In [1]:
```python
# -*- coding: utf-8 -*-
"""
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"""


import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn import svm
```

In [2]:
```python
data = pd.read_excel("data.xlsx")
```

In [3]:
```python
data
```

Out[3]:

	x1	x2	Class
0	3	1	0
1	3	-1	0
2	6	1	0
3	6	-1	0
4	1	0	1
5	0	1	1
6	0	-1	1
7	-1	0	1

In [4]:
```python
X = np.array(data[data.columns[:2]])
y = np.array(data.Class.values)
```

In [7]:
```python
print("X: ",X)
print("y: ",y)
```

```
X:  [[ 3  1]
 [ 3 -1]
 [ 6  1]
 [ 6 -1]
 [ 1  0]
 [ 0  1]
 [ 0 -1]
 [-1  0]]
y:  [0 0 0 0 1 1 1 1]
```

In [8]:
```python
clf = svm.SVC(kernel='linear', C = 1.0)
clf.fit(X,y)

color = ['purple' if c == 0 else 'red' for c in y]

w = clf.coef_[0]
print(w)

a = -w[0] / w[1]

xx = np.linspace(1.99921,2.0013)
yy = a * xx - clf.intercept_[0] / w[1]

h0 = plt.plot(xx, yy, 'k-', label="hyper Plane")

plt.scatter(X[:, 0], X[:, 1], c = color)
plt.legend()
plt.show()
```
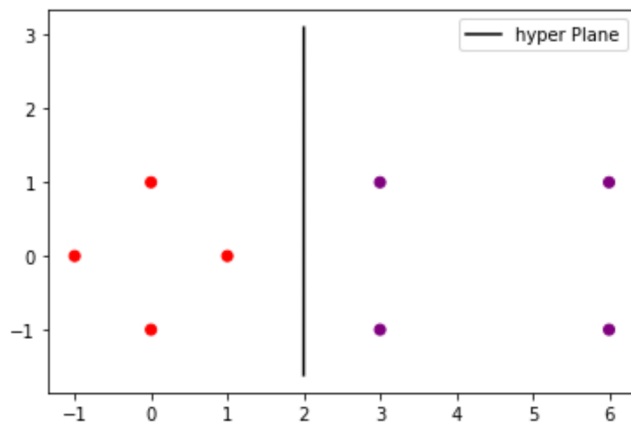
```
[-9.99778462e-01  4.43076923e-04]
```


In [ ]: