

Computer Squares

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1 Overview

First, the most important thing that a program's documentation should tell you up front but often doesn't: how to quit. If the "Setup Display" or some other not-a-full-screen Display is showing, press the [Cancel] button or press the \otimes in the upper right hand corner of the display. Then press "q". If a whole-screen display is showing (Edit, History, Present, or Squares), just press "q". You'll then be asked to verify your choice: [QUIT] or Cancel. Quit, of course. If instead you want to have the program save its current dancer information and exit, press "x" instead of q.

Swirls is "*freeware*"; read the license at the end of this document. Using Swirls means that you have agreed to the terms of the license.

Swirls supports a mixed dance with both couples and singles together. The database for Swirls includes a separate line for each dancer; dancers may have "partners". No partner? No problem! Swirls itself will match singles with other singles every tip.

Swirls is fast! On my computer it rolls up squares for 500 couples in about 2 seconds. That many squares won't legibly fit onto most monitors all at once; Swirls will automatically scroll the display in small increments up and down so that all squares will be shown over time.

(*roll*: think of dice!)

Swirls supports multi-program-level clubs; use the Setup Display (hotkey s) and select your currently desired "Minimum Pgm" level, and then Done. Swirls will leave the availability indications alone, but will only select those for square dancing via the Squares Display (hotkey: r) that can dance the requested program level. Change the program level as needed. As of version v3, you can also change the program level with the l and L keys (see Sec. 6 Program Level Control).

The program is largely run via hotkey and/or the rightmouse menu. To use the rightmouse menu, first click the right mouse button (or press m) ; a small menu of options will then appear. Make your selection by clicking on the item; to make the menu disappear just press the rightmouse button again (or m) .

Note that the hotkeys and the rightmouse will only work with the full-screen displays (Edit, History, Present, or Squares Displays). With the other (small) displays, your choices are typically on the bottom of the display (Done, DoltNow, and Cancel). You may select these by clicking them with your leftmouse.

If you've run the program before and generated a Swirls datafile, then the initial display will be the Edit Display using your last saved dance. Otherwise, you'll start with the Setup Display. Use it to set up your dance (program level, quantities of "anonymous" (ie. unnamed but numbered) dancers, where the output file goes, the name of your club, etc). Then you'll probably want to press the New Square Dancers button and enter your dancers' names. With the Edit Display, you may use the n key to generate new square dancers, or refer to the rightmouse menu.

Please don't forget to save all that information you've laboriously entered by pressing the **w** key and writing the swirls file!

Dancers are indicated as available for dancing by being brighter on the Edit Display; non-available dancers have a gray background. Whenever you enter a dancer via the New Dancer display, that dancer is assumed to be available. To change a dancer's availability status, simply click on his/her name in the Edit Display.

Swirls supports festivals with rfid cards. Couples receive a rfid card and Singles each receive a rfid card. The cards carry a unique number on them; swiping the card over a rfid reader sends that number to Swirls. Swirls will then toggle the availability of the dancer/couple. There are "command cards" which tell Swirls to switch between the Present display and to roll up a new set of squares, change the sex (M F MF FM E) associated with the dancer, etc. See the section on **E,I: RFID Display** (Sec. 19) for more.

Finally, once you've gotten yourself some dancers (either of the named or anonymous varieties), you'll want to use the "r" hotkey and roll up some squares!

2 rightmouse: Menu

a: availability display	M: multiple rfid associate
A: absent without notification	n: new square dancer
B: go back (reset dance)	o: make all (not) available
c: current squares display	p: present display
d: display name style	q: quit (no save)
e: edit display	r: roll up squares
E: edit rfid association	s: setup display
f: slower autoscrolling	t: total dancers/clear mesg
F: faster autoscrolling	T: click+tag dancer
h: newest to oldest history	u: use history display
H: oldest to newest history	w: write
I: info on rfid association	W: write+save dance counts
I: decrease program level	x: save using w then exit
L: increase program level	X: save using W then exit

leftmouse	: avail on/off
ctrl-leftmouse	: skip tip once
click, ctrl-leftmouse	: must once
avail off, S	: skip alternate tips - last selected dancer
avail on, S	: remove all skips - last selected dancer
+	: increase fontsize
-	: decrease fontsize

Clicking on the "rightmouse" (or pressing **m**) in the Edit Display, History Display, Present Display, or Squares Display will bring up the rightmouse menu.

The rightmouse menu lists the hotkeys and actions one can take. Move the mouse up and down and then use the leftmouse button to select the action/Display that you want. If you change your mind and wish to cancel out, just click the rightmouse button again.

The hotkey for each action is shown just before the colon.

The text below the buttons acts as a reminder for various actions: how to make dancers available or not, how to have a dancer sit out a single tip, how to have a dancer sit out alternate tips, and how to increase/decrease fontsize.

Selection	Action Taken	Section
a: availability	Brings up the Availability Display	Sec. 16
A: absent without notice	A modified Present display to find who is absent	Sec. 21
B: reset	Reset rfid/dancer data	Sec. 22
c: show current squares display	Re-displays the current Squares Display	Sec. 10
d: display name style	Changes the way names are displayed	Sec. 3
e: edit display	Brings up the Edit Display	Sec. 4
E: edit rfid display	Edit an rfid-square dancer association	Sec. 19
f: slow down autoscroll	Autoscroll is slower	Sec. 10
F: speed up autoscroll	Autoscroll is faster	Sec. 10
h: history display, newest to oldest	Brings up the History Display	Sec. 17
H: history display, oldest to newest	Brings up the History Display	Sec. 17
I: info on rfid association	Give name of square dancer associated with the rfid	Sec. 19
l: decrease club program level	Decrease the program level	Sec. 6
L: increase club program level	Increase the program level	Sec. 6
m: Menu	Show the menu (rightmouse btn will also do this)	Sec. 2
M: multi-rfid display	Set up multiple anonymous dancer rfid associations	Sec. 20
n: new square dancer	Brings up the New Square Dancer Display	Sec. 7
o: make all dancers (not) available	When in Edit Display, will make all (un)available	Sec. 8
p: present display	Displays a list of dancers that are present/available	Sec. 9
q: quit (no save)	Quits without saving	Sec. 15
r: roll up squares	Rolls up a new Squares Display	Sec. 10
R: repeat last timed message	Repeats the last timed message	Sec. 11
s: setup display	Brings up the Setup Display	Sec. 12
S: click + skip control	Dancer will skip alternate tips	Sec. 4.2
t: total dancers	Shows message with total dancers, singles, couples	Sec. 13
T: click + tag dancer	Enter dancer into tagged dancer list	Sec. 14
u: use history display	Returns to Square Display using the selected history	Sec. 17
w: write	Writes square dancers to selected output file	Sec. 15
W: write	Like w, but also writes dancers' dance counts	Sec. 15
x: exit and save	Writes square dancers output file and Exits	Sec. 15
X: exit and save	Like x, but also writes dancers' dance counts	Sec. 15
z: command card setup	Associate rfid card to a command	Sec. 23

3 d : Display Name Style

The **d** hotkey will select a style for displaying names in the Edit, Present, and Squares displays.

Lastname only dancers' last names will be shown

LastFI dancers' last names followed by their first name's initial

Firstname only dancers' first names will be shown

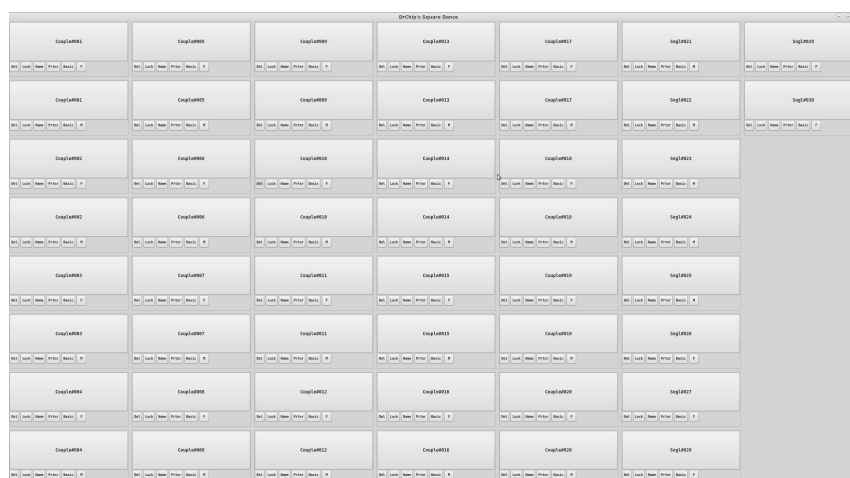
FirstLI dancers' first names followed by their last name's initial

The **d** key will go amongst these styles in a round-robin fashion.

