



MASTER

Help File Contents

- ◆ **Introduction to Maze Master**
 - ◆ **Designing Mazes**
 - ◆ **Playing and Solving Mazes**
 - ◆ **Printing Mazes**
 - ◆ **Working with Maze Files**
 - ◆ **Maze Master Menu Commands**
 - ◆ **Program Options**
 - ◆ **Validation Errors**
 - ◆ **Short Cut Keys**
 - ◆ **MAZEMASTER.INI File**
 - ◆ **REGISTRATION**
- ◆ **Technical Support**
 - ◆ **Legal Remarks**

File Menu

For more information on working with maze files, see [Working with Maze Files](#).

New:

This command deletes the current maze design, resizes and rescales the maze based on the default values in the Options command, creates a default square that matches the maze size, moves the start block to the upper left corner, moves the stop block to the lower left corner, and switches the display to the [design mode](#) if not already there. The [shortcut key](#) combination is CTRL + N.

Open:

This command displays a dialog box allowing you to open a maze from a file on disk. If the file is a valid Maze Master file, the program will delete the current maze design and load the design in the file. If the file includes maze data as well as design data, the program will shift to the [play and solve mode](#) and the maze will be displayed. If there is only maze design data, the program will shift to the design mode. The shortcut key combination is CTRL + O.

Save:

This command will save the current border design if you are in the design mode, and it will save the current maze data as well if you are in the play and solve mode. The maze will be saved with its current file name. If the current maze does not yet have a name, a dialog box will be displayed allowing you to assign a name. The shortcut key combination is CTRL + S.

Save As:

This command is similar to the Save command, except it will always show the dialog box allowing a new name to be selected. The shortcut key combination is CTRL + A.

Create Bitmap: (Registered Version ONLY)

This command is only available in the play and solve mode, and will save the currently displayed maze into a bitmap file. A dialog box will always be shown allowing you to assign a file name. The shortcut key combination is CTRL + B.

Print:

This command displays the Print Maze dialog. See [Printing Mazes](#) for a detailed description of the Print Maze dialog. The shortcut key combination is CTRL + P.

Printer Setup:

This command displays the standard Windows dialog for changing the default printer.

Exit:

This command will cause the program to terminate. (Be sure to save any mazes before exiting.) The shortcut key combination is ALT + F4.

Edit Menu

The Edit menu commands are only available in the design mode.

Cut:

This command is only available if a line is selected. It deletes the line from the design area, but retains its information in a buffer so it can be recalled with the paste command. The shortcut key combination is CTRL + X.

Copy:

This command is similar to the Cut command, except it does not delete the selected line from the design area. The shortcut key combination is CTRL + C.

Paste:

This command is only available when a line has been copied or cut. It will place a copy of the line in the paste buffer at the extreme upper left portion of the design area. Selecting Paste more than once will place multiple copies of the line on the same spot. Be sure you move or delete any multiple copies or you will get a validation error when you try to switch to the play and solve mode. The shortcut key combination is CTRL + V.

Delete:

This command is only available when a line is selected. It will delete the line from the design area, but does not retain its information in the paste buffer. The shortcut key combination is DEL.

Delete All:

This command will delete ALL lines on the design area. You cannot undo this operation so be sure you really want to delete all lines before selecting this command. The shortcut key combination is SHIFT + DEL.

Reset:

This command will delete ALL lines on the design area, and add four border lines to define a simple square with maximum height and width. It will also move the start block to the upper left corner, and the stop block to the lower right corner. The shortcut key combination is CTRL + R.

Size:

This command will display the size dialog box. You can change the size of the maze to any value from 10 to 100 in both the horizontal and vertical directions. If the new size is larger than before, there is no effect on currently drawn lines. If the new size is smaller, any lines that are completely outside the new maze size will be deleted, and any lines that partially extend into the new size will be truncated at the edge of the new size. There is no undo, so be sure you really want to change the size before you make it smaller. The shortcut key combination is F8.

Flip Line:

This command will flip the selected line about the horizontal axis (which for a single line is the same as flipping about the vertical axis). The shortcut key combination is CTRL + F.

Maze Menu

Maze menu items allow you to change the way your maze and the maze design area are displayed.

Redraw:

This command will generate a new random maze based on the current border design. If you are in the design mode, the program will automatically check your design for validation errors, and then switch to the play and solve mode. If you are already in the play and solve mode, the current maze will be deleted and a new maze will be generated. The shortcut key combination is F7.

Scale:

You can select one of five different scale options:

Large: This displays your maze at 3 blocks per inch. You will probably have to do a lot of scrolling to view your maze at this scale, especially if it is large in size. The shortcut key combination is SHIFT + F1.

Medium: This displays your maze at 6 blocks per inch. The shortcut key combination is SHIFT + F2.

Small: This displays your maze at 12 blocks per inch. This is the smallest scale at which mazes can be easily viewed on the screen. The shortcut key combination is SHIFT + F3.

