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**Dept : CSE**

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**TensorFlow**

**- >** Performing high end numerical computation

**Rank Tensor types**

**-> Scalar**

– 0 rank

- magnitude and no direction

e.g – height number

**-> Vector**

– 1 rank

- magnitude and direction

- 1 line

**-> Matrix** - 2d dimensional vector

- 2 rank

- 2 dimensional array

- 2 direction

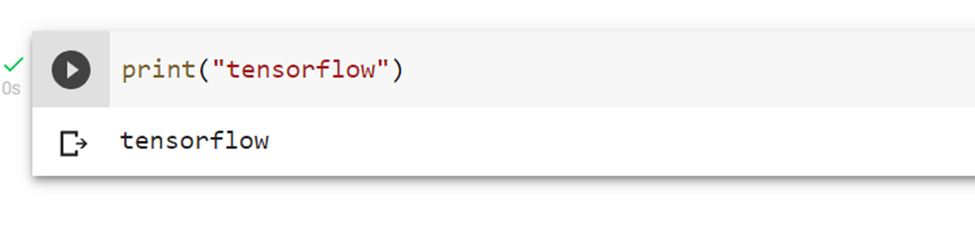
**-> Tensors** – 3D

Computation graph

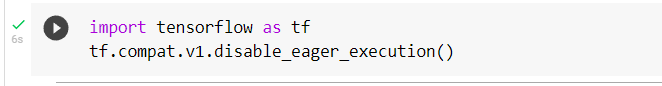
**Tensor types**

1. Constants
2. Variables
3. placeholders

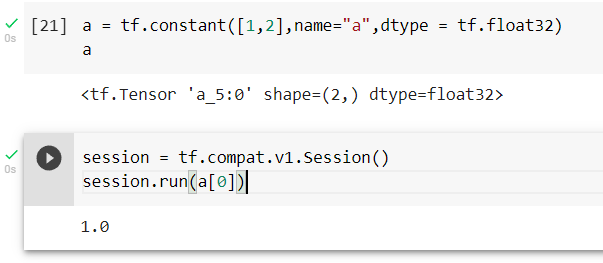
**Tensorflow Hands On Documentation**

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**Disabling the eager execution**

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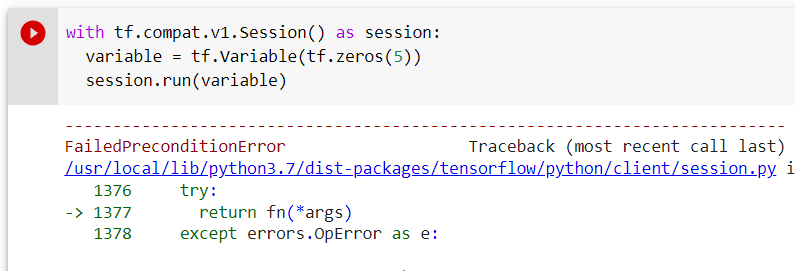
**Starting session**

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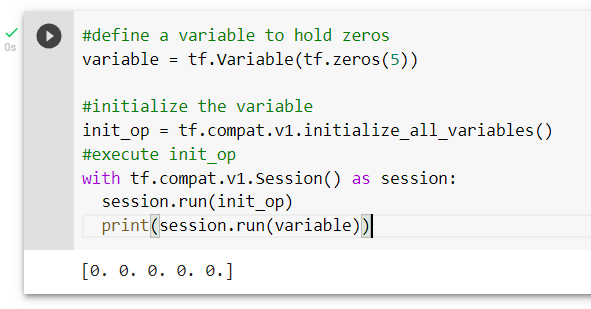
**Scalar - number ,vector - line , matrix - plate , tensor -3D**

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**Printing the tensor variables**

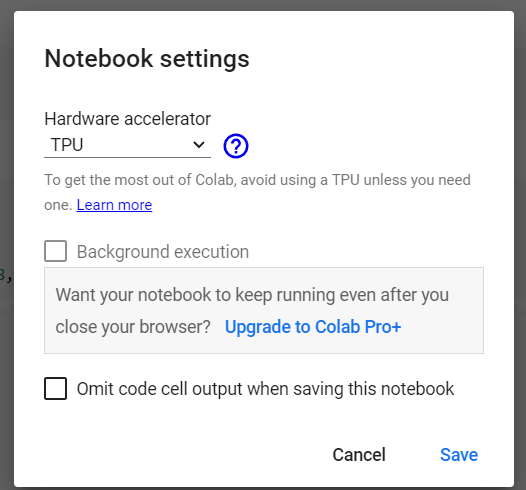


Error is due to the variables not initialized after initializing all the variables in the session the error is rectified.

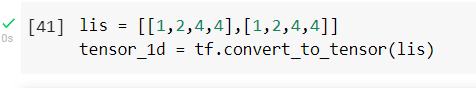


**Changing runtime**

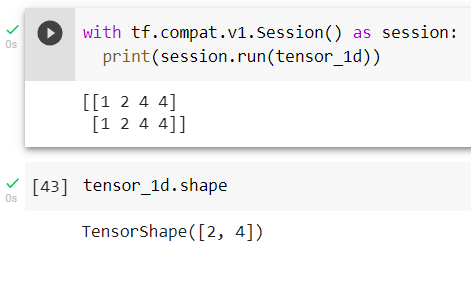
CPU , GPU , TPU - Tensorflow processing Unit

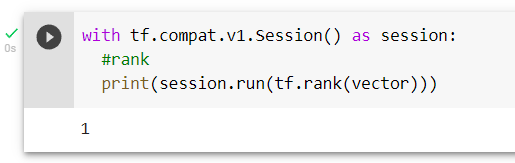


**Convert to tensor**

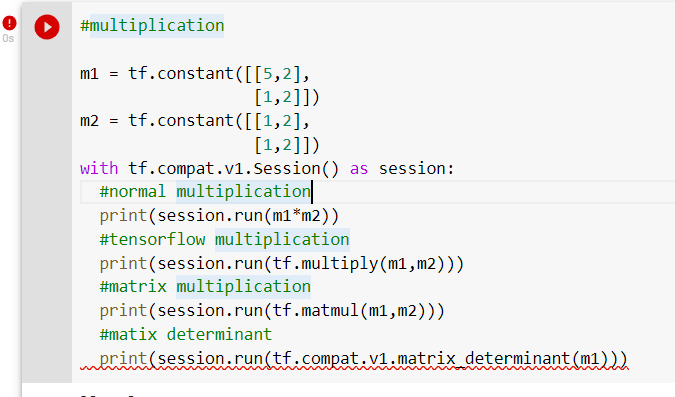


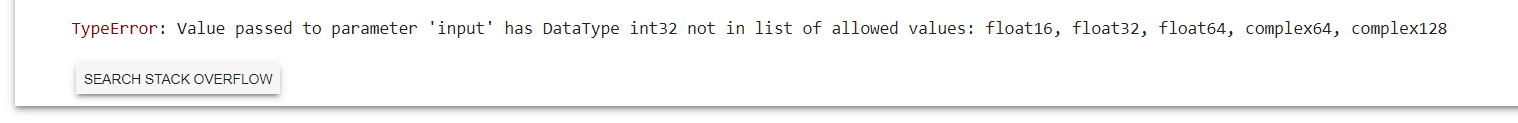
**Parameters - rank,shape,type**

**Rank**

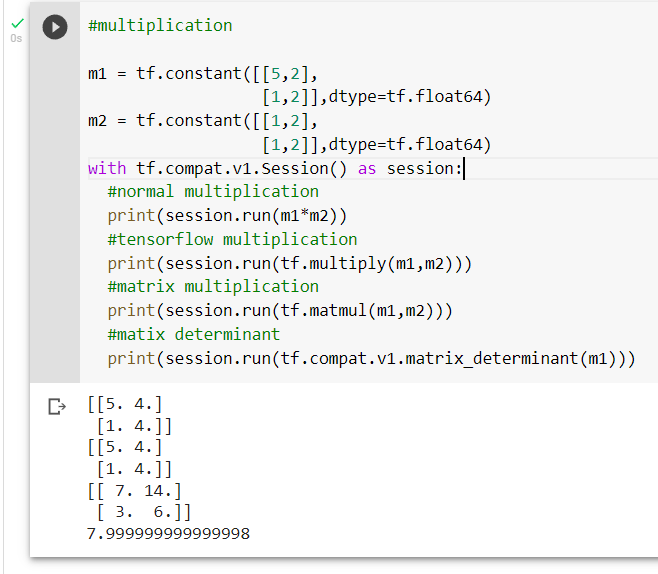


**Normal Multiplication and Matrix Multiplication and determinant**



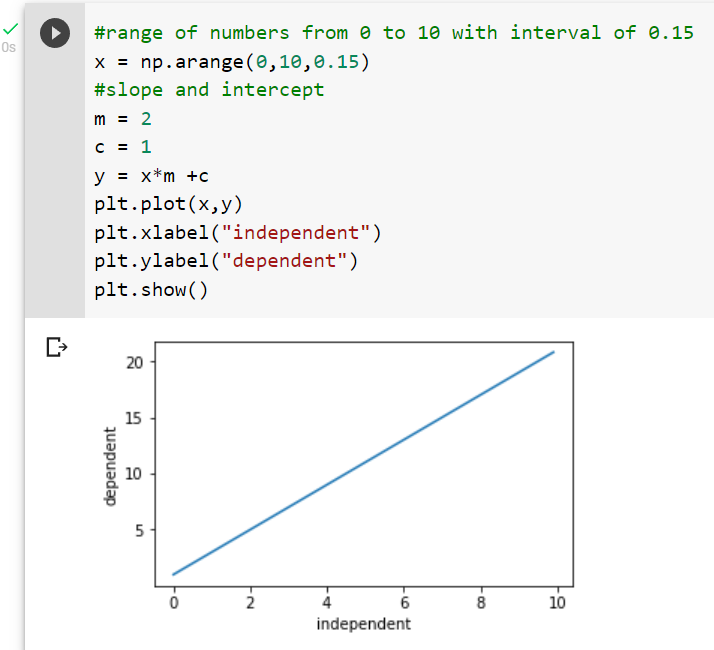


Matrix determinant is not in tensorflow 2.x and it accepts only float, complex

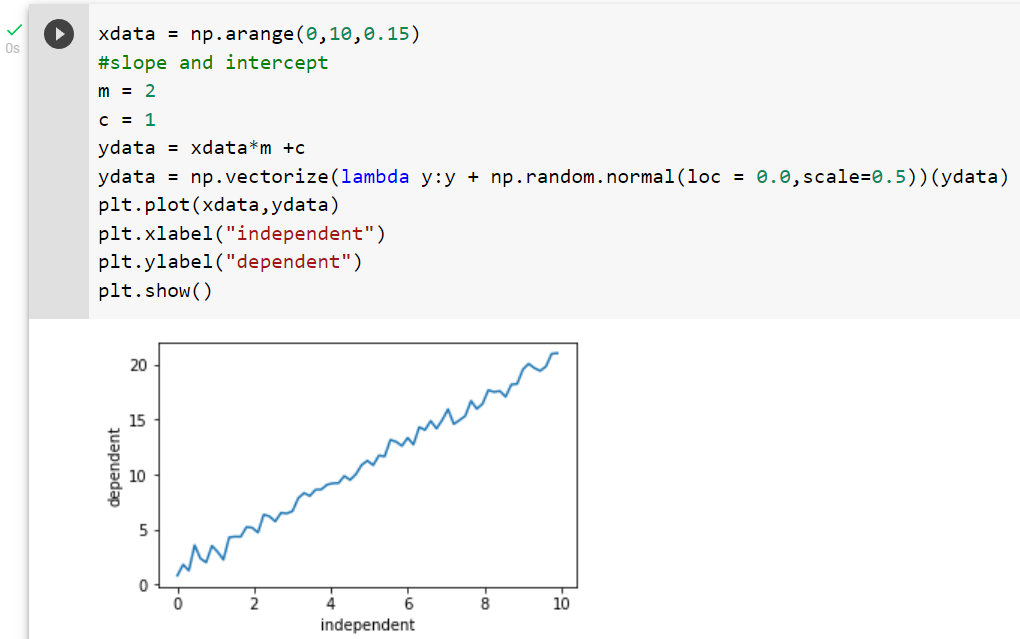


**Day 2**

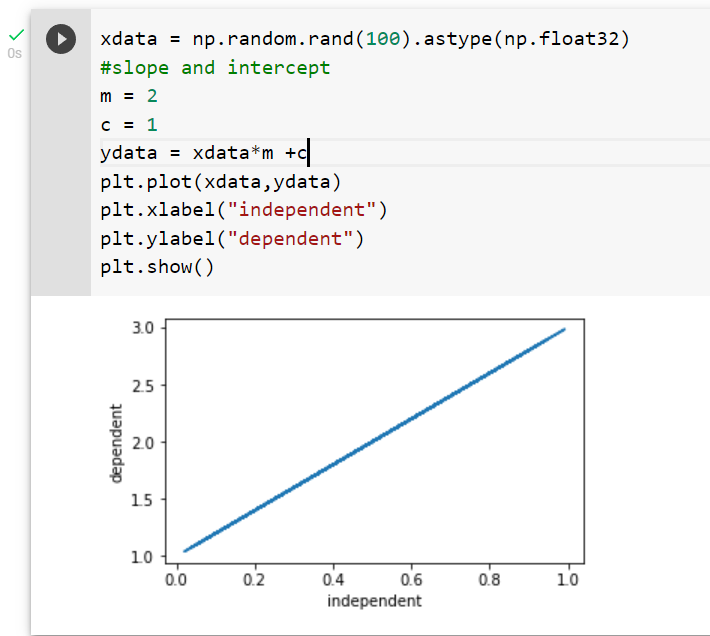
**range of numbers from 0 to 10 with interval of 0.15**



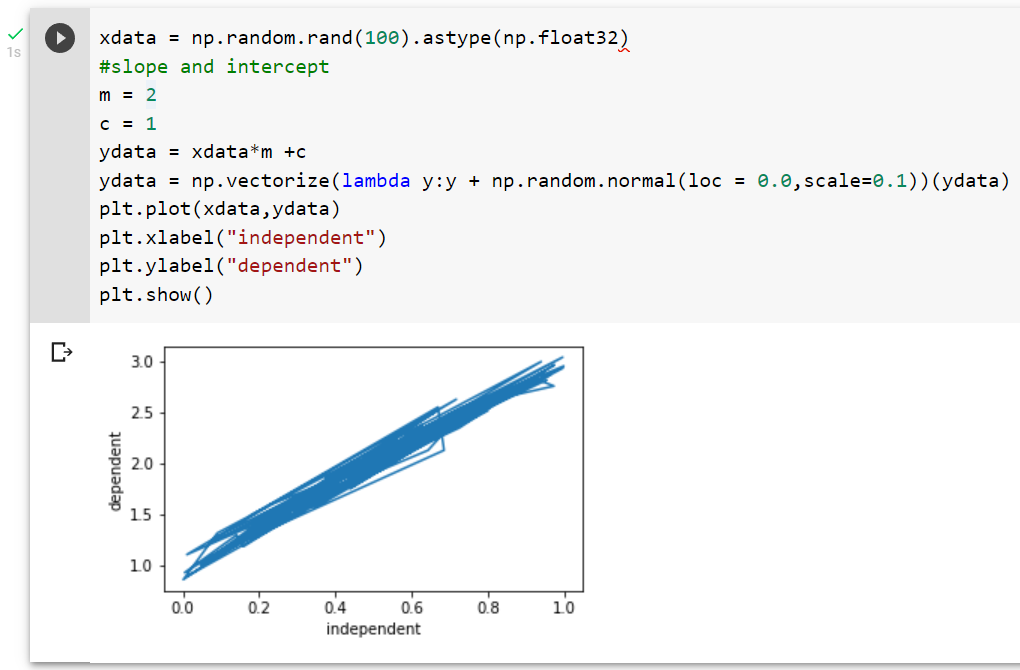
**Standard deviation of 0.5 and center 0 for y**

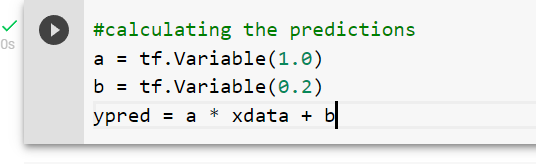


**Random numbers x of 100 values with y**

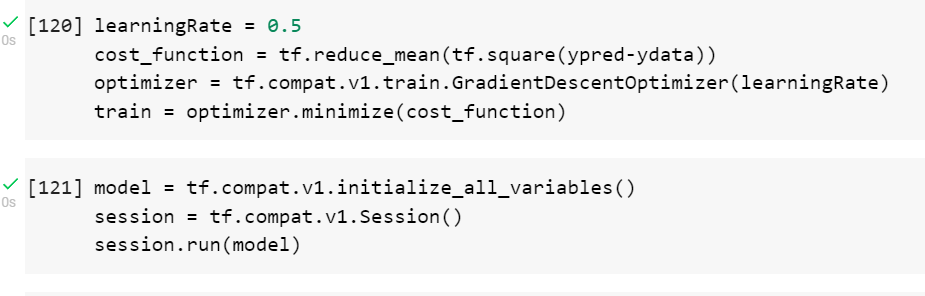


**Random numbers x of 100 values y with center standard deviation**

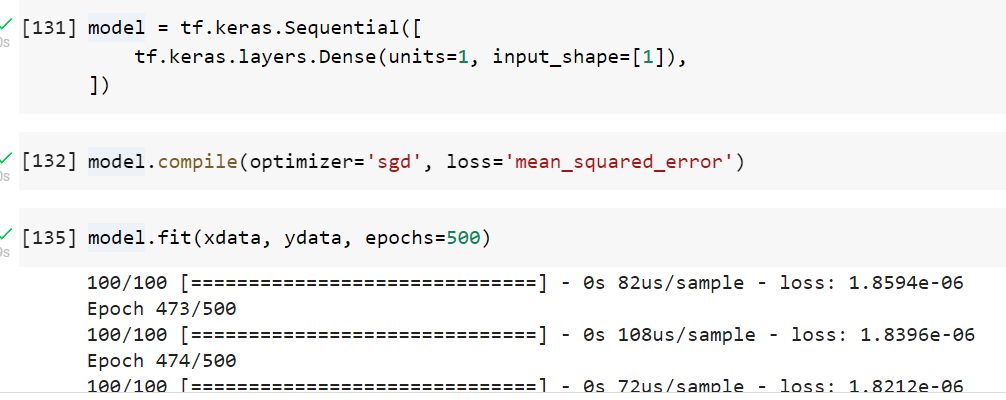




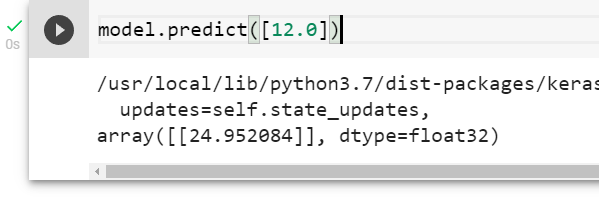
**Finding loss**



**Building and fitting neural network**

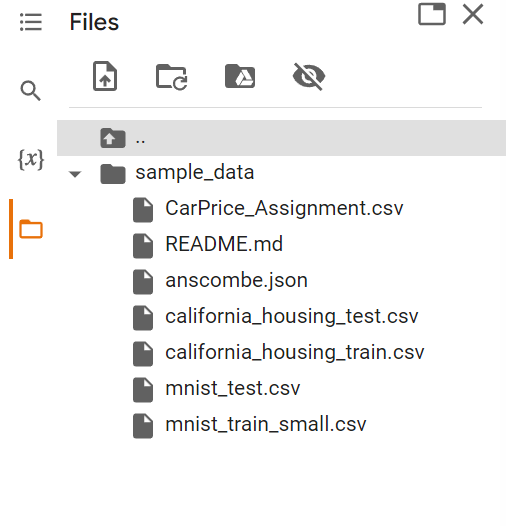


**Predicting y with x**

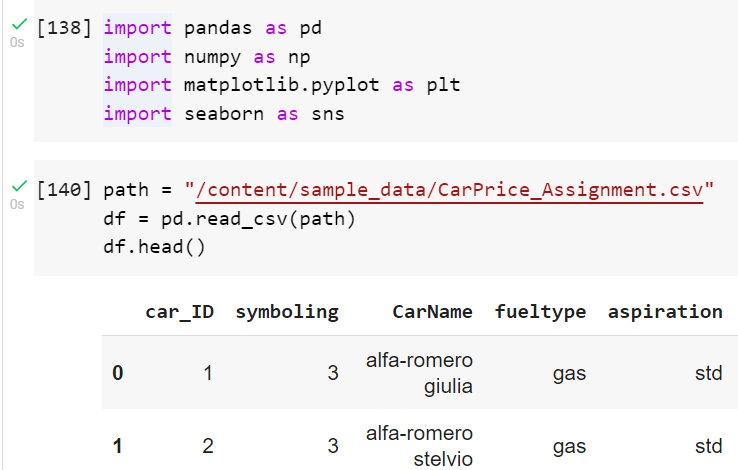


**LINEAR REGRESSION :**

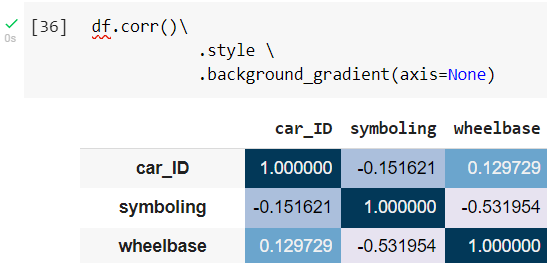
**Car Price prediction - Uploading csv file**

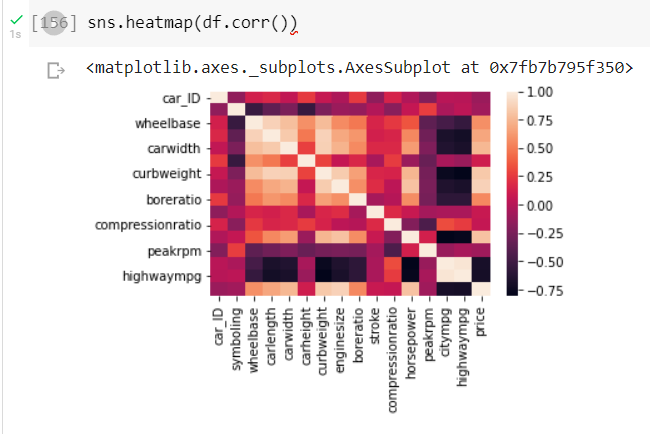
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**Reading csv file**

