Turing 4.0 Release Notes

1.0 Introduction

Turing 4.0.3 for Windows is the August 2002 release of Object Oriented Turing. Note that we have renamed "Object Oriented Turing" to "Turing". (The original DOS Turing has been renamed "Classic Turing".)

Turing 4.0 features a complete redesign of the user interface along with a number of improvements to make it even easier to teach using Turing. This new release features a much cleaner interface with fewer windows. It incorporates much requested features such as text output windows, redirection of output to printers, opening the printer as a file, saving graphics output windows as a BMP and many other features. It also includes a "Beginner Mode" that allows for only a single editor window on the screen at a time, simplifying the interface even further.

Note to Ontario Turing Users: This version (Turing 4.0.3) is distributed under the Ontario Ministry of Education license (as of June 2002). Regular updates to Turing to fix bugs and add features will be made available at our web site (http://www.holtsoft.com/turing/support).

Not every feature in that appeared Turing 3.1.1 is currently incorporated into the current release of Turing. Certain advanced features will be added to the software over the coming months. Updates will be made available on our web site. The unimplemented features are:

The Sprite module
View Variables

Note that the current version of Object Oriented Turing 1.5.1 for Macintosh as distributed by the Ministry is still the most current version.

2.0 Redistribution to Students

The Ontario Ministry license does **not** include the right to redistribute the software to students. If you wish to give the software to students, a separate license must be obtained directly from Holt Software.

If you do not have such a license, then you may use the "Take Turing Home" forms at the end of this document to allow the students to order the software from Holt Software. If you do not have the forms, the students can download them from Holt Software's web site at **http://www.holtsoft.com/studentbuy**.

If your school has purchased a redistribution license, then you may redistribute the software to your students. You can either burn copies of the CD to distribute to students or place the file **SETUP.EXE** from the distribution CD onto your school Internet server and give your students the URL. **If you place this file on your school internet server, you must not make any links from your web pages to the software.** This will prevent other users of the web from downloading your software. If you place links from your school's web site, then at some point a web search engine will find the software and post its location to the internet at large, allowing for large scale piracy (and a very overloaded school web server). If there are no links to the software, then only those who have been told the exact URL will be able to download the software.

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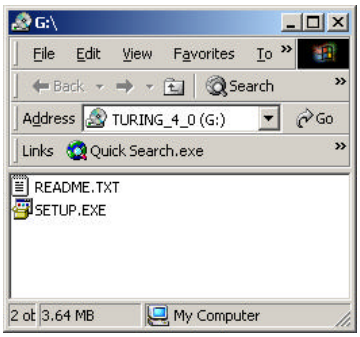
Note that if you are copying a number of different programs onto a single CD for redistribution, you may rename **SETUP.EXE** to something more descriptive.

One-time redistribution licenses can be purchased for $500-$750 for most schools. If you are interested in purchasing a redistribution license, contact Chris Stephenson at (416) 978-6476 or chris@hsa.on.ca.

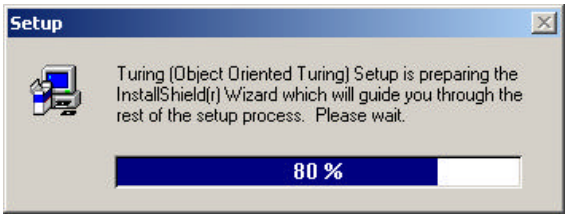
3.0 Installation

To install Turing 4.0, start by placing the CD in the CD-ROM drive.

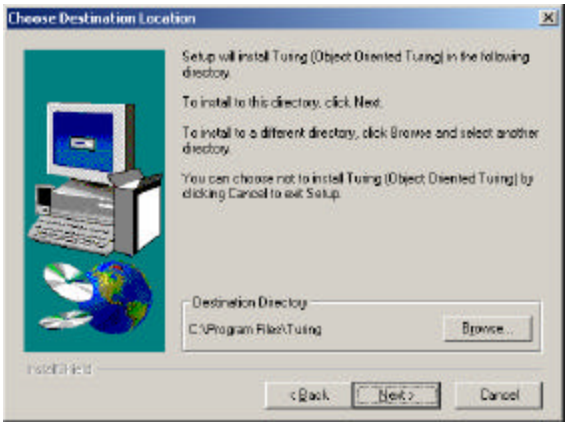


Contents of Turing 4.0 CD ROM

Current information can be found in the file **README.TXT** on the disk. To start the installation of the software, double click **SETUP.EXE**. This starts the InstallShield™ installer. Follow the installer's instructions to install Turing 4.0 on your hard drive.



