TI-FLOW

A port of Flow Free, for the TI-84 Plus
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Introduction

Flow is a popular single-player puzzle game for mobile devices. Our love of programming, and the hours of enjoyment (and frustration) that we got from perfectly completing every available Flow level (even the premium packs) inspired us create a port of the game for our favorite graphing calculator, the TI-84 Plus. After weeks of deliberation and collaborative work we now present our implementation of Flow Free for the TI-84 Plus monochrome series of calculators: TI-FLOW.

Compatibility

- TI-83, TI-83 Plus, TI-83 Plus Silver Edition
- TI-84 Plus, TI-84 Plus Silver Edition
- All known international versions of the above

Installation

Use TI Connect or a similar software to transfer TIFLOW.8xg to your calculator. If you drag the group into the RAM portion of your calculator, TI Connect will ask which files you wish to transfer. TIFLOW.8xp, and at least one of the FLPACK__.8xp files are required. The FLPACK__.8xp files contain the pack data necessary to play the levels. Each pack contains unique levels of a different size:

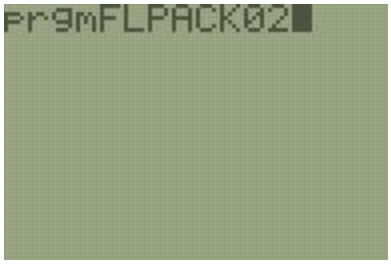
FLPACK01.8xp	50 5x5 boards and 50 6x6 boards	1199 bytes
FLPACK02.8xp	50 7x7 boards and 50 8x8 boards	1579 bytes
FLPACK03.8xp	50 9x9 boards and 50 10x10 boards	1681 bytes
FLPACK04.8xp	100 assorted boards in random order	1454 bytes

You may Archive packs that you do not currently wish to play, and UnArchive them when needed. If you have DoorsCS7 installed, you may run the packs while archived using the HomeRun feature.

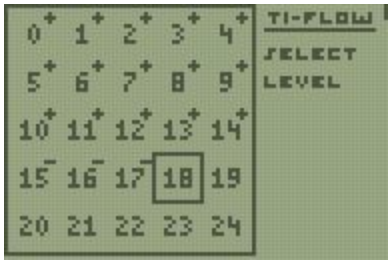
How to Play

Flow is played by two simple rules: connect each lettered pair of dots (nodes), and fill every space. Flows are also not allowed to cross themselves or flows of a different letter.

1. Play TI-FLOW by running one of the pack programs listed above from the PRGM menu.
    a. Running a FLPACK__ program loads the level data needed to play TI-FLOW.
    b. If you attempt to omit this step, you will be instructed to “RUN PACK TO PLAY.”



2. Select the desired level from the Select Level screen:
    a. Use the arrow keys to move the cursor to the desired level and press [2ND] to select it.
    b. You are only allowed to select the next level and levels that you have already completed.
    c. Completed levels are indicated with a “-” and perfectly completed levels are indicated with a “+.”
    d. You progress is saved in LFLO.



3. Playing the game
    a. Use the arrow keys to move the cursor.
    b. Press [2ND] to select/deselect a node or flow.
    c. Use the arrow keys to drag the flow in the desired direction.
    d. When you complete a flow, it will automatically deselect.
    e. Press [CLEAR] to reset the board, pressing [CLEAR] when the board is empty will take you back to the Select Level screen.
    f. Complete a level perfectly by solving the level with the least number of moves.
    g. Have fun.

4. Saving and exiting
    a. Pressing [CLEAR] at the Select Level screen will safely exit TI-FLOW
    b. Selecting “QUIT” at the completed level menu will also exit TI-FLOW safely
    c. Pressing [ON] to exit will not clear the variables, and will leave your progress susceptible to accidental deletion.

Technical Information

For the largest boards, the execution of TI-FLOW may require up to 6000 bytes of additional memory, which will be freed by exiting correctly by pressing [CLEAR].

Variables Modified:

- Real: A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, R, S, T, U, V, W, X, Z, θ
- Finance: N, I%, PV, PMT
- List: L1, L2, LFLO
- Matrix: [A], [B]
- String: Str1, Str2, Str0
- Pic: Pic8, Pic9, Pic0
- Misc: GDB1, *n*, Ans

Why are the packs separate programs?

- Storing the packs as separate programs has numerous advantages:
  - User can selectively load packs to the calculator.
  - User can archive packs to conserve memory for other programs.
  - TI-FLOW can accommodate additional packs.
  - Third-parties can create TI-FLOW packs (see "Resources").
  - Users can share individual packs with others.
  - TI-FLOW can support up to 100 packs with unique identifiers, with 100 levels each for a total of 10,000 levels at the same time! (memory allowing)
- Storing packs as separate programs also has several (minor) disadvantages
  - Packs cannot be loaded from the main program, because they may be accessible.
  - Main program cannot display statistics about all packs simultaneously.
  - Distributing the game requires transferring multiple programs.

Troubleshooting

I can't play TI-FLOW what should I do?

- Make sure the variables listed in "Technical Information" are not archived
- Make sure you run the Pack, not TIFLOW.8xp

I'm still having problems, help!

- Post about your issue on Cemetech, we will be happy to help. cemete.ch/p241226

Resources

See the “resources” directory (folder) for more in-depth information, and instructions on how to create your own TI-FLOW packs.

Individual .8xp program files are located in resources/bin.

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