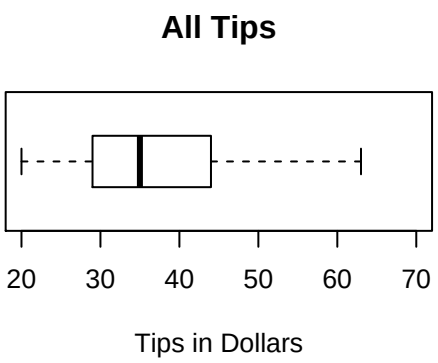
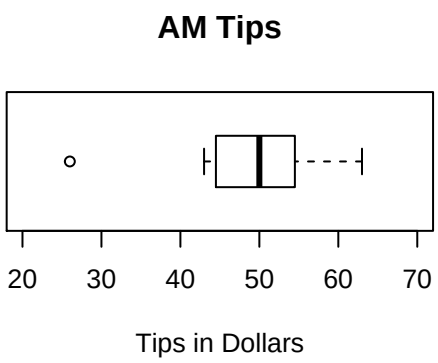
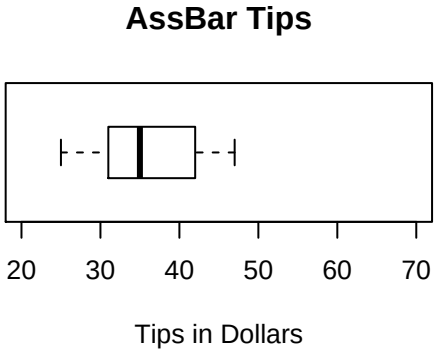
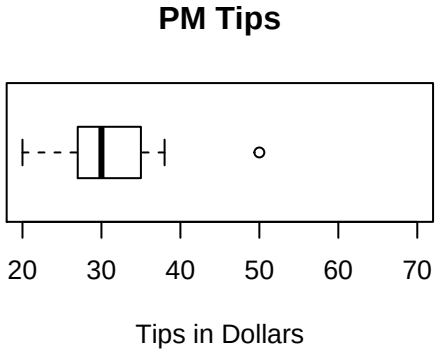
Ali's Amante Barista Stats

Boxplots



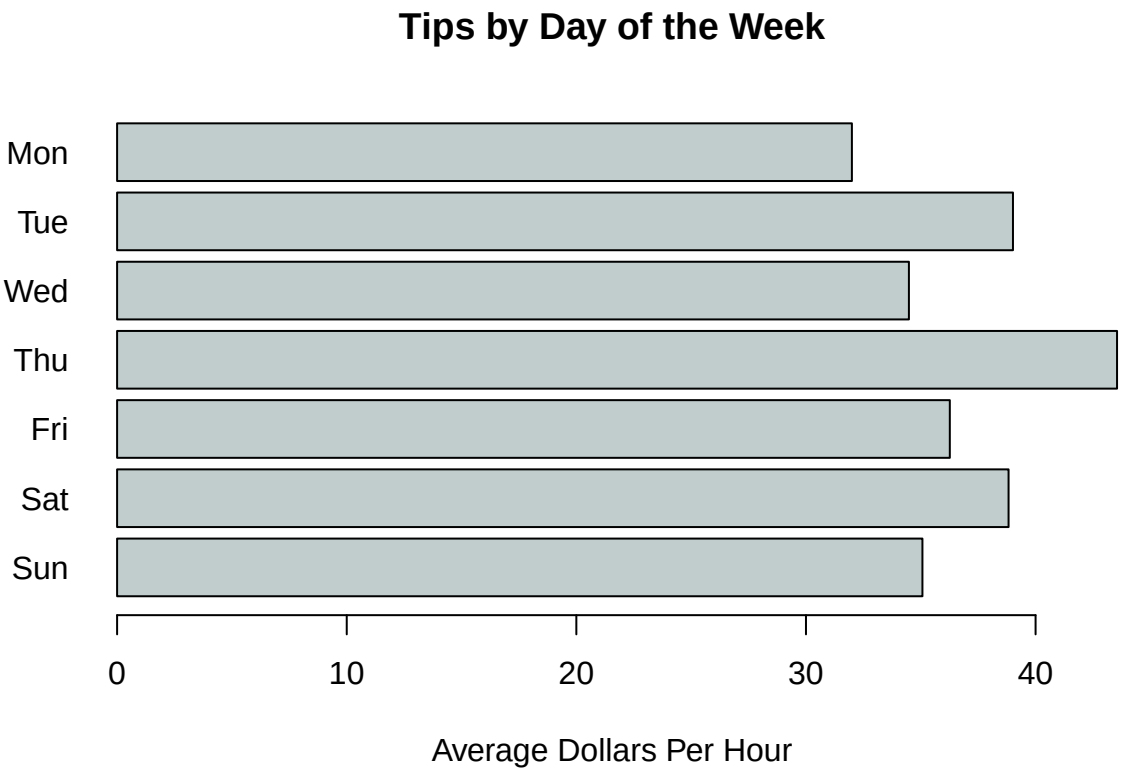




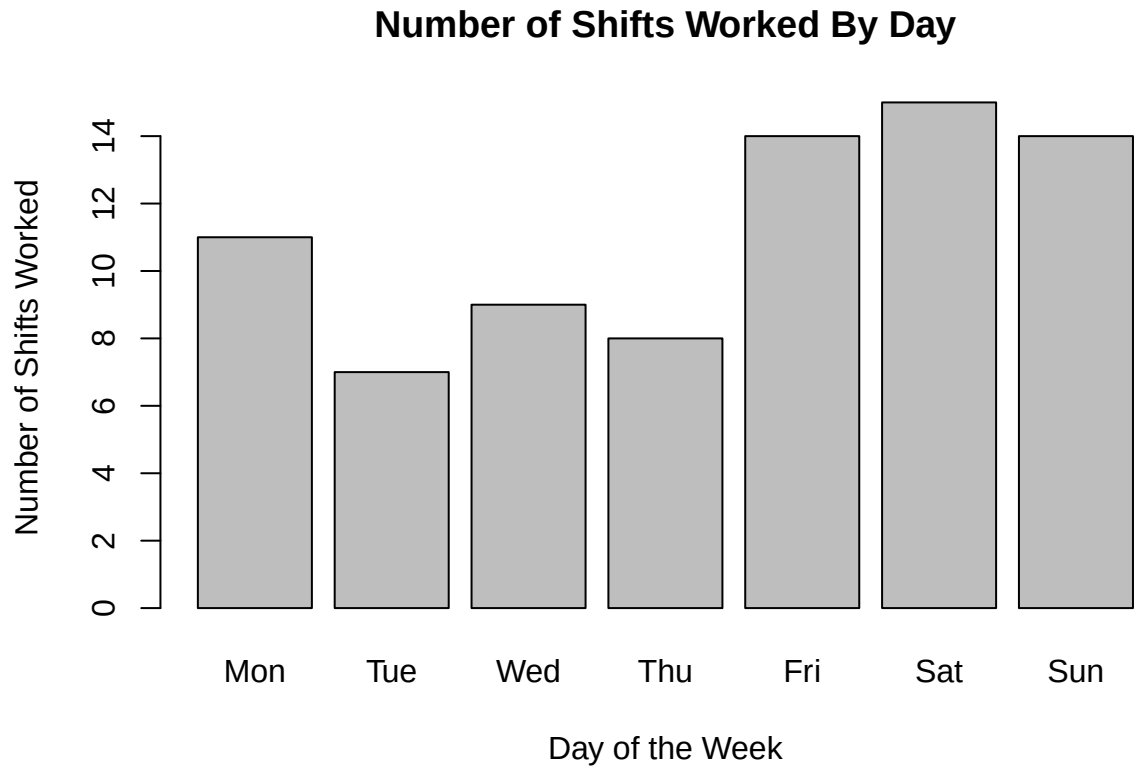


Averages

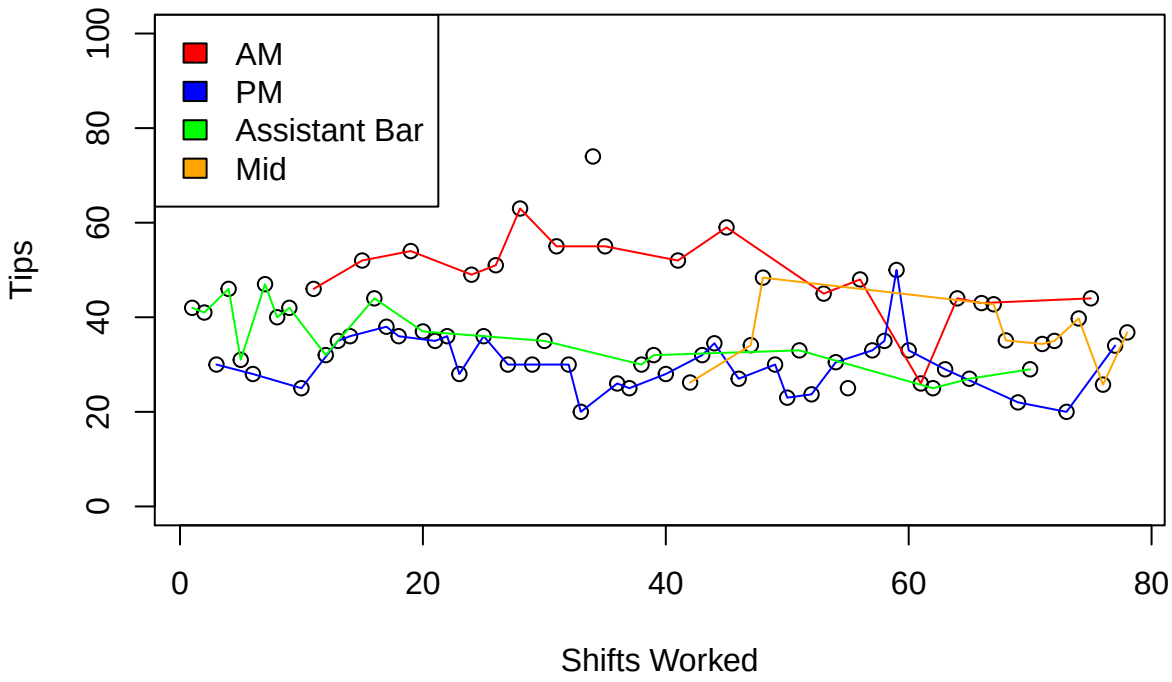
Shift	Total	Per Hour	
Overall	$36.73	$5.83	78 observations
AM	$49.12	$7.02	16 observations
PM	$30.57	$4.45	33 observations
Assistant Bar	$36.06	$7.41	17 observations
Mid (Baseline)	$35.82	$5.38	10 observations

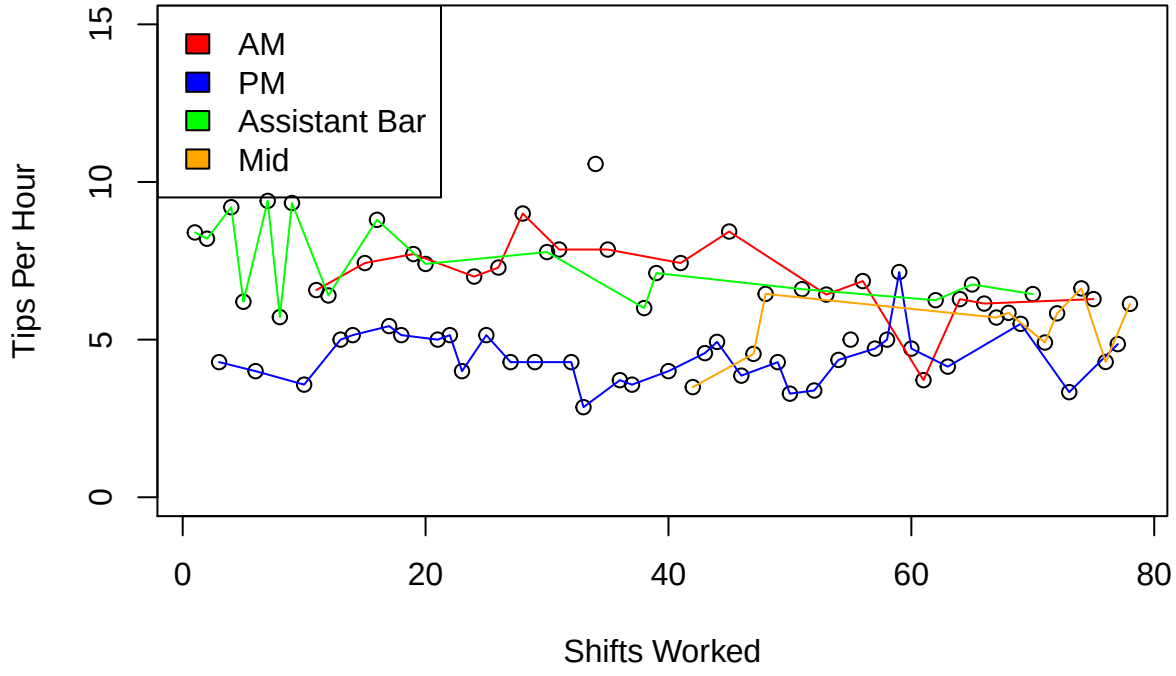


The Tuesday tip rate is inordinately high due to a large portion of only a few observations being AM shifts.



Over Time (haw)





Multiple linear regression

```
##
## Call:
## lm(formula = Tips ~ Hours + factor(AM.PM) + factor(Day.of.Week),
##     data = tipData)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -23.9189  -3.3985  -0.8734   4.6108  17.1465
##
## Coefficients:
##                              Estimate Std. Error t value Pr(>|t|)
## (Intercept)                    6.7049    10.0448   0.668 0.506815
## Hours                          3.6590     1.5065   2.429 0.017925 *
## factor(AM.PM)AM               19.1104     7.7189   2.476 0.015908 *
## factor(AM.PM)assBar           13.3819     7.0321   1.903 0.061474 .
## factor(AM.PM)holiday          41.4716    10.2755   4.036 0.000146 ***
## factor(AM.PM)Mid               6.4789     7.7553   0.835 0.406543
## factor(AM.PM)PM                0.5355     7.5258   0.071 0.943496
## factor(Day.of.Week)Monday     -4.9033     2.7338  -1.794 0.077533 .
## factor(Day.of.Week)Saturday   -1.5351     2.6234  -0.585 0.560466
## factor(Day.of.Week)Sunday     -1.5096     2.6132  -0.578 0.565473
## factor(Day.of.Week)Thursday    0.2103     3.1728   0.066 0.947346
## factor(Day.of.Week)Tuesday    -5.0183     3.2514  -1.543 0.127581
## factor(Day.of.Week)Wednesday  -1.8798     3.2457  -0.579 0.564488
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 6.645 on 65 degrees of freedom
## Multiple R-squared:  0.6685, Adjusted R-squared:  0.6072
## F-statistic: 10.92 on 12 and 65 DF,  p-value: 1.762e-11
```

Prediction for next shift

```
next.shift = data.frame(AM.PM = c('PM'), Day.of.Week = c('Saturday'), Hours = c(7.0))
prediction = predict(lmod, newdata = next.shift)
```

The model, such as it is, predicts \$31.32 $\pm$ \$6.65 in tips for the coming shift.