```python
In [1]: import numpy as np
        from nn import NN
        import pandas as pd
        from matplotlib import pyplot as plt
```
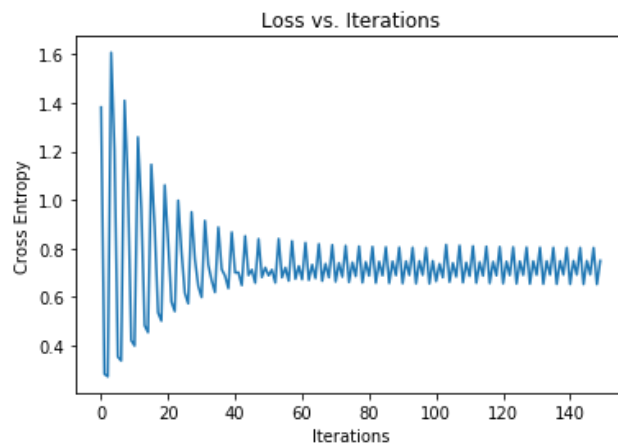
```python
In [2]: # Unit = 3
        model = NN(3)
```

```python
In [3]: data = pd.read_csv('xor.csv', header=None).to_numpy()
```

```python
In [4]: xs = data[:,:2]
        ys = data[:,2:]
```

```python
In [5]: model.build(2)
```

```python
In [6]: loss = []
        for _ in range(3):  #1000 steps
            # 50 steps in an epoch
            for i in range(len(data)):
                loss.append(model.train(xs[i], ys[i], lr=0.1))
        plt.plot(np.arange(len(loss)), loss)
        plt.xlabel('Iterations')
        plt.ylabel('Cross Entropy')
        plt.title('Loss vs. Iterations')
        plt.show()
```



```python
In [7]: data[:4]
```

```
Out[7]: array([[0, 0, 0],
               [0, 1, 1],
               [1, 0, 1],
               [1, 1, 0]])
```

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In [8]:
```python
# Test results
test = [0, 0]
if model.inference(test)[0] < 0.5:
    print(0)
else:
    print(1)
model.inference(test)[0]
```

0

Out[8]: 0.4843656066249722

In [ ]:

In [ ]: