

%%%%%%%%%%%% Nerual Network Modelling %%%%%%%%%%%%%

clear all;

close all;

clc;

% reading data from excell file

data=xlsread('train.xlsx');

temperature=data(:,1);

pressure=data(:,2);

flowrate=data(:,3);

extract yield=data(:,4);

input=[temperature pressure flowrate]';

output=[extract yield]';

%*****%Creating the network%*****%

%rp scg cgb cgp oss cgf m bfg gdx

net=newff(minmax(input),[7,1],{'tansig','purelin'},'trainlm');

net.trainParam.show = 50;

net.trainParam.epochs = 1000;

net.trainParam.min_grad=10e-20;

net.trainParam.goal = 1e-30;

[net,tr]=train(net,input,output);

y = sim(net,input);

e = output-y;

perf = mse(e)

%b m and r, correspond to the slope and the y-intercept of the best linear

[m,b,r] = postreg(y,output)

datageneral=xlsread('validation.xlsx');

temperature1=data(:,1);

pressure1=data(:,2);

flowrate1=data(:,3);

extract yield1=data(:,4);

%%%%%%%%%%%%

input1=[temperature1 pressure1 flowrate1]';

output1=[extract yield1]';

%%%%%%%%%%%%

```
y1 = sim(net,input1);  
e1 = output1-y1;  
perf1 = mse(e1)  
figure  
[m1,b1,r1] = postreg(y1,output1)
```