

4-matveychuk alexander

```
package siit_4;
import java.util.Random;
/**
 *
 * @author Andrey
 */
public class SiiT_4 {
    public static void main(String[] args) {
        int[] price = new int [20];
        double[] V = new double [20];
        int [] fitness=new int [40];
        int[][] generation=new int[40][20];
        int[][] next_generation=new int[40][20];
        Random rnd=new Random();
        for(int j=0;j<20;j++){
            price [j]=(rnd.nextInt(100)); //max price < 100
        }
        for(int j=0;j<20;j++){
            V[j]=(1.0*(rnd.nextInt(9))/10)+0.1; // max V<1
        }
        double sumka=0;

        for(int i=0;i<40;i++){
            sumka=1000;
            while(sumka>100){
                for(int j=0;j<20;j++){
                    generation[i][j]=(rnd.nextInt(60));
                }
                sumka=0;
                for(int j=0;j<20;j++){
                    sumka+=V[j]*generation[i][j];
                }
                // System.out.println(sumka);
            }
            System.out.println("----");
        }
        /*for(int i=0;i<40;i++){
            for(int j=0;j<20;j++){
                System.out.print(generation[i][j]+" ");
            }
            System.out.println();
        }*/
        for(int i=0;i<20;i++){
            fitness(price,generation,fitness,i);
        }
        sort(fitness,generation);
        for(int j=0;j<20;j++){
            System.out.println(fitness[j]+" ");
        }
    }

    public static void fitness(int[] price,int[][] generation,int[] fitness,int number){
        for(int i=0;i<20;i++){
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        fitness[number]+=price[i]*generation[number][i];
    }
}
public static void sort(int[] fitness,int[][] generation){
    for(int i=0;i<39;i++){
        for(int j=i+1;j<40;j++){
            if (fitness[j]>fitness[i]){
                int temp=fitness[i];
                fitness[i]=fitness[j];
                fitness[j]=temp;
                int temps[]=generation[i];
                generation[i] = generation[j];
                generation[j] = temps;
            }
        }
    }
}
public static void make_new_gen(int[][] generation,int[][] next_generation){
    Random rnd= new Random();
    for(int i=0;i<40;i++){
        int nump1=rnd.nextInt(20);
        int nump2=rnd.nextInt(20);
        for(int f=0;f<20;f++){
            int orrr=rnd.nextInt(2);
            if(orrr==0)
                next_generation[i][f]=generation[nump1][f];
            else next_generation[i][f]=generation[nump2][f];
        }
    }
    int randomnumber=11;
    for(int k=0;k<40;k++){
        for(int j=0;j<20;j++){
            if(randomnumber==rnd.nextInt(21)){
                next_generation[k][j]=(rnd.nextInt(100));
            }
        }
    }
}
}

```