**Jaccard Coefficient Calculations**

Given the table below, I shall calculate the Jaccard coefficients for the following pairs:

* (Jack, Mary)
* (Jack, Jim)
* (Jim, Mary)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Name | Gender | Fever | Cough | Test-1 | Test-2 | Test-3 | Test-4 |
| Jack | M | Y | N | P | N | N | A |
| Mary | F | Y | N | P | A | P | N |
| Jim | M | Y | P | N | N | N | A |

In order to calculate Jaccard’s coefficient, I converted the variables to binary values and rewrote the table. An exception is gender, which is a symmetric variable when compared to other variables such as Positive (P) or Negative (N) and Yes(Y) or No (N). I let Y and P have the binary value 1, while N and A have the binary value 0 in the new table below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name | Fever | Cough | Test-1 | Test-2 | Test-3 | Test-4 |
| Jack | 1 | 0 | 1 | 0 | 0 | 0 |
| Mary | 1 | 0 | 1 | 0 | 1 | 0 |
| Jim | 1 | 1 | 0 | 0 | 1 | 0 |

Next, I use the formula: Jaccard

Where f01 = is when one of the people have a 1 in a certain attribute

f10 = is when one of the people have a 1 in a certain attribute

f11 = is when both of the people have a 1 in a certain attribute

**Calculating the Jaccard Coefficients**

1. (Jack, Mary)

Jaccard = 1/3 = 0.33

2. (Jack, Jim)

Jaccard = 2/3 = 0.67

3 (Jim, Mary)

Jaccard = ¾ = 0.75