```python
import pandas as pd
import numpy as np
from sklearn.feature_extraction.text import CountVectorizer
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.model_selection import train_test_split
from sklearn.ensemble import RandomForestClassifier
```

```python
data = pd.read_csv("data.csv", error_bad_lines = False   )
print(data.head())
```

```python
data = data.dropna()
data["strength"] = data["strength"].map({0: "Weak",
                                         1: "Medium",
                                         2: "Strong"})
```

```python
data.shape
```

```
(669639, 2)
```

```python
print(data.sample(5))
```

```
              password strength
256647      seif147258   Medium
474650          watda1     Weak
390144          xujo23     Weak
620869  qeE8D3jIyMQGd7cw  Strong
532592     cefacipisi13   Medium
```

```python
def word(password):
    character=[]
    for i in password:
        character.append(i)
    return character
```

```python
x = np.array(data["password"])
y = np.array(data["strength"])
```

```python
tdif = TfidfVectorizer(tokenizer=word)
x = tdif.fit_transform(x)
xtrain, xtest, ytrain, ytest = train_test_split(x, y, test_size = 0.05, random_s
```

```
c:\Users\gsrin\.conda\envs\pytorch_tutorial\lib\site-packages\sklearn\feature_ext
raction\text.py:528: UserWarning: The parameter 'token_pattern' will not be used
since 'tokenizer' is not None'
  warnings.warn(
```

```python
xtrain[0]
```

```
<1x153 sparse matrix of type '<class 'numpy.float64'>'
        with 8 stored elements in Compressed Sparse Row format>
```

```python
model = RandomForestClassifier()
model.fit(xtrain, ytrain)
print(model.score(xtest, ytest))
```

```
0.9567827489397288
```

```python
import getpass
user = getpass.getpass("Enter Password: ")
data = tdif.transform([user]).toarray()
output = model.predict(data)
print(output)
```

```
['Weak']
```

```python
import getpass
user = getpass.getpass("Enter Password: ")
data = tdif.transform([user]).toarray()
output = model.predict(data)
print(output)
```

```
['Weak']
```