/Lambda and Corrected Cramer's V

Lambda / Anonymous function</>

lambda arguments: expression

```
add = lambda a : a +
a
print(add(20))
```

40

Lambda VS. Normal Function

lambda

```
add = lambda a, b, c: a + b + c
print(add(10, 10, 10))
```

```
30
```

```
print(type(add))
```

```
function
```

Def

```
def add(a,b,c):
    return a+b+c

result = add(10, 10, 10)
print(result)
```

```
30
```

```
print(type(result))
```

```
int
```

Lambda VS. Normal Function

Normal Function

The execution time:

0.001328

Slower

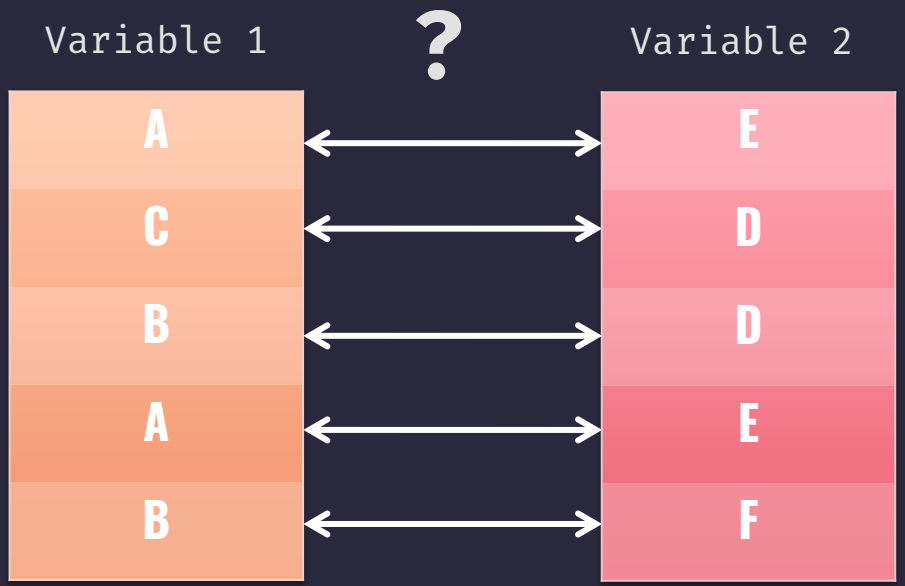
Lambda

The execution time:

0.0005

Fast

Corrected Cramer's V Test



Corrected Cramer's V Test

It ranges from 0 to 1 where:
0 indicates no association between the two variables.
1 indicates a perfect association between the two variables.

It is calculated as:
Cramer's V = √(X²/n) / min(c-1, r-1)

```
V = np.sqrt((X2/n) / minDim)
```

where:
X²: The Chi-square statistic
n: Total sample size
r: Number of rows
c: Number of columns

Chi-Square Test

It is used to determine whether your data are significantly different from what you expected

$$\chi^2 = \sum(O_i - E_i)^2/E_i$$

```
>>> from scipy.stats import chisquare
>>> chisquare([16, 18, 16, 14, 12, 12])
(2.0, 0.84914503608460956)
```

When to use the Cramer's V?

1.

You want to know the **relationship** between two variables

2.

Your variables of interest are **categorical**

3.

You have **two or more unique values per category**

<Thank you>