Contents

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Programmed and documented by Michael Hodel
Please excuse my poor English

Instructions for the Enigma Puzzle

Welcome to the Enigma Puzzle – a game as difficult as the Rubik's cube. This puzzle was in-
vented by Douglas A. Engel and it consisted of two intersecting disks in a plastic holder. This
is an adaptation for computers running a windows OS (XP, Vista, Windows 7).

If you need help for installing the program, see later in this document (from page 11).

Overview

When you start the program by double-clicking the following **Enigma** desktop icon, you get
something like Figure 1.

The program fills the whole screen, as it was originally a game for a touch screen (kiosk
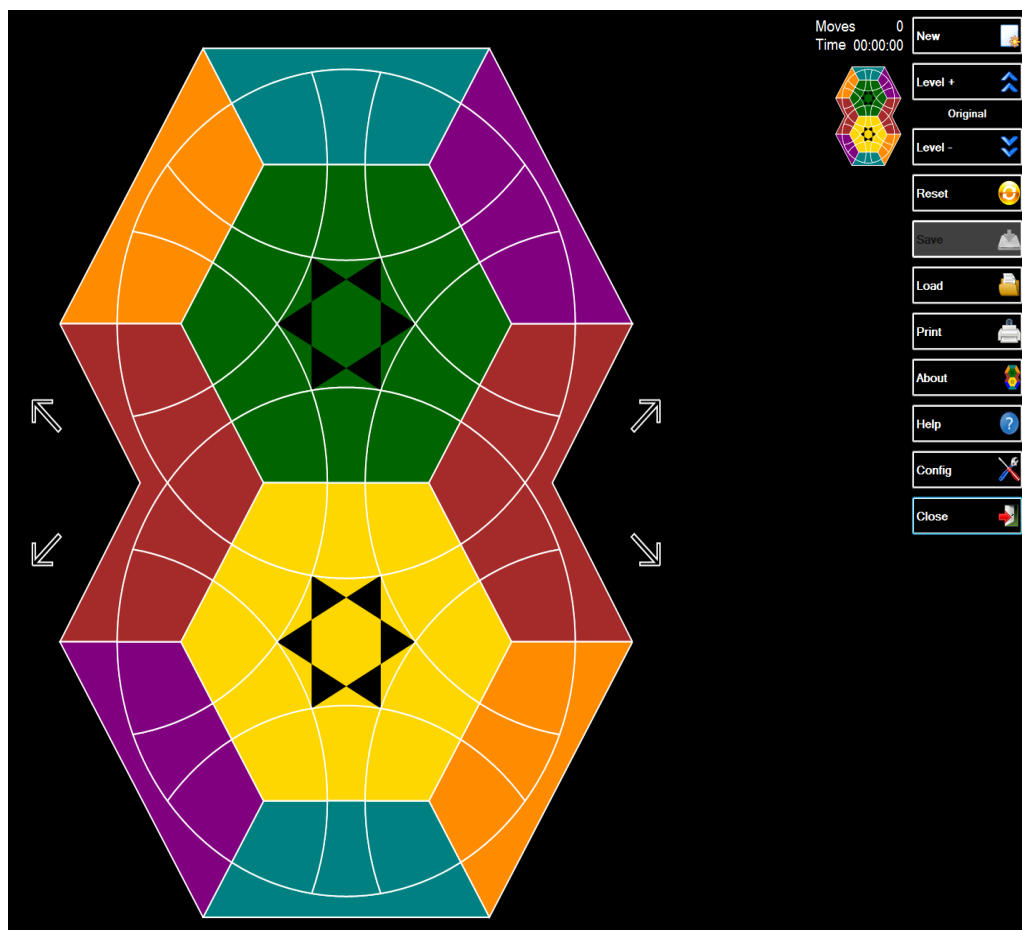mode). But this game can also be played with the mouse.

