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#### **Overview**

**Pents** provides several puzzles involving pentominoes. Pentominoes are shapes made up of five units or squares. The twelve pieces arranged about the window are all possible configurations of connected squares taken in groups of five, given they may be <u>flipped</u> over and/or <u>rotated</u>. The object is to arrange the pieces so as to fit completely within the <u>grid</u> in the center of the window.

## **Dragging the Pents**

To place the <u>pents</u> into the <u>grid</u>, place the mouse cursor anywhere on top of the piece to be moved, press down on the left mouse button, and while keeping the button depressed, move the piece to the new location.

As the pent is moved across the grid or open <u>rest area</u>, a <u>shadow</u> is cast indicating where the pent will settle when the mouse button is released. If no shadow is cast, it indicates the pent is not over an area where it can fit. When the left mouse button is released and there is no shadow the piece will return to the place where it was picked up.

# **Flipping the Pents**

The piece may only be flipped, that is, turned head for tail, when in a rest area. If the piece to be flipped is already in the <u>grid</u>, <u>drag</u> it to an open <u>rest area</u> first. Place the mouse cursor on or near the piece to be flipped. While holding down the Shift key on your keyboard, depress either the left or right button of your mouse and the piece will turn over.

## **Rotating the Pents**

The piece may only be rotated, that is, turned clockwise one quarter turn, when in a <u>rest area</u>. If the piece to be rotated is already in the <u>grid</u>, <u>drag</u> it to an open rest area first. Place the mouse cursor on or near the piece to be rotated. Depress the right mouse button or alternatively, while holding down the Control key on your keyboard, depress the left button of your mouse and the piece will rotate.

### **Puzzle Variations**

There are two different types of puzzles offered. The first may be found when selecting the **Puzzle** menu item. These require all twelve <u>Pents</u> to complete the puzzle successfully.

The second type is found under the **Pents** menu item. Each of these <u>grids</u> are in the shape of one of the 12 **Pents** and can be completed with only 9 **Pents**. Only one **Pent** is excluded from consideration, that with the same shape as the puzzle grid. It is surrounded by a square to highlight its ineligibility.

# **Saving a Puzzle**

The current puzzle may be **Saved** into a file in the same directory in which the **Pents** program resides. The file created is PENTS.SAV. To save the puzzle in progress, simply select the **File** menu item followed by **Save**. The puzzle, exactly as it appears on the screen will be saved to file and may be loaded at any time.

Note that **File Saves** overwrite previously **Saved** puzzles.

# **Loading a Puzzle**

A previously Saved puzzle may be **Loaded**. To load the puzzle, simply select the **File** menu item followed by **Load**. The puzzle, exactly as it appeared on the screen when saved to file will be loaded to the screen. This puzzle will of course overwrite the puzzle in progress.

A previously saved puzzle may be reloaded as many times as desired.

# Help

Choosing **Help** from the menu bar creates a pop-up menu which allows for several choices:

- -Help on Help provides basic information on using Help.
- -Choosing **Overview** gives general information about the operation of **Pents**.
- -Index provides a list of topics for which Help is available.
- -About Pents... provides some information about this program.

# **Exiting**

To **Exit** the program simply select the **File** menu item followed by **Exit** from the **Pents** menu bar or activate the **System Menu** and choose **Close**.

### Drag

To use the mouse to move a graphic object about the screen, usually by placing the mouse cursor on the object, depressing a mouse button and moving the cursor to the desired position.

# Flip

To flip the **Pent** head for tail. The piece must be in a rest area.

### Rotate

To rotate the **Pent** one quarter turn clockwise. The piece must be in a rest area to rotate.

### Pent

 $Short\ for\ Pentomino,\ a\ piece\ comprised\ of\ five\ fully\ connected\ equal\ squares\ .$ 

### Shadow

A highlighted portion of the screen which indicates a valid position for the **Pent** being dragged. When a piece being dragged is released it will settle in the shadowed area.

### Grid

The puzzle board made up of a grid of squares, each unit identical to those of which the **Pents** are comprised.

### Rest Area

The 12 areas surrounding the grid in which the **Pents** rest. **Pents** may only be rotated or flipped when in a rest area.