Installing the Software



Installing the Software

Note that **SETUP.EXE** can be copied onto the network to facilitate network installation.

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3.1 Start-up Directory Dialog Box

After the software has been installed, up to three dialog boxes may appear. The first dialog box requests a start-up location for Turing.

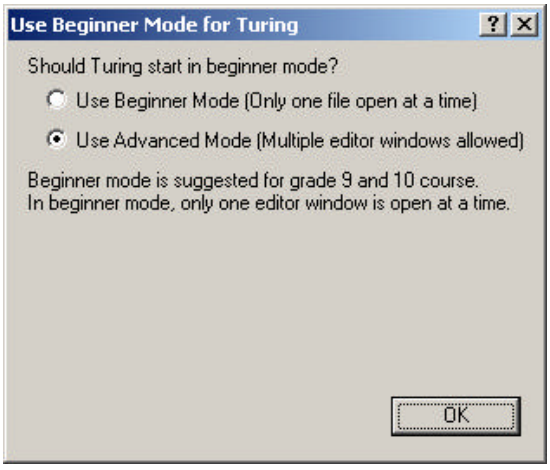
Start-Up Directory Dialog Box

Schools should select "The Turing Directory/Working Directory of Shortcut" in almost all cases. Selecting this option ensures that the networking software or the working directory of the shortcut used to start Turing will be used to determine the directory that students will see when they load or save files.

Home users (students and teachers installing the software at their home) should select the "My Documents" folder. In that way, all the files saved by the user can be easily found and saved to disk, emailed, and so on.

3.2 Beginner Mode Dialog Box

The second dialog box determines whether the Beginner mode or Advanced mode is used.



Beginner Mode Dialog Box

In Beginner mode, only one file can be open in the editor at a time. When another file is opened, it appears in the same window as the previous file and the first file is closed (as is the case for Turing for DOS). As well, in Beginner mode, when a program is run, the editor window is hidden while the Output window appears. Finally, the editor

window in Beginner mode occupies the entire screen (minus the task bar). This makes Beginner mode especially suitable for 640x480 screens where much of the benefit of multiple windows is lost.

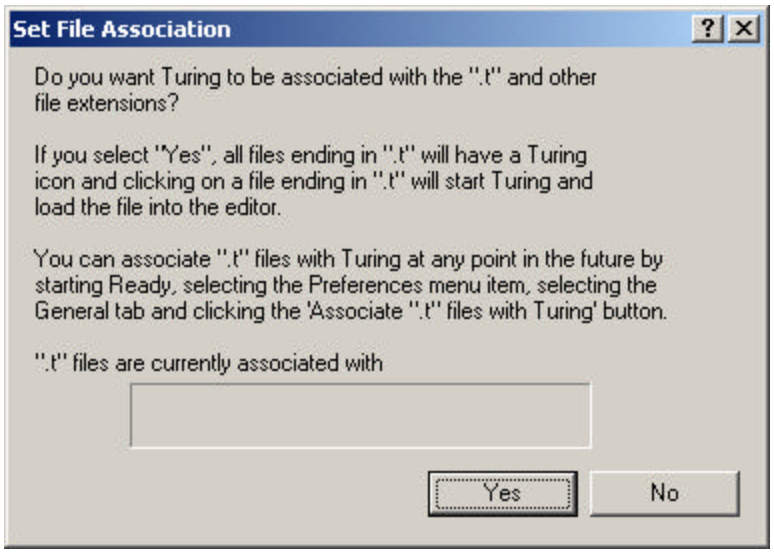
Because this mode has at most one (or possibly two) windows open at any time, it is simpler for students to use. Beginner mode is suggested for environments where teachers are concerned about students being confused or intimidated by the computing environment, and classes running on hardware with 640x480 (VGA) resolution.

In advanced mode, the student may have as many files open at once as desired. Each open file appears in a separate window. This can make editing of larger projects easier at the expense of a slightly more complicated work area.

3.3 File Association Dialog Box

The third dialog box controls whether Turing files on the system (files ending in ".t", ".tur", ".dem", ".ti" and ".tu") are associated with the Turing program. If files are associated, then they will have an appropriate icon instead of the generic icon. If an icon of a Turing file is double clicked, Turing will be started and the file will be loaded into the editor.

