

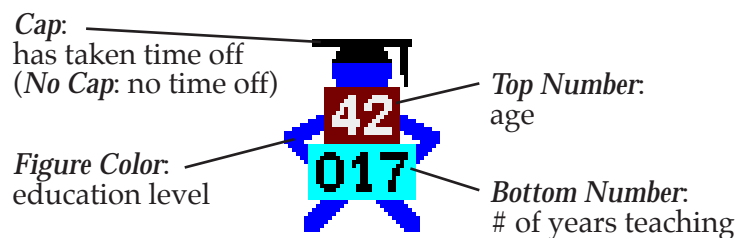
USING TABLETOP JR.™

This tutorial will prepare you to create a database of Teaching Data and analyze it in a workshop session. It uses TableTop Jr., a visual database program for elementary students that allows them to enter data and view it in many different representations. The tutorial will first introduce the general ideas of TableTop, then proceed to the specific steps you'll need to follow to prepare for your session and to work with your data. In this workshop, you will be analyzing data on the number of years each person in your session has been teaching as well as their age, their educational history, and whether they have ever taken time out from teaching. In this tutorial, you will create a small database of "teaching data" and analyze it. This will provide the basic structure for the workshop session itself, in which you will create and analyze a larger database of the participants in the workshop. In preparation for your session, you should try all the steps that you'll be using, following the steps in this tutorial. Specifics for loading the program on your particular machine and launching it are included at the end of the tutorial.

WHAT YOUR DATA WILL LOOK LIKE IN TABLETOP

Each stick figure data icon (see Figure 1) represents one teacher. The top (brown) number on the figure is their age and the bottom (blue) number is the number of years they have been teaching. If the stick figure is wearing a graduation cap, then that person has taken time off from teaching for some reason. If the figure has no cap, then they have not. The color of the stick figure indicates that person's highest degree: bachelors' degree (green), masters' degree (purple), doctorate (yellow).

FIGURE 1: A DATA ICON



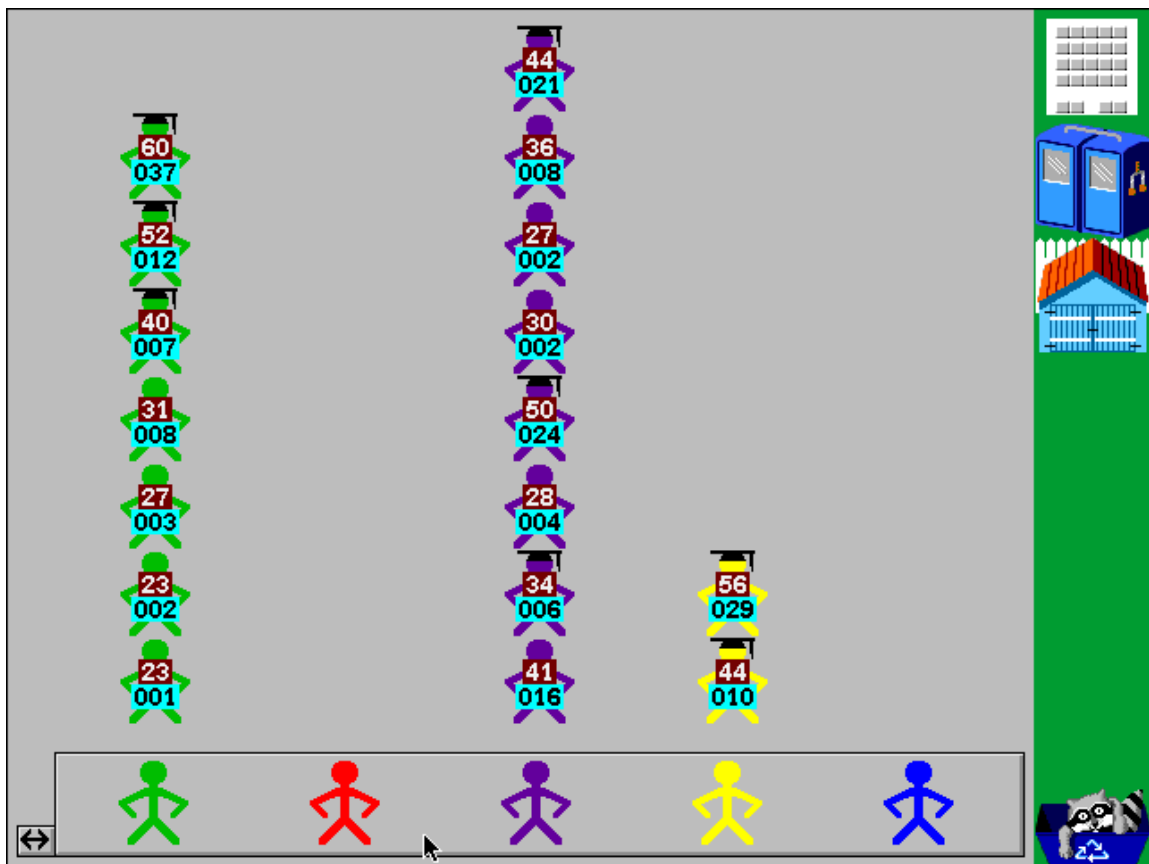
When you create your data base in this tutorial, you will follow this structure. (See below, Figure 4). This will allow you to enter data, one icon for each person in your group.

