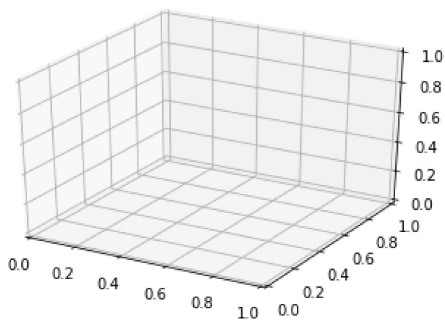# Kuliah 11

Partial derivative

$$\nabla f(x, y) = \frac{\partial f}{\partial x} i + \frac{\partial f}{\partial y} j$$

In [1]:
```
from mpl_toolkits import mplot3d
```

In [12]:
```
%matplotlib inline
import numpy as np
import matplotlib.pyplot as plt
```

In [3]:
```
fig = plt.figure()
ax = plt.axes(projection='3d')
```


In [20]:
```
def f(x1, x2):
    y=2*x1*x2 + 2*x1-x1**2-2*x2**2
    return y

x1 = np.linspace(0, 10, 100)
x2 = np.linspace(0, 10, 100)

X1, X2 = np.meshgrid(x1, x2)
Y = f(X1, X2)
```

In [21]:
```
ax = plt.axes(projection='3d')
ax.plot_surface(X1, X2, Y, rstride=1, cstride=1,
                cmap='viridis', edgecolor='none')
ax.set_title('surface');
```