The dialog box shows the application with which Turing files are currently associated. If the box at the bottom is empty, Turing files are not associated with any application.



File Association Dialog Box

In almost all cases, users should click Yes to associate Turing files with the Turing application.

3.4 Completion of Installation

Once the dialog boxes have been handled, the software is now installed. However, on Windows 95 systems running the original software (i.e. without the recommended service pack), one additional step is required. In order for Turing 4.0 to start, it requires WinSock

2.0, an update of the Windows networking software. This update is installed on the hard drive, but must be executed by the user.

If you are running the original Windows 95 with service pack update, you must execute the program

[Turing directory]\support\Microsoft\W95ws2setup.exe

This program installs an update of the networking software. If for some reason such an update cannot be run on your system due to administration issues, contact technical support at Holt Software at (416) 978-8363 for a solution.

3.5 School Networks

Unfortunately, we cannot anticipate the many different networks that the schools use. However, there are some general pointers.

3.5.1 Students Home Directory Mapped to a Drive

In most cases, the students have a home directory that is mapped to a particular drive. If that is the case, then set the working directory of the shortcut or menu entry used to start Turing to the mapped drive. In that way, the student's home directory will appear in the file dialog box when the user opens or saves a file. Note, if students are to use only a floppy drive, then the working directory should be set to the root directory of the floppy drive (usually A:\).

3.5.2 Students Home Directory Not Mapped to a Drive

If the home directory is not mapped to a drive, the procedure is a little more complicated. To set Turing to use the student's home directory there must be environment variables that can be used to set the directory. You then add a line

startupDirectory=<student home directory using environment vars>

to the file

[Turing directory]\support\ini\turing_admin.ini

Note that percent signs must surround the names of environment variables. An example most clearly illustrates how this works.

For example, if the student's home directory is

f:\students\cs305\twest04

and these environment variables are present

class=cs305

username=twest04

then you would add the line

startupDirectory=f:\students\%class%\%username%

to the file

[Turing directory]\support\ini\turing_admin.ini

When Turing starts up, it will read the **turing_admin.ini** file. It substitutes the values of the environment variables for the names and then sets Turing's default directory to the specified directory.

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4.0 Administration

Turing has many options that are available. Unfortunately, this document cannot summarize them all. The Turing online help has a Turing Teacher/Administrator Guide available with more complete information. However, a synopsis appears below.

When Turing first starts up, it initializes all the preferences to default values. It then reads the file

[Turing directory]\support\ini\turing_admin.ini

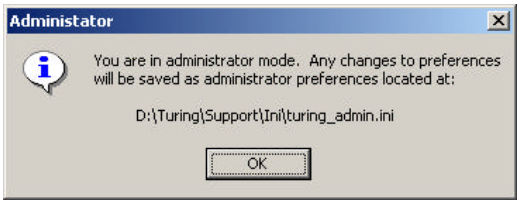
This file contains options set by the administrator. Once the preferences have been initialized, Turing reads the file **turing.ini** found in the student's home directory (or the user's Application Data directory if using the "My Documents" folder as default directory).

The administrator can set default values for all the users in one of two ways:

- By starting Turing with the command line option **–admin**, (i.e. typing **turing –admin**) at the command line,
- By editing the **[Turing directory]\support\ini\turing_admin.ini** file with a text editor (you can use Turing to edit the file).

In both cases, you must have appropriate system privileges to change a file in the Turing directory. This document does not provide the syntax for all the preferences that can be changed by editing the **turing_admin.ini** file. Contact Holt Software technical support if you cannot use the first method of changing the preferences.

When you start Turing with the **–admin** command line option, a dialog box appears informing you that you are in administrator mode.



Administrator Mode Dialog Box

At this point, select **Preferences** from the **File** menu. A tabbed dialog box appears. You can change any preferences you chose at this point. When you exit Turing, the preferences will be saved as the default preferences for all users. Users can later change their personal preferences.

What follows is a brief synopsis of the preferences.

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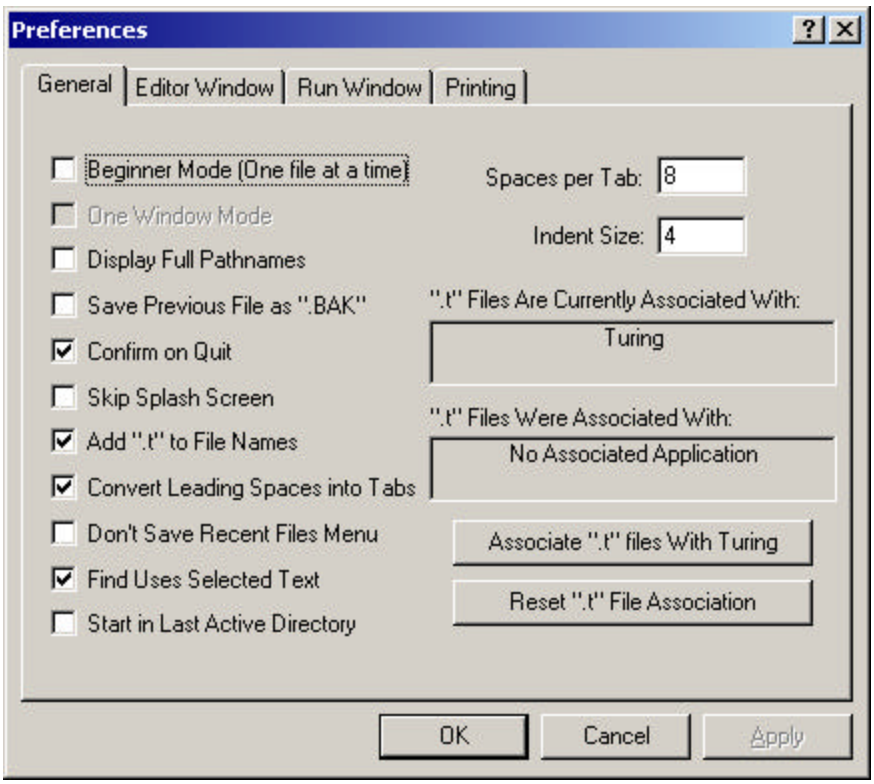
4.0.1 General Tab



The General Preferences Tab Dialog Box

Beginner Mode : The difference between Beginner mode and Advanced mode are summarized in section 3.2.

Display Full Pathnames: The full path name and not just the file name are displayed in the Editor window's title bar and recent files submenu.

Save Previous File as ".BAK": When a file is saved over top of an older file, the older file is renamed with a .BAK suffix (i.e. test.t ➔ test.bak)

Confirm on Quit: When the user closes the last editor window, Turing displays a dialog box asking whether the user wishes to Quit. On systems where loading is slow (usually over a network), this can stop the users from accidentally quitting Turing.

Add ".t" to File Names: When a Save File dialog box appears and the user specifies a file name without a file suffix, Turing adds ".t".

Don't Save Recent Files Menu: Normally Turing lists the last several files opened. However, if users do not have individual accounts, then this feature may not be useful and can be turned off.

Start in Last Active Directory: If students are writing large projects in many subdirectories, then this option can be enabled to automatically start Turing in the last directory in which a file was loaded or saved. The Turing preferences file is still stored in the user's home directory.

File Association: See Section 3.3 for a detailed explanation.

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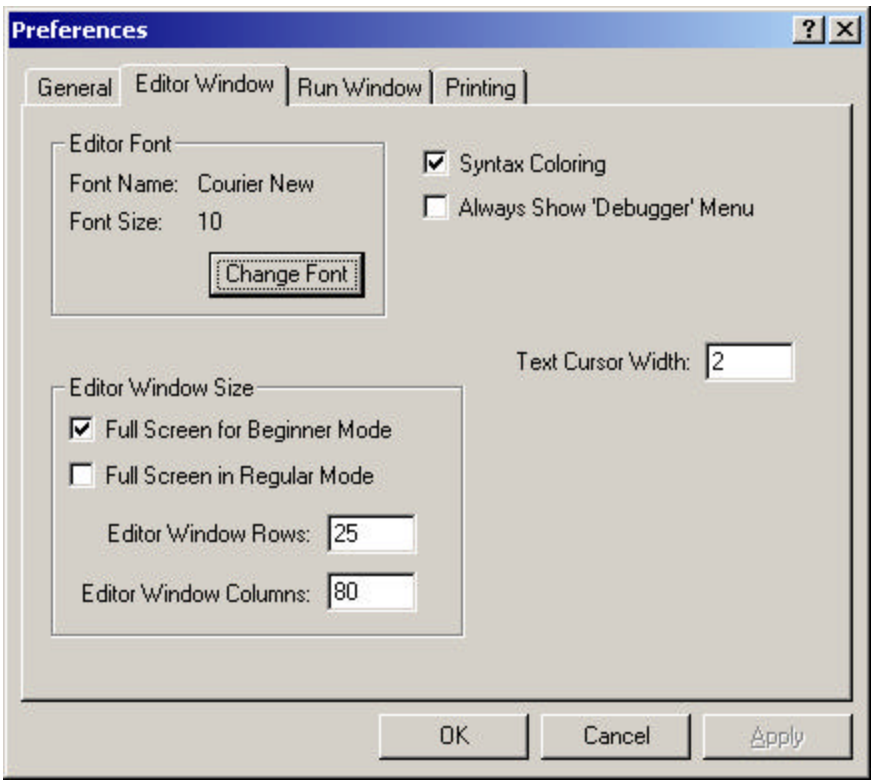
4.0.2 Editor Window Tab



