

Chapter_2_Section_5_Using_Variables

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1 Ch 02: Concept 05

1.1 Using variables

Here we go, here we go, here we go! Moving on from those simple examples, let's get a better understanding of variables. Start with a session:

```
In [1]: import tensorflow as tf
        sess = tf.InteractiveSession()
```

Below is a series of numbers. Don't worry what they mean. Just for fun, let's think of them as neural activations.

```
In [2]: raw_data = [1., 2., 8., -1., 0., 5.5, 6., 13]
```

Create a boolean variable called spike to detect a sudden increase in the values.

All variables must be initialized. Go ahead and initialize the variable by calling `run()` on its initializer:

```
In [3]: spike = tf.Variable(False)
        spike.initializer.run()
```

Loop through the data and update the spike variable when there is a significant increase:

```
In [4]: for i in range(1, len(raw_data)):
        if raw_data[i] - raw_data[i-1] > 5:
            tf.assign(spike, True).eval()
        else:
            tf.assign(spike, False).eval()
        print("Spike", spike.eval())
```

```
Spike False
Spike True
Spike False
Spike False
Spike True
Spike False
Spike True
```

You forgot to close the session! Here, let me do it:

```
In [5]: sess.close()
```