STUDYPIE

Predicting Financial Time Series using Deep Learning

Module1. Google Colaboratory

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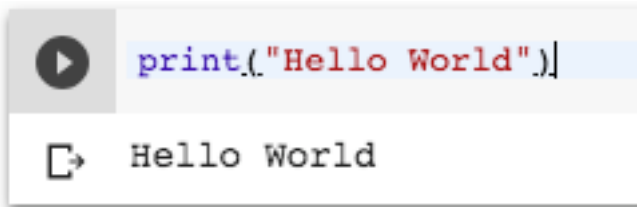
Note. This content mainly refers the summer session of KAIST organized by Jiyong Park(2018)

“Hello World” on Colab

Access to URL: https://colab.research.google.com/notebooks/welcome.ipynb#recent=true

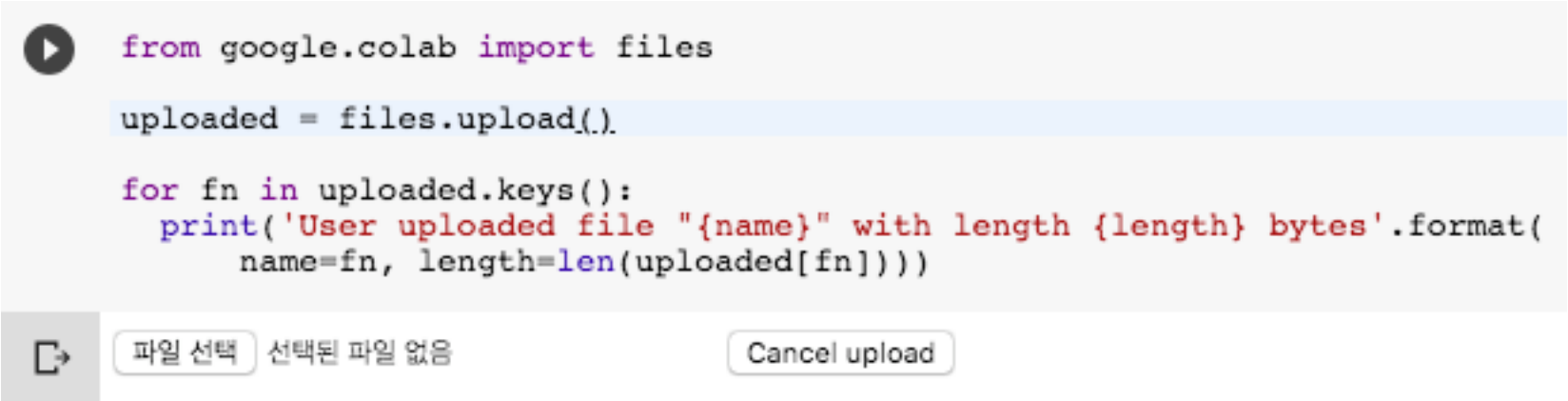
“Hello World” on Colab



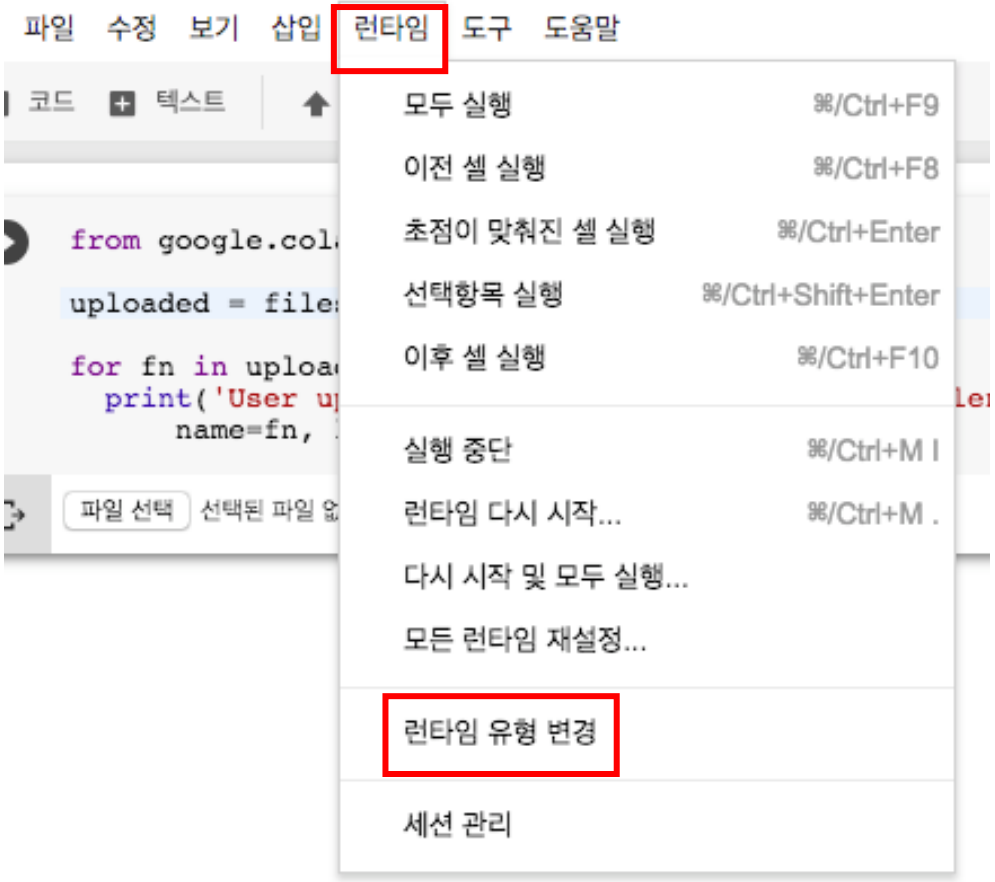
- print(“Hello World”)
- Click button or type “CTRL + ENTER”

