

# ISETL GETTING STARTED GUIDE

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## Running ISETL

### To open ISETL:

- If there is an icon named ISETL visible, double click on the icon.
- If there is no icon, see your *Lab Information Sheet* for details specific to each different lab on campus.

After some time, a window appears with menus at the top and a message.

### Basic operation of ISETL:

- Type instructions at the > prompt.
- Complete an expression with a semicolon (;).
- Press <enter> (or <return>).

If you enter  
> 6 \* 8;

ISETL Responds  
48;

- The menus above the Execution window are standard Macintosh menus.

Three kinds of input:

- an expression to evaluate
- an instruction statement
- a directive

In ISETL you can use either <enter> or <return> interchangeably.

If you get a >> prompt, your input is not complete. Check that you typed the semicolon (;).

ISETL prints results at the left margin of your screen.

### To quit ISETL:

- Open the **File** menu and select the **Quit** option, or type the directive !quit.
- ISETL then gives you a choice to Save, Discard, or Cancel. Select an option by clicking on it.

**Save** will save the entire work session in a file.

**Discard** exits without saving.

**Cancel** nullifies the **Quit** command and puts you back in ISETL.

As with other applications, be sure to quit before ending a session.

### Execution window vs. Text window:

When ISETL starts up, the Execution window is opened. Choosing **New** or **Open** from the **File** menu opens text windows which are not interactive.

- Running ISETL in the Execution window allows you to check code line by line as you submit it.
- Text windows allow you to write and save longer sections of ISETL code without executing each line.
- ISETL code must be moved from a text window into the Execution window for ISETL to process it.

The Windows version of ISETL does not currently support text windows.

This feature can be emulated by using a text editor like Notepad at the same time.

See page 5 for instructions on how to bring up code from a text window for execution.

## Entering ISETL input interactively

Enter your ISETL expression at a > prompt.

You may use

- constants
- identifiers (variables)
- keywords and symbols

### To complete your input:

- Type a semicolon (;) then enter.

ISETL evaluates your expression and displays the value at the left margin below your last line of input.

```
> a := 3+5 ;
>
```

```
> 3.7e-4;
3.700e-04;
>
```

```
> (3<2) or (2=1+1);
true;
>
```

When ISETL is ready to receive information, a > prompt appears.

ISETL evaluates  $3 + 5$ , assigns that value to  $a$ , and returns a new > prompt awaiting next input.

ISETL evaluates an expression in standard scientific notation and produces a > prompt. 'e' is shorthand for 'ten to the' power.

ISETL evaluates an expression using or as a keyword and produces a > prompt.

### To respond to a >> prompt:

- Type ; then <enter> (if semicolon was omitted).

ISETL will process the completed expression.

```
> (3<2) or (2=1+1)
>> ;
true;
>
```

— OR —

- Type the directive: !clear then <enter>.

!clear returns you to the > prompt.

```
> (3<2) or (2=1+1)
>> !clear
!clear complete
>
```

A continue prompt (>>) appears when you press <enter> after an expression ISETL does not recognize as complete.

Omitting the semicolon gets a >> prompt. Respond with more input, a semicolon, or !clear. Typing the semicolon completes this expression.

When you type !clear, ISETL forgets all material typed since the last > prompt. Previously defined identifiers remain.

**To enter multiple-line expressions:**

- Type the first line.
- Press <enter> for >> prompt.
- Type additional lines.
- Complete the expression with ; then <enter>.

```

> 17
>> >=
>> 3* 6
>> ;
>

```

ISETL does not wrap lines, nor is it very sensitive to spacing. This input will be accepted as if it were:

```
> 17 >= 3*6;
```

There is no space in := or >=. They are examples of “symbol pairs” in ISETL.

**To repeat code already on the screen:**

- Highlight the desired material with the mouse as in this example.

```

> a:= 3+5;
> a * 5;
40;
> 17 >= 3*6;
false;
> |

```

ISETL lets you re-enter old lines from anywhere on the screen (or on the screens scrolled up).

- When selected lines are highlighted, press <enter>.

```

> a:= 3+5;
> a * 5;
40;
> 17 >= 3*6;
false;
> a:= 3+5;
> a * 5;
40;
>

```

ISETL copies the selected lines to the current workspace and executes them.

This feature enables you to reassign variables or re-run complex expressions, and compare results.

**Editing ISETL input in Execution window****To make changes in an ISETL line:**

- Use arrow keys or the mouse to move the cursor. Remove a character with <delete>.
- Insert characters by moving cursor to insertion point and typing.
- Replace characters by highlighting them and typing the new input immediately.

**To delete lines:**

- Highlight selected lines.
- Press <delete> (or <backspace> key).

