**Variables and why:**

* Inquiries in the last six months- more inquiries could indicate higher likelihood to take a loan
* Delinquent Accounts in the past two years- more delinquent accounts could indicate less spare cash, and need for loan
* Debt To Income ratio- high DTI would encourage borrowing to lower and consolidate debt

**Hypothesis:**

Louise believes that homeowners are most likely to take a loan as they are at a cash crunch. We believe that the average number of loan inquiries in the last six months and the average number of accounts that are delinquent for the past two years will be higher in homeowners in support of her reasoning. We believe that average Debt to Income will be higher in homeowners (1), than in renters (2).

* Our hypothesis is regarding loan inquiries in the past six month for homeowners (2), and renters (1) is as follows: H0: µ1-µ2=0 and H1:µ1-µ2<0.
* Our hypothesis is regarding the number of delinquent accounts for the past two years for homeowners (1), and renters (2) is as follows: H0: µ1-µ2=0 and H1:µ1-µ2>0.
* Our hypothesis is regarding average debt to income for homeowners (1), and renters (2) is as follows: H0: µ1-µ2=0 and H1:µ1-µ2>0.

**Outcomes:**

* **Delinquent accounts:** We are expecting a positive t-stat, upper tail, and one tail in the delinquent case. When we ran F-test, to compare the variances, our two tailed p-value was less than the alpha (0.05 for delinquent accounts) and we had rejected the null hypotheses of assuming equal variances. We ran a t-test assuming unequal variances. In our t-test, the one tailed p-value < alpha. With a positive t Stat, we rejected the null hypothesis in support of our alternate hypothesis that homeowners had on average more delinquent accounts than renters.
* **Inquiries for last 6 months:** We are expecting a negative t stat, lower tail and one tail in the inquiries and inquiries for the last 6 months cases. When we ran F-test, to compare the variances, our two tailed p-value was less than the alpha (0.10 in this case) and we had rejected the null hypotheses of assuming equal variances. We ran a t-test assuming unequal variances. In our t-test, the one tailed p-value < alpha. With a negative t Stat, we rejected the null hypothesis in support of our alternate hypothesis that homeowners had on average more loan inquiries in the past six months than renters.
* **DTI:** We are expecting a positive t stat, upper tail and one tail in DTI case. When we ran F-test, to compare the variances, our two tailed p-value was less than the alpha (0.10 in this case) and we had rejected the null hypotheses of assuming equal variances. We ran a t-test assuming unequal variances. In our t-test, the one tailed p-value < alpha. With a positive t Stat, we rejected the null hypothesis in support of our alternate hypothesis that homeowners had on average higher DTI ratios than renters, making them more ideal borrowers.

**Summary:**

Louise should target her marketing toward homeowners. They have on average higher DTI ratios, have more delinquent accounts, and have inquiries more than renters about loans in the last 6 months.