Fit to Window: This will adjust the scale of the maze or design area so that it fully fills up the program window based on the window's current size, within the limits of maximum and minimum scale sizes. The maximum scale size is 3 blocks per inch, and the minimum is 12 blocks per inch. If you subsequently change the size of the program window, the scale factor will not change. The shortcut key combination is SHIFT + F4.

AutoScale: This will adjust the scale of the maze or design area in the same manner as Fit to Window. However, any subsequent changes in the size of the program window will cause the scale to be readjusted each time. The shortcut key combination is SHIFT + F5.

Options:

This command will display the Options dialog box. The shortcut key combination is F6.

Design Mode:

This command toggles between the design mode and play and solve mode. You can also click on the mode indicator to switch between modes. If you select Redraw from the Maze menu while in the design mode, you will automatically be shifted to the play and solve mode. If you load a maze that includes maze data you will automatically be shifted to the design mode. If you load a maze that contains only border design data you will automatically be shifted to the design mode. If you select New from the file menu, you will automatically be shifted to the design mode. The shortcut key combination is F5.

Solution Menu

This menu is only available in the play and solve mode.

Show Hint:

This command will show a small portion of the solution to allow you to see if you are going in the right direction. It will show you the solution from the point where the last hint ended (or the beginning if no hints have been shown yet) up to the first point where there are two or more choices for direction. To see which way to go, you have to show another hint. If you continue to show hints until the entire solution is shown, you will hear a sound expressing disappointment for your failure to solve the maze yourself. After the entire solution is shown, you will also no longer be able to use the path marker. The shortcut key combination is F3.

Show Solution:

This command will show the entire solution. You will also hear the sound and you will no longer be able to use the path marker. The shortcut key combination is F4.

Help Menu

Contents:

Displays the Maze Master Help File [Table of Contents](#)

Search for Help on:

Displays a dialog box that allows you to search for help on any topic.

How to Use Help:

Displays the Windows Help on Help topic.

About Maze Master:

Displays the Maze Master version and copyright notice.

Registration

[Click here to view the Registration Form](#)

Why should I Register?

Just because this program is distributed as shareware does not give you the right to use this software. You can try Maze Master for 30 days, but after that you must either register your copy or discontinue to use it and remove it from your hard drive. If you do not do either of these things, you are breaking the law. Besides, a lot of effort was put into this program by the authors and they certainly have a right to expect fair compensation if their product is being used by others.

Registering will also get rid of those annoying startup and exit dialog boxes, allow you to export your mazes as bitmap graphics, allow you to save your default option settings, and allow the program to run indefinitely. The unregistered version will not run if it has been on your system for more than 60 days. Registered users will receive free technical support. They will also receive free minor upgrades and be eligible for discounts on future major upgrades and other program releases. Upgrades will normally be available on CompuServe in the WINSHARE or WINFUN forums.

What do I get for registering?

Registered users will receive the following:

A diskette containing the program files, along with a registered copy of MAZEMSTR.DLL. The presence of this file will determine if you are a registered user. Under NO CIRCUMSTANCES shall copies of the registered version of MAZEMSTR.DLL be provided to any other person, or uploaded to any bulletin board or on-line service or otherwise distributed without the express written consent of C & E Software Co.

Free technical support for one year., via e-mail, and regular mail.

Free minor version upgrades, and discounts on major revisions and other programs released by C & E Software Co.

Free sample maze designs that you can use or edit.

How do I Register?

It's easy to register! You can register by filling out the [Registration form](#) and mailing it to C & E Software Co. Registration costs \$15.00 (U.S. funds, only, please).

If you are a member of **CompuServe**, you can register by using the CompuServe registration service. The registration fee will then be charged to your CompuServe Account. Just **GO SWREG**. The program ID for Maze Master is **12384**. You will be asked for your address and phone number. Please provide both. Your account will be charged \$17.65, which includes the price for the registered version disk and the 18% CompuServe processing fee.

Printing Mazes

You may wish to have a printed copy of your mazes. You can easily print any maze generated by Maze Master. You can adjust margins, the horizontal and vertical scaling of the printed maze, whether or not to print colors or the solution, or scale to automatically fit on one page.

To Print a maze:

Select Print from the File menu. You will be shown the Print dialog:

The screenshot shows the 'Print Maze' dialog box with the following settings:

- Page Layout:** A grid representing the maze with 4 pages needed.
- Maze Size:** Width: 8.3 in, Height: 8.3 in.
- Print Scaling:** Horizontal: 6.00 BPI, Vertical: 6.00 BPI.
- Margins:** Left: 1.00, Right: 1.00, Top: 1.25, Bottom: 1.25.
- Print Options:**
 - Print Colors as Black & White
 - Print Solution
 - Scale to Fit on One Page
 - Center Maze on Page

Buttons on the right: Print..., Print Setup, Cancel, Help.

(Click on any area for more detailed information.)

The scale of your maze can be adjusted in the horizontal and vertical directions independently. You can set the actual width and height of your maze (and the scale will be calculated) or enter the scale and the height and width will be calculated. The scale can be any value from 3 blocks per inch (for really large mazes that will probably take up several pages) to 18 blocks per inch (to give you really small mazes). Selecting Fit on One Page (if it is available) forces the maze to automatically scale itself to fit on one page. If the maze does fit on one page, you can have it print in the upper left corner, or have it centered on the page.

You can choose to print mazes in color (if your printer supports it). The color, width and style of lines that are set in the Options command will be the ones that the printer uses when it prints your maze. You can also choose to print the solution along with the maze.

If you want to change the current printer, select the Print Setup button. This calls the standard Windows dialog for changing the default printer. You can adjust the margins if desired.

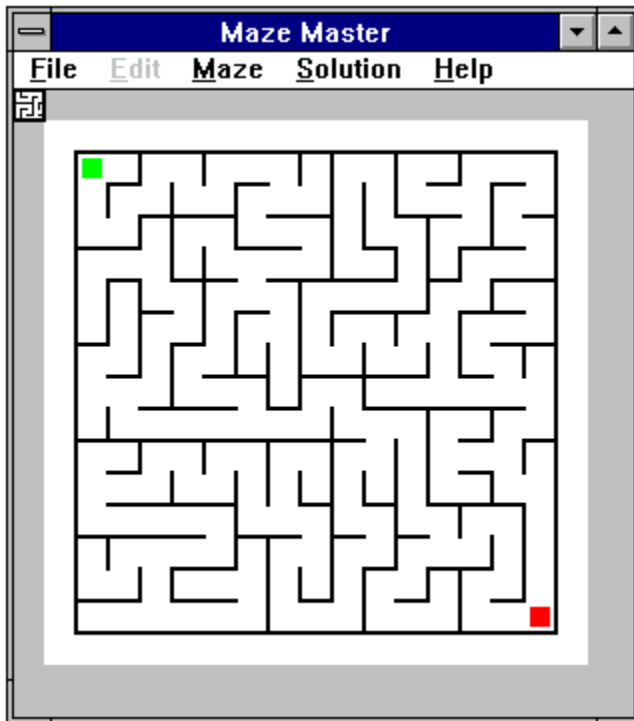
When you have set all options to the desired values, select the Print button to commence printing.

If you change your mind, and want to cancel, press Cancel at any time to close the dialog box.

Playing and Solving Mazes

After you have designed your maze by defining its borders, you can generate a random maze based on your border, and display it. You can change the scale either in the design mode, or after the maze has been generated. Use the scroll bars if the maze is too large to fit in the window, or resize the window. Try to solve the maze by moving from the start block to the end block. For each maze, there is one and only one possible solution. If you want to leave a trail to help you keep track of your progress, you can leave a path marker. If you want help solving the maze, you can get a hint, which will show a small portion of the solution, or show the entire solution if you give up.

In the play and solve mode, the program window will look something like this:



The maze is displayed in the colors set in the Options command on the Maze menu. If the maze is too large for the program window, scroll bars will be visible to the right and bottom of the maze. The mode indicator in the upper left corner shows the icon for play and solve mode.

To Play and Solve Mazes:

First switch out of the design mode by clearing the check box on the Design Mode command on the Maze menu, or by clicking on the mode indicator. Depending on the size and complexity of your maze borders, it may take a few seconds to generate and display your maze. If your design has no validation errors, it will be displayed, otherwise a dialog box will pop up that explains the problem, and offer you a chance to return to the design mode, or continue with a plain square maze.

To enable or disable the path marker:

If you want to solve the maze yourself, click once on the maze to enable the path marker. Click again on the maze to disable it. When the path marker is enabled, use your mouse to trace out your path on the maze. If you make it to the end, you will be rewarded with a

sound of congratulations.

To show hints or the entire solution:

If you want help solving the maze, select Show Hints from the Solution menu. This will show a small portion of the correct path, and let you see if you are on the right path. If you give up, or just want to see the solution without solving the maze yourself, select Show Solution from the Solution menu. The entire solution will be displayed. If you use Show Solution, or if you use Show Hints enough times so that the end is reached, you will hear a sound of disappointment for failing to solve the maze yourself. Once the entire solution is shown, the path marker will be disabled until a new maze is generated.

To generate a new maze:

Select Redraw maze from the Maze menu. Another random maze based on this border design will be constructed and displayed.

]To change the scale of the maze:

