

Program is written in Java.

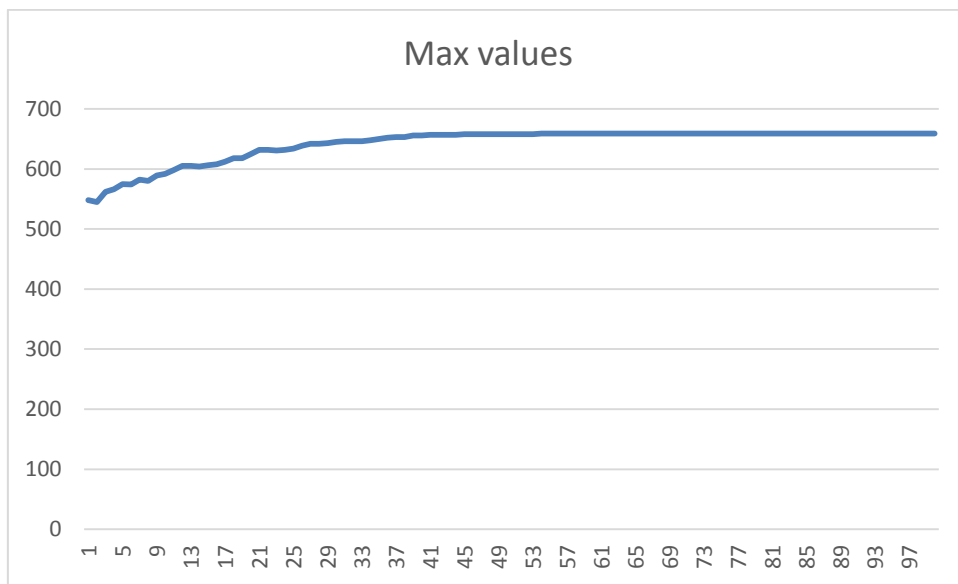
```
import java.util.*;
import java.io.*;
public class Main {
    public final static int chromos = 100;
    public final static int gens = 1000;
    public static void makeChilds(int[][] mas) {
        int[][] newGeneration = new int[chromos][gens];
        int[][] mas_2 = new int[1][gens];
        int[][] mas_1 = new int[1][gens];
        Random random = new Random();
        int parent1 = random.nextInt(chromos/2);    //индекс особи
        int parent2 = random.nextInt(chromos/2);
        int cut = random.nextInt(gens + 1); // место разреза для обмена
        System.out.println(parent1);
        System.out.println(parent2);
        System.out.println(cut);
        for (int i = 0; i < 1; i++) {
            for (int j = 0; j <= cut; j++) {
                mas_1[i][j] = mas[parent1][j] ;
            }
            for (int j = cut; j < gens; j++) {
                mas_1[i][j] = mas[parent2][j] ;
            }
        }
        for (int i = 0; i < 1; i++)
        {
            for (int j = 0; j <= cut; j++)
            {
                mas_2[i][j] = mas[parent2][j] ;
            }
            for (int j = cut; j < gens; j++) {
                mas_2[i][j] = mas[parent1][j] ;
            }
        }

        for (int i = 0; i < 1; i++) {
            for (int j = 0; j < gens ; j++) {
                mas_1[i][j]=newGeneration[i][j];
            }
        }
        for (int i = 0; i < 1; i++) {
            for (int j = 0; j < gens ; j++) {
                mas_2[i][j]=newGeneration[i][j];
            }
        }
        for (int i = 0; i < chromos; i++) {
            for (int j = 0; j < gens; j++) {
                System.out.print(newGeneration[i][j]);
            }
            System.out.println();
        }
    }
}
```

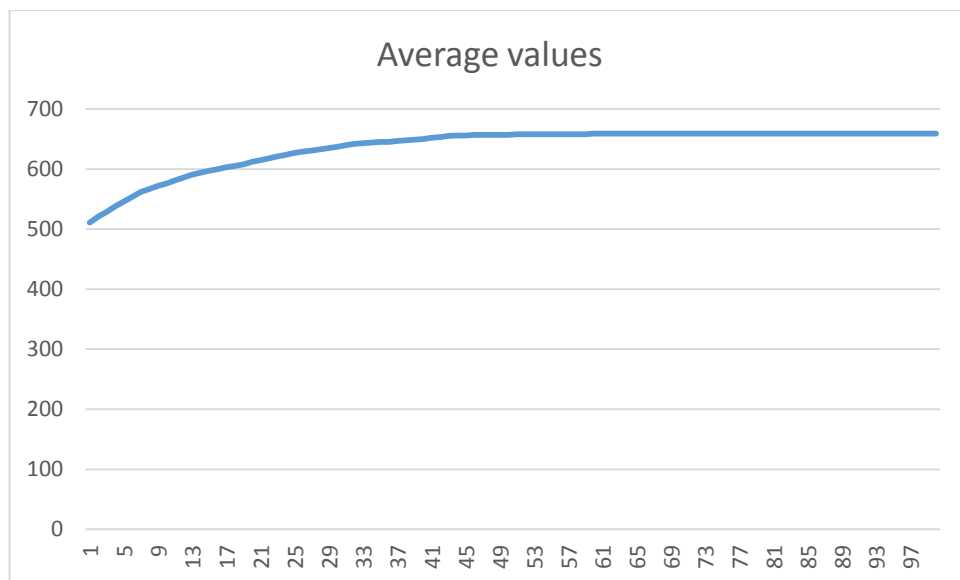
```

    }
    public static int[][] sort(int[][] mas ) { //запустить
сортировку!!!
        int[][] best_parents = new int[chromos / 2][gens];
        int ones = 0;
        int[] parents = new int[100];
        for (int i = 0; i < 100; i++) {
            for (int j = 0; j < 1000; j++) {
                ones += mas[i][j];
            }
            parents[i] = ones;
            ones = 0;
        }
        int average;
        int sum = 0;
        for (int j = 0; j < parents.length; j++) {
            sum += parents[j];
        }
        average = sum / parents.length;
        System.out.println(average);
        return best_parents;
    }
    public static void main(String[] args) {
        int[][] generation = new int[chromos][gens];
        Random random = new Random();
        for (int i = 0; i < generation.length; i++) {
            for (int j = 0; j < gens; j++) {
                generation[i][j] = random.nextInt(2);
            }
        }
        int ones = 0;
        int[] parents = new int[gens];
        for (int i = 0; i < chromos; i++) {
            for (int j = 0; j < gens; j++) {
                ones += generation[i][j];
            }
            parents[i] = ones;
            ones = 0;
        }
        int average;
        int sum = 0;
        for (int j = 0; j < parents.length; j++) {
            sum += parents[j];
        }
        average = sum / parents.length;
        for(int i=0;i<1;i++){
            sort(generation);
            makeChilds(generation);
        }
    }
}

```



X-line contains iteration(number of generation). In Y-line we have value of max sum of best genes in chromosomes.



X-line contains iteration(number of generation). In Y-line we have value of average sum of genes in chromosomes.