In [1]:

```
import numpy as np
import pandas as pd
from matplotlib import pyplot as plt
from sklearn.ensemble import RandomForestClassifier
from sklearn.model_selection import train_test_split
%matplotlib inline
```

In [2]:

```
data=pd.read_csv('mnist.csv')
```

In [3]:

```
data.head()
```

Out[3]:

	5	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	...	0.608	0.609	0.610	0.611	0.612	0.613	0.614
0	0	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0	0	0
1	4	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0	0	0
3	9	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0	0	0
4	2	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0	0	0

5 rows × 785 columns

In [4]:

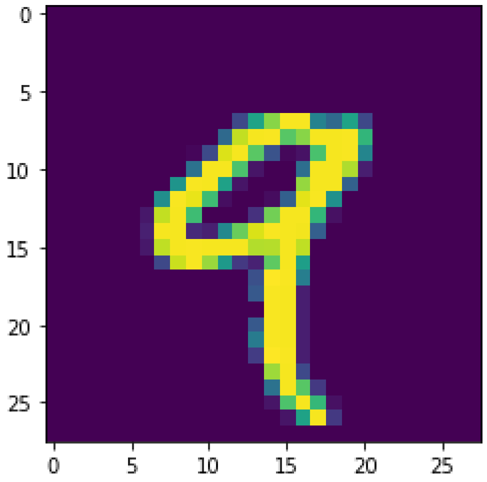
```
a=data.iloc[3,1:].values
```

In [5]:

```
a=a.reshape(28,28).astype('uint8')
plt.imshow(a)
```

Out[5]:

```
<matplotlib.image.AxesImage at 0x1f0ebae7850>
```



In [6]:

```
df_x=data.iloc[:,1:]
df_y=data.iloc[:,0]
```

In [7]:

```
x_train,x_test,y_train,y_test=train_test_split(df_x,df_y,test_size=0.2,random_state
```

In [8]:

```
x_train.head()
```

Out[8]:

	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	...	0.608	0.609	0.610	0.611	0.612	0.613
20379	0	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0	0
53031	0	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0	0
27005	0	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0	0
30510	0	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0	0
508	0	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0	0

5 rows × 784 columns

In [9]:

```
y_train.head()
```

Out[9]:

```
20379    7
53031    4
27005    6
30510    3
508      3
Name: 5, dtype: int64
```

In [10]:

```
rf=RandomForestClassifier(n_estimators=100)
```

In [11]:

```
rf.fit(x_train,y_train)
```

Out[11]:

```
RandomForestClassifier()
```

In [12]:

```
pred=rf.predict(x_test)
```

In [13]:

```
p=pred.astype(int)
p
```

Out[13]:

```
array([0, 1, 6, ..., 1, 8, 6])
```

In [14]:

```
s=y_test.values.astype(int)
s
```

Out[14]:

```
array([0, 1, 6, ..., 1, 8, 0])
```

In [15]:

```
count=0
for i in p:
    if p[i]==s[i]:
        count=count+1
```

In [16]:

```
count
```

Out[16]:

```
10929
```

In [17]:

```
len(p)
```

Out[17]:

```
12000
```

In [18]:

```
#Accuracy level
count/len(p)
```

Out[18]:

```
0.91075
```