**To clear your work space:**

- Highlight the material to be removed.
- Press <delete> (or <backspace> key).

**To recover from an error:**

- After most errors, ISETL clears the input. Retype the code with corrections or edit the input on the screen (see above) and reenter.
- If ISETL does not clear the input, type `!clear` and then proceed.
- If ISETL does not execute what is typed when <enter> is pressed, you may not be on the active prompt. Scroll to the bottom of the window and use the last prompt.
- If the last line of the window has no prompt, place the cursor as far down as possible (use the down arrow) and press <enter>. This will give a new >.
- If you close the Execution window, immediately use **New** in the **File** menu.

The usual practice of deleting any highlighted material when any new key is pressed works in ISETL except for <enter> and <return> which re-enter the selected code (see page 3).

If you get a >> prompt, you probably need to clear using `!clear`.

A response of 0M from ISETL means you have used an undefined identifier.

Only the last line of the Execution window is active. All typing needs to be done on that line.

**Entering ISETL code from a file****To write ISETL input in a text window:**

- Move to a text window:
  - Open the **File** menu.
  - Select the option **New**.A text window will appear.
- Type ISETL code.  
No prompts will appear in the text window.

Writing code in a text window and moving it into the Execution window can save time.

**To save a text window as a file:**

- Use the **Save** option from the **File** menu.
- As you work, save your file often.

**To execute code from a file, using a Macintosh:**

- Under the **File** menu, **Open** the file as a text window.
- Edit the file, if necessary. You may need to “deprompt” the file.
- Highlight the lines you want to execute.
- Press <enter>.

The lines will be copied into the Execution window, and ISETL will process the statements.

See the next section if you are working in ISETL for Windows.

Files cannot be executed unless they have been deprompted (see page 6).

If the code calls a graphics routine or if you need to plot, you will need to point ISETL to its home directory. See *ISETL Graphics Guide*.

**To execute code from a file, using Windows**

ISETL for Windows does not currently support text windows. To work around this difficulty, we will open files into their own window using the program Notepad or some other text editor.

- Open the file in a text editor.

You will need to open Notepad through the **Start Menu**, going to **Programs** and into **Accessories**. When Notepad is running, use the **Open** command in the **File** menu to open the file.

- Edit the file, if necessary.
- Highlight the lines you want to execute.
- Choose **Copy** from the **Edit** menu.
- Switch back to ISETL’s Execution window and choose **Paste** from the **Edit** menu.
- Highlight the pasted lines again, and press <enter> to run the code.

**Saving your ISETL work in files****To save ISETL code or ISETL results:**

- Highlight lines to save.
- Select **Copy** from the **Edit** menu.
- **Open** a file (using the **File** menu), or start a **New** file.
- **Paste** the lines in the file using the **Edit** menu.
- **Save** the new or updated file.

**Suggestion:** Start a new file for all work associated with each problem. (Really large files cannot be read by ISETL.)

**To save a complete session:**

- Remove prompts and error messages (see below).
- Select **Save as...** from **File** menu.
- Type in a name for your file. This will re-name the Execution window with your file name, but it will remain the interactive window.
- Press <enter>.

**Warning:** Never close the Execution window in the middle of a session. You could crash the system.

**To remove prompts from ISETL code:**

- Highlight the lines desired.
- Open the **Edit** menu and select **Deprompt**.

All prompts will be removed from the selected code. This option works in the Execution and text windows.

**Beware:** Deprompt code before re-entering it from a text window. ISETL reads prompts in your file as commands and errors will result.

**To Print ISETL results:**

- Select **Print...** from the **File** menu.
- Respond as directed by your local print setup.

**Important!** There is a different procedure for printing graphics on a Macintosh. Do not use **Print...** in the **File** menu. See either the *Printing Information Sheet* or the *ISETL Graphics Guide* documents.

**Using directives**

Directives must begin with an exclamation mark(!). They do *not* end with a semicolon.

**To clear interactive input:** Use `!clear`.

ISETL forgets all material typed since the last `>` prompt. Previously defined identifiers remain.

**To reenter lines from a file:** Use `!include <filename>`.

ISETL reads and processes the file. Be sure the file is in the same folder as ISETL. The filename must not contain any spaces.

**To check memory available:** Use `!memory`.

**To increase memory:** Use `!memory <any positive integer>`

Put a space after `!memory` and omit commas from large numbers. e.g., `!memory 200000`

**ISETL character set**

**Legal characters for input:**

```
* / + - [ ] { } ( ) < >
a-z A-Z 0-9 @ #
% ~ _ , ; : = | ?
```

**These pairs are also used:**

```
:= .. ** ->
/= <= >=
```

Do not put a space between these symbols.

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