The KJumpingCube Handbook

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Abstract

This documentation describes the game of KJumpingCube version 2.1

Chapter 1

Introduction

GAMETYPE:
Strategy, Dice

NUMBER OF POSSIBLE PLAYERS:
Two

KJumpingCube is a simple tactical game. You can play it against the computer or a friend - or you can set up a game between two computer players and just watch.

That can be a good idea if you have not played KJumpingCube before. See Frequently asked questions, 'How do I get started in this game?'.

The playing area is a box of cubes containing points. When the game starts each cube has one point, no owner and a neutral color. If you click on a neutral cube it becomes yours, changes to your color and increases by one point. Your objective is to capture all the cubes, but now it is your opponent's turn.

Players move and add points by clicking on neutral cubes or their own cubes.

The only way to capture your opponent's cubes is to increase a cube's value until it reaches a maximum and expands into neighboring cubes. Then those cubes become yours, even if they belonged to your opponent before.

Sometimes a neighbor will also reach a maximum value and expand and a cascade of moves will spread across the board. Large numbers of cubes can suddenly change hands and this is where KJumpingCube becomes interesting and challenging.

Chapter 2

How to Play

> OBJECTIVE:
> Take over all the cubes on the game board.

KJumpingCube loads directly into game mode, so you can start playing right away. If Player 1 is a computer player, you must click to get started.

If you have not played KJumpingCube before, try watching a game or two where the computer plays against itself. See Frequently asked questions, 'How do I get started in this game?'.

You move by clicking on a neutral cube or one you already own. If you click on a neutral cube, you gain ownership over it and the cube's color changes to your playing color. Each time you click on a cube, the value of the cube increases by one. If the cube's value reaches a maximum, some of its points move to the cube's immediate neighbors (the points 'jump' around). If a neighboring cube happens to be owned by the other player, it is captured, together with all of its points, and changes to your playing color.

> EXAMPLE:
> If a cube in the centre reaches five points, four of its points go to its four neighbors leaving the source cube with one point. It is possible to start a cascade of automatic moves if any of the neighbors cubes also reaches a maximum.

> NOTE:
> Large parts of the playing area can change hands very rapidly. You can use animation settings to help you follow what is happening then. See the Game Configuration section for more details.

The winner is the player who ends up owning all the cubes on the board.

Chapter 3

Game Rules, Strategies and Tips

3.1 Rules

1. A move consists of clicking on a cube that does not belong to your opponent.
2. The move increases the points in the cube by one.
3. At the start of the game, each cube has one point, is painted in a neutral color and has no owner.
4. Each player has a color to mark the ownership of cubes.
5. By clicking a cube that has no owner, the player becomes the owner of that cube and it changes its color to the player's color. Simultaneously the cube's value is increased by one.
6. If a cube has more points than it has neighbors, one point jumps to each of the neighbors.
7. During such a move, all the neighboring cubes become owned by the player who moved and so do all of their points, even if the neighbors were neutral or owned by the other player.
8. Neighbors are the cubes located above, below, at left or at right, but not diagonally. Corner cubes have two neighbors, edge cubes have three and center cubes have four.
9. If a move leaves a neighbor with a maximum number of points, the move continues automatically to the neighbor's neighbors and so on, in a cascade. A large number of cubes can change ownership during such a move.
10. The winner is the player who ends up owning all the cubes.
11. You can use settings to select board size, computer players, move animations and players' colors. Each computer player can have its own style and skill level. If not playing, it can provide hints to the corresponding human player. You can also pit one computer player against another and watch the outcome. See the Game Configuration section for more details.

3.2 Strategies and Tips

- It may help to set up a computer v. computer game and select the check boxes in the settings dialog that let you step through moves and animations at your own pace. See Frequently asked questions, 'How do I get started in this game?' and 'That was too fast for me, how can I slow it down?'.

- If you have a cube which is right next to an opponent's cube, try to stay ahead by increasing before your opponent does.
- If such a cube's points are less than or equal to the opponent's, try to avoid increasing: you cannot win that arms race.
- Look for opportunities to increase and capture, but beware of your opponent being able to reply by starting a cascade.
- Try to get control of the corner cubes first, then the edge cubes. You need fewer moves to make them reach a maximum and expand.
- Try not to play too close to your opponent, especially during the opening moves. Drop back a cube or two or pick a cube on the diagonal from your opponent.
- Keep an eye out for long chains of cubes that are almost at their maximum. If they are yours, you must guard them against cascading moves. If they are your opponent's, they can become ripe for capture by a cascading move, just as soon as they are close enough to your territory.

