


# Key - Zombie Prediction


## Creating a Model

In order to turn this data into a model that can make a prediction, we'll use a technique to make **similarity-based recommendations**. This involves taking new data and finding similarities with the data you already have. Here is information about one location that is close to us:

| Location | Building | Type       | Noise Level | Sidewalk? | # ZOMBIES  |
|----------|----------|------------|-------------|-----------|-----------------------------------------------------------------------------------------------|
| A        | indoor   | restaurant | low         | no        | 25                                                                                            |

**Do This:** Compare Location A with the features from the previous data:

- Anytime a column from Location A matches a column for another location, that's one point of similarity.
- After comparing each column, you can add up all the points of similarity.
- Use the table below to keep track of how similar Location A is to the other locations.
- The first two rows have already been completed.

| Location | Building | Type       | Noise Level | Sidewalk? | ZOMBIES  | Similarities |
|----------|----------|------------|-------------|-----------|---------------------------------------------------------------------------------------------|--------------|
| 1        | indoor   | school     | medium      | yes       | 51                                                                                          | 1            |
| 2        | outdoor  | zoo        | medium      | yes       | 66                                                                                          | 0            |
| 3        | indoor   | library    | low         | no        | 9                                                                                           | 3            |
| 4        | indoor   | restaurant | medium      | yes       | 45                                                                                          | 2            |
| 5        | outdoor  | park       | low         | no        | 21                                                                                          | 2            |
| 6        | outdoor  | school     | medium      | no        | 54                                                                                          | 1            |
| 7        | outdoor  | restaurant | high        | no        | 60                                                                                          | 2            |
| 8        | outdoor  | park       | high        | yes       | 96                                                                                          | 0            |

**What are three locations that are most similar to Location A?** If some locations have the same level of similarity, choose the ones highest in the list.


The three locations most similar to Location A are: \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_

To predict how many zombies could be at this location, we need to take the average of the three most similar locations.

1. Calculate the sum by adding together all the zombie values from these locations: \_\_\_\_\_
2. Divide the sum by the number of values: \_\_\_\_\_
3. Write this value in the Zombies column at the top of this page. That's the prediction!

## Predicting Multiple Locations

There are two other locations that are nearby. We need to decide whether to go hide at location A, B, or C. Use the same strategy to predict how many zombies will be at location B and at location C.

| Location | Indoor/Outdoor | Type       | Noise Level | Sidewalk? | # ZOMBIES  |
|----------|----------------|------------|-------------|-----------|-----------------------------------------------------------------------------------------------|
| B        | outdoor        | restaurant | high        | yes       | 74                                                                                            |
| C        | indoor         | school     | low         | yes       | 35                                                                                            |

| Location | Building | Type       | Noise Level | Sidewalk | # ZOMBIES | Similarities B | Similarities C |
|----------|----------|------------|-------------|----------|-----------|----------------|----------------|
| 1        | indoor   | school     | medium      | yes      | 51        | 1              | 3              |
| 2        | outdoor  | zoo        | medium      | yes      | 66        | 2              | 1              |
| 3        | indoor   | library    | low         | no       | 9         | 0              | 2              |
| 4        | indoor   | restaurant | medium      | yes      | 45        | 2              | 2              |
| 5        | outdoor  | park       | low         | no       | 21        | 1              | 1              |
| 6        | outdoor  | school     | medium      | no       | 54        | 1              | 1              |
| 7        | outdoor  | restaurant | high        | no       | 60        | 3              | 0              |
| 8        | outdoor  | park       | high        | yes      | 96        | 3              | 1              |

**What are three locations that are most similar to Location B?** If some locations have the same level of similarity, choose the ones highest in the list.

The three locations most similar to Location B are: **7, 8 and 2**

To predict how many zombies could be at this location, we need to take the **average** of the three most similar locations.

1. Calculate the **sum** by adding together all the zombie values from these locations: **222**
2. Divide the sum by the number of values: **74**
3. Write this value in the Zombies column at the top of this page. That's the prediction!

**What are three locations that are most similar to Location C?** If some locations have the same level of similarity, choose the ones highest in the list.

The three locations most similar to Location C are: **1, 3, and 4**

To predict how many zombies could be at this location, we need to take the **average** of the three most similar locations.

1. Calculate the **sum** by adding together all the zombie values from these locations: **105**
2. Divide the sum by the number of values: **35**
3. Write this value in the Zombies column at the top of this page. That's the prediction!

**Which location is predicted to have the least amount of zombies - location A, location B, or location C?**

**Location A**