Figure 1: EnigmaGame

In the middle of the screen you see the actual playing area. It consists of two circular disks
that are intersecting each other. On each disk, there are six *stones* alternating with six *bones*.
The *stones* look like overweight triangles, the *bones* as malnourished rectangles.

Since the disks are intersecting, they share two stones and a bone. If a disk, let's say the up-
per one, is rotated by 60 degrees, then one stone and one bone that had previously also be-
longed to the lower disk are replaced by a new stone and new bone.

Right next to the playing area there are four buttons with little arrows on it. With these but-tons, the two disks may be rotated. ↗ means, for example, that the upper disk shall be ro-tated 60 degrees to the left (anticlockwise). More information is available in the next section.

On the right of the screen you will find a series of buttons with which the game can be con-trolled. The functions of the buttons are described in detail below (see page 5).

When you first start the game the level is set so that the playing area looks like the original puzzle by Douglas A. Engel (this is the second highest level). It is however recommended to start with simpler levels. Click on the button **level -** to reduce the game level. Just above the button, the current level is displayed (see also configuration from page 6). The active level is stored and during the subsequent launch of Enigma restored.

Right next to the buttons for the setting of the game level you will find the original configur-ation of the currently selected level. There you can see how the disks have to look to solve the puzzle.

Next to the **New** button you find the number of moves in the current game and the elapsed time. You may pause a running game by just closing the programm. The next time you start the game will be restored.

Game Concept

The game concept of Enigma is simple. The playing area consists, as mentioned, of two rotat-ing disks, which partly overlap. The disks are surrounded by a frame that takes of the shape and color of the adjacent disk component.

The two disks are broken into small sections (stones and bones), which can be colored differ-ently. The stones and bones are further subdivided. These parts can have different colors as well. The higher the level of the puzzle the more colors are used. At the beginner levels all the parts of the stones and the bones have only one color.

By alternating rotations of the two disks by multiples of 60 degrees in random directions the stones and bones mess up.

When you start a game (**New** button), the computer rotates the two disks randomly to the left or to the right so that the parts come to lie at other positions. How often the computer should turn and if the rotations are displayed can be specified in the configuration (see Con-figuration section on page 9). Goal of the game is of course to bring the disks back to the original positions by turning the disks. How you can rotate the disks is explained in the fol-lowing section. The frame is always fixed and sets the target position of the colors.

Turning the disks

The two disks in the playing area can be easily turned by clicking on one of the arrow but-tons. On a touchscreen a touch with your finger is enough. The buttons have the following meanings:

- ↗   rotate the upper disk 60 degrees to the left (anticlockwise)

- ↙   rotate the lower disk 60 degrees to the left (anticlockwise)

- ↖   rotate the upper disk 60 degrees to the right (clockwise)

- ↘   rotate the lower disk 60 degrees to the right (clockwise)

Turning with the mouse

The rotations can also be initiated with an intuitive mouse movements (or on a touch screen

with a finger gesture). This requires a mouse click on the appropriate disk and then a mouse move while holding the mouse button pressed. When you release the mouse button, the rotation is executed. With a touch screen you can do that with the finger. The program takes the starting point and the direction of the mouse movement to calculate the rotation. Try it out.

In the center of the playing area, where the disks overlap, everything above the center line of the playing area belongs to the upper disk and everything below that line to the lower disk.