The Setup Display (**s**) has a selector button for these choices, too.

Unfortunately the **d** key will not modify the History display. That's because the History display will only show what Swirls showed previously.

4 e : Edit Display



has hotkeys has rightmouse menu

The “e” hotkey will bring up the Edit Display.

This display is composed of a grid of Dancer names and editing tabs. Each Dancer name is actually shown in a “toggle” button; if bright, the dancer is *available*; click on it and the dancer becomes “dark” and is no longer available for dancing.

If one lets the mouse sit still atop a Dancer name button (computer geeks call this “hovering”) then a small tooltip will show the dancer’s name, his/her partner, and the quantity of dances they’ve participated in. Additional information may also sometimes be shown: if the dancer is skipping a tip and/or if the dancer has been “tagged” (for tagging, see Setup Display).

You may have a popular club and have so many dancers that the Edit Display is full. Swirls does attempt to choose a font that will fit the dancers onto your display, but the Edit Display may still be too full. A scrollbar will then appear on the right hand side of the display that you may move up and down to see all of the dancers' names.

For Partners:

Double-clicking with the leftmouse will change the availability status of both the dancer and his/her partner.

Handling a Block of Availability Changes: (advanced)

If you wish to toggle a block of dancers' availabilities, toggle the first dancer's availability button, move the mouse to the last dancer's availability button, then press **shift-leftmouse**.

4.1 Skipping A Tip

Sometimes dancers will request that they be allowed to skip the next tip.

To accomplish this, simply press **ctrl-leftmouse** while atop their name in the Edit Display, assuming that s/he is currently marked as available. Their availability will then be changed to not available and a message will appear indicating that they will be made available in a subsequent tip.

To cancel a skiptip, press **ctrl-leftmouse** while atop their name in the Edit display, assuming that they are currently marked as not available. Their availability will then be changed to available and a message will appear indicating they they will not be skipping a tip.

Note that such a dancer's partner, if available, will be treated as a single when the dancer is marked unavailable and as the dancer's partner when the dancer is available.

4.2 Skipping Alternate Tips

Some dancers may prefer to be out every other tip. Swirls accomodates this using the following method:

- In the Edit Display, click the dancer's availability to off
- Press "S" (for skiptip)

The dancer's availability will then alternate between in and out.

To remove this alternation:

- In the Edit Display, click the dancer's availability button to on
- Press "S" (for skiptip)

A concern such dancers may have is what will happen to their partner? When the dancer is not available, the dancer's partner will be treated by Swirls as a single (assuming that they're available, of course). When the dancer is available, then they will be treated as a couple.

4.3 A Dancer Tab

I've extracted a single Dancer from the Edit Display as shown below:



This dancer is the female half of Couple#7.

There are six actions one can perform with this dancer using the editing tabs below it.

Del Click this and you'll get a requester asking "Just checking: Are you sure?". Two, sometimes three, options here: "OK", "CANCEL", and sometimes "Del Rfid Only":

OK Click on "OK", and the dancer will be deleted from Swirls's database.

Accidental Deletion: The dancer may not be totally gone if that dancer was in your database file; until you either exit the program by pressing x or save the live database with w the database file will still have the dancer. Pressing "q" will quit the program without saving, and thus you may then recover from erroneously deleting a dancer. Of course, whatever other changes were made since the last save will also be lost.

Del Rfid Only When the square dancer has an rfid, then this button will remove the rfid and the association. It will *not* delete the square dancer!

CANCEL Click on "CANCEL", and the dancer will *not* be deleted!

Luck Dancers are in two categories for dancing: they are either "Luck" or "Must". This is a matter of priority – "must" dancers have priority over "lucky" dancers. Use the "must" dance priority for a class with students, for example, and "luck" for your experienced angel dancers. Normally, the expectation is that dancers will have "Luck" priority.

Click on this button to toggle the dancer's priority between "luck" and "must". If one wishes to have a "must" condition to last for one tip only, click ctrl-leftmouse on the luck-must button. Normally newly arrived dancers are given a dance count one less than the maximum the dancers have, so they already will receive a priority boost.

Helping out with "Open" Tips

This feature is especially useful with "Open" tips. Mark those sitting out an open tip with a

one-tip-must condition. Otherwise, those who sat out an open tip will likely complain when Swirls marks them as “out” for the next tip, even though there’s no way for Swirls to know who sat out or who danced, or that there even was an open tip.

Higher priority dancers will be spread out over the squares. This feature helps student dancers by not concentrating them in a few squares, exposing them to more experienced dancers instead.

Ctrl-click (ie. press the ctrl key while pressing the leftmouse) while atop a dancer’s “Luck” button will enter a next-tip-only priority change for the dancer to “Must”.

Deep There are actually at least two more priority levels controlled completely by the program itself. In order to insure that dancers don’t miss out on dancing more than one tip in a row, the program keeps track of the number of dances (tips, actually) a dancer has participated in. Dancers with fewer dances get a “want-to-dance” bump in their priority. So the priorities are, from the highest to the lowest: must+want, must, luck+want, and luck.

Name The “Name” button, when clicked, brings up another (small) display:



no hotkeys no rightmouse menu

One may change an already existing Dancer’s name with this tool. Press “Done” when you’re satisfied with the modified name. If you wanted a new dancer instead, press “Cancel” and then “n”.

Prtnr A dancer may or may not have a partner. Clicking on this tab will bring up a slider and a name (or “None”). When “None”, the dancer is considered to be single and Swirls will endeavour to match that dancer up with other single dancers every tip. The slider will only show names that are dancing-compatible with the dancer: that is, with singles that can dance the other part (a girl will be matched with someone who can dance boy, for example). When you’re done with this selection, just click on the “Prtnr” button again or click on the partner’s name.

Why can’t I make these two into partners?

Note that the Prtnr slider will only present dancers that are available, dancing compatible, and not already partnered. In other words, no M-M or F-F couples, and no triples. If you get a request that a pair of people wish to be a couple on the floor, make sure that the program knows that they’re not both boy only or girl only dancers (can one dance MF, FM, or E?).

Another thing that can block two dancers from being considered as partners is the current program level the club is dancing. If either dancer’s program level is not at or above the club’s current program dance level then that dancer won’t be considered for partnering.

If a person is unexpectedly not appearing in the potential matches list, check that that person isn’t already partnered with someone. If s/he is partnered, “unpartner” them - select that

person's Prtnr button, move it to "None" (or just partner them up with the desired match).

What happens when a dancer's partner isn't present?

Sometimes only half of a couple will show up for your dance or a dancer will leave early. Swirls has no problem with this; just make or leave the present dancer as *available* and make or leave the absent partner *unavailable*.

Swirls will then treat the single dancer as, well, a single!

Basic (or some other square dancing program). Clicking this button will allow you to change what Swirls knows about the dancer's program level: basic, ssd, mainstream, plus, dbd, a1, a2, c1, c2, c3a, c3b, or c4. When rolling up squares, this selection is important, because dancers who have only mastered programs less than the selected program level won't be considered. In other words, when the club program is at C1, a DBD dancer will not be considered when rolling up squares. You can change the club's current dancing program by using the "s" hotkey (see Setup Display below).

