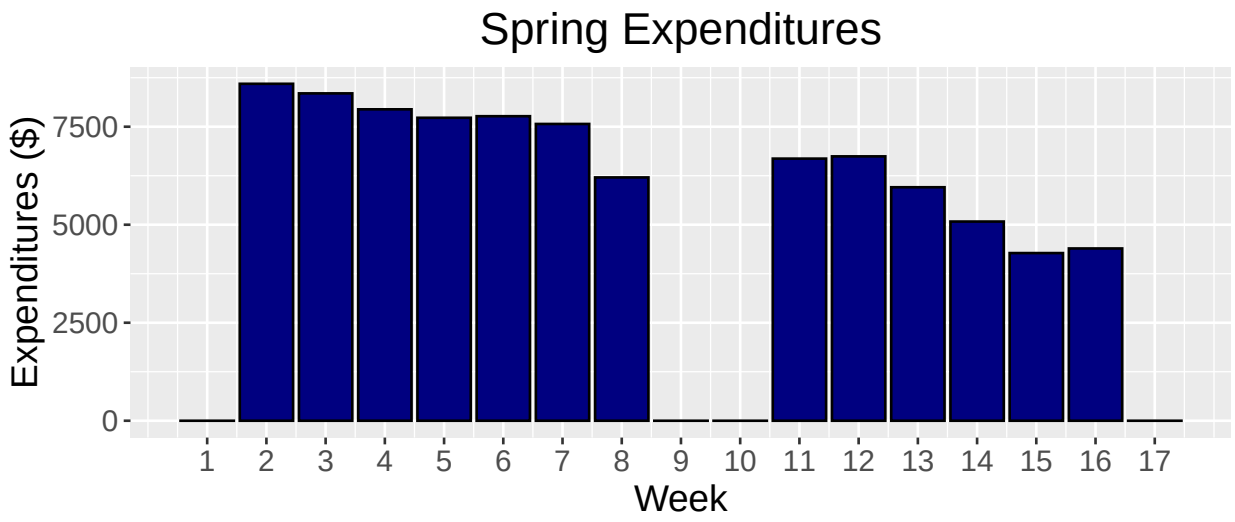
May 7, 2020

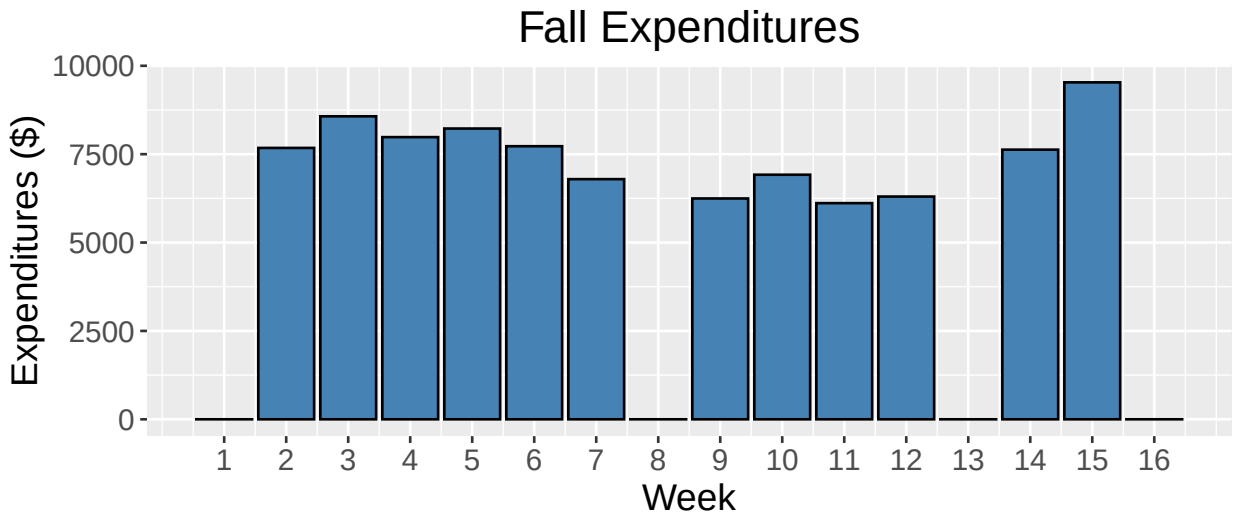
Spring Semester Dates Campus Open: 1/20/19, Start: 1/22/19, End: 5/8/19, Campus Closed: 5/20/19