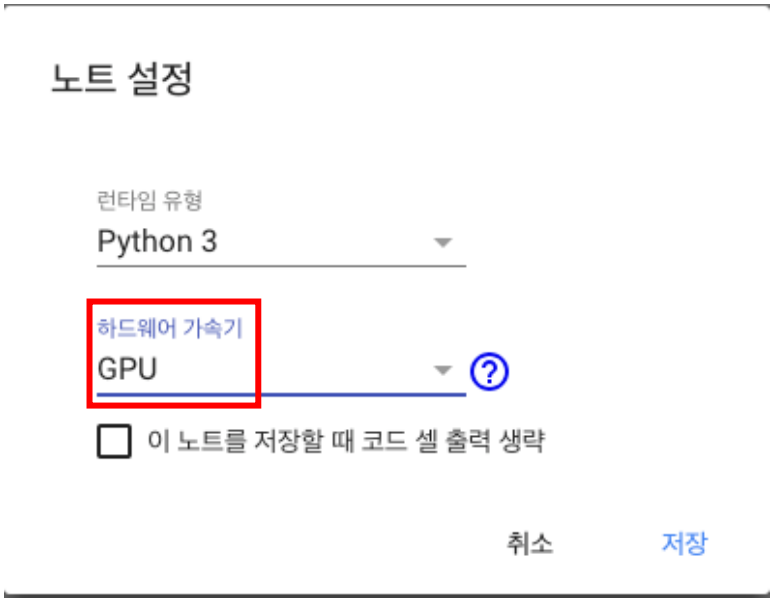
“File Upload” on Colab

Access to URL: https://colab.research.google.com/notebooks/io.ipynb



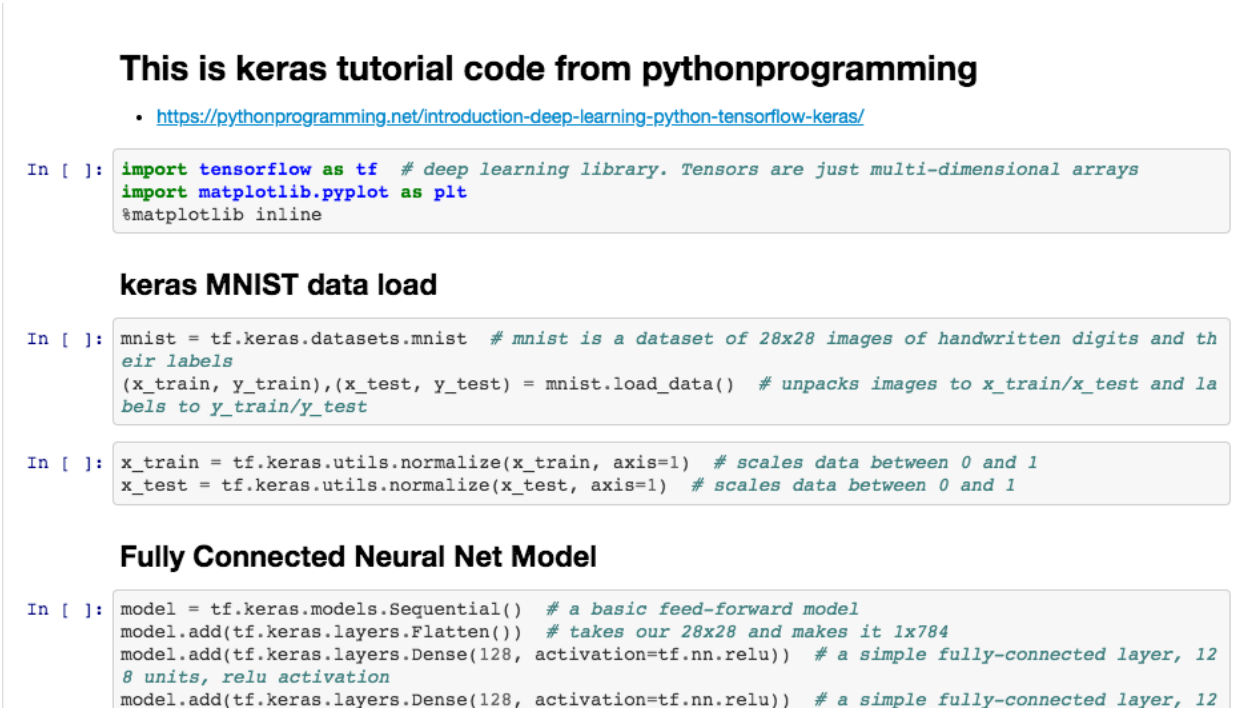
“Set GPU” on Colab





Run Keras on Google Colab

Code URL: https://colab.research.google.com/drive/1U81gAePnC0oX9iq13dCzl-KOcJC3TcP5



This is keras tutorial code from pythonprogramming

- https://pythonprogramming.net/introduction-deep-learning-python-tensorflow-keras/

In [ ]:
```
import tensorflow as tf  # deep learning library. Tensors are just multi-dimensional arrays
import matplotlib.pyplot as plt
%matplotlib inline
```

keras MNIST data load

In [ ]:
```
mnist = tf.keras.datasets.mnist  # mnist is a dataset of 28x28 images of handwritten digits and th
eir labels
(x_train, y_train),(x_test, y_test) = mnist.load_data()  # unpacks images to x_train/x_test and la
bels to y_train/y_test
```

In [ ]:
```
x_train = tf.keras.utils.normalize(x_train, axis=1)  # scales data between 0 and 1
x_test = tf.keras.utils.normalize(x_test, axis=1)  # scales data between 0 and 1
```

Fully Connected Neural Net Model

In [ ]:
```
model = tf.keras.models.Sequential()  # a basic feed-forward model
model.add(tf.keras.layers.Flatten())  # takes our 28x28 and makes it 1x784
model.add(tf.keras.layers.Dense(128, activation=tf.nn.relu))  # a simple fully-connected layer, 12
8 units, relu activation
model.add(tf.keras.layers.Dense(128, activation=tf.nn.relu))  # a simple fully-connected layer, 12
```

Google Colaboratoy Useful Shortcuts

Actions	Colab	Jupyter
show keyboard shortcuts	Ctrl/Cmd M H	H
Insert code cell above	Ctrl/Cmd M A	A
Insert code cell below	Ctrl/Cmd M B	B
Delete cell/selection	Ctrl/Cmd M D	DD
Interrupt execution	Ctrl/Cmd M I	II
Convert to code cell	Ctrl/Cmd M Y	Y
Convert to text cell	Ctrl/Cmd M M	M
Split at cursor	Ctrl/Cmd M -	Ctrl Shift -

Thank you ☺

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References

- Jiyong Park (2018), KAIST Summer Session, Retrieved from https://sites.google.com/view/kaist-mis-session2018/overview?authuser=0