Chapter 4

Interface Overview

4.1 The Toolbar

4.1.1 The Stop/Start Button

This large button appears at the top left of the toolbar and is used to provide control over animations and computer moves, especially if the computer has the first move, is playing against itself or is taking too long to move. The button can also be used for stepping through a game or a move, to let beginning players view each step at their own pace. Check boxes in the settings dialog turn the step mode on or off (see the Game Configuration section for more details).

The button has three states:

Red
: It is possible to stop or interrupt a computer calculation, an animation or a computer v. computer game.

Green
: It is possible to start or continue a computer move, an animation or a computer v. computer game.

Blue
: The button is disabled and a human action is expected, such as making the next move.

In each case, the button contains some text to indicate what action can be done or is expected, such as **Stop animation** or **Your turn**.

If you stop the calculation of a computer move, the computer will pick the best move it has so far. If you interrupt an animation (e.g. a cascade that is taking too long), the move will proceed to its conclusion immediately.

4.1.2 Standard Toolbar Buttons

Settings
: A shortcut to enter the settings dialog and change playing conditions. See the Game Configuration section for more details.

New
: Start a new game.

Load...
Load a previously saved game.

Save
Save the current game.

Hint
Get a hint as to the best move to make next. The hint is calculated by computer player 1 or 2, depending on whether you are human player 1 or 2. See the Game Configuration section for more details.

Undo
Undo a previous move, repeatedly if required. Note: It is possible to undo the closing moves of a completed game and investigate alternative endings.

Redo
Redo a move that was undone, repeatedly if required.

4.2 Menu Items

4.2.1 The Game Menu

Game → New (Ctrl+N)
Start a new game.

Game → Load... (Ctrl+O)
Load a previously saved game.

Game → Save (Ctrl+S)
Save the current game.

Game → Save As...
Save the current game with a different name.

Game → Quit (Ctrl+Q)
Quit KJumpingCube.

4.2.2 The Move Menu

Move → Undo (Ctrl+Z)
Undo a previous move, repeatedly if required. Note: It is possible to undo the closing moves of a completed game and investigate alternative endings.

Move → Redo (Ctrl+Shift+Z)
Redo a move that was undone, repeatedly if required.

Move → Hint (H)
Get a hint as to the best move to make next. The hint is calculated by computer player 1 or 2, depending on whether you are human player 1 or 2. See the Game Configuration section for more details.

4.2.3 Other Menus

Additionally KJumpingCube has the common KDE **Settings** and **Help** menu items, for more information read the sections about the Settings Menu and Help Menu of the KDE Fundamentals.

Chapter 5

Frequently asked questions

1. *I want to change the way this game looks. Can I?*

   Currently you can only change the player's colors, but not the game theme. To change the player's colors use the Game Configuration dialog.

2. *How do I get started in this game?*

   The moves of KJumpingCube can be hard to follow at first. One way to learn is to watch games where the computer plays against itself. Use the Game Configuration dialog to set it up. Check both **Playing now** boxes, choose a board size in the range 3x3 to 5x5, set the animation to **Scatter dots** and the move-time to **Long**, then click **OK**. Now click the big green button in the toolbar to start the game.

3. *That was too fast for me, how can I slow it down?*

   Use the Game Configuration dialog again. Down at the bottom are two check boxes. Check one to pause the game between moves. Check the other to pause between steps of cascade moves that spread out over the board, especially near the end of the game. Back in the game, you can now use the big toolbar button (whenever it goes green), to trigger off each move or proceed step by step within a move, at whatever pace you choose.

4. *What does the big button in the toolbar do?*

   This button is used to stop something the computer is doing (red color), start or continue a computer action when you are ready (green color) or prompt you to do something, such as make a move (blue color, button disabled). For a full description see The Stop/Start Button.

5. *Can I use the keyboard to play the game?*

   No. KJumpingCube cannot be played using the keyboard.

