In [ ]:

```python
import keras
from keras.datasets import mnist
from keras.models import Sequential
from keras.layers import Dense, Dropout, Activation, BatchNormalization
from keras.optimizers import SGD, Adam, RMSprop
from keras.callbacks import LearningRateScheduler
from keras.utils import np_utils


from keras.models import load_model
```

In [ ]:

```python
import numpy as np
```

In [ ]:

```python
x=[]
y=[]
for i in range(0,100):
    if(i<50):
        y.append(0)
    else:
        y.append(1)
    x.append(i)
```

In [ ]:

```python
print(x)
print(y)
```

In [ ]:

```python
x=np.array(x)
y=np.array(y)
```

In [ ]:

```python
x=x.astype(np.float)
y=y.astype(np.float)
```

In [ ]:

```python
x /=99
```

In [ ]:

```python
model = Sequential()
model.add(Dense(20,input_shape=(1,)))
model.add(Dense(1,activation='sigmoid'))
```

In [ ]:

```python
model.summary()
```

In [ ]:

```python
model.compile(loss='mse', optimizer=SGD(lr=1), metrics=['accuracy'])
```

In [ ]:

```python
model.fit(x, y, batch_size=10, epochs=20, verbose=1, validation_split=0.2)
```

In [ ]:

```python
test=[1,56,78,23]
test=np.array(test)
test=test.astype(np.float)
test /= 99
```

In [ ]:

```python
out=model.predict(test)
```

In [ ]:

```python
out=np.round(out)
```

In [ ]:

```python
out
```

In [ ]: