Q2. Use of sigmoid function on solving XOR function in neural network.

import java.util.Scanner;

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\* Created by linuxsagar on 7/8/15.

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public class NeuralSigmoid {

public static void main(String[] args) {

int[] weights = {1,1,1,1};

double[] h1 = new double[3]; //hidden input 1

double[] h2 = new double[3]; //hidden input 2

double[] oP = new double[4]; //output array

Scanner inpScanner = new Scanner(System.in);

int[] inp1 = new int[4];

int[] inp2 = new int[4];

System.out.println("Enter input1");

for (int i = 0; i < 4; i++) {

inp1[i] = inpScanner.nextInt();

}

System.out.println("Enter input2");

for (int i = 0; i < 4; i++) {

inp2[i] = inpScanner.nextInt();

}

for (int i = 0; i < 3; i++) {

double temp = 1/(1+Math.exp(-(i-0.5)));

h1[i] = temp;

}

for (int i = 0; i < 3; i++) {

double temp = 1/(1+Math.exp(-(i-1.5)));

h2[i] = temp;

}

double oP1 = Math.abs(h2[0]-h1[0]);

double oP2 = Math.abs(h2[1]-h1[1]);

double t1Output = 1/(1+Math.exp(-(oP1-0.2)));

double t2Output = 1/(1+Math.exp(-(oP2-0.2)));

for (int i = 0; i < 4; i++) {

if(i==0){

oP[i]=t1Output;

}

if(i==1){

oP[i]=t2Output;

}

if(i==2){

oP[i]=t2Output;

}

if(i==3){

oP[i]=t1Output;

}

}

//Assuming that “0.5’ and below are considered as ‘0’ and above as ‘1’

System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*OUTPUT\*\*\*\*\*\*\*\*\*\*\*\*");

for (int i = 0; i < oP.length; i++) {

if (oP[i]>0.5){

System.out.println(1);

}

else {

System.out.println(0);

}

}

}

}