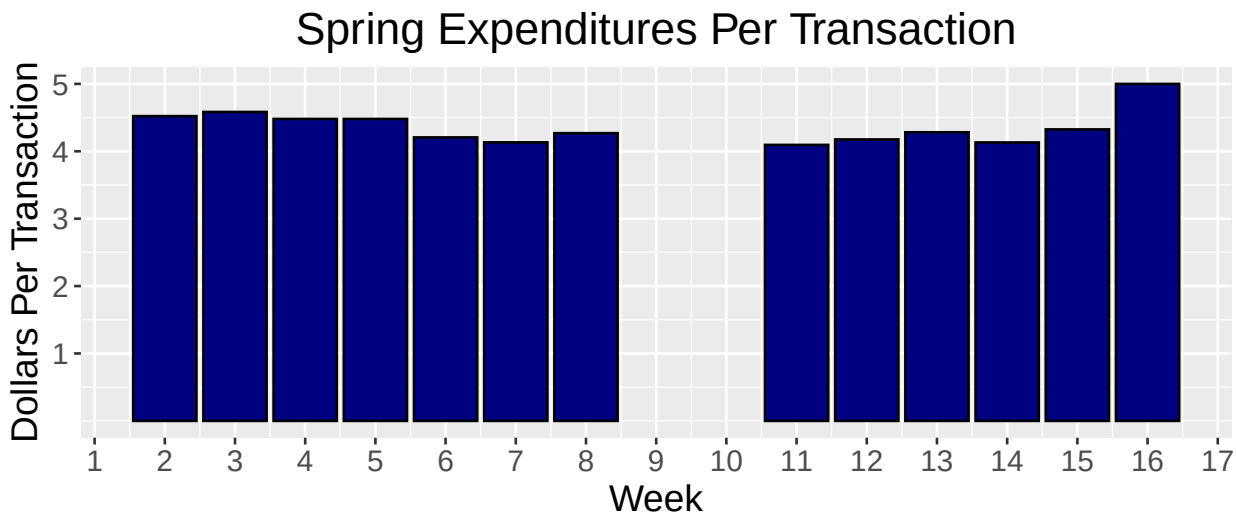
Fall Semester Dates Campus Open: 8/31/19 Start: 9/3/19, End: 12/11/19, Campus Closed: 12/21/19

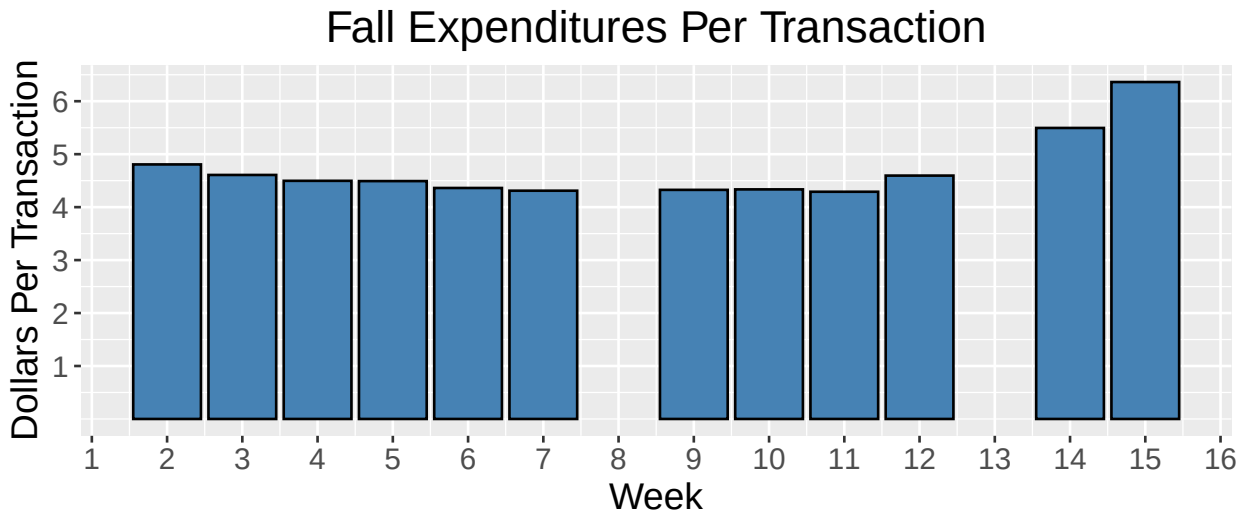


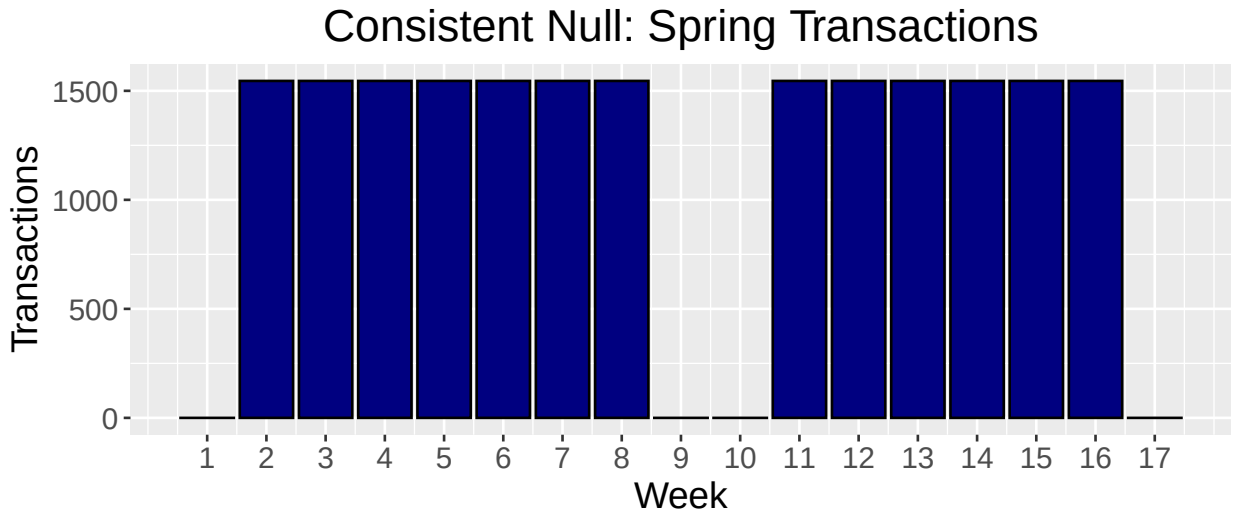


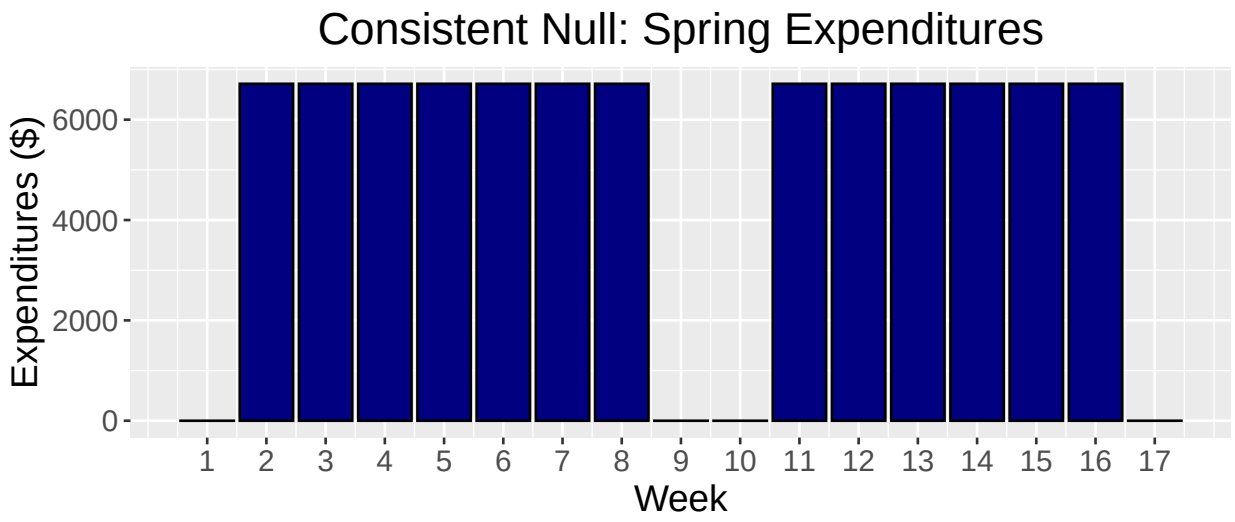

Spring Expenditures
Expenditures ($)
7500
5000
2500
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
Week

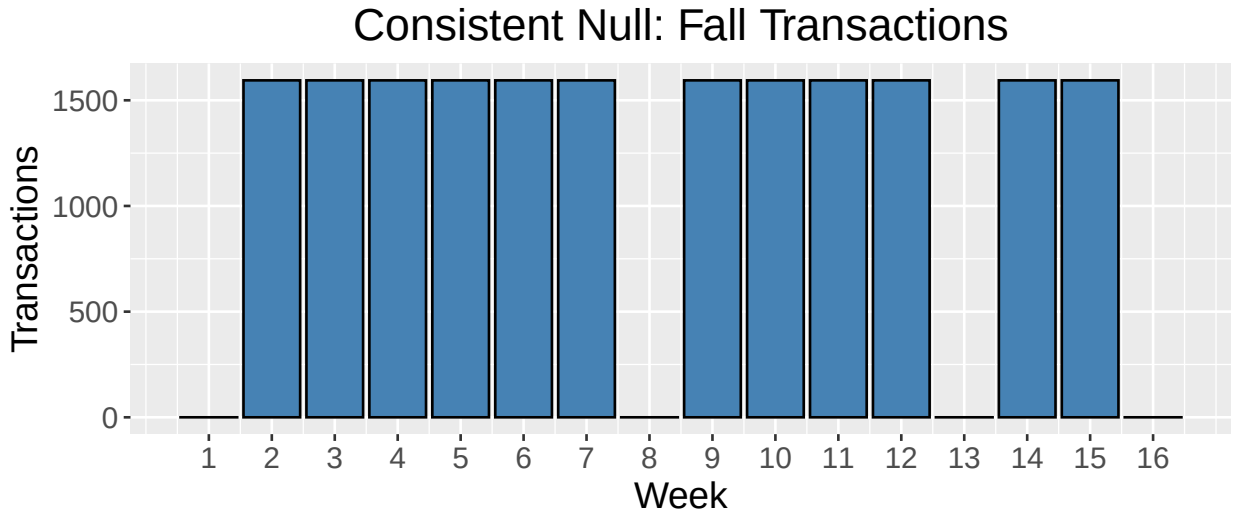

Fall Expenditures
Expenditures ($)
10000
7500
5000
2500
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Week

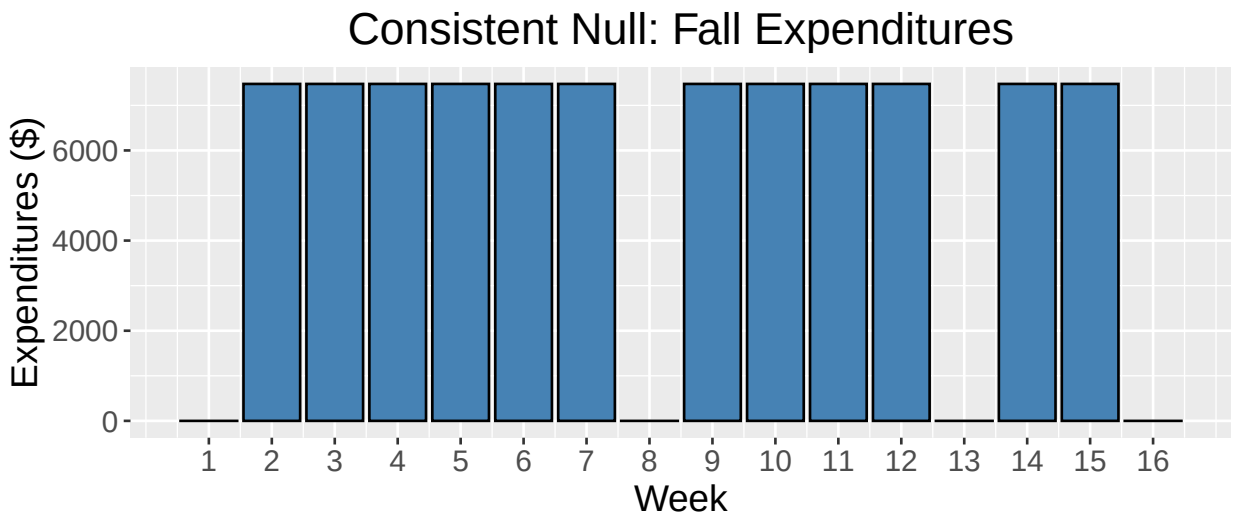

Spring Expenditures Per Transaction
Dollars Per Transaction
5
4
3
2
1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
Week


Fall Expenditures Per Transaction
Dollars Per Transaction
1
2
3
4
5
6
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
Week


Consistent Null: Spring Transactions
Transactions
0
500
1000
1500
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Week


Consistent Null: Spring Expenditures
Expenditures ($)
0
2000
4000
6000
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
Week


Consistent Null: Fall Transactions
Transactions
0
500
1000
1500
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Week


Consistent Null: Fall Expenditures
Expenditures ($)
0
2000
4000
6000
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Week

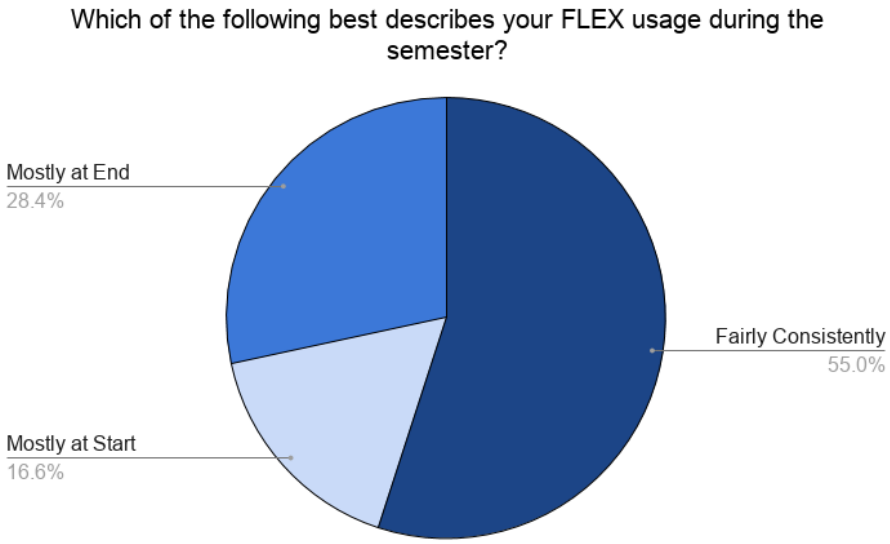
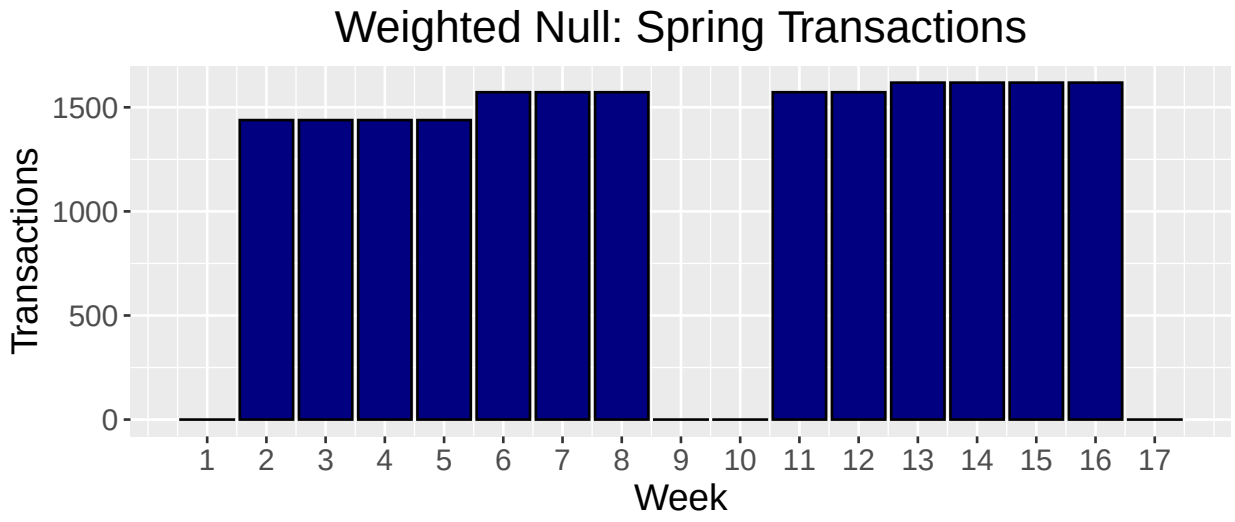
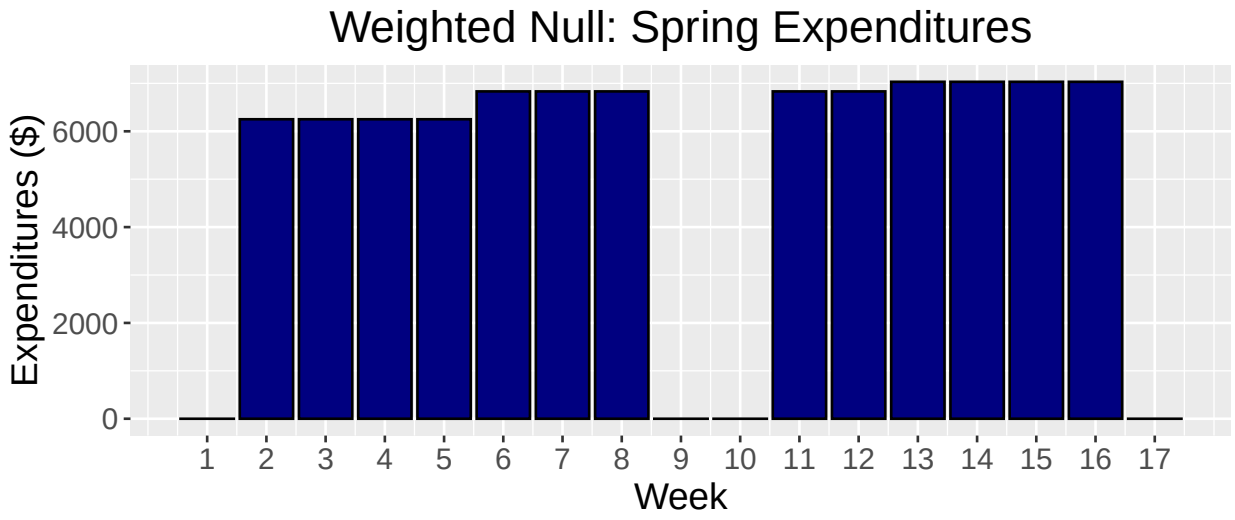
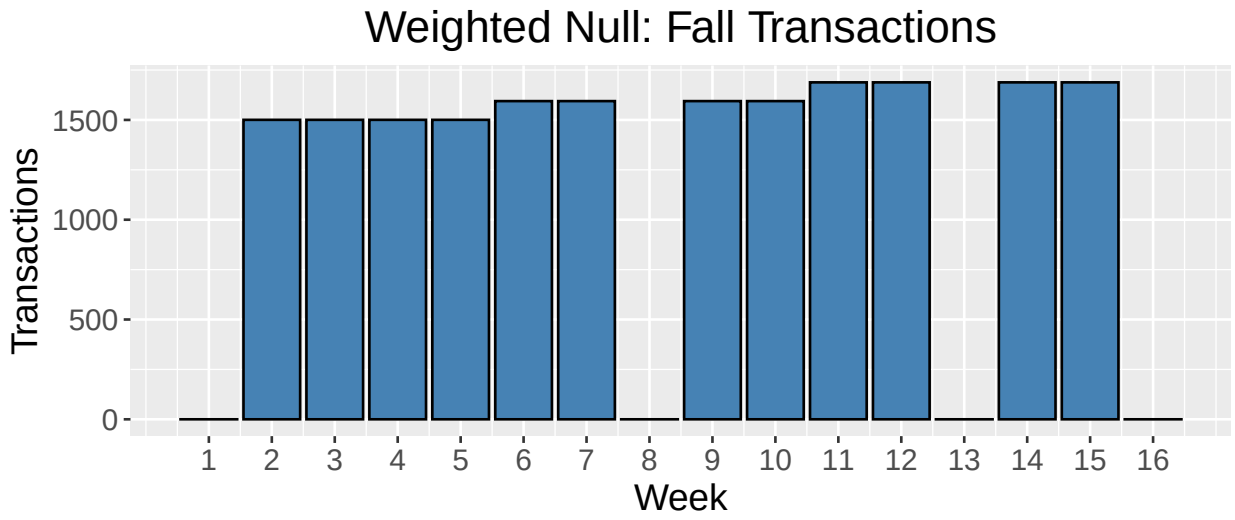
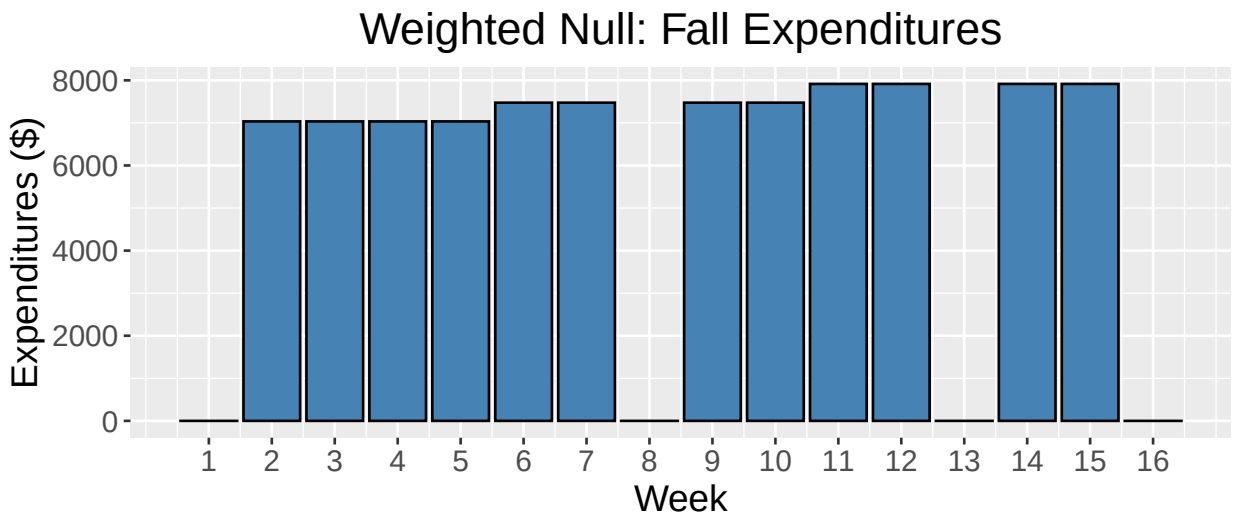