If a dancer's program level is less than the club's current dancing level, then although the dancers' availability will not change, available dancers' PGM level's (DBD, A2, etc) foreground text will be displayed in red.

Why isn't this dancer included in the Squares display?

Make sure that Swirls knows what their proper program level is; ie. use the Edit display as needed to fix their program level.

F (or M, MF, FM, or E) This is the sexy button! Oddly enough, there are five possibilities here:

Dancers who dance "F" are assumed to be able to dance the "girl" part (only).

Dancers who dance "M" are assumed to be able to dance the "boy" part (only).

A "MF" dancer is one who prefers to dance boy, but can dance the girl part, too.

A "FM" dancer is one who prefers to dance girl, but can dance the boy part, too.

An "E" dancer is one who can dance either boy or girl and has no preference.

This choice also affects the "Prtnr" button's slider as to which dancers a dancer may potentially be partnered with, and the "Squares" display (r key) which will attempt to match single dancers with compatible single dancers.

5 g,G : Debugging using Recording

(*advanced*)

6 l,L : Program Level Control

Pressing l will cause the club's program level to be decreased by one.

Pressing L will cause the club's program level to be increased by one.

The Swirl window's title will change to show the new program level.

When Swirls rolls up a new set of square assignments (r), it insures that dancers are paired up that are a) available, b) are dancing compatible, and c) can both dance the current program level (basic, plus, dbd, adv2, etc). Dancers that are not able to dance the current level have their levels shown in red on the Edit Display (e).

7 n : New Square Dancer Display



no hotkeys no rightmouse menu

The “n” hotkey will bring up this display from the Edit Display; if you’re in the Squares Display, pressing “n” will bring up the Edit Display and then the New Square Dancer display.

Here you can enter the first and last names of the new dancer, and use the buttons to specify luck vs must, program level, partner, and boy-girl preferences. See “Edit Display” for details on how these buttons work.

One may press “Done” which will enter the new dancer into the database, or “Cancel” to cancel without entering that new dancer into the database. The “DoltNow” button will enter the new dancer into the database but remain ready for another new dancer to be entered.

Entering two people as partners in the New Square Dancer display is also supported! In the “First name” entry box, enter the couple’s two first names separated by an “&”. If the couple shares the same last name, simply enter it into the “Last name” entry box; if the couple has different last names, enter them like you did their first names: separated by an “&”. Either way, Swirls will generate two dancers, one “M” and one “F”. You can always go and change something about a dancer in the usual way later (ie. via the Edit Display).

example [Jack & Jill] [Hillclimber]

This enters Jack Hillclimber and Jill Hillclimber into Swirls, as partners.

example [Jack & Jill] [Hill & Valley]

This enters Jack Hill and Jill Valley into Swirls, as partners.

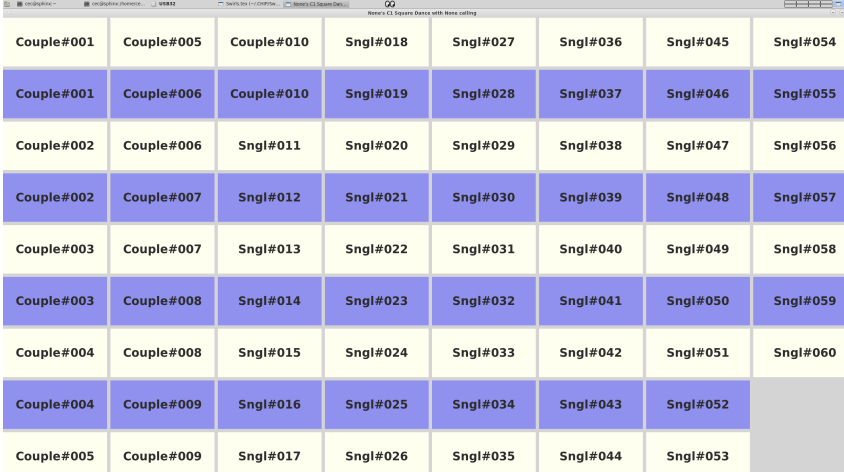
As a reminder, after you’ve entered in new dancers, when you’re next in the Edit display or the Squares display press w to write out the new dancers to a file.

8 o : Make All Dancers (Not) Available

The “o” hotkey, when in Edit Mode, will set the availability of all dancers to not available, unless all square dancers are already not available. In the latter case, the “o” hotkey will cause all square dancers to be set to available. This action makes it quicker to “reset” the display for a new dance session; one may then enable dancers as they enter.

As a side effect: when one uses the o key, presumably one is radically changing the number of dancers that are available, so Swirls will also clear the dances all dancers have. Affects priority.

9 p : Present Display



The screenshot shows a window titled "Present Display" with a grid of dancer information. The grid has 8 columns and 8 rows. The first 7 columns contain dancer IDs, and the 8th column is empty. The dancers are listed in pairs of Couple and Sngl for each row. The background of the window is light gray, and the grid cells are white with black text. The window title bar includes "Present Display", "Swirls", and "Henry's C++ Square Dance with Base Calling".

Couple#001	Couple#005	Couple#010	Sngl#018	Sngl#027	Sngl#036	Sngl#045	Sngl#054
Couple#001	Couple#006	Couple#010	Sngl#019	Sngl#028	Sngl#037	Sngl#046	Sngl#055
Couple#002	Couple#006	Sngl#011	Sngl#020	Sngl#029	Sngl#038	Sngl#047	Sngl#056
Couple#002	Couple#007	Sngl#012	Sngl#021	Sngl#030	Sngl#039	Sngl#048	Sngl#057
Couple#003	Couple#007	Sngl#013	Sngl#022	Sngl#031	Sngl#040	Sngl#049	Sngl#058
Couple#003	Couple#008	Sngl#014	Sngl#023	Sngl#032	Sngl#041	Sngl#050	Sngl#059
Couple#004	Couple#008	Sngl#015	Sngl#024	Sngl#033	Sngl#042	Sngl#051	Sngl#060
Couple#004	Couple#009	Sngl#016	Sngl#025	Sngl#034	Sngl#043	Sngl#052	
Couple#005	Couple#009	Sngl#017	Sngl#026	Sngl#035	Sngl#044	Sngl#053	

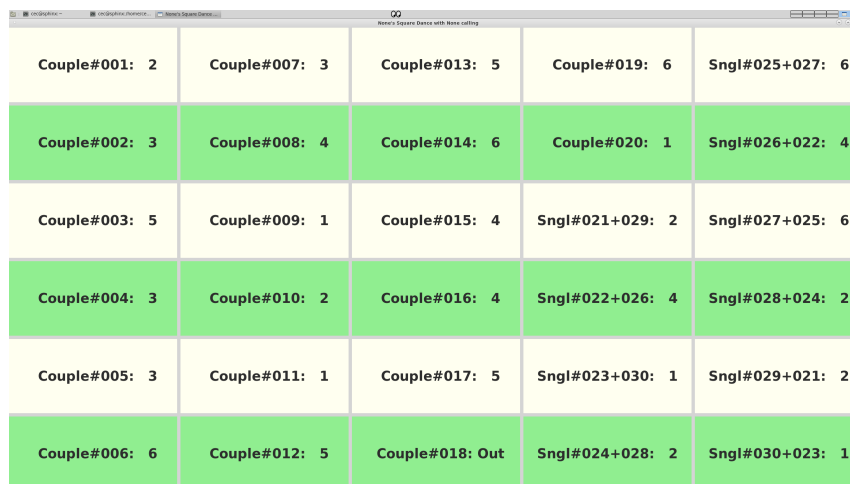
has hotkeys has rightmouse menu

The “p” hotkey brings up the Present Display.

The Present Display generates a list of available dancers that can dance at the currently selected level. Show this display to dancers so they can tell you if they’re missing from the display. Its especially useful when one is starting the first tip. The Present display does not modify dancers’ tip counts (which affect priority), and so is “safe” to bring up; the Squares Display has much the same information present, but using r to show the Squares Display modifies each dancer’s tip counts.