WHAT TABLETOP CAN TELL YOU ABOUT YOUR DATA

When you've entered your data, TableTop will let you look at them in several ways. These graphs will be described in more detail later; only one example will be discussed here now, just to give you an idea of the way you will be analyzing your data. Here is one example of the kind of graph you might look at – a Stack Up graph.

A Stack Up graph is like a bar graph; it places all the icons that have something in common, such as highest degree, in a vertical stack, one on top of the other. A plot like this would show you how many people had bachelor's, master's or doctor's degrees. Figure 2 shows a Stack Up graph based on education. The icons in the first stack are green, and represent people with bachelors' degrees. The second stack are purple and represent people with masters' degrees. The third, short, stack are yellow and represent people with doctorates. You can see that about half the people have at least a master's and only two have PhD's. . (These three colors have been chosen because their differences show up best in black and white; that's why they are not next to one another along the axis. You can make different color choices if you'd like, but remember to keep track of them as you go along.)

FIGURE 2: A STACK UP PLOT BY EDUCATIONAL LEVEL

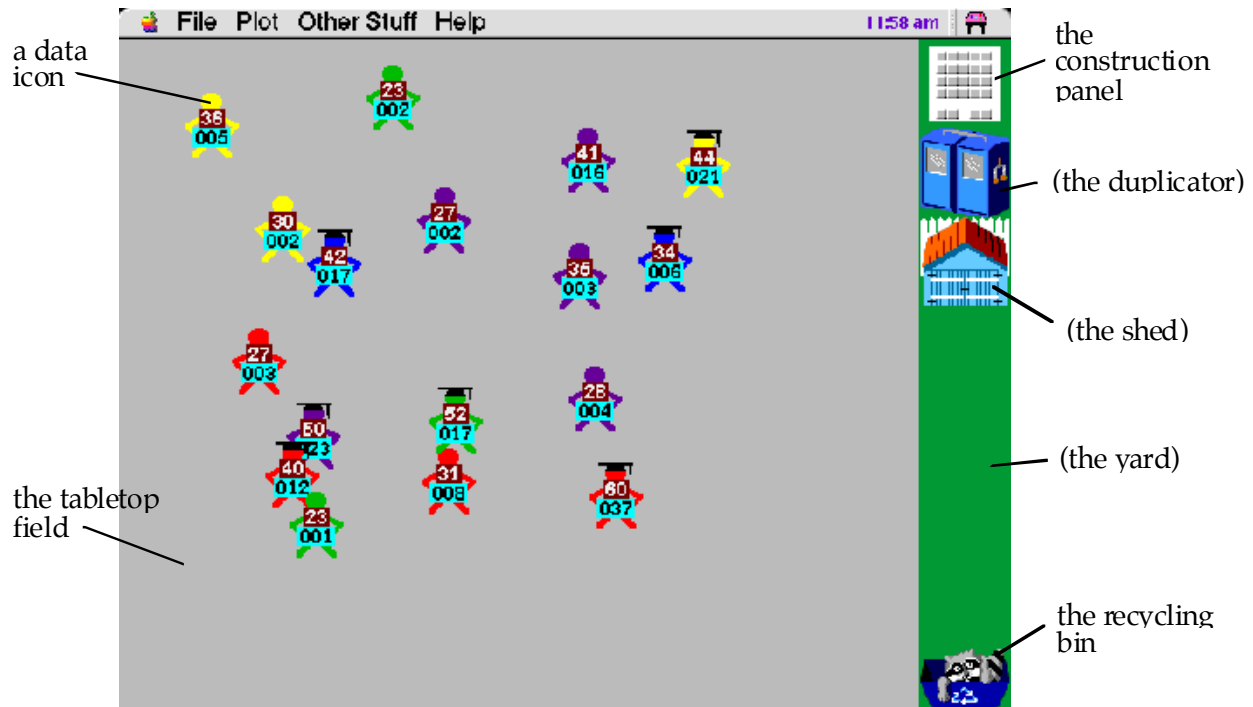


CREATING YOUR TEACHING DATA BASE

To create your data base, you will first need to choose a particular icon to work with, then enter the data. Here is the basic TableTop window where you will do your work (Figure 3).

The large gray area is the tabletop field where you can create plots with the data icons. The strip along the side contains several accessories of which you will only need the construction panel and the recycling bin. The construction panel is where you enter data by creating data icons. If you make a mistake while creating a data icon, you can drag it back into the construction panel or delete it by placing it in the recycling bin.

FIGURE 3: THE ELEMENTS OF THE TABLETOP



The directions below take you through the process of creating a new database, using some data we have supplied for you. In your workshop session, you will create a second database using data you collect from the participants.

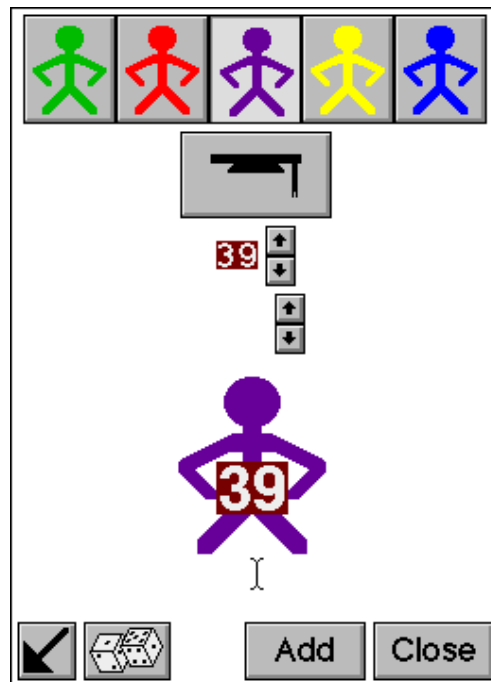
To create a new database:

- Select "New" from the "File" menu. You will be presented with an array of data icons to choose from. Select "Double Data People."
- Tabletop Jr. will open the construction panel (Figure 4) where you can create individual data icons for each participant in your session (up to a total of 50). For each person you put into your database you will have to specify degree received, age, years of teaching, and whether or not they took time off by changing the appearance of the icon.
 - **Educational Level** (represented by the color of the figure): click on the appropriate color of the stick figure for the highest degree each person has: green for bachelor's, purple for master's, yellow for doctorate.
 - **Age** (represented by the top number): To enter the age, click the up arrow of the top set of arrows once to get zero (and see the numbers). Click once for each year, or

click and hold on the arrow to scroll through the numbers and release the mouse button when you have reached the number you want.

- **Years of teaching** (represented by the bottom number): To enter number of years of teaching, use the bottom set of arrows. These arrows work the same way as the top arrows.
- **Took Time Off?** (represented by a cap): To show that a participant has taken time off from teaching, click once on the cap. (Click a second time to remove the cap.)
(There is a text field below the data icon. If you type on the keyboard any time the construction panel it open, you will type in this space. You will not need this field.)