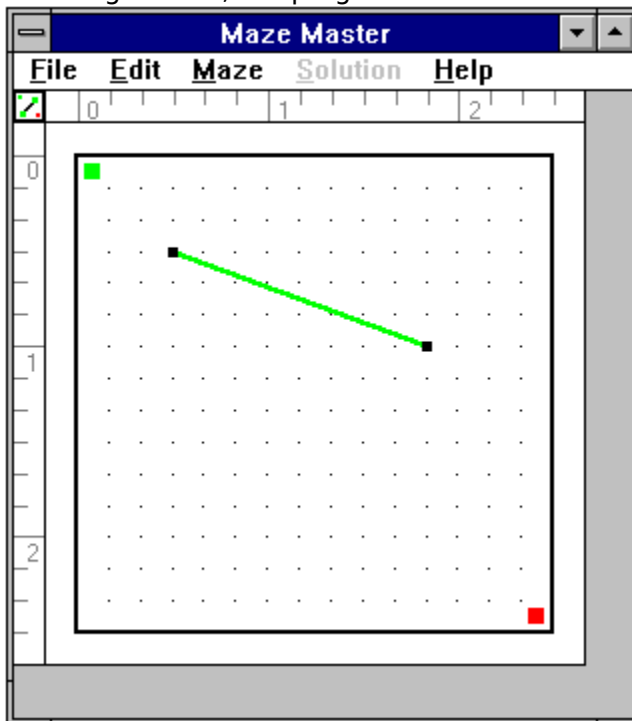
The scale of the maze refers to the actual size of the blocks that make up your maze. Large scale means the blocks are large, and small scale means the blocks are small. You can adjust the scale to one of three standard values, Small, Medium, and Large by choosing them from the Scale command on the Maze menu. You can also select two automatic scaling options- Fit to Window and AutoScale. Fit to Window will adjust the scale of the maze so it fills up the program window based on the window's current size. However, any changes in window size after selecting Fit to Window won't affect the scale; it will stay the same. AutoScale is similar to Fit to Window, except the maze will continuously update to fill the program window with any and all changes to the program window's size.

Designing Mazes

Maze Master is different from all other maze programs in that you have the ability to design your own custom borders; you are not limited to squares and rectangles.

Designing your own borders is as simple as drawing an outline of the shape in which you want your maze to be drawn. There are some restrictions, however, as to how the lines you use to define your borders can be arranged. Basically, you must draw completely connected loops, with one loop defining the outside border of your maze, and any number of smaller loops defining inside borders. See [Validation Errors](#) for a more detailed discussion on what arrangements of lines are allowed and disallowed.

In the design mode, the program looks like this:



The main area of the program window is the design area. The design area includes a grid pattern to aid in placement while you are adding or editing lines. To the left and top of the design area are rulers that also act as aids in placing lines. They also help visualize the overall size of your maze. If the design window is larger than the program window, scroll bars will be visible to the right and bottom of the design area. The small icon in the upper left corner of the design area is the mode indicator. Border lines are indicated by solid black lines, and the currently selected line appears green with two black squares called handles at either end.

To design your own maze border:

First shift to the design mode by selecting Design Mode in the Maze menu, or by clicking on the [mode indicator](#). The current maze design will be indicated by black lines. A small green square indicates the starting position for when you want to solve your maze, and a small red square marks the ending position. You can select lines that are already drawn when you are in the Edit Line mode. The mouse cursor will be a normal pointing arrow. Or you can add lines when you are in the Add Line mode. The cursor will be a cross hair. Use the Edit Line/Add Line toggle command on the [Edit menu](#) or right click on the design area to change between modes.

To draw a new line:

Position the cross hair near the grid point where you want to start the line. Drag with the left mouse button (press and hold the left mouse button while you move the mouse). A green line will extend from the starting point to the current mouse position. When the line is positioned where you want it, release the left mouse button.

To edit already existing lines:

Click on a black line to select it. The line will now be displayed in green with two black squares marking start and end points.

You can move the line by dragging it (press and hold the left mouse button while you move the mouse). The black squares will disappear, and the green highlighted line will follow the mouse pointer across the screen. Let up on the left mouse button when the line is in the position you desire.

You can move either end point by dragging the black square; the cursor will switch to a cross hair, and allow you to move the endpoint just like you were drawing a new line. Click once with the left mouse button when the endpoint is where you would like it.

You can cut, copy or delete the line by selecting the appropriate menu command, or using a shortcut key. You can also flip the line.

To paste a cut or copied line:

If you cut or copy a line, you can paste it on the design area, and then move it to a new location. Select Paste from the Edit menu. The newly pasted line will be positioned at the extreme upper left corner of the design area. If you select Paste more than once, you will get multiple copies of the line at the same position. Be sure to move these lines before trying to draw a maze, as they may cause a validation error.

To delete all lines:

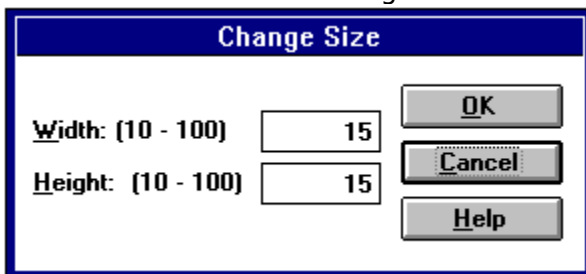
Select Delete All Lines from the Edit menu to remove all lines, including the default square lines from the design area. If you select Delete All Lines, there is no undo or paste command available, so be sure you want all lines deleted.

To reset the design to a square:

Select Reset from the Edit menu to reset the current design to a square with maximum height and width. This will also return the starting block to the upper left corner, and the ending block to the lower right corner. All lines except the four edges will be deleted. There is no undo or paste available if you select this command, so be sure you don't want the current design before you reset.

