



Der Supercomputer als Teleskop - Die Sternenbewegung im Zeitraffer

Gymnasium Zitadelle
der Stadt Jülich



<http://www.nzz.ch/images/Platine/1.649406.jpg>



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Vorstellung des Projektteams

- **Betreuende Lehrpersonen:**

Frau Vomberg, Herr Antwerpen

- **Schülerteam:**

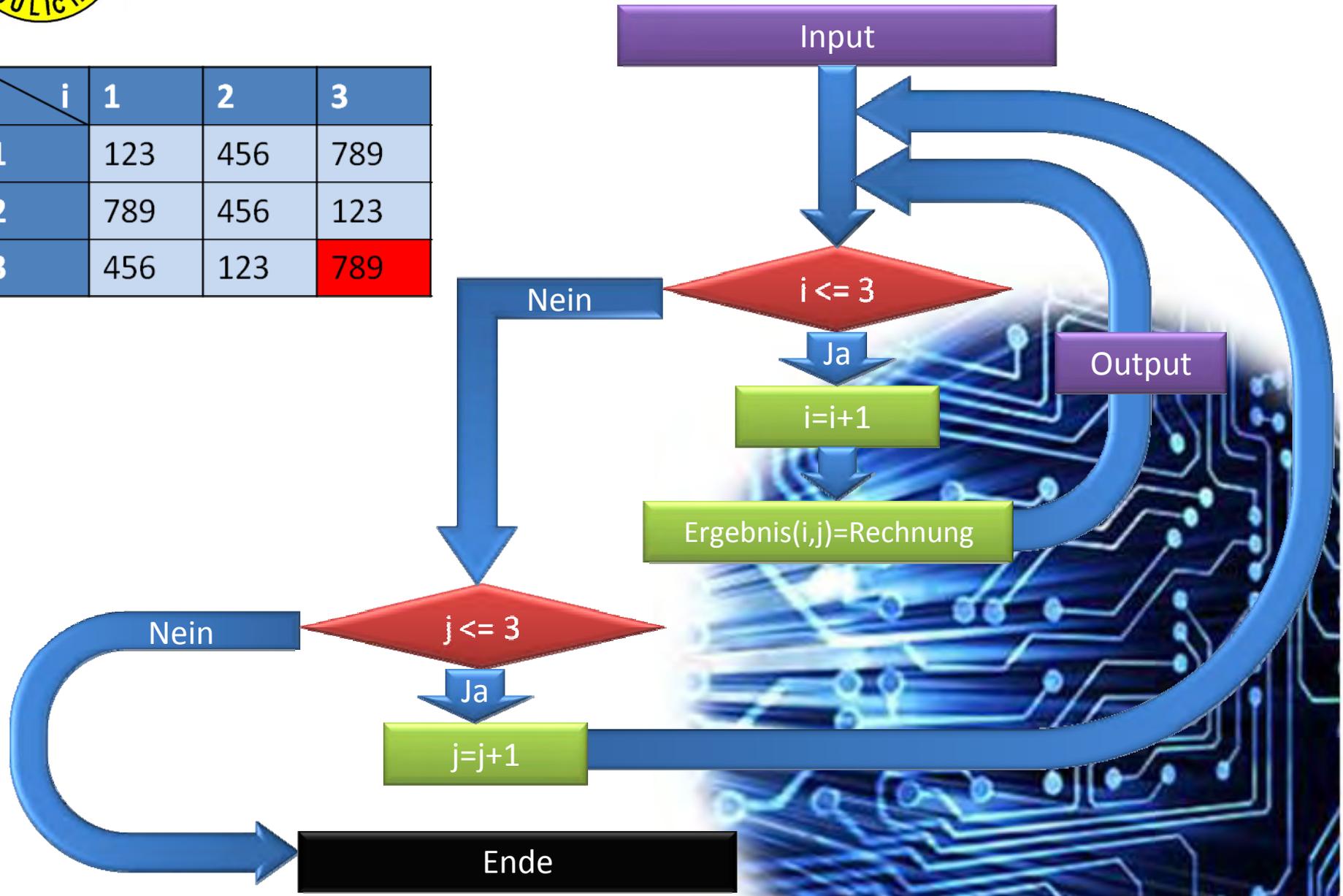
- Dennis Krug
- Georg Winkens
- Jan Attig
- Julia Lontzen
- Mirko Heidelberg
- Tobias Ogrzewalla





Vorstellung des Programms

j \ i	1	2	3
1	123	456	789
2	789	456	123
3	456	123	789





Kraftberechnung

```
NetBeans IDE 6.1
File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help
<default: config>
Projects: Test
Files:
Services:
Start Page Main.java Main.java
Main.java
* Main.java
*
* Created on 25. August 2008, 14:35
*
* To change this template, choose Tools | Template Manager
* and open the template in the editor.
*/

package stern;

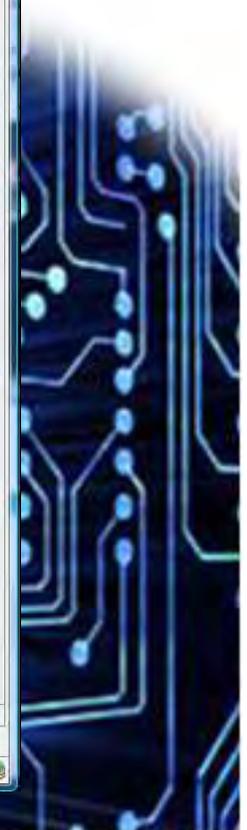
import java.io.*;
import java.lang.Math;

/**
 *
 * @author gymnasium.zitadelle
 */
public class Main {

    // Konstanten
    static final int n = 20000; //Wichtig
    static final double g = 1;

    // Eigenschaften
    static double[] xArray = new double[n];
    static double[] yArray = new double[n];
    static double[] zArray = new double[n];
    static double[] mArray = new double[n];
    static double[] rArray = new double[n];
    static double[] fxArray = new double[n];
    static double[] fyArray = new double[n];
    static double[] fzArray = new double[n];
    static double[] fxgesArray = new double[n];
    static double[] fygesArray = new double[n];
    static double[] fzgesArray = new double[n];

    /** Creates a new instance of Main */
    public Main() {
    }
}
```





Zeit-Integration

```
Test - NetBeans IDE 6.1
File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help
<default config>
Projects: Test
Files:
Services:
Start Page Main.java
/*
 * Main.java
 *
 * Created on 25. August 2008, 14:35
 *
 * To change this template, choose Tools | Template Manager
 * and open the template in the editor.
 */

package Geschwindigkeit;

import java.io.*;
import java.lang.Math;
import java.text.NumberFormat;

/**
 *
 * @author gymnasium.zitadelle
 */
public class Main {

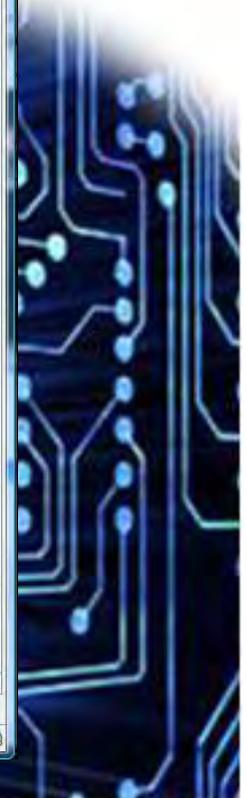
    // Konstanten
    static final int n = 20000; //Wichtig
    static final double dt = 0.01;
    static final double g = 1;

    // Eigenschaften
    static double[] xArray = new double[n];
    static double[] yArray = new double[n];
    static double[] zArray = new double[n];
    static double[] mArray = new double[n];
    static double[] vxArray = new double[n];
    static double[] vyArray = new double[n];
    static double[] vzArray = new double[n];

    static double[] rArray = new double[n];
    static double[] fxArray = new double[n];
    static double[] fyArray = new double[n];
    static double[] fzArray = new double[n];

    main(String[] args)
    save(String dateiname)
    axArray : double[]
    ayArray : double[]
    azArray : double[]
    dt : double
    fxArray : double[]
    fxgesArray : double[]
    fyArray : double[]
    fygesArray : double[]
    fzArray : double[]
    fzgesArray : double[]
    g : double
    mArray : double[]
    n : int
    rArray : double[]
    v2xArray : double[]
    v2yArray : double[]
    v2zArray : double[]

    Output
```





Persönliches Ergebnis

meine Kräftedaten		meine Zeitintegrationsdaten	
Benutzer	gymnasiumzitadelle	Benutzer	gymnasiumzitadelle
Schule	Gymnasium Zitadelle	Schule	Gymnasium Zitadelle
Teilnehmer	8	Teilnehmer	8

	Gesamt	Von mir berechneter	Anteil
Wechselwirkungen	11.562.200.258	1.414.227.233	12.23%
Zeitintegration	1.199.980	120.829	10.07%