



PRESS  
ANY KEY  
TO START

Computer Science AP | Multimedia Design AP

## 1. Semester interdisciplinary project



# GAME DESIGN

## Introduction

Welcome to your first interdisciplinary project! Working together in blended teams, 1<sup>st</sup> semester students from Computer Science and Multimedia Design will develop a 2D multilevel game application – as a [prototype](#). Focus is on game concept, in-game graphics, programming and a web-based distribution platform for your game (basic website with Java applet embedded).

The project concludes in an online presentation/documentation of your work. The project is evaluated as “passed/not passed” and is part of your *study points* program.

## Learning objectives

During the project period, you are supposed to learn about

- Working in interdisciplinary teams with role allocation (web designer, graphic designer, programmer etc.)
- Creating documentation for your design (high concept statement, uml diagram etc.).
- Computer Science students: Basic game programming with Java using Greenfoot, creating Java applets from your source files
- Multimedia Design students: Graphic design with Photoshop, web design and layout (HTML/CSS)

## What is this supposed to mean?

You are going to work together in teams of 4 students: 2 students from Multimedia Design and 2 from Computer Science.

**The whole team** is supposed to

- develop the game concept/idea and to describe it in a professional game design document: a [high concept statement](#).

**Multimedia Design students** are acting as graphic designers and web designers. Your main tasks are

- providing the game’s graphics (backgrounds, actors and objects)
- presenting the project on a basic website. Embed the prototype on the front page and design 2 subpages displaying your high concept statement and concept art.

**Computer Science students** are the game programmers. Based on the concept, they will take care of

- programming the game as a Java application in Greenfoot
- publishing the prototype as a \*.jar (Java archive) file ready to be embedded into the website.

### What exactly are you supposed to deliver?

1. The prototype of your game as \*.jar (Java archive) file., embedded into a webpage for online review.
2. A website consisting of 3 pages: The **front page** displaying the game application, a **page with your high concept statement** and a **concept art page** showing the artwork you developed together with brief explanations.

A sample of a complete project page + game applet can be reviewed at:

<http://marckluge.bplaced.net/tutorials/greenfoot/index.html> **Note:** See the appendix for adjusting your Java security settings!

### Technical requirements

The **prototype** has to be published as a \*.jar (Java archive) file and must be distributed online via a webpage.

#### The features in 3 steps:

**First step:** You must create a game that can be played with the characters and environment of your own design. It must contain at least 2 levels with different or progressing challenges.

**Second step:** You must create a second level to your game. This level can reuse some elements, but should as a minimum have 1 or 2 new or additional features.

**Third step:** This step is optional and should only be made if you have extra time after fully completing step 1 and 2. In the third step you should develop game statistics in a way that users can compete with a list of high scores. This can be done writing to a text file (in the standalone version of the game).

**The website** has to be developed in valid HTML5/CSS3 (exception: you can use the obsolete applet tag), tested with recent versions of Firefox, Chrome and Internet Explorer. All pages must be linked and accessible from a global navigation. All images have to be web-optimized and published in appropriate file formats. **Group number and names of the group members need to be included in a disclaimer (footer)!**

#### Hand-in (06.10, deadline: 16:00)

Post the link to your website in a dedicated hand-in folder *Game design project* on **Fronter**. The hand-in folders are going to be created during the project period. You are supposed to hand-in as a group, MUL/DAT team members have to post separately in their own Fronter rooms – as documentation for active participation. Afterwards, we will publish a public list with all links and projects!

#### Project timeline week 40/41

<b>29.09.</b> 08:30 – 10:00 MUL int, CS int 10:30 – 12:00 MUL B, DAT B 12:30 – 14:00 MUL A, DAT A	<b>Project Start</b>	Project brief, short introduction to game design, teambuilding. Working on the game concept. <i>Note: MUL B/DAT B are meeting 08:30 as scheduled.</i>
<b>30.09</b> 08:30 – 16:00 all classes	<b>Project Day</b>	Start developing prototype, graphics and webpage. The groups are responsible for time management and workflow.
<b>01.10</b>	<b>Lectures</b>	Lessons on project related topics or general guidance.

08:30 – 16:00 all classes	as scheduled	Possibility to discuss project related problems in class. Self-dependent project work after classes.
<b>02.10</b> 08:30 – 16:00 all classes	<b>Lectures</b> as scheduled	Lessons on project related topics or general guidance. Possibility to discuss project related problems in class. Self-dependent project work after classes.
<b>03.10</b> 08:30 – 16:00 all classes	<b>Lectures</b> as scheduled	Lessons on project related topics or general guidance. Possibility to discuss project related problems in class.
<b>06.10</b> <b>Deadline: 16:00</b>	<b>Hand-in</b>	Submit the link to your online project on <b> Fronter </b> (hand-in folder <i>Game design project</i> ), separately as MUL or DAT team-members.

Happy coding!

Marc Kluge, Thomas Hartmann  
Lecturers Computer Science | Multimedia Design

## APPENDIX

### Literature and links

*The* introduction to game design:

Ernest Adams, *Fundamentals of Game Design* (3rd Edition), New Riders 2013, ISBN-13: 978-0321929679  
ISBN-10: 0321929675.

High concept statement:

<https://fenix.tecnico.ulisboa.pt/downloadFile/3779576270494/HighConceptTemplate-Inl4.pdf> - excerpt from Ernest Adams's book (PDF).

<http://ilagame100.blogspot.dk/2011/02/game-idea-high-concept-statement.html> - a template.

Creating web graphics with Adobe Photoshop CC:

<https://helpx.adobe.com/photoshop/how-to/generate-web-graphics-automatically.html>

Creating a basic web page with Adobe Dreamweaver CC:

<https://helpx.adobe.com/dreamweaver/how-to/make-style-web-page.html>

Video tutorials on Greenfoot (Collision detection, loops, timers, text, animation, score, mouse input):

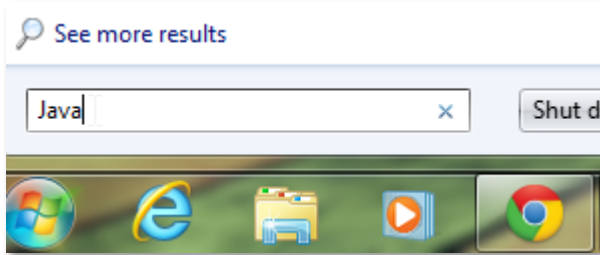
<https://www.youtube.com/user/18km/videos>

<https://www.youtube.com/watch?v=NcGe141R2yA> (from the Greenfoot developer himself)

## How to adjust your Java security settings for reviewing the online project template

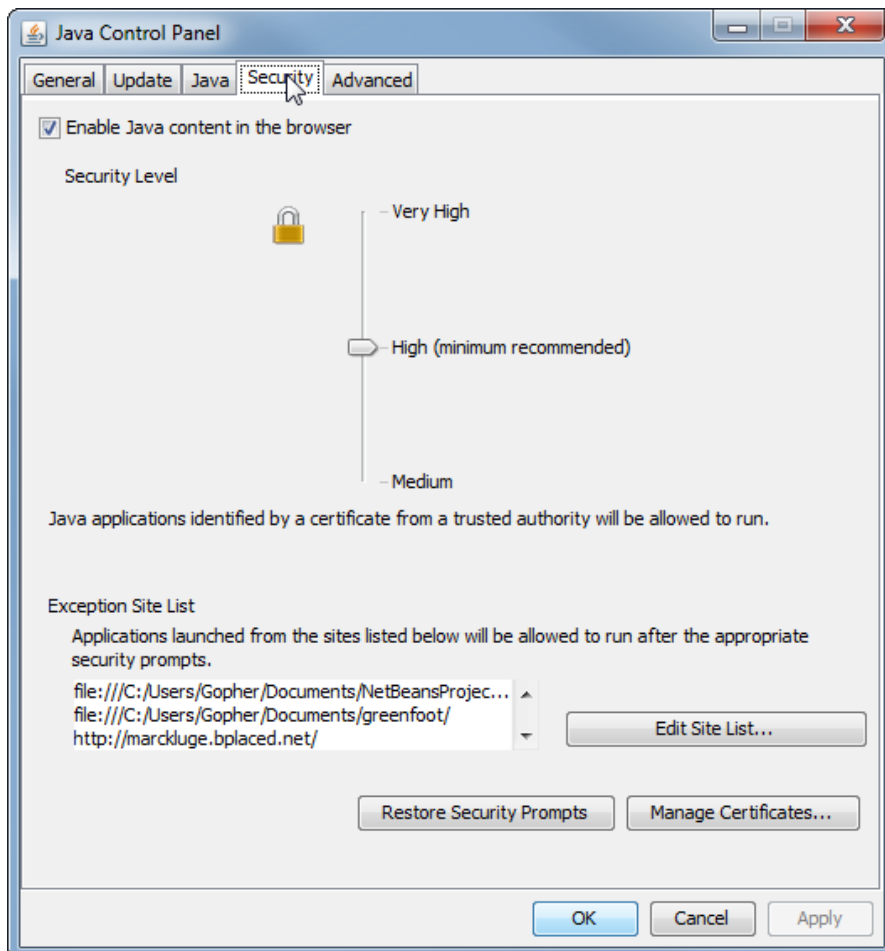
If your browser is blocking Java applets for the domain <http://marckluge.bplaced.net>, you need to adjust your Java security settings.

On a PC (XP-Windows7), type “Java” in the search box above the Start button. On a Windows 8 PC, use the Search-icon from the dashboard.

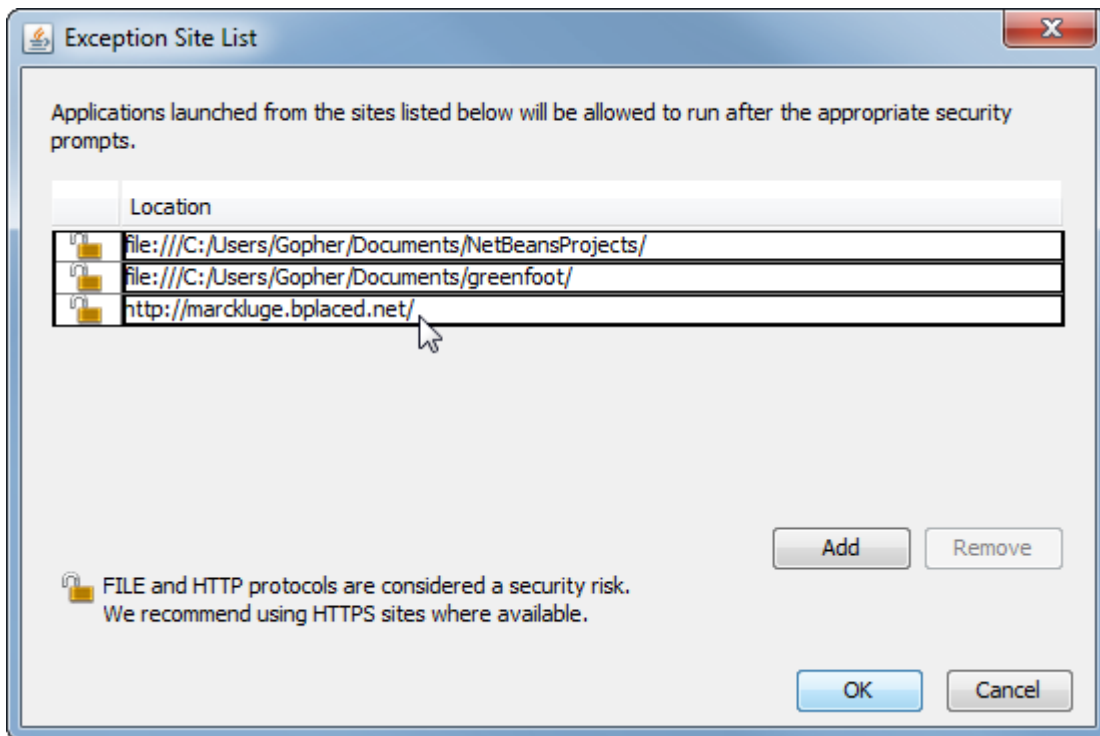


To launch the Java Control Panel on Mac OS X (10.7.3 and above): Click on Apple icon on upper left of screen. Go to System Preferences. Click on the Java icon to access the Java Control Panel. From the list with suggestions, choose: Configure Java. This will bring up the Java Control Panel.

Select the “Security” tab.

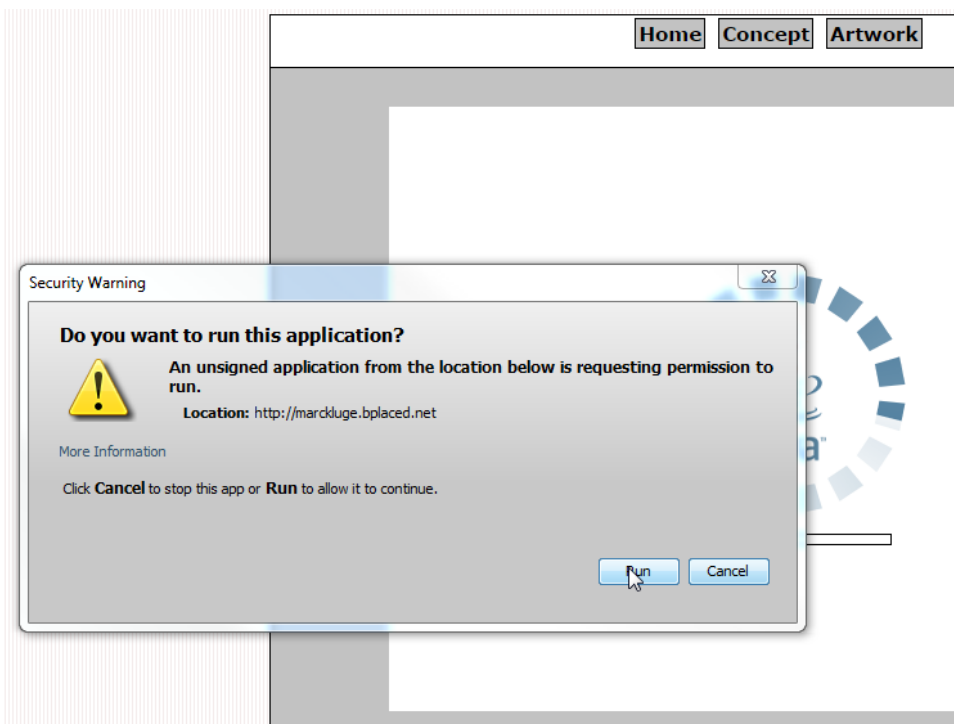


Check on “Enable Java content in the browser” and edit the “Exception Site List” by clicking “Edit Site List”.



**Add** an exception for the domain `http://marckluge.bplaced.net/` - **important**: don't forget the protocol `http://`  
Press **OK**.

On the website itself, confirm to run the applet.



Press run, you're done (oh, that rhymes....)!

Home Concept Artwork

www.greenfoot.org | For license information see: [www.greenfoot.org/about/license.html](http://www.greenfoot.org/about/license.html)'." data-bbox="165 158 835 525"/>

Score: 0

Reset Run

Run the simulation.

Instructions: Press "Run". Move the lobster with the arrow keys on your keyboard, catch all starfishes.

Educational project @ Marc Kluge  
Made with Greenfoot - [www.greenfoot.org](http://www.greenfoot.org) | For license information see: [www.greenfoot.org/about/license.html](http://www.greenfoot.org/about/license.html)