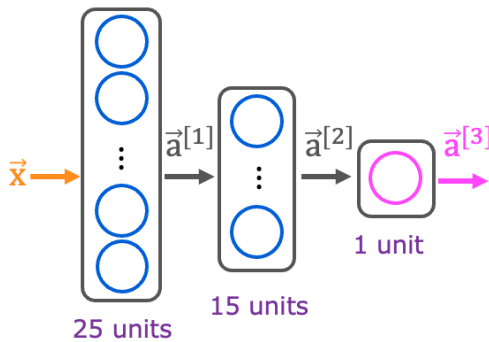


Train a Neural Network in TensorFlow



```
import tensorflow as tf
from tensorflow.keras import Sequential
from tensorflow.keras.layers import Dense

model = Sequential([
    Dense(units=25, activation='sigmoid')
    Dense(units=15, activation='sigmoid')
    Dense(units=1, activation='sigmoid')
])

from tensorflow.keras.losses import
BinaryCrossentropy
```

```
model.fit(X,Y,epochs=100)
```

Here is some code that you saw in the lecture:

```
...
model.compile(loss=BinaryCrossentropy())
...
```

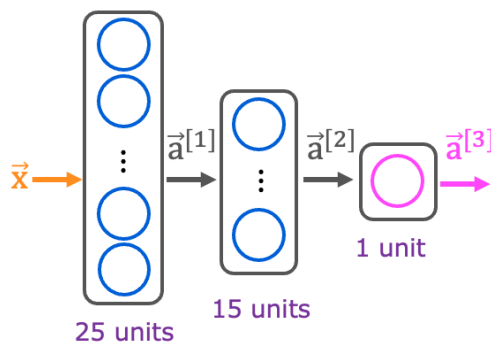
For which type of task would you use the binary cross entropy loss function?

- ☐ regression tasks (tasks that predict a number)
- ☒ binary classification (classification with exactly 2 classes)
- ☐ A classification task that has 3 or more classes (categories)
- ☐ BinaryCrossentropy() should not be used for any task.

☒ Correct

Yes! Binary cross entropy, which we've also referred to as logistic loss, is used for classifying between two classes (two categories).

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])

from tensorflow.keras.losses import
BinaryCrossentropy
```

```
model.fit(X,Y,epochs=100)
```

2. Here is code that you saw in the lecture:

```
...
model = Sequential([
    Dense(units=25, activation='sigmoid'),
    Dense(units=15, activation='sigmoid'),
    Dense(units=1, activation='sigmoid')
])

model.compile(loss=BinaryCrossentropy())
model.fit(X,y,epochs=100)
...
```

Which line of code updates the network parameters in order to reduce the cost?

- ☐ `model.compile(loss=BinaryCrossentropy())`
- ☒ `model.fit(X,y,epochs=100)`
- ☐ None of the above -- this code does not update the network parameters.
- ☐ `model = Sequential([...])`
- ☒ Correct
Yes! The third step of model training is to train the model on data in order to minimize the loss (and the cost)