To change the size of the maze:

Select Size... from the Edit menu if you want to make the maze design area larger or smaller. You will be shown the size dialog box:



The image shows a dialog box titled "Change Size" with a blue header. It contains two input fields: "Width: (10 - 100)" and "Height: (10 - 100)", both with the value "15" entered. To the right of these fields are three buttons: "OK", "Cancel", and "Help".

You can make the maze as wide as 100 squares, or as narrow as 10. The height of the maze has the same limitations. Make any changes you want to the maze size, then select OK. If you change your mind, select Cancel.

After you make a change in size, your current design is affected as follows: If the new size is larger, then no changes are made to any lines currently on the design area. If the new size is smaller, all lines that are completely outside the new size are deleted, and lines that are partially in the new size are truncated to the lower or right edge as appropriate. If lines are deleted or modified due to resizing the design area, there is no undo.

To change the scale of the design area:

The scale of the design area refers to the actual size of the blocks that make up your maze. Large scale means the blocks are large, and small scale means the blocks are small. You can adjust the scale to one of three standard values, Small, Medium, and Large by choosing them from the Scale command on the Maze menu. You can also select two automatic scaling options- Fit to Window and AutoScale. Fit to Window will adjust the scale of the design area so it fills up the program window based on the window's current size. However, any changes in window size after selecting Fit to Window won't affect the scale; it will stay the same. AutoScale is similar to Fit to Window, except the design area will continuously update to fill the program window with any and all changes to the program window's size.

Menu Commands

Choose the menu item for which you need more information:

- ◆ File
- ◆ Edit
- ◆ Maze
- ◆ Solution
- ◆ Help

Introduction

Maze Master is a program that allows you to construct, display and print randomly generated mazes up to 100 squares by 100 squares. You can solve the mazes on the screen, get hints on the solution, or show the entire solution. You can print mazes in color, and include the solution if you want.

But Maze Master doesn't stop there! Squares can get real boring real fast! Maze Master allows you to **custom design** the border that defines your maze. Now you can make virtually **any shape into a maze**. Your only limitation is your imagination!

Maze Master has a very user friendly interface. To generate new mazes based on the current border, just choose Redraw from the Maze menu.

You can try to solve the maze yourself by clicking on the maze display to activate the path marker. Click again to deactivate the path marker. Change the display scale of the maze to make the squares large or small.

If you want some help, try showing a hint. Or if you give up, show the solution.

Switch to the design mode to draw your own border shapes. You can add lines, edit lines and move lines with commands similar to most line draw programs.

Save your designs and mazes so you can use them again later, and print out your designs (including solutions if you want). You can adjust the scale when you print to enlarge or shrink the maze to nearly any size you want. If your maze is too large for one page, just cut and paste the printed pages along the guide lines to form jumbo mazes. You can also export your mazes as a standard bitmap graphic which you can import into other programs. (Registered version ONLY)

For more detailed information on program operation, see

[Designing Mazes](#)

[Playing and Solving Mazes](#)

[Printing Mazes](#).

[Working with Maze Files](#)

For more detailed information on menu commands, see [Menu Commands](#).

Maze Master is distributed as shareware. You are granted a 30 day trial period to evaluate this program. If you find it useful, you are required to register your copy for further use. See [Registration](#).

Technical Support

Whether or not you are registered, we are very interested in your feedback. Please send us your comments and suggestions.

Support for Registered Licensees:

If you have registered your copy of Maze Master, you will be entitled to free technical support for one year. You can reach C & E Software Co. as follows:

Mailing address:

C & E Software Co.
8210 University Point Cr.
Bremerton, WA 98311-9420

Phone: (360)-613-5448 (9:00AM - 3:00 PM, MON through FRI, Pacific Coast Time)

CompuServe e-mail address: 73363,2052

Internet e-mail address: 73363.2052@compuserve.com

If you have a problem, or encounter what you think is a bug, please contact us, and we will get the situation resolved as quickly as possible.

MAZEMSTR.INI

(Registered version ONLY)

If your copy of Maze Master is registered, you will have the ability to save your options in an initialization file. Changes you select in the Options dialog box will automatically be saved in this file, along with the program window's last size and position.

You can edit this file using a standard text file if you desire. The entries allowed in each section of MAZEMSTR.INI are as follows:

[ProgramOptions]

This section contains the values for the initial position of the program window. Enter values using the units of measure that Windows uses to measure the overall size of your screen (usually twips, which are 1/1440 of an inch in size). For program state, enter 0 for normal, and 2 for maximized.

[Recent Files]

This section contains values representing the directories and names of the four most recent files used by the program. RecentFile# values should be a directory and filename pointing to a valid MZM file.

[MazeParameters]

This section contains the default values for maze height and width, resolution, and startup mode.

MazeWidth and MazeHeight values must be whole numbers, not less than 10 and not greater than 100.

Resolution must be a whole number selected from the following table:

0	Large scale
1	Medium scale
2	Small scale
4	Fit to Window mode
5	AutoScale mode

StartMode must be 0 to force design mode on startup, and -1 to force play and solve mode on startup.

[LineDefaults]

This section contains the default colors and line styles for maze walls, the solution, the path marker and the maze background color.

