Jeg vil forsøge at skabe den samme datatype som i et af datasættene fra Tensorflowplayground :https://playground.tensorflow.org/

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Data skal i en tabel se ud som : X1;X2;Value (X2 svarer til "Y") -4;3;-1 #en orange prik øverst til venstre 4;2;-1 #orange øverst højre 1,0,1 # blå prik

In [1]:
```
PunktAntal = 2400
```

In [2]:
```
# de blå er de letteste
# de ligger vidst inden for en cirkel ?!
import math
import random

random.seed(37)

for n in range(5):
    angle = random.uniform(0,6.28)
    X1 = random.uniform(0,2.5) * math.sin(angle)
    X2 = random.uniform(0,2.5) * math.cos(angle)
    print (X1,X2,-1)
```

```
-0.20821629311432244 -0.6430319933791562 -1
-1.7510201801950322 0.7000687828426219 -1
-0.6757364309322038 -0.8992834025517825 -1
1.0700501154866215 1.1701658999452718 -1
0.9276247831367879 -0.3650571691276944 -1
```

In [3]:
```
#de gule ligger i en "ring"
#som har udvendig radius på 5
# og indvendig 3.5
#(ringens bredde er 1.5))
for n in range(5):
    angle = random.uniform(0,6.28)
    X1 = (3.5 + random.uniform(0,1.5)) * math.sin(angle)
```

```
    X2 = (3.5 + random.uniform(0,1.5)) * math.cos(angle)
    print (X1,X2,1)
```

```
1.7124599173228805 -4.6494527795613685 1
-3.095425196944252 1.896107874622914 1
3.924350075928976 -1.090056539049951 1
-3.8521304778891654 2.060786005330281 1
-1.568054182514254 -3.8490975856123315 1
```

In [4]:
```
f = open("data.csv", "w")  #w-ovwerwrite   a-append
s="X1,X2,Value test"+"\n"
f.write(s)

for n in range(PunktAntal // 2):#
    angle = random.uniform(0,6.28)
    X1 = (3.5 + random.uniform(0,1.5)) * math.sin(angle)
    X2 = (3.5 + random.uniform(0,1.5)) * math.cos(angle)
    s= str(X1)+","+str(X2)+","+ str(-1)+"\n"
    f.write(s)
    angle = random.uniform(0,6.28)
    X1 = random.uniform(0,2.5) * math.sin(angle)
    X2 = random.uniform(0,2.5) * math.cos(angle)
    s= str(X1)+","+str(X2)+","+ str(1)+"\n"
    f.write(s)

f.close()
```

In [5]:
```
!pip install matplotlib
```

```
Requirement already satisfied: matplotlib in c:\users\chr_v\documents\eaa23itek\3
semester\kunstig-intelligens\ai\lib\site-packages (3.9.2)
Requirement already satisfied: contourpy>=1.0.1 in c:\users\chr_v\documents\eaa23
itek\3semester\kunstig-intelligens\ai\lib\site-packages (from matplotlib) (1.3.0)
Requirement already satisfied: cycler>=0.10 in c:\users\chr_v\documents\eaa23itek
\3semester\kunstig-intelligens\ai\lib\site-packages (from matplotlib) (0.12.1)
Requirement already satisfied: fonttools>=4.22.0 in c:\users\chr_v\documents\eaa2
3itek\3semester\kunstig-intelligens\ai\lib\site-packages (from matplotlib) (4.53.
1)
Requirement already satisfied: kiwisolver>=1.3.1 in c:\users\chr_v\documents\eaa2
3itek\3semester\kunstig-intelligens\ai\lib\site-packages (from matplotlib) (1.4.
5)
Requirement already satisfied: numpy>=1.23 in c:\users\chr_v\documents\eaa23itek
\3semester\kunstig-intelligens\ai\lib\site-packages (from matplotlib) (2.0.2)
Requirement already satisfied: packaging>=20.0 in c:\users\chr_v\documents\eaa23i
tek\3semester\kunstig-intelligens\ai\lib\site-packages (from matplotlib) (24.1)
Requirement already satisfied: pillow>=8 in c:\users\chr_v\documents\eaa23itek\3s
emester\kunstig-intelligens\ai\lib\site-packages (from matplotlib) (10.4.0)
Requirement already satisfied: pyparsing>=2.3.1 in c:\users\chr_v\documents\eaa23
itek\3semester\kunstig-intelligens\ai\lib\site-packages (from matplotlib) (3.1.4)
Requirement already satisfied: python-dateutil>=2.7 in c:\users\chr_v\documents\e
aa23itek\3semester\kunstig-intelligens\ai\lib\site-packages (from matplotlib) (2.
9.0.post0)
Requirement already satisfied: importlib-resources>=3.2.0 in c:\users\chr_v\docum
ents\eaa23itek\3semester\kunstig-intelligens\ai\lib\site-packages (from matplotli
b) (6.4.4)
Requirement already satisfied: zipp>=3.1.0 in c:\users\chr_v\documents\eaa23itek
\3semester\kunstig-intelligens\ai\lib\site-packages (from importlib-resources>=3.
2.0->matplotlib) (3.20.1)
Requirement already satisfied: six>=1.5 in c:\users\chr_v\documents\eaa23itek\3se
mester\kunstig-intelligens\ai\lib\site-packages (from python-dateutil>=2.7->matpl
otlib) (1.16.0)
```

