

例 3.9 判断对称矩阵是否正定

修改参数：A：输入判断的矩阵

"""

```
import numpy as np
```

```
def PD():
```

```
    m, n = A.shape
```

```
    B = A.T
```

```
    if (A == B).all() and m == n:
```

```
        for i in range(0, n):
```

```
            Master = np.zeros([i + 1, i + 1])
```

```
            for row in range(0, i + 1):
```

```
                for column in range(0, i + 1):
```

```
                    Master[row][column] = A[row][column]
```

```
            if np.linalg.det(Master) <= 0:
```

```
                print('该矩阵非正定')
```

```
                done = False
```

```
                return done
```

```
        print('该矩阵正定')
```

```
    else:
```

```
        print('您输入的矩阵不是对称矩阵')
```

```
if __name__ == '__main__':
```

```
    A = np.array([[6, -3, 1],
```

```
                  [-3, 2, 0],
```

```
                  [1, 0, 4],
```

```
                  ])
```

```
    PD()
```