Color values must be one of the numbers from the following table:

0	Black
1	Dark Blue
2	Dark Green
3	Dark Cyan
4	Gray
5	Blue
6	Green
7	Cyan
8	Dark Red
9	Dark Purple
10	Dark Yellow
11	Dark Gray

12	Red
13	Purple
14	Yellow
15	White

Style values must be one of the numbers from the following table:

0	Dotted Line
1	Dashed Line
2	Thin Solid Line
3	Medium Solid Line
4	Thick Solid Line

[Sounds]

Enabled should be a 0 to disable sounds, and -1 to enable sounds.

Sound# values should be a directory and filename pointing to a valid WAV file

[PrintOptions]

Margins can be any number between 0 and 2.

PrintBW should be -1 to print black and white mazes, and 0 to print color mazes.

PrintSoln should be -1 to print solutions with mazes and 0 to not print solutions.

Working with Maze Files

File handling procedures in Maze Master are similar to most other windows programs. You can save files with the same name or different names, load files, or start a new file. You can also copy the maze image you created into a standard Windows bitmap file. This allows you to import the maze into other programs such as word processors and layout designers where you can add text and other graphics to your maze designs.

To start a new maze based on default values:

To start a new maze, select New from the File menu. This will delete any currently stored maze from memory and change the maze size and scale back to the values listed in the Options dialog box. A default square will be loaded, and the display will shift to the design mode.

To save a maze or maze design:

Selecting Save from the File menu will save the current maze and maze design to disk. If the maze already has a filename, it will automatically be saved with the same name, erasing the previous version. If the maze does not have a name, you will be prompted for a name. You can select Save As to save a maze with a different name than the one it currently has. Note that if you are in the design mode when you save a maze, only the maze design will be saved. If you are in the play and solve mode, the individual maze data, including your progress with the path marker, will be saved along with the maze design.


To load a maze or maze design:


Selecting Open from the File menu will open a dialog box asking for the name of the maze file to open. If the maze file contains only design data, you will automatically be shifted to the design mode. If the file contains a maze as well, you will be shifted to the play and solve mode and the maze will be displayed.

To create a bitmap file: (Registered version ONLY)

Select Create Bitmap from the File menu. When prompted, select a name for the bitmap file. This option is only available in the play and solve mode.

Mode Indicator:

The small square in the upper left corner of the main window. It shows  if in the play mode, and

 if in the design mode.

Short Cut Keys

The following shortcut key combinations are available:

Working with files:

Starting a new file:	CTRL + N
Opening a file:	CTRL + O
Saving a file:	CTRL + S
Saving a file with a new name:	CTRL + A
Saving a maze as a Bitmap file:	CTRL + B (Registered version ONLY)
Printing a maze:	CTRL + P
Exiting Maze Master:	ALT + F4

Editing maze designs:

Cutting a line:	CTRL + X
Copying a line:	CTRL + C
Pasting a line:	CTRL + V
Deleting a line:	DEL
Deleting ALL lines	SHIFT + DEL
Resetting maze:	CTRL + R
Changing maze size:	F8
Flipping a line:	CTRL + F

Modifying the display:

Changing to/from design mode:	F5
Displaying maze Options dialog:	F6
Redrawing a new maze:	F7
Display maze in Large scale:	SHIFT + F1
Display maze in Medium scale:	SHIFT + F2
Display maze in Small scale:	SHIFT + F3
Display maze in Fit to Window Scale:	SHIFT + F4
Display maze in AutoScale:	SHIFT + F5

Playing and Solving mazes:

Enable/Disable path marker:	SPACEBAR
Show a hint:	F3
Show entire solution:	F4

Context sensitive Help: F1

Validation Errors

Whenever Maze Master builds a new random maze, it will first validate the border design that you specified.

If a problem with the border is encountered, a dialog box will be shown that explains the error, and you will be given a chance to continue without a custom maze border, or return to the design mode and correct your border design.

The error messages that can be generated and an explanation of how to correct them are as follows:

"Must have at least three connected lines."

It is impossible to define an enclosed area with less than three lines. You need to have at least three lines (which would form a triangle) to define a custom border. **Solution:** Add enough lines to at least form a triangle.

"Lines cannot cross each other."

Border lines cannot cross over each other. A valid set of lines will define a separate enclosed area, and crossed over lines would not define an separate enclosed area. You will also get this error if lines lie on top of each other. If you choose to return to the design mode, the lines in question will be highlighted in red. **Solution:** Delete or edit any lines that cross over each other or that lie on top of each other.

"Lines must be connected end to end."

A valid set of lines must define an enclosed space. This means your lines need to be connected end to end to form a complete and closed loop. If you don't draw complete loops, or have any extra lines that are not attached to anything, you will get this error. If you choose to return to the design mode, the line in question will be highlighted in red.

Solution: Edit or delete lines so that they all meet end to end, and there are no stray lines.

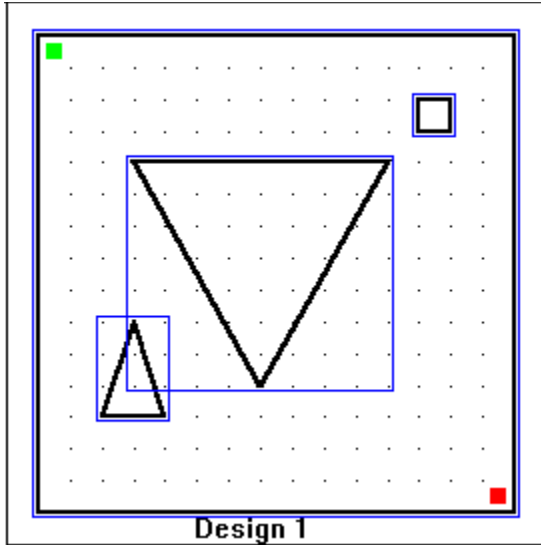
"Only two lines can meet at one point."

To define a valid arrangement of lines, you can only have two lines meeting at a single point. Three or more lines meeting at a single point can form complex arrangements that could result in several different interpretations as to what is an enclosed area. **Solution:** Edit or delete lines so only two lines meet at one point..

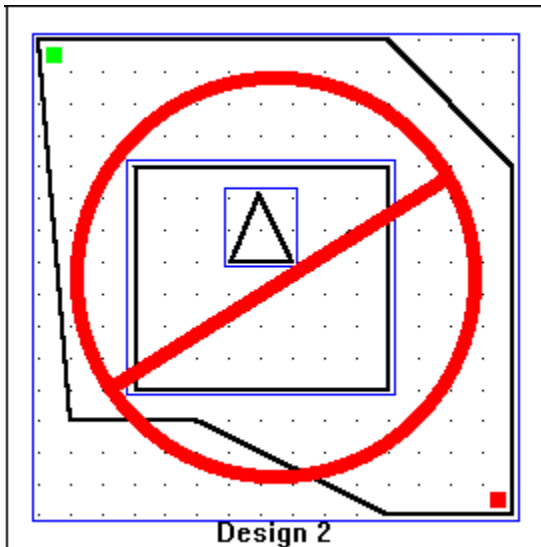
"Invalid arrangement of borders."

If you are defining outside and inside borders, you need to ensure that there is only one outside border that includes all inside borders. Also, none of the inside borders can be inside each other. **Solution:** Edit or delete lines so there is only one outside border surrounding all your inside borders, and that your inside borders do not surround each other.

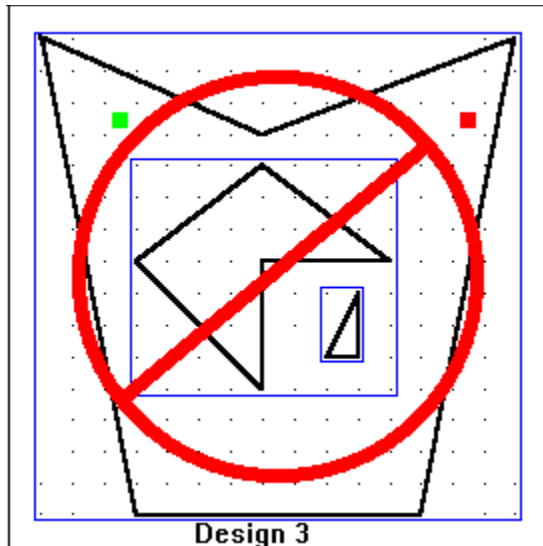
The way that Maze Master tests to see if one group surrounds another is by the maximum and minimum values in both the horizontal and vertical direction for each group of lines. Here are some samples to explain how borders can and can't be arranged:



This example shows a valid arrangement of borders. The large square surrounding the other shapes is the outside maze border. The max and min values (the blue lines) for the two triangles and the smaller square are all inside the large square. None of two triangles or small square have max and min values that are completely inside each other. Notice that some of the max and min values of the inside borders overlap; this is okay as long as one inside border shape is not completely inside another.



This example shows an invalid arrangement. The large shape surrounds all the other shapes so it is the outside border. The smaller triangle that is inside the larger square is not allowed, because its max and min values (the blue lines) are completely inside the square. If the smaller triangle were moved outside of the square it would be valid.



This example also shows an invalid arrangement. It looks like it should be okay- the large penant like shape defines the outside border, and the two other shapes are inside borders. The small triangle is not inside the diamond-like shape, so it should be okay, but because Maze Master tests to see if one group surrounds the others by their max and min values, the smaller triangle is invalid. Its max and min values (the blue lines) are completely inside the diamond-like shape's max and min values. Moving the small triangle so it is not completely inside the max and min values (overlapping is okay) of the diamond shape would make this a valid arrangement.

"There is a problem with this border; maze cannot be built."

Sometimes, a complex maze may appear to have a valid border, but no maze can be constructed. If Maze Master encounters difficulty while trying to build a maze, it will return you to the design mode. In this case, you will need to examine your design to ensure you don't have any areas that are blocked off by narrow corridors from the main areas of your maze.

Page Layout:

This section gives a graphical view of how your maze size compares to the printed page size. The number of pages it will take to print your maze is shown underneath the layout view. The gray area indicates the overall width and height of your maze, and the blue dotted lines indicate the size of the printable area on each page.

Print Options:

You can choose from the following options:

Print colors as Black and White: If your printer supports colors, you have the choice of printing your maze in the same colors as they are displayed, or as black lines on a white background. This check box will be disabled if your printer does not support color.

Print Solution: If selected, this will cause the program to print the solution to the maze along with the maze itself.

Scale to Fit Page: If selected, the scale will be adjusted to cause the maze to fit exactly on one printed page. Height and width will be scaled equally. If the maze cannot fit on one page, even at the smallest scale, this check box will be disabled.

Center Maze on page: If the maze is small enough to fit on one page, it will be printed in the upper left corner of the page, unless this option is selected. This option forces the maze to be centered on the page both horizontally and vertically. If the maze is larger than one page, this check box will be disabled.

Maze Size and Scaling:

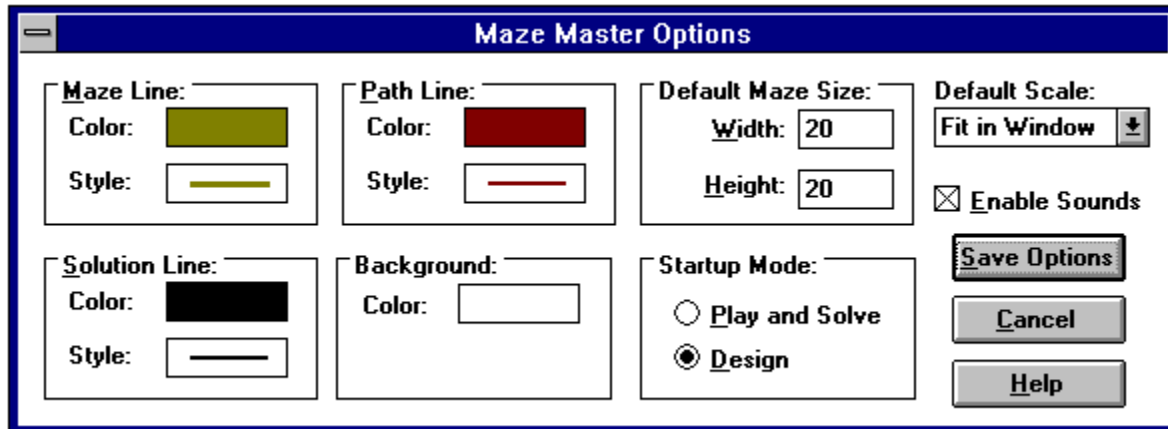
Use these sections to adjust the size and scale of your printed maze. You can enter the maze width or height directly (in inches) and the scale will automatically be calculated, or enter a scale, and the size will automatically be calculated. You cannot select a scale smaller than 3 blocks per inch or larger than 18 blocks per inch. The program will limit maze height and width entries to keep the scale value within limits.

Margins:

Enter the margins you want for the top, bottom, left and right sides of the printed page. Entries will automatically be corrected so they fall in between the printer's minimum values and two inches. Changing the default printer will automatically adjust margins to the new printer's minimums if necessary.

Program Options

There are several parameters affecting the display and designing of mazes that you can control. The Options command in the Maze menu includes most of these parameters. When you select the Options command, you will be shown the Options dialog:



(Click on any area for more detailed information.)

You can change the colors and styles by clicking on the appropriate boxes.

You can change the startup options by editing the appropriate items.

Changes in colors, styles and Sound Enabling will be immediate after you select Save Options. Default maze height and width, default scale and startup mode will only have an effect the next time you select New from the File menu.

(Registered Version ONLY): All changes to these options are stored in a file called MAZEMSTR.INI in your program directory, and will be effective the next time you start the program.

Colors and Styles

You can change the colors and styles for the lines that the program uses to draw the maze walls, the solution, and the path marker. You can also change the background color on which the maze is drawn.

To change the color of a line:

Double click on the color box for the line you want to change (or use the TAB key to move to the color box and press SPACEBAR). Double click on the color that you want(or use the cursor keys to highlight the color you want and press ENTER).

To change the style of a line:

Double click on the style box for the line you want to change (or use the TAB key to move to the style box and press SPACEBAR). Double click on the style that you want(or use the cursor keys to highlight the style you want and press ENTER).

Startup Options

The following options can be changed:

Default Maze size:

Enter the values here that you want the program to use when you first load the program, or select New from the File menu.

Startup Mode:

If you want Maze Master to be in the design mode when you first load the program or select New from the File menu, select Design; if you want to have a maze generated immediately, select Play and Solve

Default Scale:

Select the scale mode that you want the program to be in when you first load the program, or select New from the File menu.

Enable Sounds:

Clear the check box if you want sounds disabled.

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Registration Form

Complete and Mail to :

C & E Software Co.
8210 University Pt Cr.
Bremerton, WA 98311-9420

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City: _____ **ST:** _____ **ZIP:** _____

Phone: (_____) _____

Send me a single user license to register my copy of Maze Master for \$15.00:

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