* **MODUL 9**

1. Download data penyakit Immunotherapy dari https://archive.ics.uci.edu/ml/machine-learning-databases/00428/ atau download dari classroom dengan nama file Immunotherapy.csv Lakukan tahapan-tahapan dalam menentukan klasifikasi untuk memprediksi dengan algoritma KNN.

* **Kode**

%matplotlib notebook

import numpy as np

import matplotlib.pyplot as plt

import pandas as pd

from sklearn.model\_selection import train\_test\_split

from sklearn.neighbors import KNeighborsClassifier

from sklearn import neighbors

from matplotlib.colors import ListedColormap, BoundaryNorm

import matplotlib.patches as mpatches

dataimmuno = pd.read\_excel("Documents/Tugas Kuliah/5P42/Data Science/Praktek/Immunotherapy.xlsx")

print(dataimmuno.shape)

dataimmuno.head(10)

dataimmuno.describe()

lookup\_immuno = dict(zip(dataimmuno.sex.unique(),dataimmuno.age.unique()))

print(lookup\_immuno)

X = dataimmuno[['age', 'Time', 'Number\_of\_Warts', 'Type', 'Area', 'induration\_diameter', 'Result\_of\_Treatment']]

y = dataimmuno['sex']

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size = 0.2, random\_state=0)

print('X\_train = ', X\_train.shape)

print('X\_test = ', X\_test.shape)

print('y\_train = ', y\_train.shape)

print('y\_test = ', y\_test.shape)

X\_train.head()

y\_train.head()

KNN = KNeighborsClassifier(n\_neighbors = 5)

KNN.fit(X\_train, y\_train)

KNN.score(X\_test, y\_test)

immuno\_range = range(1,20)

scores = []

for immuno in immuno\_range:

KNN = KNeighborsClassifier(n\_neighbors = immuno)

KNN.fit(X\_train, y\_train)

scores.append(KNN.score(X\_test, y\_test))

plt.figure()

plt.xlabel('immuno')

plt.ylabel('accuracy')

plt.scatter(immuno\_range, scores)

plt.xticks([0,5,10,15,20])

* **Hasil**







