



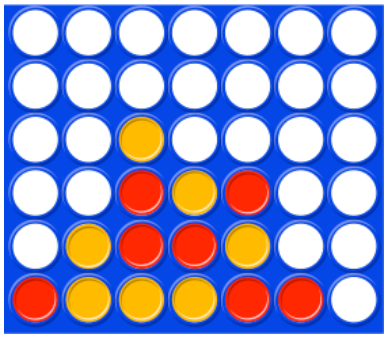
# Connect4

Written for : BadGames, Inc
Written by : Marc Chevaldonné, IUT Informatique, Université d'Auvergne Clermont1

November the 24th of 2008
Book of specifications version 1.1

# 1. Introduction

## 1.1. Context



This book of specifications has been written for students of the second year of “Génie Informatique” of the IUT Informatique in the University d’Auvergne. Its goal is to be used as a simulation of a real case for a project. In this context, this book of specifications describes the software the students will developp.

Connect4 is a simple player vs. player strategy and combinatory game, in which the players take turns in dropping alternating colored discs into a seven-column, six-row vertically-suspended grid. The object of the game is to connect four singly-colored discs in a row -- vertically, horizontally, or diagonally -- before your opponent can do likewise.

## 1.2. Glossary

Connect4 is also known as Puissance4 in french.

# 2. User requirements

## 2.1. Goals

The main goal consists in developing a software application allowing playing to Connect4. The application will not be sold. It should verify the following main functional requirements :

- to display the vertical board with the different discs of the two players inside
- to allow two players to play together and to display the winner
- to run on a PC computer with keyboard and mouse
- to allow one or two of the players to be computer players (with Artificial Intelligence inside).

## 2.2. Result

The result should be one exe program (with some library dll). This means that it should not need any compiler to be executed. The program should run under Windows 2000 at least.

## 2.3. Functional Requirements

The software should allow doing these functional actions :

- F 1 : to prepare the two players before starting the game
  - F1.1 : to choose the type of the players among the following types : human, articial intelligence, random
  - F1.2 : to modify the name of the player and the colour of the discs to use
  - F1.3 : to indicate which player will begin to play
- F 2 : to start the game
- F 3 : during the game, to check if
  - F 3.1 : one player has won
  - F 3.2 : the game is even (no more possibilities and no winner)

- F 4 : at the end of the game,
  - F 4.1 : to save (in an XML file) and to display the score between these two players
  - F 4.2 : to propose a new game
- F 5 : to quit the application.

### 2.4. Acceptability and reception criteria

The software shall verify the funcitonal requirements above and run under Windows 2000. It shall be an exe file with some library dll in the same folder. No required dll should be asked to the client. The scores between players should be automatically saved in an XML file in the same folder. The source code shall not be delivered to the client.

## 3. Agenda

### 3.1. Plannig

| Principal phases | Responsable | Date |
|---|---|---|
| writing of the book of specifications | Marc Chevaldonné | 18/11/2008 |
| writing of functional and technical specifications and requirements | Marc Chevaldonné and GI students | 24/11/2008 |
| core application development and test under console application, for human and random players | GI students | 28/11/2008 |
| test and validation | Marc Chevaldonné | 01/12/2008 |
| graphical user interface development | GI students | 12/12/2008 |
| test and validation | Marc Chevaldonné | 15/12/2008 |
| saving scores, enhancements and final version | GI students | 09/01/2009 |
| test and validation | Marc Chevaldonné | 12/01/2009 |
| Artificial Intelligence Player development | GI students | february and march 2009 |

### 3.2. Ressources

Human ressources are GI students and professors. GI students can ask the professor whenever they want and work in groupe.

Material ressources are Visual Studio 2005 and particularly VisualC# that can be used in different free access rooms (B10, A10) and the IUT Clermont1 in Aubière.