The Editor Window Tab Dialog Box

Editor Font: You can change the font size and typeface used in the editor window. If you change the typeface, you must choose a monospaced font where bold and non-bold letters are the same size. Many monospaced fonts have different sizes for bold and non-bold letters.

Full Screen for Beginner Mode: If in beginner mode, editor windows are automatically in full screen mode.

Full Screen: Editor windows are automatically created in full screen mode. This option is suggested for systems with 640x480 screen resolution. Users can change the window size by clicking the full screen/normal window button (/) in the window's title bar.

Editor Window Rows/Columns: The default window size can be changed.

Syntax Coloring: When selected, parts of Turing programs appear in different colors: comments appear in green, strings in red, keywords in bold face, predefined identifiers in black, and user identifiers in blue.

Always Show 'Debugger' Menu: When selected, every Turing Editor window will have a debugger menu. This enables quick access to the debugger controls. Check this preference if you have advanced students who are often using the debugger. If this box is not checked, then the debugger menu can be displayed by selecting the **Show Debugger Menu** menu item from the **Run** menu.

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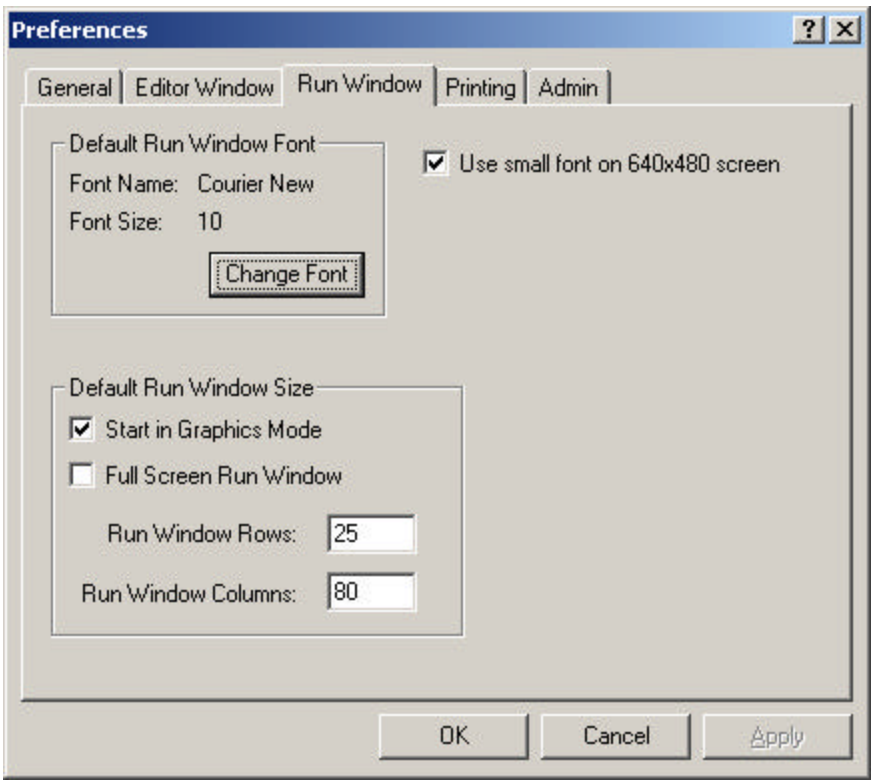
4.0.3 Run Window Tab



Run Window Tab Dialog Box

Run Window Font: You can change the font size and typeface used in the Turing run window. If you change the typeface, you must choose a monospaced font. Note that changing the size of the run window font may cause odd output in Turing programs that were written assuming a particular character size.

