**Project 1 (Individual): Blog-like post Tutorial**

**Introduction to the lambda function in python**

**Introduction:**

In Python, anonymous function is a function that is defined without a name. While normal functions are defined using the def keyword, in Python anonymous functions are defined using the lambda keyword.

It may seem tricky at first as to know what the lambda function is. In this tutorial, I will explain

**Main part of tutorial**

Lambda functions are usually not more than a line. It can have any number of arguments just like a normal function. The body of lambda functions is very small and consists of only one expression. The result of the expression is the value when the lambda is applied to an argument. Also, there is no need for any return statement in lambda function.

Let's take an example:

Consider a function multiply():

def multiply(x, y):

return x \* y

Here is the equivalent lambda function which will return the same output as above.

r = lambda x, y: x \* y

r(12, 3) # call the lambda function

**Summary**

How Python lambdas came to be

How lambdas compare with regular function objects

How to write lambda functions

Which functions in the Python standard library leverage lambdas

When to use or avoid Python lambda functions

**Project 2 (Individual): Machine Learning Application**

**Introduction to the lambda function in python**

**Birth Rate Prediction by State**

1. Introduction

Birth rate has a massive impact on the economy. As the birth rate drops, the proportion of elderly people increase, which follows serious economic consequences. Health care costs for the elderly will strain resources, while the smaller working population will struggle to produce enough income tax revenue to support these rising costs. It’s likely this will cause spending power to decrease, consumerism to decline, job production to slow – and the economy to stagnate. For more information, refer to the link below:

<https://www.businessinsider.com/dropping-fertility-rates-will-affect-the-economy-2016-11>

Thus, I was interested in finding what affects the birth rate to the society. I will be investigating various features that may have an impact on the birth rate for each State.

1. Data

Data collection: Using web scrape from this url: https://www.infoplease.com/us/states

What the final data looks like:

x1: per Capita personal income by state

x2: % of people in poverty by state

x3: crime rate by state

x4: marijuana policy by state

x5: number of deaths by state

y: birth rate

1. Methods

I will use linear regression with lasso and ridge method. The reason being I do not know which variable will affect the target the most. I will rely on lasso and ridge methods to determine the significance of features.

1. Results

* What was learned

1. Summary