FIGURE 4: THE CONSTRUCTION PANEL



The data you are entering appear in Table 1 at the back of the Tutorial. Once all of the data for an individual have been entered, click “Add” to move that icon onto the tabletop field of the screen. Continue creating icons until all of your data have been entered. If you want to get rid of an icon at any point, drag it to the recycling bin at the bottom right of your screen. If you want to modify any icon you have already made, drag it to the construction panel and you will be able to change any of its parts.

When you have finished constructing your database close the construction window with the Close button, and save your data by selecting “Save...” from the “File” menu. If you haven’t already given your file a name you will need to do so now. Give it a name that will remind you of what it is and will distinguish it from the database you will create during the session. If you need to add more data later, you can do this by clicking once on the construction panel image in the upper right corner of the screen. You can then define more icons, as well as modify or get rid of icons by following the instructions in the paragraph above.

ANALYZING DATA WITH TABLETOP JR.

You are now ready to analyze your data. The initial view of the data is called a Free Plot; icons are placed on the screen in no particular order and you can move the individual icons anywhere you wish on the tabletop field. You may create other graphs from the Plot menu. The three plots best suited for this database are Stack Up, Loops, and Axes. For each plot you may choose to sort by any of the four attributes: education, age, years of teaching, or time off?.

CREATING A STACK UP PLOT

- From the "Plot" menu, select "Stack Up." The icons will arrange themselves randomly over the label "Free Stacking."
- Click once in the Free Stacking label to define a rule by which the icons should be sorted.
- In the dialogue box (see Figure 5) click once on the "999" in a blue box (where the years of teaching data is in your icons) to sort by the number of years of teaching.
- Click "OK" to see the graph. It should look like the one in Figure 6. Tabletop automatically labels the graph for you. Notice that the icons are grouped automatically into piles that cover a range of numbers, in this case, a range of 5, e.g. 14 – 19.
- Some questions you can answer with this plot include: "What is the longest anyone has taught?" "Are there many new teachers in the group?" "What is the most common number of years people have taught? "

FIGURE 5: STACK UP RULE-CHANGE DIALOGUE BOX

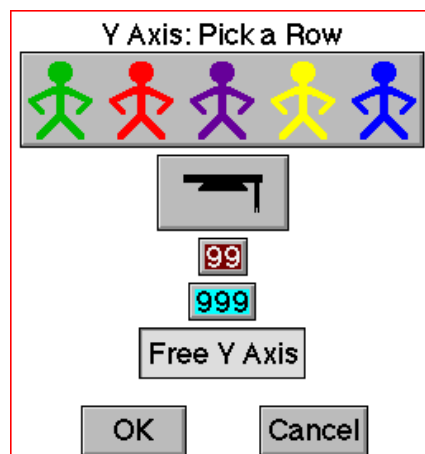
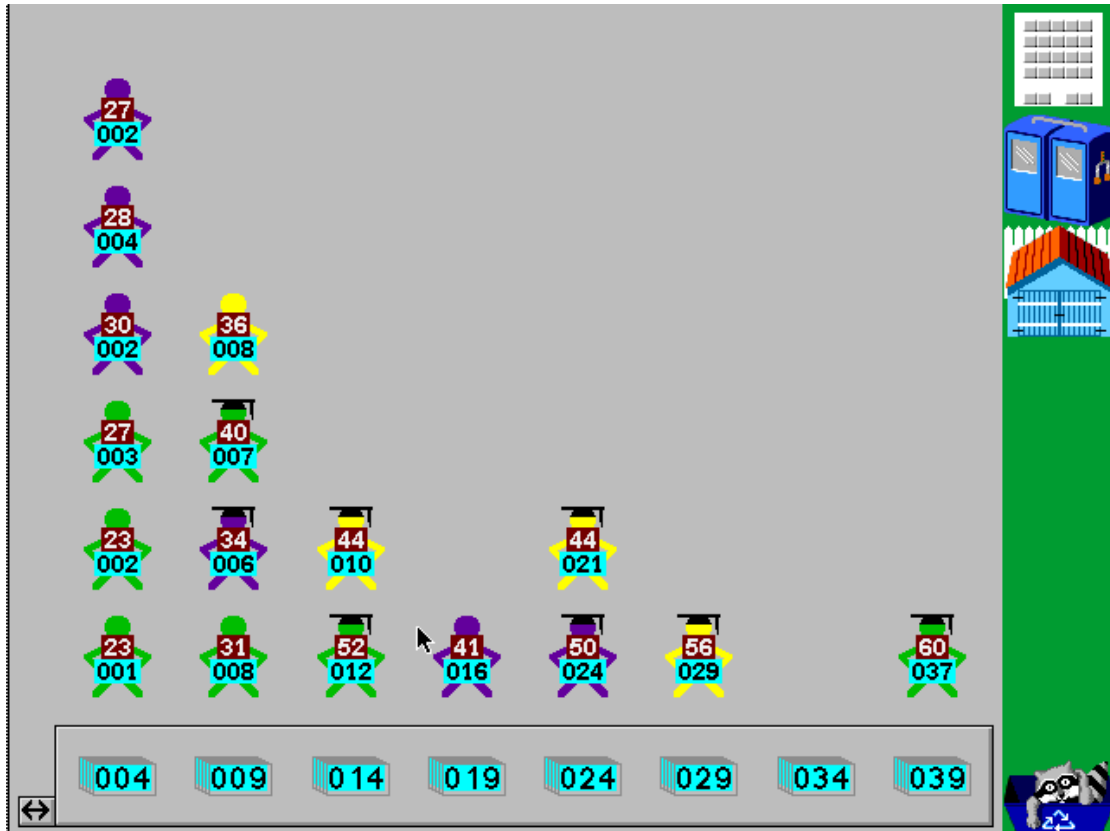