Start in Graphics Mode: This makes the initial run window a graphics window. The user can use graphics without the **setscreen ("graphics")** command in the program. Output that scrolls off the top of the screen is lost. In text mode, graphics are not allowed, but all text output is kept and can be scrolled, saved, and printed at any time.

Full Screen Run Window: This causes the default run window to occupy the entire screen.

Run Window Rows/Columns: This sets the size of the default run window. Changing the size may cause programs that assume a 25x80 window to malfunction.

Use Small Fonts on 640x480 Screen: A standard 25x80 window does not quite fit on a 640x480 screen with a standard size task bar. As a result, without this option, the default graphics mode run window appears with scroll bars. This option causes Turing to use a slightly smaller font for 640x480 run windows so the entire window fits on the screen. This option may cause odd output in Turing programs that were written assuming a particular character size.

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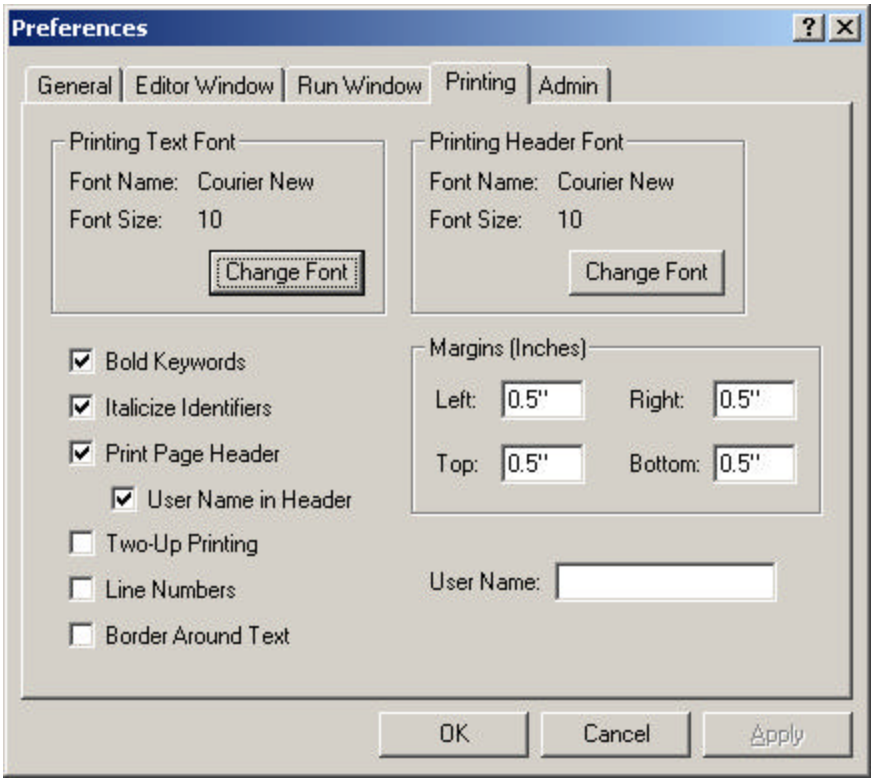
4.0.4 Printing Tab



Printing Tab Dialog Box

Printing Font/Printing Header Font: You can change the font size and typeface used in printing. If you change the typeface, you must choose a monospaced font where bold and non-bold letters are the same size. Many monospaced fonts have different sizes for bold and non-bold letters.

Bold Keywords/Italicize Identifiers: This allows for "syntax coloring" of printouts.

Two-Up Printing: This is a paper saving measure. Text is printed in landscape mode with two "pages" per piece of paper. This means that listings use half the amount of paper. Of course, the font is much smaller.

Line Numbers: This prints out line numbers in front of each line of the program. It is useful if you are printing out a listing to hand out to the class.

User Name: On systems where the user name is non-descriptive or non-existent, the user can enter a name that will appear on the printout allowing it to be identified. If users are choosing inappropriate user names, this preference can be disabled in the Admin tab preference dialog.