In [6]:
```
!pip install numpy
```

```
Requirement already satisfied: numpy in c:\users\chr_v\documents\eaa23itek\3semes
ter\kunstig-intelligens\ai\lib\site-packages (2.0.2)
```

In [7]:
```
import numpy as np

# using loadtxt()  #læs data fra fil
arr = np.loadtxt("data.csv",
                 delimiter=",", dtype=str)
display(arr)
```

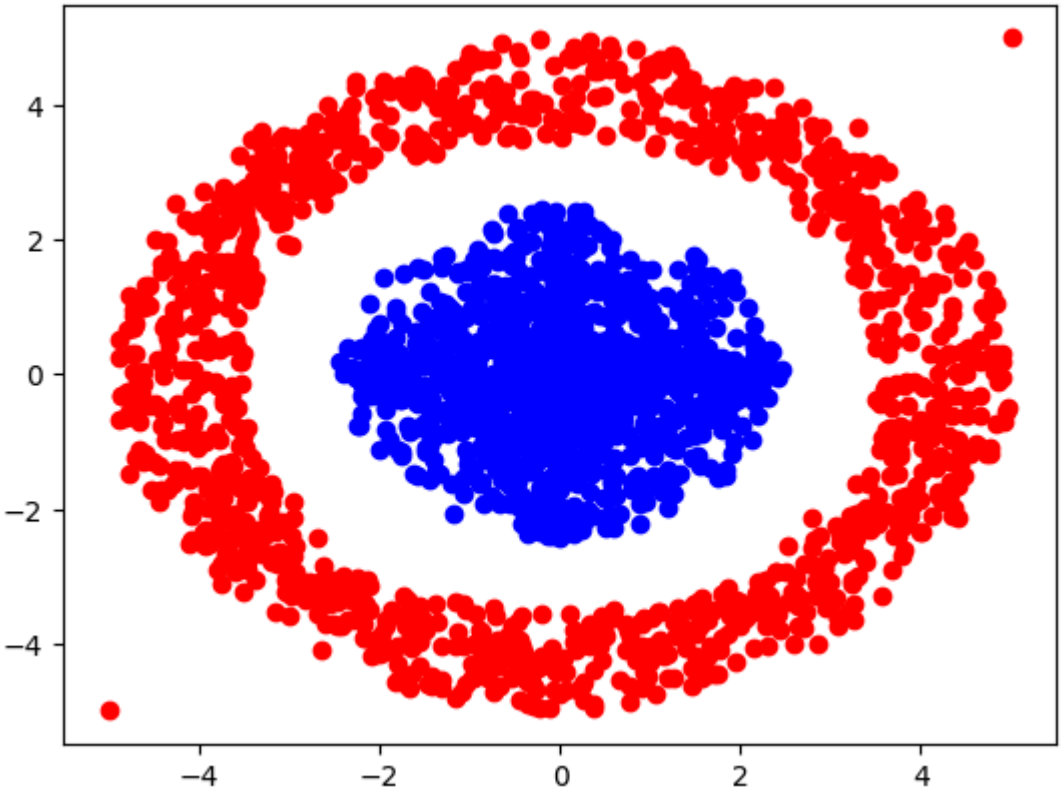
```
array([['X1', 'X2', 'Value test'],
       ['4.015272658235177', '0.8064832463220241', '-1'],
       ['-1.8856707903461813', '-0.09601199285105193', '1'],
       ...,
       ['-0.6341844389911259', '0.2859388563253605', '1'],
       ['4.313095976384615', '-1.644443262410993', '-1'],
       ['1.6576308271010662', '-0.01983912029503965', '1']], dtype='<U23')
```

In [9]:
```
import matplotlib.pyplot as plt

plt.scatter(5,5,color='red') #marker
plt.scatter(-5,-5,color='red') #marker

for n in range (1,PunktAntal):  #prøve-plot
    if int(arr[n][2])==-1:
        c = 'red'
```

```
    else:
        c = 'blue'
    plt.scatter(float(arr[n][0]),float(arr[n][1]),color=c)
plt.show()
```



In [ ]: