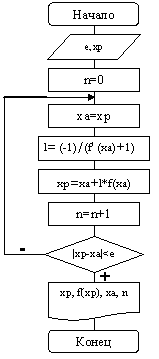
БЛОК-СХЕМА МЕТОДА ПРОСТЫХ ИТЕРАЦИЙ

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КОД ПРОГРАМИ МЕТОДА ПРОСТИХ ІТЕРАЦІЙ

import java.util.Locale;  
import java.util.Scanner;  
  
public class Solution {  
 public static void main(String[] args) throws InterruptedException {  
 double P[];  
 double Array[][];  
 Array = new double[5][5];  
 Scanner scanner = new Scanner(System.in);  
 scanner.useLocale(new Locale("Russian"));  
 //Ввод массива Array[i][j]  
 for (int i = 1; i <= 4; i++) {  
 for (int j = 1; j <= 4; j++) {  
 System.out.println("Array["+i+"]["+j+"]=");  
 Array[i][j] = scanner.nextDouble();  
 }  
 }  
 //----------------------------------------------  
 for (int i = 1; i <= 4; i++) {  
 for (int j = 1; j <= 4; j++) {  
 System.out.print("\t" + Array[i][j]);  
 }  
 System.out.println("\n");  
 }  
 //----------------------------------------------  
 float D[];  
 D = new float[5];  
 for (int i = 1;i <= 4;i++){  
 System.out.println("D["+i+"]=");  
 D[i] = scanner.nextFloat();  
 }  
 double eps[];  
 eps = new double[4];  
 for (int i = 0;i <= 3;i++){  
 eps[i] = scanner.nextDouble();  
 }  
 float s = 0; int k =0;  
 int q = 0;  
 P = new double[4];  
 do{ q++; eps[0] = P[0]; eps[1] = P[1];  
 eps[2] = P[2];  
 eps[3] = P[3];  
 for(int i = 0; i <= 3;i++){  
 s = 0; k = 0;  
 for (int j = 0; j < 2; j++){  
 if ((i == j)&&(k < 2)) k++; s = (float) (s + Array[i][j] \* eps[k]);  
 if (k<2) k++; } P[i] = s +D[i]; } } while((Math.abs(P[0]-eps[0])>0.001)||(Math.abs(P[1]-eps[1])>0.001)||(Math.abs(P[2]-eps[2])>0.001)&&(Math.abs(P[3]-eps[3])<0.001));  
 for (int i = 0; i < 4; i++)  
 System.out.println(eps[i]);  
 System.out.println(q + "Iteration");  
 System.out.wait(); }}

РІШЕННЯ СИСТЕМИ ЗА ДОПОМОГОЮ ПРОГРАМИ

Система:

-0.87 + 0.27 + 0.22 – 0.18 = -1.21

-0.21 – 1.0 – 0.45 + 0.18 = 0.33

0.12 + 0.13 – 1.33 + 0.18 = 0.48

0.33 – 0.05 + 0.06 – 1.28 = 0.17

7 Iteration

X1 = 1.277

X2 = -0.444

X3 = -0.262

X4 = 0.202