Taller 2 - corte 2

Perceptron

```
import random
import math
import matplotlib.pyplot as plt
from matplotlib.colors import LogNorm
import numpy as np
```

Puntos a evaluar

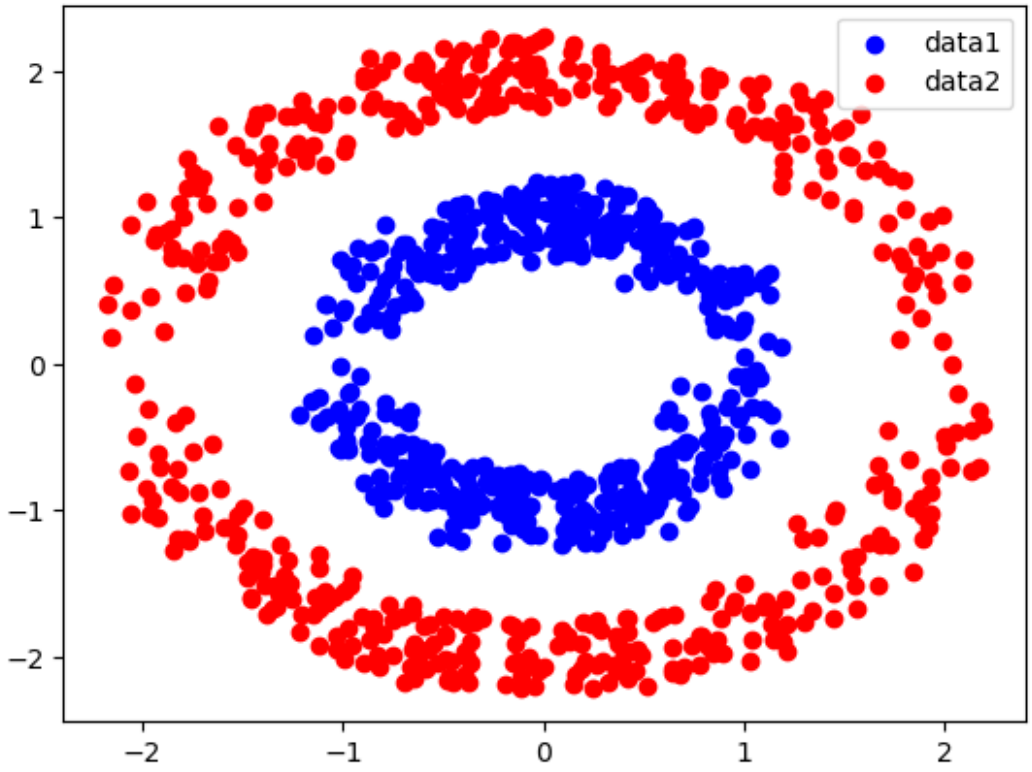
- Realizar la implementacion de un perceptron que logre clasificar el set de datos propuesto
- Generar una funcion de predicciones
- Generar un mapa de calor que identifique las zonas predichas por el modelo en conjunto con el set de datos

```
# generar data
data_1 = []
data_2 = []
for i in range(500):
    # data 1
    noise = 0.5
    radio = 1
    data1_random_x = (random.random()-0.5)*radio*2
    data1_y = math.sqrt( radio**2 - data1_random_x**2 )
    data_1.append( [data1_random_x+(random.random()-0.5)*noise ,
data1_y*random.sample([-1,1],1)[0]+(random.random()-0.5)*noise] )
    # data 2
    noise = 0.5
    radio = 2
    data2_random_x = (random.random()-0.5)*radio*2
    data2_y = math.sqrt( radio**2 - data2_random_x**2 )
    data_2.append( [data2_random_x+(random.random()-0.5)*noise ,
data2_y*random.sample([-1,1],1)[0]+(random.random()-0.5)*noise] )

# unificar data
X = data_1 + data_2
y = []
for _ in data_1:
    y.append(-1)
for _ in data_2:
    y.append(1)
```

```
plt.scatter( [d[0] for d in data_1], [d[1] for d in data_1],
color="blue", label="data1" )
plt.scatter( [d[0] for d in data_2], [d[1] for d in data_2],
color="red", label="data2" )
plt.legend()
```

```
<matplotlib.legend.Legend at 0x245bfcb7710>
```




```
# aqui tu implementacion
```