Example

In Figure 2, the upper disk shall be rotated to the right (clockwise). To do this click with the mouse at the start of one of the red arrows and move the mouse to the end of the same arrow, there release the mouse button. It doesn't matter which of the arrows you use. Each of these movements results in a rotation to the right. If you will reverse the direction of the mouse movement, then the disk will turn to the left. The exact position of the clicks doesn't matter - only the vector of the movement must be correct.
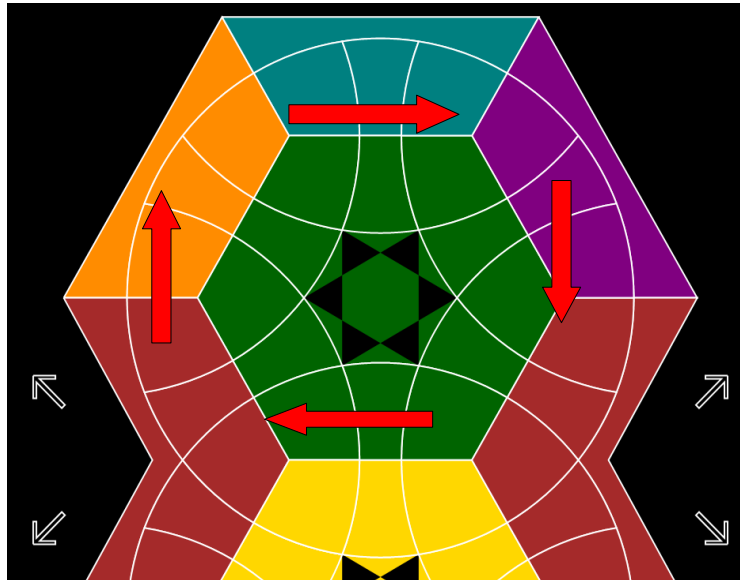
Figure 2: Turn a disk

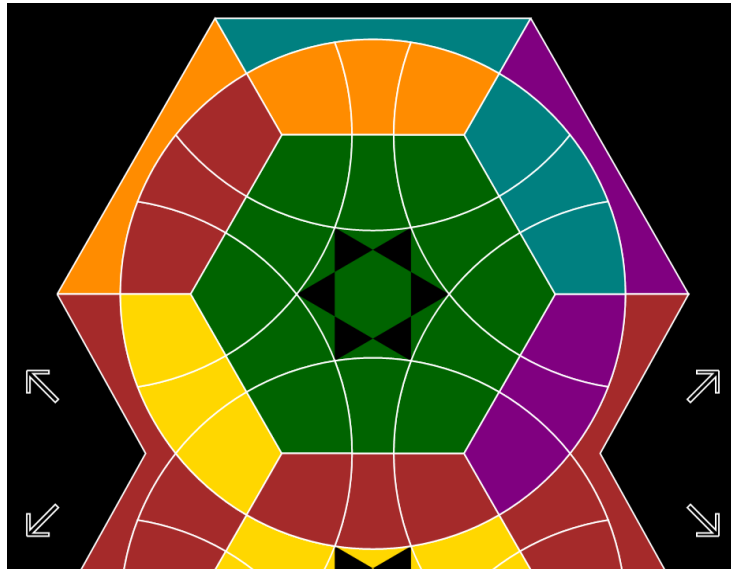After the above action, the disk looks like as in Figure 3.

Figure 3: Disk turned

In this way, both disks can be rotated in both directions. It just depends on where you start with the mouse movement and in which direction you move the mouse.

Button Functions

Here is a brief overview of the functioning of the buttons, that you can find on the right side of the program window.

This starts a new game. The disks are randomly rotated a few times. How many times the disks are rotated, and whether the rotations are displayed, you can set in the configuration dialog. Before turning the disks are brought into the starting position of the actual game level.

Brings the playing area back to the original state of the current game level.
A started game will be canceled.
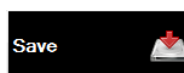
This feature allows you to save the current state of a game, so you can play later on. You get a **Save As** dialog and you can specify a file name for the current score. The file type must be set to **Enigma**.
You can also save just the image as a JPEG file. Then select the **Save As** dialog with the file type (Image).

This loads a saved game. You'll get a **File Open** dialog where you can select the file with the saved game.
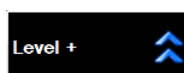
This increases the difficulty of the playing area. The playing area is brought into the starting position of the level.
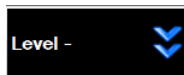
This reduces the difficulty of the playing area. The playing area is brought into the starting position of the level.
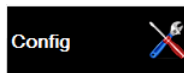
With this button you can print out the playing area. It prints only the actual playing area on one sheet. The print uses the default printer.
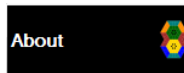
A small dialog is started which provides some information about the program.

Here you find the instructions to the program. It appears this instructions as a PDF document. This of course only works if a PDF viewer is installed.

Clicking on this button launches the configuration dialog. More information can be found below in the section configuration.

Quits the program.

Game levels

Level Buttons **Level +** and **Level -** are used to determine the current level of the puzzle. You can choose one of the levels from the list below. The name of the current level is displayed in a text box between the two buttons and the picture of the original layout is shown left to the buttons.
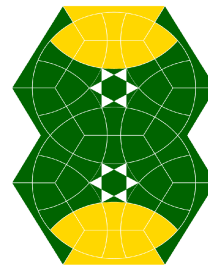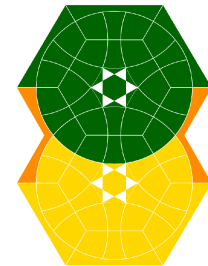
Baby
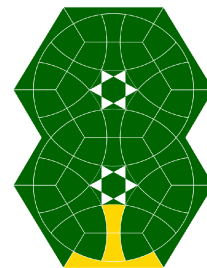
Pupil

Here it can happen that the solution set is broken up when turning the disks. But it is still easy to find the solution.
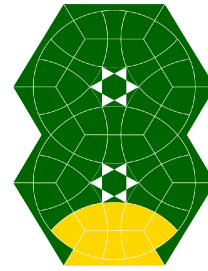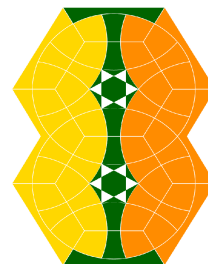
Beginner

Here, only two blocks have to be put back correctly. However, still easy to come to an end.

Novice

There may be a right mess. But there are only two colors, and the stones and bones are colored uniform.
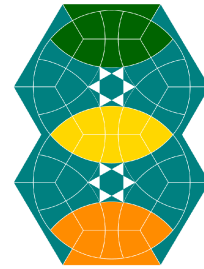
Amateur

One more color and therefore somewhat more difficult than the novice level.
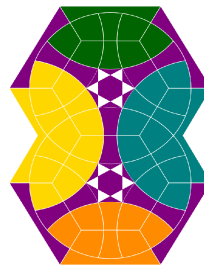
Challenger

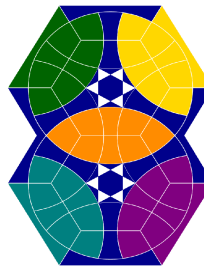And one more color. But still monochrome bones and stones.

Advanced

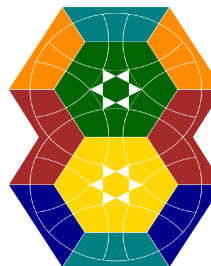One more color but still monochrome bones and stones.

Semiprofessional

And it gets even more complex, as more colors are available.

Professional

That's close to the original by Engel. Here the stones and bones are more colorful.
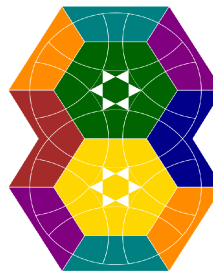But there are some identical stones and bones.

Original

Only one color more. This means that there are more different stones and bones, which must be placed correctly. This pattern corresponds to the original by Douglas A. Engel.
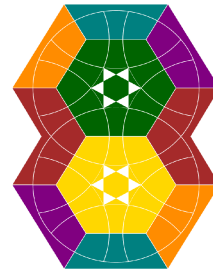
Superman

There are no two stones or bones that are the same.