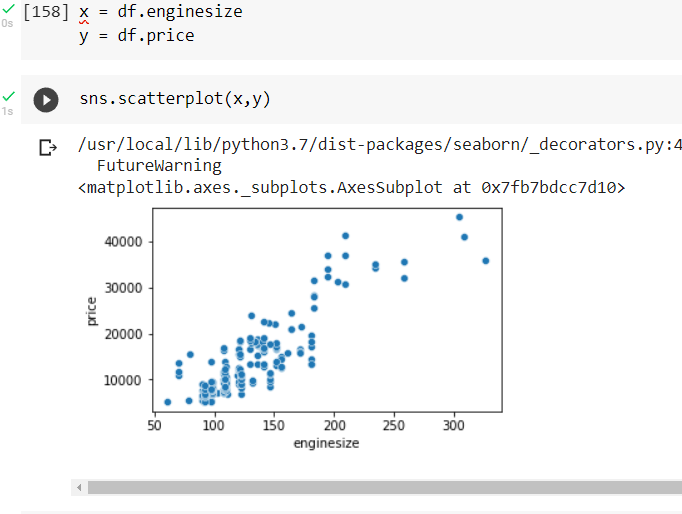
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**Finding correlation**

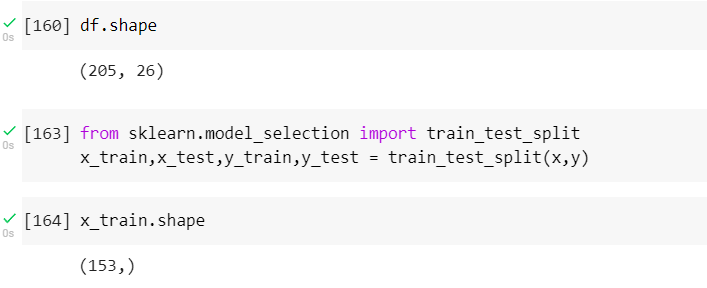
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**Selecting the attributes - engine size and price**

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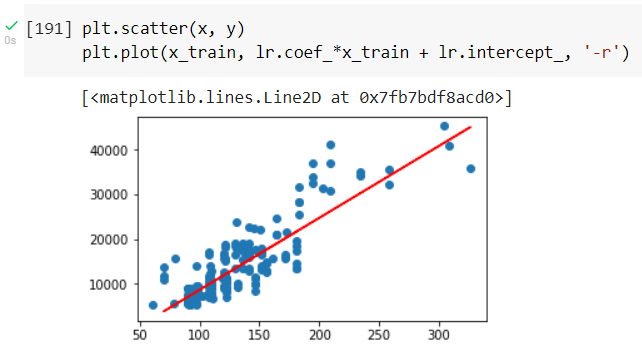
**Splitting into training and testing**

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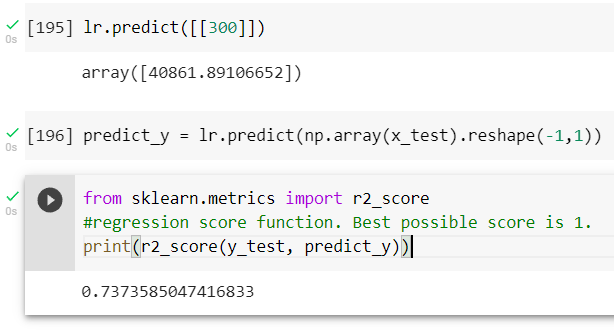
**Linear regression model**

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**Drawing a linear line**

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**Prediction and Accuracy**

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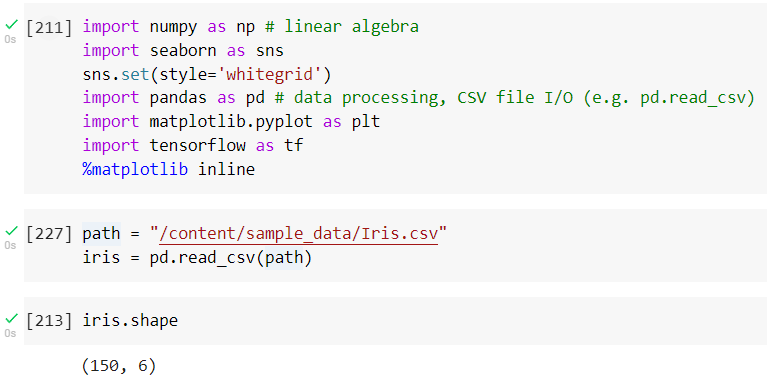
**Logistics Regression**

tf.matmul(X,weights)

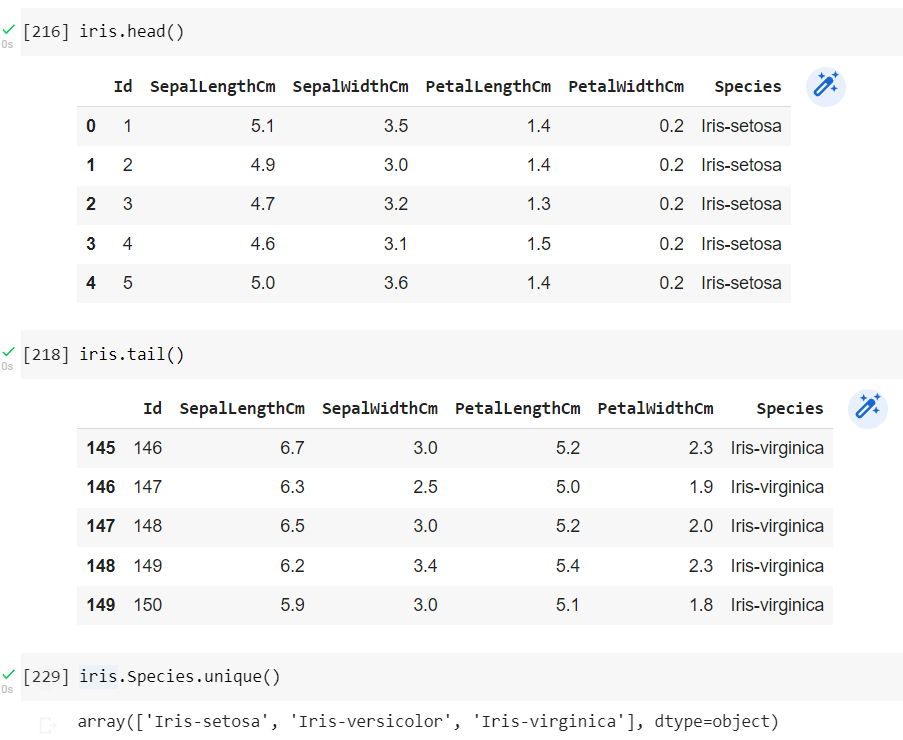
tf.add(weighted\_X,bias)

