Assignment 1

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Braking Distance

In this question, do not use the `lm` function or a module that provides an implementation of k-NN. You are allowed to use elementary statistical objects like mean, variance, etc.

We will be predicting the distance that a car takes to stop when driving at a certain speed. The dataset is from 1930, so it might be slightly outdated. Units are miles per hour (speed) and feet (distance).

Data Preparation

```
# Load and preprocess dataset
```

Linear Regression (Without lm)

```
# Compute slope and intercept for simple linear regression
```

Using the linear regression model, predict the braking distance for a car going at 30 km/h and include an 80% prediction interval.

```
# Prediction for 30 km/h
```

k-NN Model

```
# Fit and predict using k-NN model
```

Filipino Household Income

Data Preparation

```
# Load and preprocess dataset
```

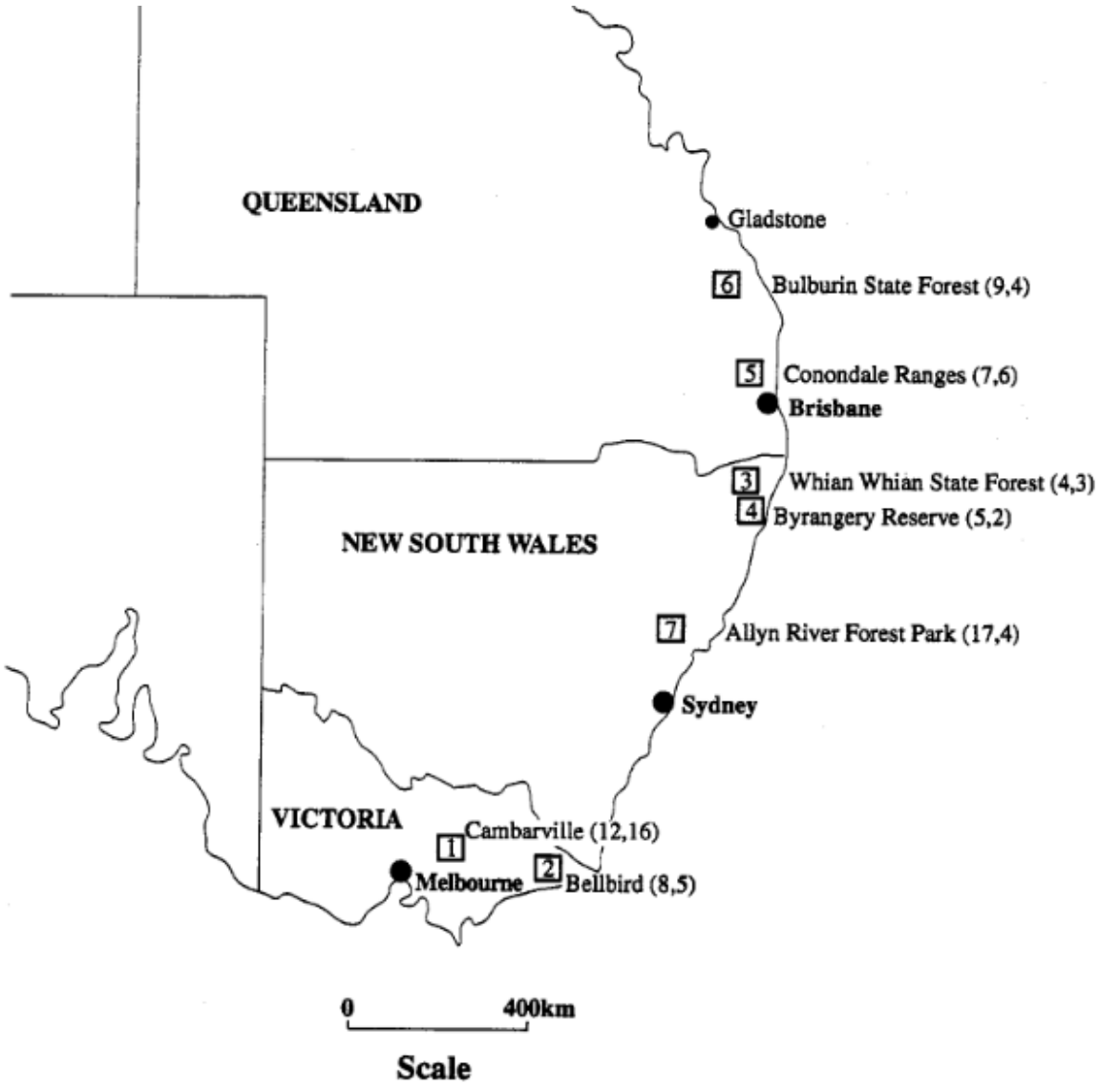
Linear Regression

```
# Fit linear model and summarize
```

Predicting Possum Age

Data and Initial Analysis

```
# Load dataset and visualize
knitr::include_graphics("../images/possum_age_plot.png")
```



```
## Data Preparation

# Preprocess dataset
```

Feature Selection and Model Training

```
# Forward feature selection and model training
```

Model Evaluation

```
# Compute evaluation metrics
```

Further Exploration

```
# Additional analysis or research questions
```