Configuration

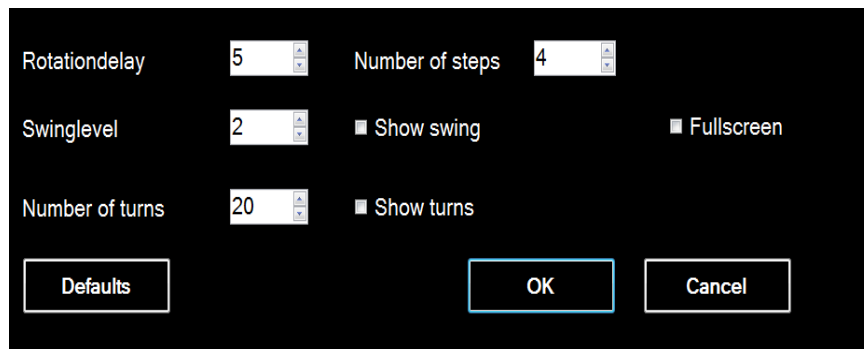When you click the **Config** button, then you will get the following dialog box (Figure 4).

Figure 4: Configuration for the Enigma Puzzle program

In this dialog you can define the behavior of Enigma. The various options are described in the following sections.

Setting for the display

The first settings are used to make the rotation visible. The default values work well on a current computer. You may need to adjust the values if it is too slow or too fast. In addition, you can turn off all the swing so you can play faster.

Rotationdelay	This is the delay in milliseconds to wait between the shown steps.
Number of steps	This number indicates how many partial images are drawn when a disk is rotated by 60 degrees.

A value 4 defines that every 15 degrees, a new image is displayed.
The program waits between the images as long as under rotationdelay has been defined.
The more sub-steps are shown the smoother is the rotation. But it also requires a lot of system resources.

Swinglevel   This value determines how hard the disk is swing across.
The greater the value the longer it takes to rotate.

Show swing   You can use this to switch the swing across on or off.

FullScreen   Change from fullscreen mode to sizable mode and back.

Settings for a new game

The next settings are for how a new game is started.

Number of turns   This number determines how often randomly the disks will be rotated by the computer if you start a new game.
The higher the number the greater the mess and the more difficult it is to produce the starting positions.

Show turns   You can view the turns when starting a new game.
If you remove the check here, you don't see the turns on a new game but only the resulting pattern.

Buttons in the configuration dialog

OK takes over the settings and the Cancel buttons do not.

The button Defaults sets the settings back to the values as they were set after the installation.

Installation

Installation is simple. Start the **EnigmaSetup.exe** program and follow the instructions.

This enigma puzzle can only be installed if the .Net Framework is installed at least in version 4.0. You will find the Framework on the Microsoft's website.

Installation Steps

After starting the Setup program, you get the dialog for language selection. Choose the language in the list and then click **OK**.
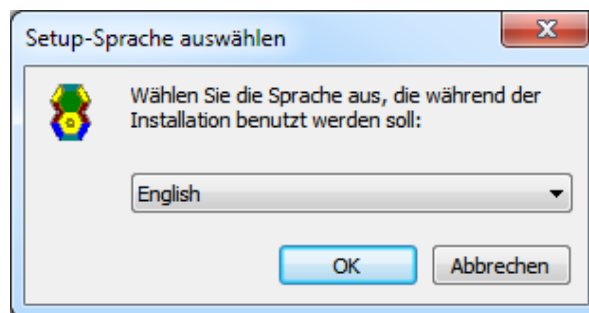

Figure 5: Select the language

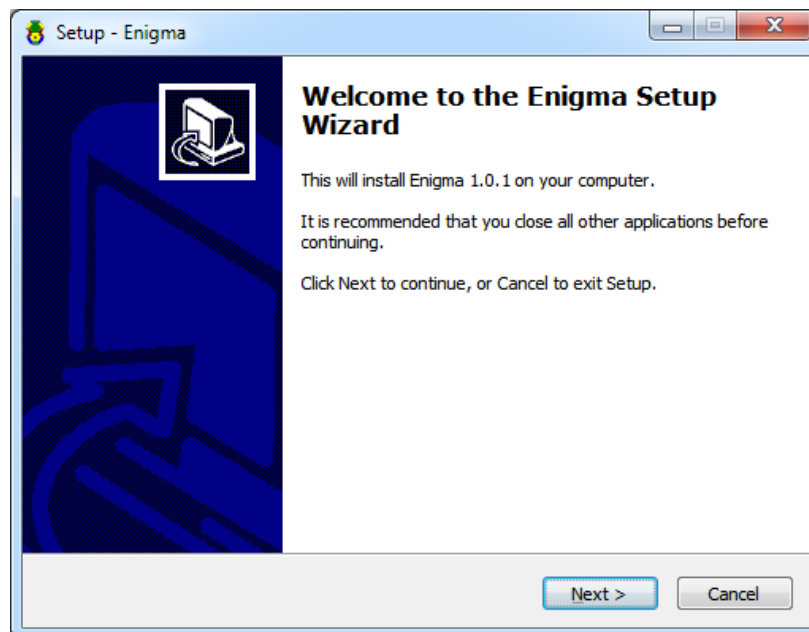Now the welcome screen (Figure 6) will show up in the chosen language. Click **Next**.

Figure 6: Welcome Screen

In the next step (Figure 7) you can choose the installation directory. You can use the suggested installation folder (Program Files \ Enigma) or put in another folder. Then click **Next**.
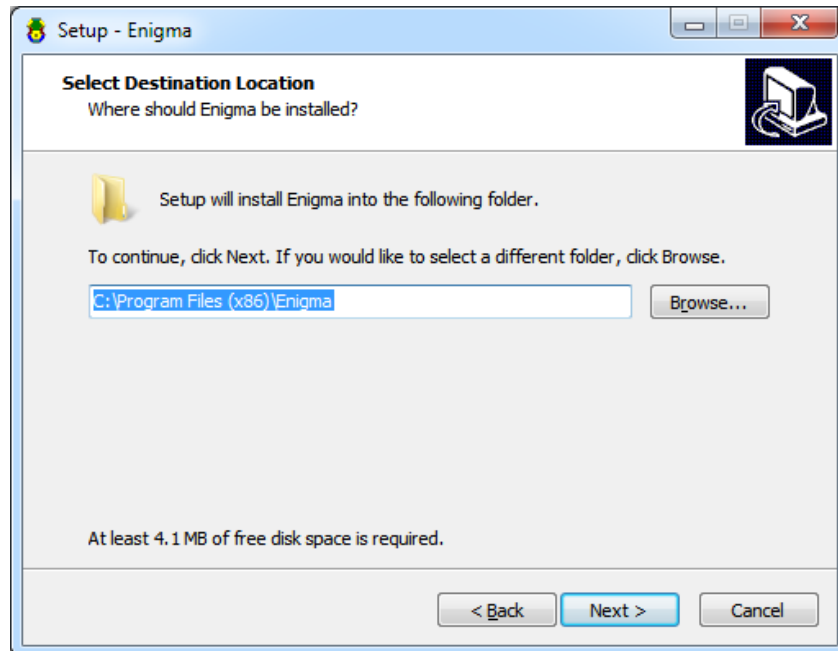
Figure 7: Choose the destination folder

In the next step (Figure 8), specify the name of the Start menu. You can take the shown value (Enigma), or enter a different name. Then click **Next**.
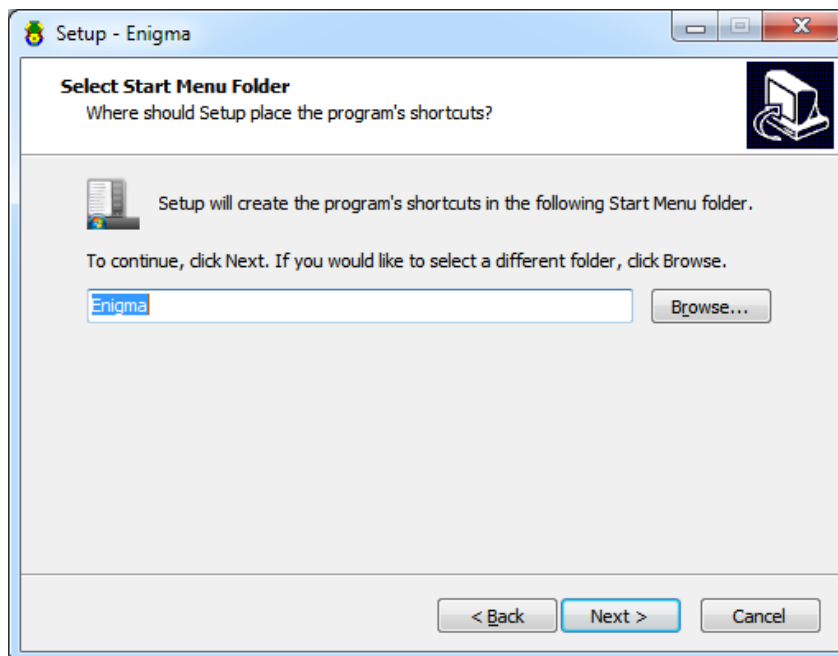

Figure 8: Select Start menu

In the next dialog (Figure 9) you can specify whether a desktop icon will be created for the game or not. Check the box accordingly and then click **Next**.
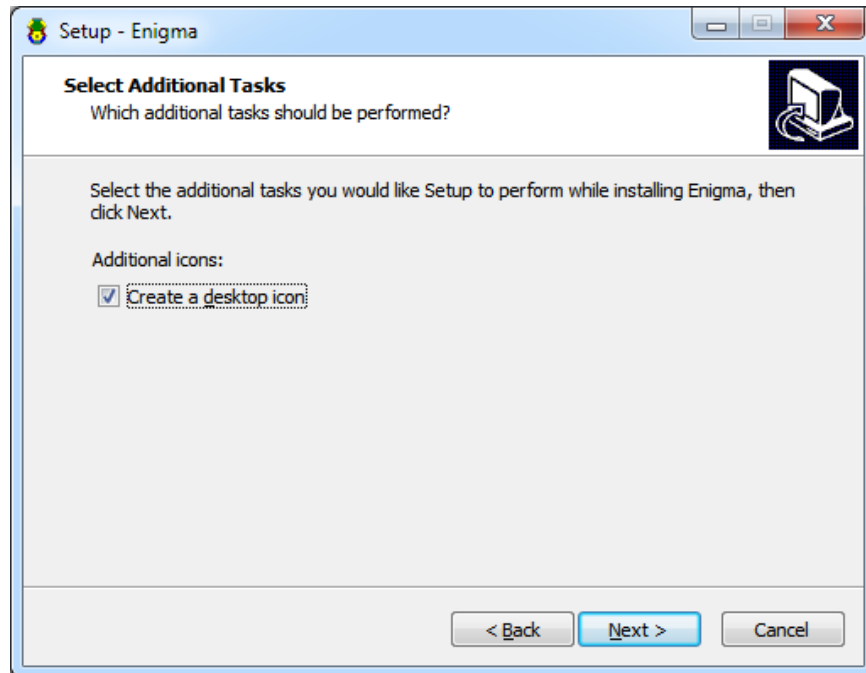
Figure 9: Desktop Icon