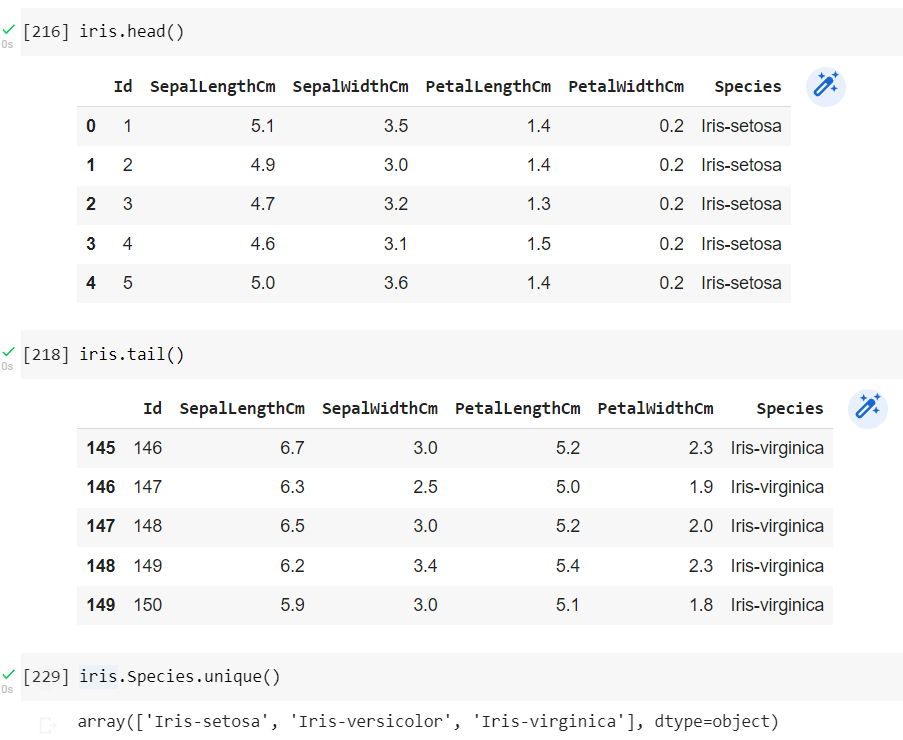
tf.nn.sigmoid(weighted\_x\_with\_bias)

**Loading dataset - Iris dataset**



**Head ,tail, unique elements in column**

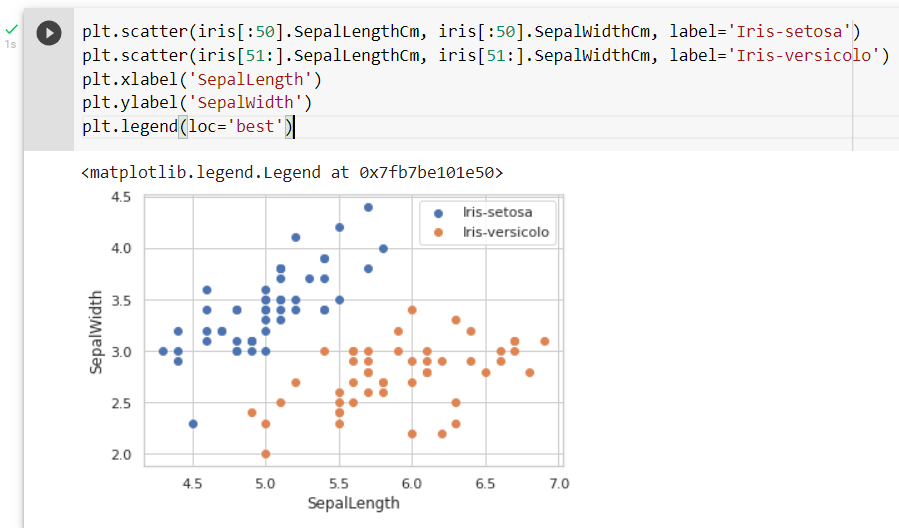




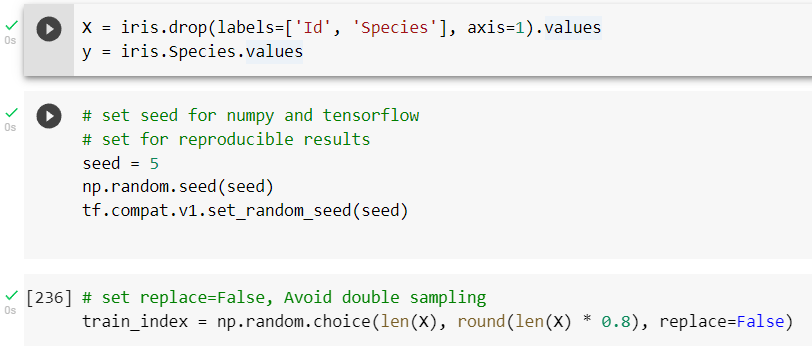
**Replacing and selection two types of flowers for logistic regression**

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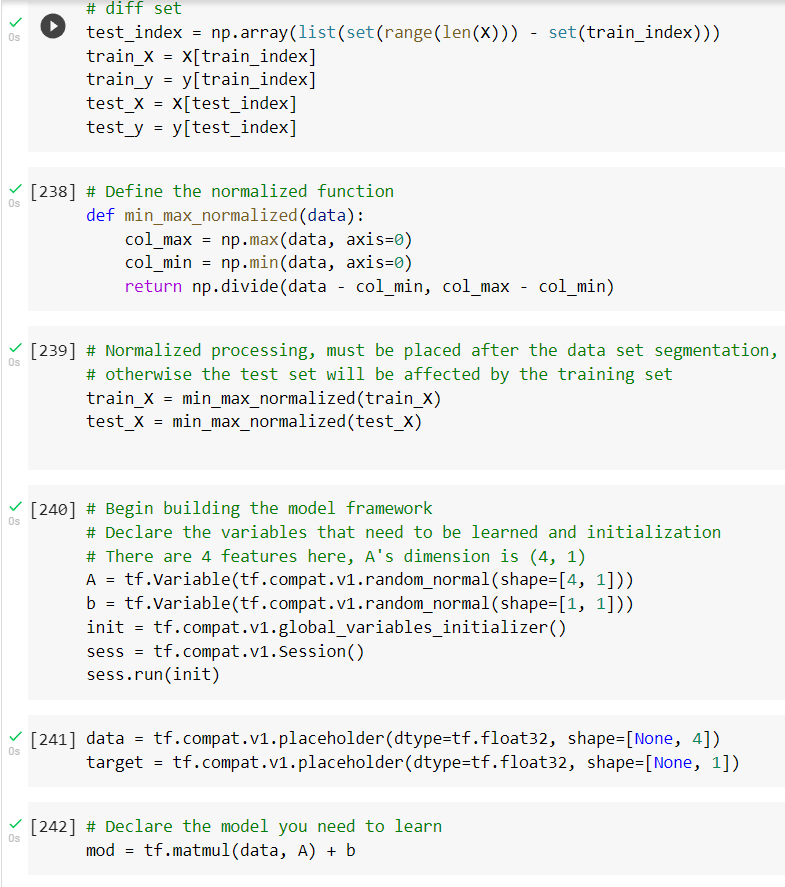
**Visualizing using scatter**

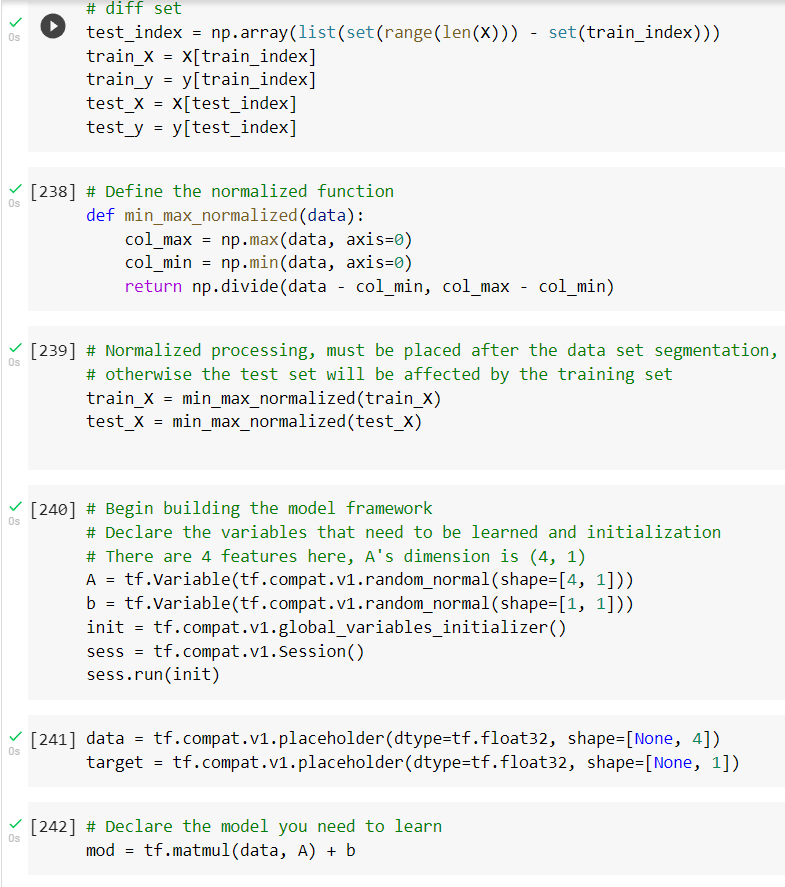
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**Set seed**

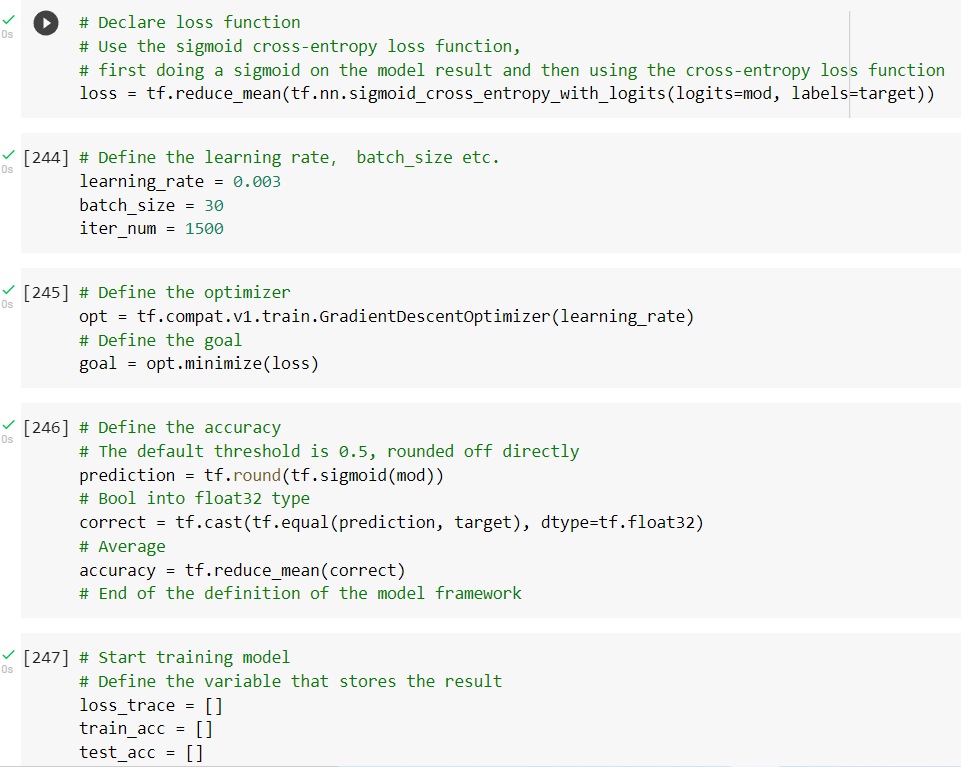
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**Normalized function and model framework**

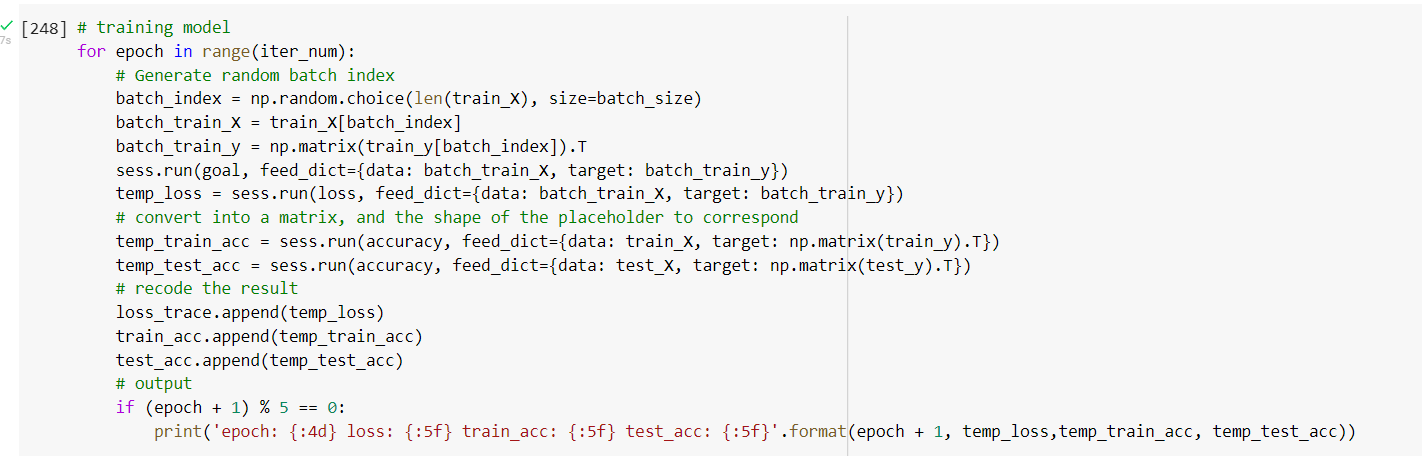
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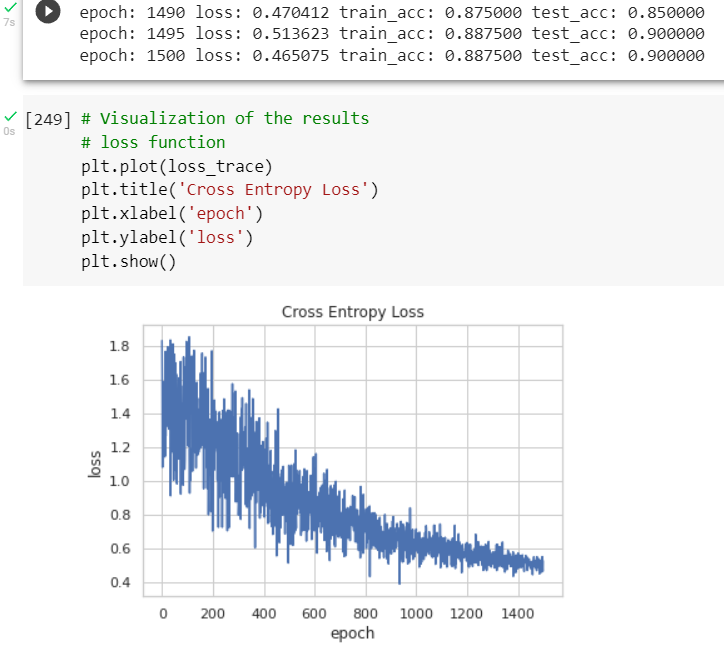
**Loss ,optimizer,accuracy**

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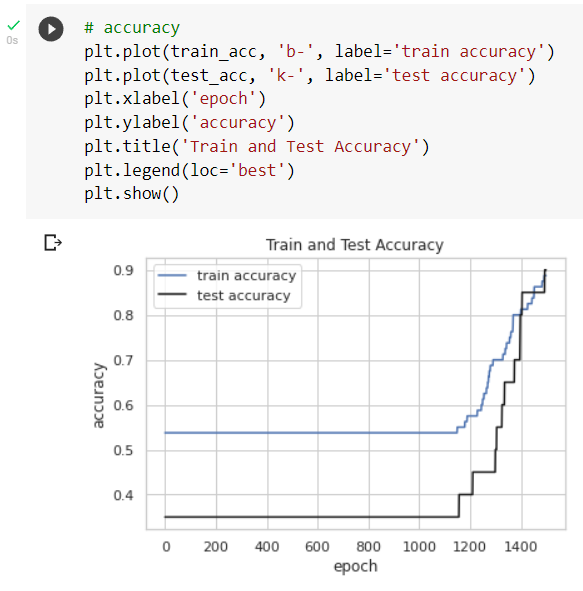
**Training**

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**Visualizing Loss**

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**Epoch vs accuracy**

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I Learned about tensorflow , linear regression and logistic regression.