Question 18.1

1. Determine the client's ability to pay.

Given:

- Reported income
- Account user's credit score
- Home price and neighbourhood house price
- Past payment history

Use:

- A SVM to classify customers. There are numerous factors that can weigh on the error and margin.
    - Error: What are some impacts that are caused by misclassification?
    - Seasonality: during certain seasons, it would be cruel to turn off the power and will heavily influence that household.

To:

- Identify which clients are able to pay and which are not. Then, those who are unable to pay are excluded from the outcomes and placed in a special support program.

2. Determine the probability of the client paying the bill

Given:

- Client's credit history
- Past payment history with the firm
- Ownership of the property
- Length of account
- Length of the bill

Use:

- Logistic Regression

To:

- Estimate the probability that the client will pay the bill in the near future.

3. Determine which household's power should be turned off

Given:

- Results from the previous estimation of those who won't pay their bill.
- The physical address of the household location
- Availability of technicians

Use:

- k-Means clustering algorithm and K = number of available technicians

To:

- identify clusters of non-paying customers scheduled for switch-offs and it is within a certain geographical distance so that technicians can have minimal travel time.