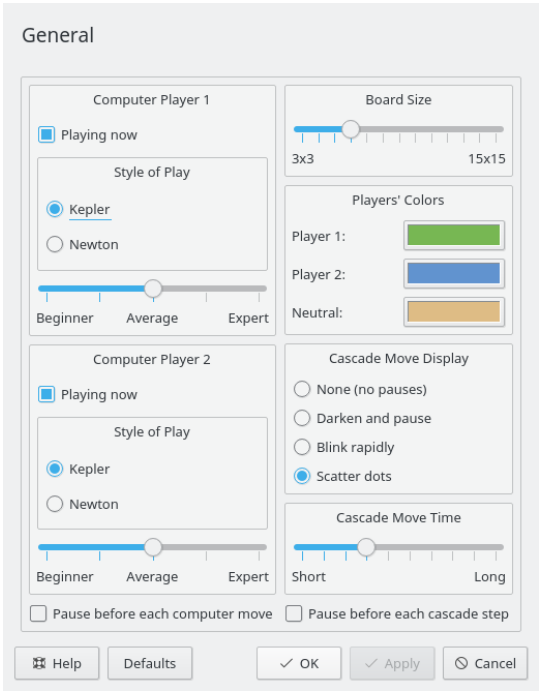
6. *Where are the high scores?*

   KJumpingCube does not have such a feature.

Chapter 6

Game Configuration

To open the configuration dialog use the **Settings** → **Configure KJumpingCube...** menu item, on Apple Mac OS X use the **KJumpingCube** → **Preferences** menu item, or you can use the **Settings** button in the toolbar.



The Cascade Move Display and Cascade Move Time panels control the optional animation display when a cube reaches its maximum and spills over into neighboring cubes, possibly starting an extended cascade of moves. It is easiest at first to use the 'Scatter dots' animation and a long move time. That is the best way to follow the progress of cascade moves. The two Pause check boxes let you step through animations and computer moves at your own pace.

The Computer Player 1 and 2 panels control the style and level of each computer player's play and whether that player should actually play or just provide hints to human player 1 or 2.

6.1 Details of Settings

Playing now

Sets Computer Player 1 or 2 to be actively playing or just assisting a human player with hints. Normally you would set the computer to play one player and you would play the other, but you can have two human players or two computer players and just watch. Player 1 always starts first.

Style of Play

Sets Computer Player 1 or 2 to play as Kepler or Newton. Kepler chooses moves by the same method as earlier versions of KJumpingCube. Newton uses a different method.

Computer Skill

Lets you choose a computer player's playing skill from a slider. This decides how clever the computer opponent will be.

You can choose any of five levels, ranging from **Beginner**, through **Average** to **Expert**.

Board Size

Lets you choose the size of the play area.

Use the slider to select a value between **3x3** cubes and **15x15** cubes. The range 5x5 to 9x9 is the most convenient. Below 5x5 it is very hard to beat the computer. Above 9x9 games can become rather long.

Players' Colors

Choose a color for each player and for the neutral cubes.

Cascade Move Display

Choose an animation style for when a cube reaches its maximum and expands into neighboring cubes, possibly starting a cascade of such moves and covering a large area of the board.

Use the radio buttons to select from **None (no pauses)**, where the whole move is displayed instantaneously; **Darken and pause**, where each overloaded cube darkens until it is time for it to expand; **Blink rapidly**, where each overloaded cube darkens at first and then blinks rapidly when it is time for it to expand and **Scatter dots**, where each overloaded cube darkens at first and then fires dots into neighboring cubes when it is time for it to expand.

Cascade Move Time

Use the slider to select from a range of times (**Short** to **Long**) to be spent on animations. The times depend a little on the type of animation, but can range from 0.15 seconds to 1.5 seconds for each stage of a cascade move.

Pause before each computer move

If this check box is selected, computer players will pause before they start a move, until you click to resume. This is to help you follow the action, especially if you are a new player or studying a computer versus computer game.

Pause before each cascade step

If this check box is selected, the animation of cascade moves will pause between steps, until you click to resume. This is to help you observe such a move as it spreads out over the board.

Chapter 7

Credits and License

KJumpingCube is Copyright 2012, 2013 Ian Wadham and Copyright 1998, 1999 Matthias Kiefer matthias.kiefer@gmx.de

KJumpingCube was inspired by a game that came out for the Commodore 64 and other early home computers. Unfortunately the original author's name is unknown.

In 2007, Ian Wadham took over maintenance of KJumpingCube for KDE 4 and Eugene Trounev painted the first SVG theme.

In 2012 and 2013, Ian developed versions 2.0 and 2.1 of KJumpingCube, adding the animation styles, allowing board sizes down to 3x3 or up to 15x15 and writing completely new artificial intelligence modules that offer more of a challenge to a human player. These versions calculate moves faster, add multi-level undo/redo (previously only one move), add a choice of two AI opponents and provide options for beginning players to step through animations and computer moves.

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Documentation updated for KDE 2 and 3 by Lauri Watts lauri@kde.org

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