If someone is missing from the display, you’ll likely need either to set their availability status to available, to modify the program level the dancer can handle (using the Edit display), or to enter them in as a new dancer.

10 r,c : Roll Squares Display



Couple#001: 2	Couple#007: 3	Couple#013: 5	Couple#019: 6	Sngl#025+027: 6
Couple#002: 3	Couple#008: 4	Couple#014: 6	Couple#020: 1	Sngl#026+022: 4
Couple#003: 5	Couple#009: 1	Couple#015: 4	Sngl#021+029: 2	Sngl#027+025: 6
Couple#004: 3	Couple#010: 2	Couple#016: 4	Sngl#022+026: 4	Sngl#028+024: 2
Couple#005: 3	Couple#011: 1	Couple#017: 5	Sngl#023+030: 1	Sngl#029+021: 2
Couple#006: 6	Couple#012: 5	Couple#018: Out	Sngl#024+028: 2	Sngl#030+023: 1

has hotkeys has rightmouse menu

The “r” hotkey will bring up the Squares Display; it *generates* a new set of square assignments to dancers.

This display is the one that your dancers will see most often. It consists of a grid of display-names followed by a square assignment. If you want a new assignment of dancers to squares, just press “r” again. There are four styles of display names (lastname, lastname+first initial, firstname, and firstname+last initial – use “d” to try them out).

Suggestion: if your roster has two or more couples with the same last name, use the d hotkey to use a name display style that will differentiate the dancers.

AutoScrolling: When the number of couples+singles exceeds the carrying capacity of the screen, the Squares Display will only show a subset of the dancers, but it will autoscroll up and down to show all dancers’ assignments over time.

Use f to slow down autoscrolling.

Use F to speed up autoscrolling.

The Edit Display provides a vertical scrollbar which must be manually moved in such conditions, so it doesn’t perform autoscrolling.

A new side effect: every time one rolls up a new square the results will be saved (like “W”; see Sec. 15 Writing, Exiting, Quitting).

Sometimes there just aren’t enough single dancers to make a temporary couple in some square. In those situations, Swirls will give the single’s name and display “(ask)”. Hopefully someone who is otherwise slated to sit out the dance will join in! I suppose that a phantom dancer could drop in, too.

In the Squares Display:

<i>singles</i>	names are separated by plus signs (name1+name2 and name2+name1)
<i>permanently partnered dancers</i>	with different last names are separated by colons
<i>permanently partnered dancers</i>	with the same last name are shown by their last name only

Since Swirls knows about “MF” and “FM” dancers, it tries to honor preferences by matching M and MF dancers to F or FM dancers (and vice versa). No guarantee; the other combinations (MF:M, MF:MF, FM:F, FM:FM) can occur.

Naturally, “E” will match with anybody.

If you are running Swirls, you too may wish to participate in the dancing, but running halfway across the crowded room to your square assignment and back is not exactly optimal. You’re in luck: see the Setup Display’s square tagging!

The “c” hotkey regenerates the Squares Display using the previous dance counts for each dancer. Some uses for this:

- You want to check on something best available via the Edit Display such as checking on someone’s full name: hit **e** to enter the edit menu, do whatever, then hit **c**.
- You need to change something via the Edit Display: hit **e** to enter the edit menu, do whatever, then hit **c**. Note that most things you can change will also cause the Squares Display to change; however, it will have been regenerated using the same dance counts.

Note that pressing “r” will change dancers’ tip counts (dances). That count is important – its used to determine dancer priority. I strongly suggest that you don’t press “r” unless people have actually completed or at least are already participating in the tip. If you must change something after pressing “r”, use “e” followed by “c”. In my experience, its probably best to wait until the last moment to generate a new Squares Display.

See **Edit Display** about how to let dancers skip a tip.

Deep There are (usually) four priority groups of dancers (see Edit Display’s Luck description). Swirls knows how many dancers are in each priority group. Think of four decks of cards with dancers’ names on them; Swirls randomizes each deck and “deals” the dancers out to the squares, starting with the highest priority group, and spreading them out as it does so. Note that the “cards” are not by couple, but by each individual dancer. When a dancer is selected, their partner also gets selected, both are placed into a square, and both are then marked as assigned. When a card comes up with an already assigned dancer, that dancer is skipped as s/he is already in a square. Dancers without permanent partners (ie. singles) are first matched to another single dancer with a compatible dancing style (M-F, F-M, M-FM, etc).

Note that there are a limited number of dancers who will sit out a tip; with squares of 8 people, that typically means only 7 at the most. The program keeps track of the quantity of tips a dancer has participated in; those with fewer tips get a priority bump. Hence couples and singles both get equal chances of dancing.

Deep Actually the quantity of priorities is also affected by the hallsize limit (the maximum number of squares that can fit into a hall). If there are more dancers than the hall can handle as indicated to Swirls by the hallsize limit set in the Setup Display, then clearly more dancers than just 7 can miss a dancing opportunity on each tip. Swirls will prioritize those that have fewer dances.

The quantity of priorities is also affected by extreme quantities of M vs F dancers. For example, if there are 4 F dancers but 14 M dancers, then only one square can dance at a time. Swirls will account for this with extra priority groups so that all will receive as fair an allocation of tips as possible (in this case, the Fs would get to dance all the time, but each M would only dance every 3 to 5 tips).

Why is this dancer displayed twice?

You're looking at a single dancer who has been matched up by Swirls with another single dancer. You'll note that the two square assignment blocks show "name1+name2" and "name2+name1". This helps the single dancers to find themselves on the display. Don't worry, each square still has just the right number of dancers in it!

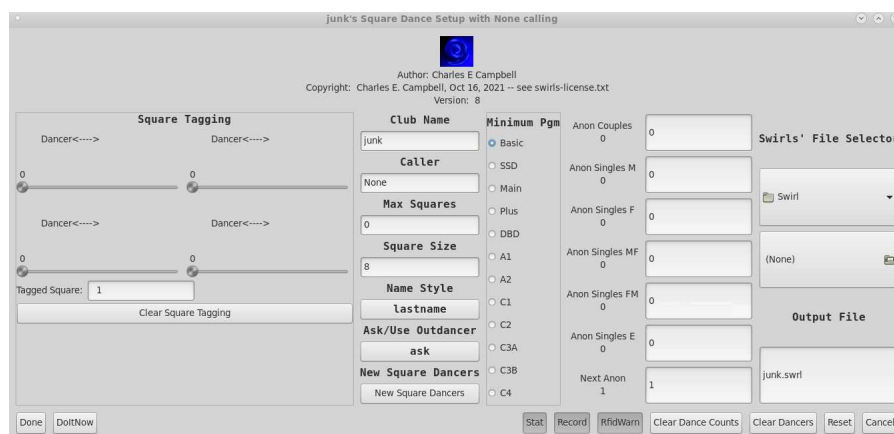
Who is (ask)?

Swirls had a problem matching the named single dancer to someone; there just weren't enough dancing-compatible singles to do so. So "(ask)" is simply asking the dancer to inquire of those sitting out the tip if someone would care to fill in.

11 R: : Repeat Message

Sometimes one may be shown a message but it disappears too quickly. Use "R" to repeat the last (timed) message (for 3 more seconds).

12 s : Setup Display



no hotkeys no rightmouse menu

The “s” hotkey will bring up the Setup Display.

Here’s where the odds and ends of setting up your dance go.

Anon Couples Anonymous couples are appended to the list of square dancers; they have “names” like “Couple#042”. Entering 10 into the adjacent box will add 10 more anonymous couples to your dance. These couples will take the “Min Pgm Level” for their dancing program level.

Anon Singles F Quantity of anonymous singles who dance as girl only; has a name like “Sngl#043”. These are appended to the list of square dancers.

Anon Singles FM Quantity of anonymous singles who prefer to dance as girl, but can dance boy; has a name like “Sngl#043”. These are appended to the list of square dancers.

Anon Singles M Quantity of anonymous singles who dance as boy only; has a name like “Sngl#044”. These are appended to the list of square dancers.

Anon Singles MF Quantity of anonymous singles who prefer to dance as boy, but can dance girl; has a name like “Sngl#044”. These are appended to the list of square dancers.

Anon Singles E Quantity of anonymous singles who dance either girl or boy, no preference; has a name like “Sngl#045”. These are appended to the list of square dancers.

Caller Used in the title of the four main windows (Edit, History, Present, and Squares). To actually get the caller’s name entered, you must follow their name with a <Return>.

Club Used in the title of the four main windows (Edit, History, Present, and Squares). To actually get the club’s name entered, you must follow the clubname with a <Return>.

Cancel Ignores any settings in the various dialogues and buttons, and returns to Edit Display.

Clear Dance Counts Resets all dancers' dance counts to zero; resets tip to 0; clears History; clears all SkipTips. Dancers are left in place with their current availabilities. *This operation is done immediately.* Useful for recovering from an error in using Swirls; I suggest using an open dance and then using this to restart.

RfidWarn When an rfid tag is encountered that is not known to Swirls...

RfidWarn Enabled issue a warning that RfidDisplay() is suppressed with new rfid#

RfidWarn Disabled bring up the RfidDisplay (see Sec. 19)

This option toggles between two values, enabled and disabled. It specifies what to do when an rfid# that has not known to Swirls is encountered; either issue a warning or bring up a display that can be used to specify a new SqrDancer. A use for this: different halls are running Swirls, each hall has a different set of rfid tags, and one doesn't want the tags to be used outside the one hall where its been specified.

Stat *Optional* – swirls can optionally keep some statistics on the dance that its used at. Festival managers, in my experience, often want to know how many dancers are using halls so they can apportion them better. If **Stat** is enabled, then **Swirls** will keep lines such as

```
2023-03-14 15:29:48 11 11 0 0 0 0 0 # Fri: totdancers couples snglM
```

in a file called `clubname.stat`, re-using the club's name. Each line is generated whenever Swirls generates a new tip's square assignments. It can be plotted using **gnuplot** (<http://www.gnuplot.info/>), which is available for Linux, Windows, and Mac platforms. As an example:

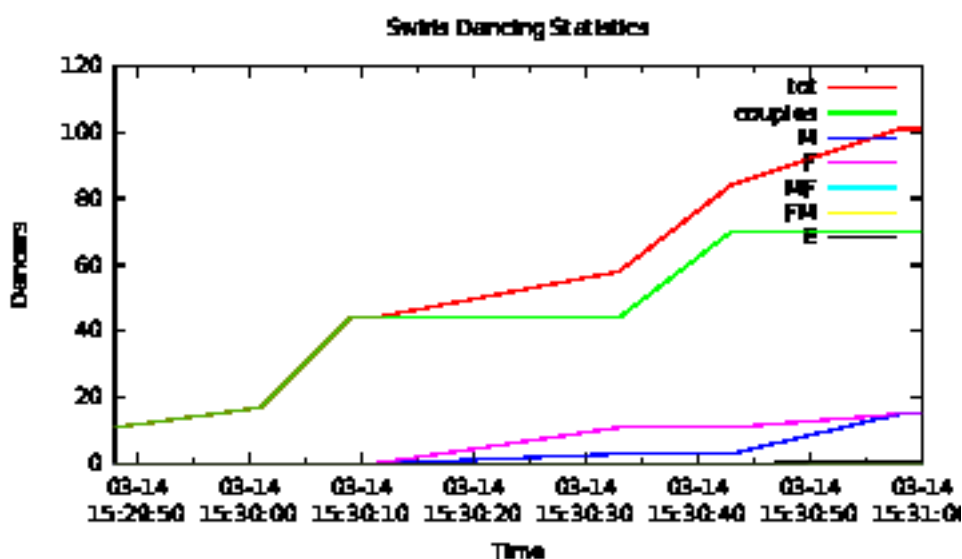


Table 1: Swirls Dancing Statistics

Clear All Rfid Only present if at least one square dancer has an rfid association; this function will clear *all* such associations. *This operation is done immediately*

Clear Dancers When one wishes to remove all dancer information from Swirls, use this button to clear them out. *This operation is done immediately*; you probably should save the dancers' information first! In particular: clears dancers and square tagging information.

DoItNow Implements whatever settings have been made, but stays in Setup Display.

Done Implements whatever settings have been made and invokes the Edit Display.

Max Squares This is the maximum number of squares that Swirls can assign to. If zero, it means unlimited. Use this feature when your hall is limited as to the quantity of squares it can handle.

Minimum Pgm Subsequent tips require at least this program level of Square Dancing. For clubs that do various programs, use this to change the current dancing program (level).

Name Style This button shows the current name style (lastname, lastfi, firstname, firstli). Pressing the button will bring up a small menu of choices for the styling on how names are to be displayed on the Edit display and on the Squares display. Press **Done** when complete.

Output File The path to the file where the square dancing information will be saved. The club's name will be used when Swirls generates the output file; to generate a new Swirls file, simply change the club's name and clearing the dancers is sufficient. The club name used to start Swirls will not, in that case, be affected.

Record (*advanced*) Swirls will record commands, rfid numbers, etc that will permit a dancing session to be duplicated. Very useful for debugging. The record file will be `swirls.record###`. See Sec. 5 for how to debug Swirls using a recording file.

RfidWarn Normally when a rfid card is used that Swirls hasn't seen before, it will bring up the New Rfid Key Display (see Sec. 19.1). However, during a dance/festival you may not want that to happen; then turn on "RfidWarn" which tells Swirls to issue a warning instead.

Reset Resets all settings to their standard default values; clears History; Setup Display remains active. In particular, Swirls will clear dancers, square tagging information, caller and clubname, and sets anonymous dancer counts to zero.

SqrDancers' File Selector One may specify a file to read and write square dancing information with this chooser. The upper box specifies the *path* where `*.swrl` files are located. The lower box holds the *name* of the Swirls file you're wishing to use. Typically `*.swrl` files are named after their club; ie. `clubname.swrl`. These `*.swrl` files hold the saved square dancers' information (names, m:f:mf:fm, program level, etc). They are also used to specify the output file.

Changing the output file will make Swirls read in the new file if it exists and append the newly selected file's dancer information to the previous square dancer information. If you want the new set of dancers to replace the old set, press the Clear Dancers button.

Square Size Normally squares are composed of 8 people; one may choose a variant such as 12 (6 couples), etc, instead. Such a choice must be an even number; otherwise, it will be rounded up. So, Swirls will support 2-member "squares", 4-member "squares", etc.

Square Tagging Up to four dancers may be "tagged" to a square. One may use the sliders in this box to select dancers and one may use the Tagged Square box to specify which square is tagged (default: #1). After rolling up new squares in the usual manner (Squares Display), Swirls will then swap any assigned and tagged dancers into the tagged square. Naturally this means that the tagged dancers' partners will also come along! The idea is to help those who are running the Swirls program to get in some dancing time themselves without having to run across a potentially crowded room to their otherwise assigned square. Square-tagged dancers get no priority bump from being tagged, though.

Clear Square Tagging Clears (resets) the square tagging selections to all Nones and the tagged square to #1.

New Square Dancers this button will bring up the New Square Dancer display.

13 t : Totals and Message Clearing

`totals: displayed=9 couples=0 singles=9 maxdances=0`

has hotkeys has rightmouse menu

The “t” hotkey will pop up a small window which displays the total number of available dancers inside a fullscreen display such as the Edit or Present displays. In Squares mode, the “t” hotkey will display the total number of displayed dancers (ie. those displayed explicitly or implicitly as a couple). These two numbers should match, of course.

A second press of “t” will clear the note away. You can also use this hotkey feature to clear any warnings or notes that may have popped up.

14 T : Tagging a dancer

With “T”, one first uses the Edit Display (Sec . 4) and clicks on a dancer’s name. Doing so will toggle the dancer’s availability, but following it with a T will restore availability and enter the dancer into the tagged square dancer list. This list is displayed and controlled in the Setup Display (Sec. 12), so the T command acts as a quick way to use it.

If the dancer is already in the tagged dancers’ list, then click+T will remove the dancer from that list.

15 w,W,x,X,q: Writing, Exiting, Quitting

w With the “w” hotkey, Swirls will write the square dancers’ information to the current output file

W With the “W” hotkey, Swirls will do all that w does plus include dance counts (which affect priority)

x With the “x” hotkey, Swirls will do a w and then exit

X With the “X” hotkey, Swirls will do a W and then exit

⊗ The ⊗ control in the upper right hand corner of the displays will terminate the small displays (New Square Dancer, Setup, Availability) or perform a w action and then terminate the Swirls program (Edit, Squares).

q The “q” hotkey will make Swirls quit without saving anything.

Auto-Save: When a new set of squares is rolled up (“r”; see Sec. 10 Roll Squares Display), Swirls will automatically save as if “W” was pressed.

16 a : Availability Display (*advanced*)



no hotkeys no rightmouse menu

The “a” hotkey will bring up the Availability Display.

The Availability Display is mostly intended to be used with Anonymous dancers (Couple#..., Sngl#..), but it can also take names. There are two boxes, one for those dancers who wish to become available and one for those dancers who wish to become unavailable for dancing.

By the numbers: Just enter the number, not the “Couple#” or “Sngl#” – the program will figure out who you mean and either make them available or not, depending on which box you used. You can even use a range such as “10-20”.

By the name: Enter in the last name, and the program will make them available or unavailable depending on the box you used. Just thought I’d point out that its probably easier to simply click on their names in the Edit Display, though. Don’t forget the o key – use it to turn availability off for all dancers.

17 h,H,u : History Display (*advanced*)



The screenshot shows a window titled "HISTORY: Name's Square Dance with Name calling tip#3". It contains a 3x3 grid of yellow cells. The middle row (Couple#002 to Couple#008) is highlighted in orange. The text in each cell is as follows:

Couple#001: 1	Couple#004: 1	Couple#007: 2
Couple#002: 2	Couple#005: 1	Couple#008: 2
Couple#003: Out	Couple#006: 1	Couple#009: 2

has hotkeys has rightmouse menu

17.1 Introducing h and H

The History display can be brought up by using either the “h” or “H” hotkeys.

Swirls saves the results of each Square Display roll internally in a linked list. The h hotkey begins with the most recently saved Square Display and moves backwards in the list. The H hotkey begins with the oldest saved Square Display and moves forward in the list. Look at the window’s title bar for the historic tip number being shown.

Perusing the history with h and H does not change any dance counts or the current Square Display. To return to showing the current Square Display use c. The r hotkey is also still active and may be used to roll up a new Square Display (with concomitant increments to dancers’ dance counts as usual).

17.2 Prehistory

If the history is showing tip#1, the earliest history, one can actually go back one more time using h. Doing so will result in “prehistory”; the Edit display will be shown. However, look at the window’s title bar: you’ll see it say “PREHISTORY”. If you press u the Edit Display will continue to be shown, but the pseudo-random number generator’s seeds have been reset to their initial values. Of course, you can still use c (current tip) or r (roll up a new tip).

17.3 Introducing u

Upon pressing u (*use displayed history*), swirls restores:

- the PRNG (pseudo-random number generator) seeds
- the dancers' tip counts
- displayed dancers' availability
- displayed dancers' sex (M F MF FM E)
- the program level
- displayed dancers' tagged status

It also clears out any “skip tip” information.

The display is then re-generated; the resulting display should usually be the same as the “historic” display as shown earlier.

17.4 Why use history?

Often the need for history is due to pressing r and then regretting it. Assuming one has used the h and/or H hotkeys to pick the earlier tip one wishes to revert to, press u (“use”) to make that historic tip the current tip. Similar caveats to using c apply; if one has inserted new dancers or deleted dancers between the current tip and the desired previous state, the reversion will take the historical dance counts into account but the historical display won't be precisely duplicated.

The purpose of this display is to allow one to recover from a mistake. As an example, assume one has just freshly rolled up a new tip. All the assigned dancers have had their dance counts incremented. Then a dancer drops by and wishes to sit out the tip. OK so far – go to edit mode, change the availability to off using `ctrl-leftmouse`. Now for the mistake: instead of pressing c to return to Square Display mode, one presses r. That rolls up a new Square Display, bumps the tip count, and bumps dancers' dance counts. Translated: the mistaken r tip never happened but its effects on dancers' dance counts remain, and so bad things can happen such as people sitting out multiple tips in a row.

So, the way to fix this before people actually begin dancing with the new, errant Square Display:

- First, press hhu. This hotkey sequence will bring up the current Square Display (as History) and then the previous Square Display (also as History). The u will then make that final historic display the current SquareDisplay.
- Make any changes via the edit display that you need to do
- You'll need to repeat the procedure to allow the dancer to skip the tip, though (go to Edit Display, turn the dancer's availability to off using `ctrl-leftmouse`, and this time followed by c).

Another scenario: one has just generated the display with `r` when someone shows up and would like to be included. If people have already seen the newly generated display and headed to their squares its probably best to tell the new arrival that they'll have to wait for the next tip. However, perhaps no one has seen that new display yet except you – so quickly type `hhu` and then use the Edit Display to make the newcomer “available” for dancing.

17.5 History Commands

`h` start at the current squares display, move back through history
`H` start at first squares display, move forward through history
`u` make the history display the current Square Display

- The `u` key will revert the dancers' dances, availability, program level, sex, and tagged status to the selected historical state.
- It will remove all skip-tip information.
- All history from the latest down to (but not including) the selected history will be forgotten.
- To get out of History mode without changing anything, use `c` (ie. don't use `u`).

Deep Swirls uses a pseudo-random number generator to produce random numbers to set up a “deck of cards” with dancers' names for the `r` hotkey. PRNGs have “seeds”; begin with the same seed and the same sequence of “random” numbers will be produced. To support both `c` and `u`, the seeds needed for that display are used to re-initialize the PRNG. If the quantity of dancers hasn't changed, their dancing preferences hasn't changed, etc; then the PRNG will be used the same way and so the same display will be shown. However, most things in the Edit Display will change how the PRNG is queried, and so different results will appear.

18 Hidden Hotkeys

These hotkeys are available but are currently not in the rightmouse menu.

- + The `+` hotkey will increase font size.
- The `-` hotkey will decrease font size.

19 E,I: RFID Display (and where to get equipment) (*advanced*)



no hotkeys no rightmouse menu

Swirls works with a rfid reader (Fissaid's RFID Reader 125KHz Reader USB Read 1326 Family Proximity Cards & EM4100 ID Card Emulate USB Keyboard Input) and rfid "cards" to simplify setting up availability for square dancers. The idea is that dancers are issued rfid cards which they can use to take themselves in and out of the dance by presenting their tag to the reader. This feature may be used with both named square dancers and anonymous square dancers. These cards are available in the form of "credit cards", key fobs, and/or stickers. I have successfully used YARONGTECH RFID Card Proximity access control 125khz Blank 0.9mm Thin EM4100 Chip (pack of 100) with the Fissaid reader; both the reader and the cards have been available via Amazon.

19.1 New Rfid Key

The Rfid Display is shown when no square dancer is currently associated with the just swiped rfid key. It has a number of buttons:

SqrDancer clicking on this button will bring up a name button and a slider. Moving the slider will show names that are not yet associated with an rfid. When you've picked out the dancer you want, click on his/her name and the rfid tag will be associated with that dancer. Click "None" if you want to cancel this selection.

Couple clicking on this button will bring up a new anonymous dancer of the "Couple#..." variety.

Sngl-M clicking on this button will bring up a new anonymous dancer of the "Sngl#..." variety who can dance as M (boy only)

Sngl-F clicking on this button will bring up a new anonymous dancer of the "Sngl#..." variety who can dance as F (girl only)

Sngl-MF clicking on this button will bring up a new anonymous dancer of the "Sngl#..." variety who can dance as MF (either, but prefers boy)

Sngl-FM clicking on this button will bring up a new anonymous dancer of the "Sngl#..." variety who can dance as FM (either, but prefers girl)

Sngl-E clicking on this button will bring up a new anonymous dancer of the "Sngl#..." variety who can dance as E (either)

Cancel clicking on this button cancels associating the rfid tag with a square dancer.

Subsequent use of the rfid tag will simply just toggle the associated dancer's availability (and the Rfid Display will not be shown).

19.2 E : Editing the Rfid Association

After pressing E the next rfid presentation to the reader will bring up the Rfid Display.

If the rfid was associated with a named dancer, the named dancer will lose rfid association, and the Rfid Display will function as if no dancer has been associated yet (ie. see Sec. 19.1 New Rfid Key).

If the rfid was already associated with an anonymous square dancer, that square dancer will retain his/her number but the “sex” (M, F, MF, FM, E) can be changed. The current program level of the club will be used to set the square dancer’s level, so you’ll want to change that first if necessary (see Sec. 6 Program Level Control).

19.3 I : Displaying the Rfid Association

After pressing I the next rfid presentation to the reader will bring up a note that gives the rfid number and the name of the associated Square Dancer. Use t (see Sec. 13 Totals and Message Clearing) to remove the note.

19.4 Additional Rfid Controls

In the Edit Display, pressing a square dancer’s “del” button will show an option to “Del Rfid Only”. Pressing that will clear the dancer’s rfid and remove the rfid’s association to the square dancer. You can read about this in Sec. 4.3 A Dancer Tab.

In the Setup Display appears a button that says “Clear Rfid”. Pressing this will clear all dancers’ rfid associations. You can read about this in Sec. 12 Setup Display.

20 M: RFID Display (*advanced*)



no hotkeys no rightmouse menu

When you wish to make a lot of rfid-associated anonymous dancers, first press “M”. This action will bring up the “Multiple-Anonymous Rfid Display”. The idea here is to first set up the type of anonymous dancers you want; subsequently, just swipe rfid-tag(s) (whether card, fob, or sticker) and a new anonymous dancer will be generated and associated with each rfid.

E The “E” way of handling rfid associations: press E first; swipe the rfid tag; and then choose a square dancer or sex-based style of dancing. This process allows you to edit one rfid tag. (ie. swipe, then choose)

The program level is that set for the current program (level) of dance (see Sec. 12 Setup Display).

- M** The “M” way of handling rfid associations: press M first; then choose the sex-based style of dancing and program level; then swipe one or more rfid tags; choose Done when done . Note the alteration in the order! (ie. choose, then swipe)
While In “M” mode: swipe however many rfid tags you want; they’ll all have the same program level and couple/singles specification. When done, press “Done” (on the far right of the display).

The button on the far left will show the “program-floor” level by default (see Sec. 12 Setup Display); click on it and you’ll get a radio-button style list of program levels. Pick one or leave it at the default.

To the right of the program level button are couple/singles buttons (radio-button style): “Couple”, “M”, “F”, “MF”, “FM”, and “E”. Pick the type of anonymous dancer you want (see Sec. 4.3 A Dancer Tab) by clicking on its button.

Don’t forget to save your work with “w” (see Sec. 15 Writing, Exiting, Quitting)!

21 A : Absent Without Notice (*advanced*)

has hotkeys has rightmouse menu

Unfortunately some dancers will forget to swipe themselves out with their rfid tag when they leave the dance hall. This results in a bit of a disruption as one square will be missing one or two dancers that Swirls has been told are present.

- Press **A**: this will bring up a modified Present display (see Sec. 9); the square dancers’ names will be preceded by the square number that they’ve been assigned to.
Since the display is sorted all the members of the affected square will be shown next to one another.
- Talk to the square’s members on the floor and ascertain which dancer(s) is/are missing.
- Click on that name/number on the AWON display; this will remove the missing dancer from the dance.
In the case of the name being “Couple#...” it will also mark the dancer’s partner as not available.
- The rest of the affected square will be credited as not having danced and will be put on the “outdancers” list (ie. those who sat out the last tip).
Of course, those dancers may be able to find someone sitting out to complete their square anyway.

- The display will revert to the Present display. You may choose to type **c** to show the current squares assignments (which will show the removed dancers anyway; its part of the history suite of commands) or use **r** to generate a new squares assignment. Remember that every use of **r** tells Swirls that the dancers danced and will affect their priority.

22 B : Reset rfid/dancer data Back to original (*advanced*)

This command resets Swirls' dancer and rfid associations back to an "original" form, usually meaning no dances for anyone, no new rfid associations, etc.

Generally, Swirls will have started with a file "*clubname*".swrl. If there is a file "*clubname*".reset available, then when **B** is pressed Swirls will revert to whatever "*clubname*".reset specifies. Currently, one needs to make that file ("clubname".reset) using the computer's normal operating system (ex. copy "*clubname*".swrl "*clubname*".reset).

Why do this? Its quick and easy, and at festivals one often wants to reset Swirls nominally to a "clean" condition. For example, one may want a "clean" Swirls setup at the end of each session (morning, afternoon, evening). If something happens that you need to have everyone re-sign in, hit "**B**" first and reset Swirls.

To generate a reset file: (I suggest using edit mode)

1. Use **o** to set all dancers to unavailable
2. Press **B**
3. You will then see a dialog box with three buttons

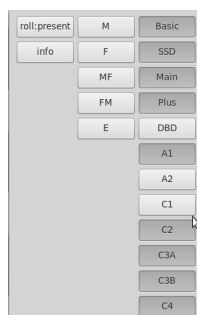
Yes clicking on this button will produce a reset file using the current settings as shown in the Edit Display.

No clicking on this button will do a regular reset and will not generate a reset file.

Cancel clicking on this button will abort the operation entirely

Now, why not use "**R**" (for reset) instead of "**B**"? I'm just attempting to avoid a situation where one actually wanted **r** (to generate a new squares display) and accidentally somehow got an **R** instead.

23 z: Set up Special Command Cards (*advanced*)



no hotkeys no rightmouse menu

Swirls permits some rfid tags (cards) to be used to instigate commands rather than dancer toggles. The z command tells Swirls that a card to be used as a command card will be swiped next.

1. Issue the z command. You will see the message “z pending - swipe a card”
2. Swipe an unused card. You will then see the “z display”
3. Pick an action to be associated with that card

upon swiping the card, the z-display will be shown. Simply click on one of the choices and that card will thenceforth be a command card. Swiping that card will cause the action its associated with to take effect. (summary: z swipe-card select-action)

roll:present	this card will toggle between showing the Present Display (Sec. 9) and rolling up a new Squares Display (Sec. 10)
info	this card will display information about the next card that's swiped (Sec. 19)
M	this card will change the dancing style of the next card that's swiped to M
F	this card will change the dancing style of the next card that's swiped to F
MF	this card will change the dancing style of the next card that's swiped to MF
FM	this card will change the dancing style of the next card that's swiped to FM
E	this card will change the dancing style of the next card that's swiped to E
Basic	this card will change the program (level) of the next card that's swiped to Basic
...	ditto for the other program levels

24 How Dancer Selection Works (*advanced*)

Warning - this section concerns Swirls's internals and as such may be a bit detailed; feel free to skip this section. Its mostly for the curious. Essentially, the algorithm considers must&luck priorities, the quantity of dances each dancer has had, the hall's squares limit, and M:F imbalances. With these considerations in mind, it then populates the squares.

Ignoring the hallsize limit, and assuming that the quantity of M dancers vs F dancers is comparable, then Swirls will push the disparity in dances that each dancer has participated in towards 1. A disparity of 1 means that there are two priority levels for *luck* and two priority levels for *must* dancers.