You will receive an overview of selected settings (Figure 10). If everything is OK, you start the installation, therefore click **Install**.
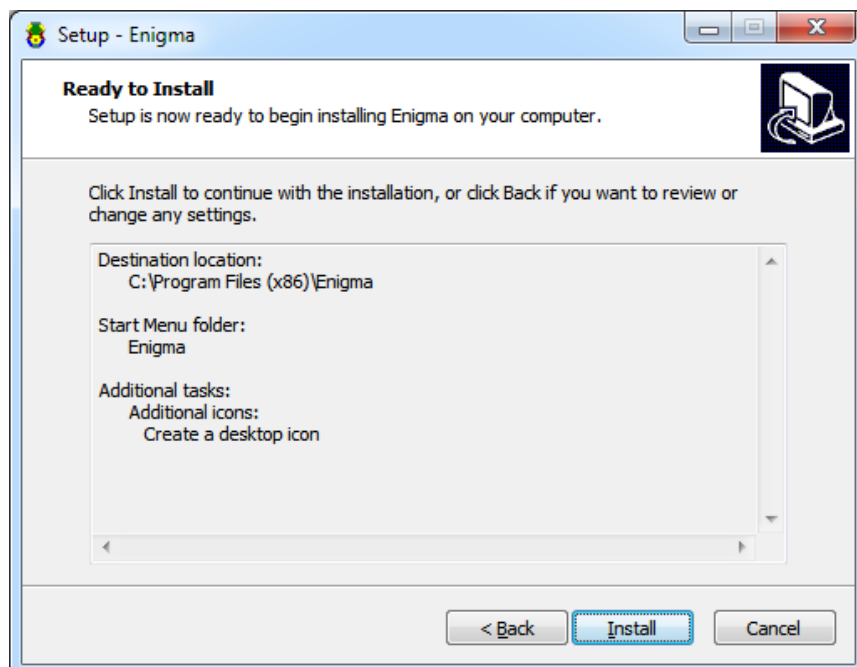

Figure 10: Installations overview

After a short installation time you will see a completion dialog (Figure 11). Click **Finish** to complete the installation.
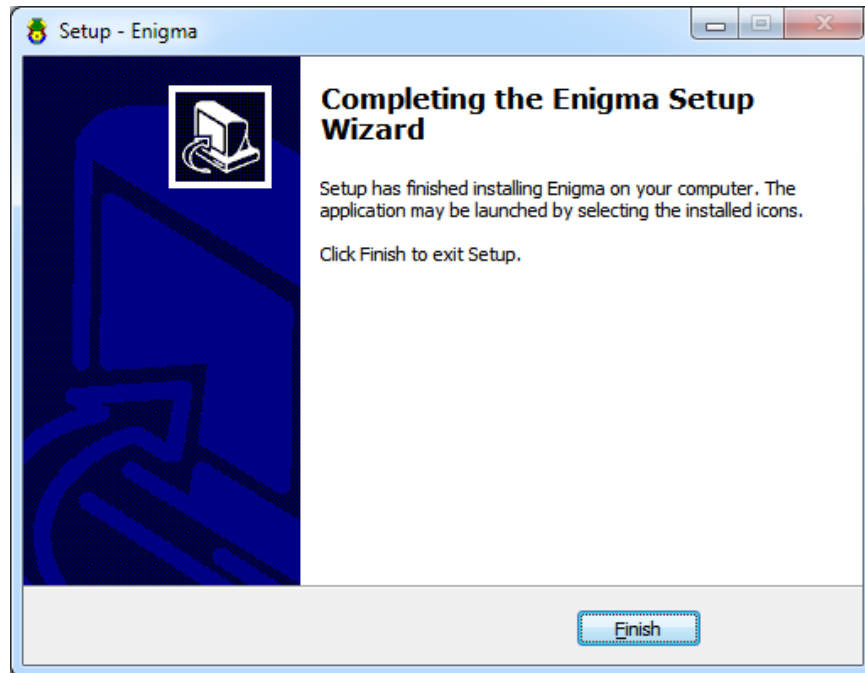
Figure 11: Installations completion

Uninstall the Program

The Enigma Puzzle program can be uninstalled easily at any time. You can go for example on Windows **Control Panel**. There select **Programs - Uninstall a program**.

In the Start menu under Enigma Enigma you will also find an entry to remove the program. Select this to uninstall Enigma Puzzle.

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