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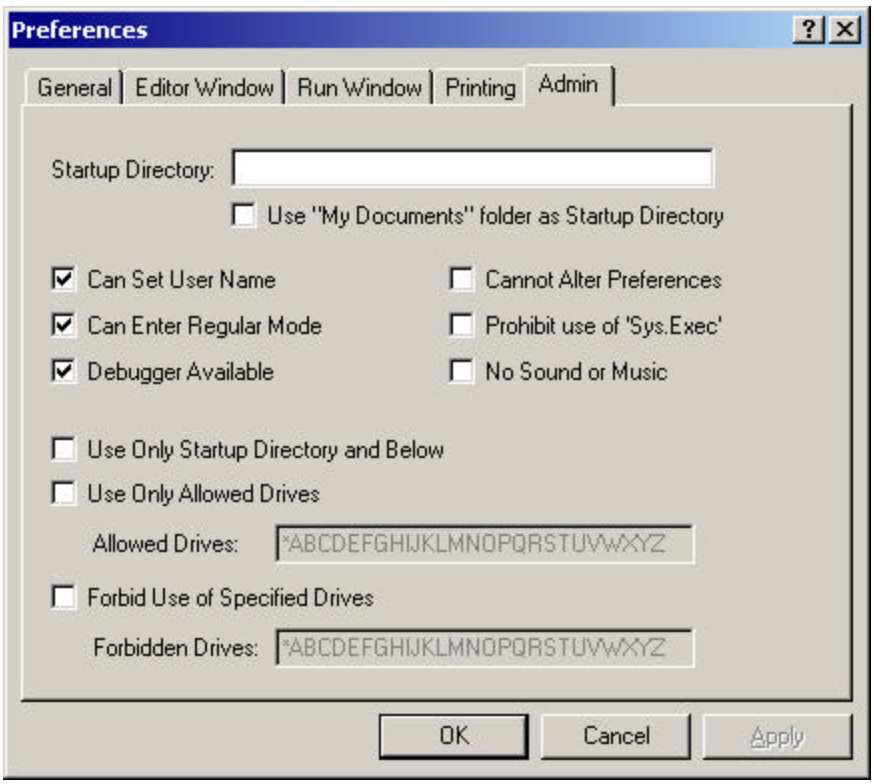
4.0.5 Admin Tab



Administrator Tab Dialog Box

Note, this dialog box is only available in administrator mode. Students starting Turing will not have access to this dialog box.

Startup Directory: Users will start in this directory. If left blank, Turing will use the working directory of the shortcut used to start Turing. If no working directory is specified, the directory where Turing is installed is used. Environment variables prefixed and suffixed with % signs can be used here (example: **g:\students\%username%**).

Use "My Documents" folder…: The "My Documents" folder can be used as the startup directory. This is most commonly used in single user systems.

Can Set User Name: Allows the user to specify the user name to appear on top of printouts.

Can Enter Advanced Mode: Allows the user to turn off the beginner mode preference.

Use only Startup Directory and Below: CAUTION! This option only provides rudimentary security and is to be used only on systems where the operating system cannot provide proper security. This option will not allow students to save or load to any directory other that their startup directory or directories created in the startup directory. This option does not stop students from browsing the names of files in other directories, only from loading or saving files in them.

Cannot Alter Preferences: Stops users from accessing the Preferences dialog. Stops Turing from reading the user's **turing.ini** file.

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5.0 New Features

5.1 New User Interface

Turing 4.0 has a completely new user interface. This interface is both simpler and more intuitive to use than the previous version. Unfortunately, the Turing User's Guide is not yet available. Notification of its availability will be made at the Turing web site (**http://www.holtsoft.com/turing**) and in the web help available from within Turing. The guide will be a free download and paper copies will be purchasable from Holt Software as soon as it is available.

5.2 Turing vs. Object Oriented Turing

The software identifies itself as Turing 4.0. The Turing name is replacing the "Object Oriented Turing" name. All OOT features are present with the exception of those noted in Section 6. We recommend that all users of Turing for DOS ("Classic Turing") upgrade to the new version of Turing. Most programs will work with minimal modification in the new environment.

5.3 Textbooks

At this time, the *Introduction to Programming in Turing* and the *Don't Panic Guide to Programming in Turing* have chapters on the Turing 4.0 interface. However, all older textbooks are usable with minimal modification. With older textbooks, you may have to provide your own notes on the editor.

5.4 Text Run Window

Output windows come in two flavors, graphics and text. Graphics mode is pretty much the same as in previous versions of the software. Text mode allows for scrolling text. It does not allow for graphics. If you are writing a program with a lot of text output, you can use

setscreen ("text")

to switch the window to text mode. Any output that scrolls off the top of the window can be scrolled back, text can be selected from the window and the entire contents of the output window can be saved or printed as a text file.

You can switch the default mode of the run window to either graphics or text in the Preferences.