Figure 1: "Figure XXX: Student Responses to FLEX Usage"




Weighted Null: Spring Expenditures
Expenditures ($)
0
2000
4000
6000
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
Week


Weighted Null: Fall Transactions
Transactions
0
500
1000
1500
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Week


Weighted Null: Fall Expenditures
Expenditures ($)
0
2000
4000
6000
8000
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Week

Chi Squared Models

```
#Two Nulls Against Each Other
chisq.test(sprnullweighted$Transactions, p = sprnullconsistentprob$Probability)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  sprnullweighted$Transactions
## X-squared = 45.792, df = 12, p-value = 7.535e-06
```

```
chisq.test(sprnullweighted$Purchases, p = sprnullconsistentprob$Probability)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  sprnullweighted$Purchases
## X-squared = 198.98, df = 12, p-value < 2.2e-16
```

```
chisq.test(fallnullweighted$Transactions, p = fallnullconsistentprob$Probability)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  fallnullweighted$Transactions
## X-squared = 44.249, df = 11, p-value = 6.574e-06
```

```
chisq.test(fallnullweighted$Purchases, p = fallnullconsistentprob$Probability)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  fallnullweighted$Purchases
## X-squared = 207.48, df = 11, p-value < 2.2e-16
```

```
#Spring Transactions Chi Squared

chisq.test(springtransactions$Transactions, p = sprnullconsistentprob$Probability)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  springtransactions$Transactions
## X-squared = 878.69, df = 12, p-value < 2.2e-16
```

```
chisq.test(springtransactions$Transactions, p = sprnullweightedprob$Probability)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  springtransactions$Transactions
## X-squared = 1197, df = 12, p-value < 2.2e-16
```

```r
#Spring Purchases Chi Squared
chisq.test(springpurchases$TotalPurch, p = sprnullconsistentprob$Probability)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  springpurchases$TotalPurch
## X-squared = 3785.5, df = 12, p-value < 2.2e-16
```

```r
chisq.test(springpurchases$TotalPurch, p = sprnullweightedprob$Probability)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  springpurchases$TotalPurch
## X-squared = 5438.5, df = 12, p-value < 2.2e-16
```

```r
#Fall Transactions Chi Squared
chisq.test(falltransactions$Transactions, p = fallnullconsistentprob$Probability)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  falltransactions$Transactions
## X-squared = 215.63, df = 11, p-value < 2.2e-16
```

```r
chisq.test(falltransactions$Transactions, p = fallnullweightedprob$Probability)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  falltransactions$Transactions
## X-squared = 424.92, df = 11, p-value < 2.2e-16
```

```r
#Fall Purchases Chi Squared
chisq.test(fallpurchases$TotalPurch, p = fallnullconsistentprob$Probability)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  fallpurchases$TotalPurch
## X-squared = 1590.2, df = 11, p-value < 2.2e-16
```

```r
chisq.test(fallpurchases$TotalPurch, p = fallnullweightedprob$Probability)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  fallpurchases$TotalPurch
## X-squared = 2115.8, df = 11, p-value < 2.2e-16
```

```r
#Testing the Fall and the Spring semesters against one another
springtransactions <- springtransactions %>% filter(Week != 16)
springpurchases <- springpurchases %>% filter(Week != 16)
#chisq.test(falltransactions$Transactions, p = springtransactions$ProbWeight, rescale.p = TRUE)
#chisq.test(fallpurchases$TotalPurch, p = springpurchases$ProbWeight, rescale.p = TRUE)
#chisq.test(springtransactions$Transactions, p = falltransactions$ProbWeight, rescale.p = TRUE)
#chisq.test(springpurchases$TotalPurch, p = fallpurchases$ProbWeight, rescale.p = TRUE)
```