

Playing_with_Autograd_two_dimensions

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```
[2]: import autograd.numpy as np
      from autograd import grad
      import matplotlib.pyplot as plt
```

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[3]: # Playing with autograd

      def model(x,y): #creating a definition with 2 inputs (x,y)
          return x**2+y**2 #the definition creates the function  $x^2 + y^2$ 

      d_by_dx = grad(model,0) #taking the gradient/derivative of the x variable
      d_by_dy = grad(model,1) #taking the gradient/derivative of the y variable

      x0 = 5.0
      y0 = 5.0

      print('At the coordinates ',x0,y0)

      print('the slopes in the x and y directions are', d_by_dx(x0,y0),' and ',
            ↪d_by_dy(x0,y0)) #inserting both points in for both gradient/derivatives in
            ↪respect to x and then y
```

At the coordinates 5.0 5.0

the slopes in the x and y directions are 10.0 and 10.0