5.5 Run Window Size

The run window can be made to the maximum size of the screen using the notation "max" for the window's width or height. For example

setscreen ("graphics:max;max")

produces an output window that is the entire size of the screen. Note this is not the same as the "fullscreen" mode that was available in Object Oriented Turing 3.1.1. The window's title bar is visible. Unfortunately, Turing 4.0 does not yet support full-screen mode.

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5.6 Run Window Position

A run window's position can be specified in terms of alignment with the screen. For example, to place a run window in the top-left corner of the screen, use

Window.Set (winID, "position:top;left")

The allowable alignments are top, middle, truemiddle, and bottom for the vertical alignment and left, center and right for the horizontal alignment. The middle alignment actually places the window 2/3 up the screen, as is the proper alignment for dialog boxes being placed in the "middle" of the screen. The "truemiddle" alignment places the window exactly in the middle of the screen.

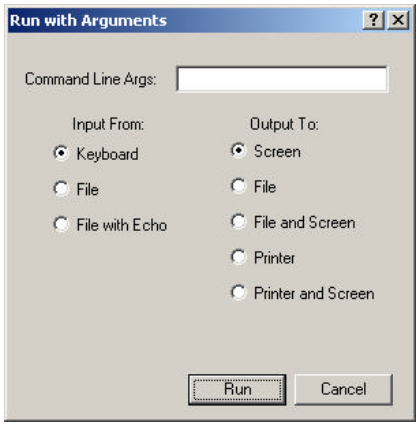
5.7 Open Printer as a File

To have a program send output to a printer, the program can open the file "printer" for **put**. When the file is closed, the output is sent to the printer. The following program sends a line to the printer and a line to the output window.

```
var f : int
open : f, "printer", put
put : f, "This will appear on the printer, not on the screen"
put "This appears on the screen, not the printer"
close : f
```

5.8 Redirection of Input/Output

Turing 4.0 allows for output to be redirected to a file and screen simultaneously. It also allows for input redirected from a file to be echoed to the screen, just as input from the keyboard is echoed. To use these new options, select **Run with Arguments** from the **Run** menu.



Run with Arguments Dialog Box

The **File with Echo** option causes input to be echoed to the screen as it is read from the file. The **File and Screen** option causes output to be sent to both the output window and the file that the user specifies. The **Printer** option and the **Printer and Screen** option send output directly to the printer (or the printer and the output window).

5.9 New Predefined Routines

Turing 4.0 introduces a host of new predefined routines. To get more information about these routines, check with the on-line help.

Pic.Rotate – Rotate a bitmap an arbitrary number of degrees

Pic.Scale – Scale a bitmap to any size. The width and height can be scaled independently.

Pic.Width and **Pic.Height** – Obtain the width and height of a picture.

Pic.FlipVertical and **Pic.FlipHorizontal** – Flip a bitmap over a vertical or horizontal axis.

Music.PlayFileStop – Stop music playing from a file.

Input.Keydown – Determine which keys are currently depressed.

Input.Flush– Flushes the keyboard buffer.

Sys.Exec – Launch a third-party application or file.

Sys.GetUserName and **Sys.GetComputerName** – Obtain the current user name and the name of the workstation.

View.Update and **Window.Update** – Used in conjunction with **setscreen ("offscreenonly")** to produce smooth, flicker-free animation.

5.10 Enhanced Predefined Routines

Turing 4.0 has enhanced some previously existing predefined routines. To get more information about these routines, check with the on-line help.

Music.PlayFile – Now plays MP3's on machines equipped with the appropriate Microsoft Media Player.

Pic.FileNew– Now loads JPEG's. Sadly, due to patent licensing issues, GIF importation will not be supported until the GIF patent runs out in a few years.

6.0 Features Not Yet Implemented

Turing 4.0 does not yet incorporate all the features that currently exist in Object Oriented Turing 3.1.1 and are intended for future Turing releases. Over the next few months, new features will be added and updates to Turing will be made available on our web site. The features to be added are:

The Sprite module
View Variables

If you have immediate need of either of these features, please continue to use the Object Oriented Turing 3.1.1 software. Ontario users can obtain the software through their OESS software representative.

To determine the current release of Turing, check the Turing web site at

http://www.holtsoft.com/turing/support

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7.0 Technical Support

If you have problems, questions or suggestions about the Turing software, contact technical support at

Telephone:	(416) 978-8363
Toll free:	1-800-361-8324
Fax:	(416) 978-1509
E-mail:	west@hsa.on.ca