A disparity greater than one means that some dancers have lately been included in those available, the hallsize is limiting the number of squares, etc.

Note that singles and couples receive equal and fair chances to dance, thus the occasional “(ask)” partner. Consider what happens with no “(ask)” and 3 singles: each single is sitting out a third of all the tips.

Swirls keeps track of the quantity of tips each dancer has participated in; those who have fewer dances have higher priority. Only a limited number of dancers can sit out a tip (at most 7 for 8-dancer squares unless there’s a hall-based limit to the quantity of squares or excessively imbalanced quantities of M or F dancers). So, those who sit out a dance will receive a priority bump until everyone else has had to sit out, and so they will be dancing tips for quite awhile thereafter.

Still ignoring the hallsize limit and *must* priority, etc., mentally consider piles of cards, with each card having a dancer’s name on it. There are two piles of cards being discussed here, one for each priority level (due to tip count disparity). Effectively this means that all dancers at this point are single. Each pile of cards is randomized (shuffled, if you will). The higher priority pile is considered first. When a “card” is chosen: if the dancer has a partner (ie. is a member of a couple), both dancers are entered into a square. If the dancer does not have a (permanent) partner, then the “LookForPartner()” function looks for a compatible dancing partner (ie. the pair will have one who can dance the boy part and one who can dance the girl part). Either way, once the two dancers are selected for a square both are marked as assigned (and thus not available this cycle for further matching) and their dance counts are individually incremented.

If the singles partnering fails, the dancer does not sit out; instead, they are given an “(ask)” notification to ask someone sitting out if s/he would be willing to fill in.

Squares are filled up somewhat like a dealer distributes cards: a pair of dancers goes into a square, the next pair goes into the next square, etc. Once all the squares have received a pair of dancers, the process is continued with the first square.

This process allows student dancers to be dispersed amongst the squares.

Another wrinkle: Swirls will endeavour to insure that people do not sit out two consecutive tips. Those who sat out the last tip are moved to the front of the line in their respective priority level. Reason: especially at festivals, sometimes a large number of dancers can enter the dance, typically at the beginning of a new caller’s term. However, such dancers are put in at the same priority level (maxdances less one) as some of those who sat out the last tip, thus the possibility of consecutive sitouts.

Some observations about this process:

- No one is left out of the dance one tip more than anyone else (again, ignoring hallsize limits, etc)

- Although a coupled dancer will bring in their partner, single dancers will also bring in a single dancer.
- The only benefit of being partnered is that one will always dance with the same person; no additional likelihood of dancing results.

This process is fair to all dancers. Its even as fair as possible given extreme M or F disparities. For example, a dance with 4 F dancers but 14 M dancers will result in dancing time being fairly distributed amongst the M dancers, although the F dancers will dance every tip.

And now for the details:

- Swirls computes the total available dancers (`totavail`) based on square dancer's availability status and whether they can dance the current program level (mainstream, plus, etc).
- Swirls then computes `totsquare = totavail/squaresize`. The `squaresize` is controlled in the Setup screen, and is usually 8. Note that this calculation is done in integer arithmetic; so, for example, `totavail= 9` and `squaresize=8` means that `totsquare` would be one.
- Compute the qty of priority levels: sort the dancers by the number of dances each has had, then `dancesprio` is the max dances less the minimum dances dancers have had. Double that to account for the two broad priority levels, *must* and *luck*.
Allocate the `prio` array of `dancesprio` structures and initialize them to empty. Often `qtyprio` is 2; however, if the hallsize limit kicks in or an extreme M-F imbalance exists, then `qtyprio` can be bigger.
- Compute the qty of dancers at each priority level.
- Populate the priority level structures with dancers.
- Compute `excessm` (the total number of M dancers less F, MF, FM, and E dancers).
If `excessm > 0`, compute double the count of all the non-M dancers and divide by the `squaresize`; this gives a restriction on `totsquare`, the total number of squares that can be formed.
- Compute `excessf` (the total number of F dancers less M, MF, FM, and E dancers).
If `excessf > 0`, compute double the count of all the non-F dancers and divide by the `squaresize`; this gives a restriction on `totsquare`, the total number of squares that can be formed.
- Further restrict `totsquare` by the `hallsize` (the number of squares that can simultaneously fit in the hall – see the “Setup Display”).
- For each priority level:
 - Set up a randomized selection of the dancers at the current priority level.
 - Move dancers at the current priority level that sat out the last tip to the front of the queue.
 - For each dancer at the current priority level:
 - * Pick a square for the next dancer to enter. This operation is done round-robin style (`isqr=isqr+1 modulus totsquare`).

- * Assign the dancer to the isqr^{th} square.
 - * If the dancer has a permanent and available partner who can dance at the current floor's dancing program level, also assign that dancer to the square.
 - * If the dancer does not have a permanent partner, attempt to assign a temporary partner. This operation is done by the function `LookForPartner()`.
- Swap dancers that have been tagged into the requested square as necessary.

The `LookForPartner()` function also looks through the dancer lists by priority, so higher priority not-yet-assigned dancers are considered first.

- If the dancer is an M-style dancer, consider F partners. If no such partner is available and not-yet-assigned, then consider FM partners.
- If the dancer is an F-style dancer, consider M partners. If no such partner is available and not-yet-assigned, then consider MF partners.
- If no partner yet, consider M:F MF:F M:FM MF:FM pairings.
- If no partner yet, consider F:M FM:M F:MF FM:MF pairings.
- If no partner yet, consider M:MF F:FM M:E or F:E pairings.
- If no partner yet, consider M:MF F:FM M:E F:E pairings.
- If no partner yet, consider MF:* FM:* and E:* pairings.

If no suitable partner could be found, then the dancer will be told to “(ask)” for a partner amongst those sitting out. One nice side effect of the excessive m/f handling is that singles who need an “(ask)” partner are guaranteed that someone sitting out this tip could fill in. Whether they accede to doing so is another issue.

25 Fonts

Fonts are selected using files named `resolution.mac`, `resolution.win32`, or `resolution.unix`.

First, there is a group of fonts associated with the number of horizontal pixels that are available on your display.

There are five fonts in each group: the main font (`sdfont`), the first button font (`bttfont1`), the second button font (`bttfont2`), and two “label” fonts (`lblfont1` and `lblfont2`). Currently, `lblfont2` is not being used. Each font has a name (ex. “Luxi Mono Bold 14”), which describes the type of font it is (plain, bold, etc), the font's name, and the typical quantity of pixels.

Additionally, there are two integers (`maxsqrcolqty` and `maxeditcolqty`) which give hard maximum column counts for that font for the “Squares” and “Edit” displays, respectively.

Note that the resolution decreases and the font size decreases as one goes down into the file.

You may customize the fonts you use and their sizes with these files. Of course, pick the one associated with your o/s!

You may temporarily increase/decrease the fontsize selected by pressing + or -, respectively.

sdfont1	used for the names in the Square Display
bttfont1	used for the names in the Edit Display
bttfont2	used for the small button labels in the Edit Display
lblfont1	used for the labels in the Setup Display
lblfont2	currently unused

26 Contact Information

If you have a problem with this program or a suggestion for additional features, please send me an email: business@drchip.org. Please include “swirls” somewhere in the subject line.

In the event of problems, it will be a big help if you could provide your dancer database (ie. your *.swrl file) along with exactly what you were doing so I can duplicate the situation. Even better is to have turned on “record” (see Sec. 12) in the Setup Display.

Swirls is “freeware”; this means that there is no payment or other compensation needed for its use. It is, however, licensed software.

Thanks goes to Doren McBroom and Kenny Farris’ *The Crossfires* square dancing club (Columbia, Md) and to Ett McAtee’s *Ettseteras* square dancing club for allowing me to test the program with their dances (College Park, Md).

Thanks also goes to Reinhold Roedig, who wrote the installation file (using Inno Setup) which greatly simplifies installation under Windows. Reinhold Roedig wrote callerama (<http://callarama.com/>), an aide for callers.

27 License

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