FIGURE 6: STACK UP PLOT BY YEARS OF TEACHING.



You can change the rule to any of the other three attributes by clicking again on the label below the graph. The three colors of stick figures will give you three stacks of teachers at various educational levels. This graph may help illustrate a disparity in the relative numbers people with various degrees, or show that they are about even. Clicking on the hat will give you a stack of people who have taken years off and another who haven't. This graph will answer a question like "Are there more people who took time off or not?" Click on the brown "99" (which is where ages are recorded in your icons) for a plot by age. This graph will show you both the range and the distribution of ages in your session. This age plot may be helpful for posing further questions like "There's a cluster of people between 40 and 50, do they share any other traits?" or "There is a group of people above 42 and another one below 35, which group has taught for longer?" These questions can be addressed with the Loops and Axes plots.

CREATING A LOOPS PLOT

The Loops Plot allows you to create a one, two, or three loop Venn diagram. Here are the steps for creating a Loop plot in which all the people over 50 are in one loop and people who have taken time off are in a second loop.

- From the “Plot” menu, select “Loops.” The icons will arrange themselves randomly inside and outside a loop with a “Free Loop” label.
- Click once in the “Free Loop” label to change the rule for this loop.
- From the dialogue box (Figure 7) use the upper set of arrows to select the number 50. (You just have to remember that the top number is the age and the bottom number is years of teaching.) Once you start select a number, the boxes “Not,” “or more,” and “or less” appear. Click once on the “or more” box. (See Figure 8.)
- Click “OK” to see the graph. Tabletop automatically moves the icons to the correct location and labels the loop “50 or more.”
- A button in the bottom left corner shows one white loop like the one you have on the tabletop and a second, black loop. Click once on this button to create a second loop.
- From the rule dialogue box click on the cap to select everyone who has taken time off. Then click “OK.”
- Your graph should look like the one in Figure 8. This graph indicates that everyone over 50 has taken time off.

You can make a large number of Loop graphs, each with one, two, or three loops. What you try next depends on your data and what questions people have suggested. You may want to look at how many people with doctorates have taken time off (perhaps for school!). To do this change the rule of the first loop to be a yellow stick figure (doctorate) and keep the rule of the second loop the same (took time off).

FIGURE 7: LOOPS RULE-CHANGE DIALOGUE BOX

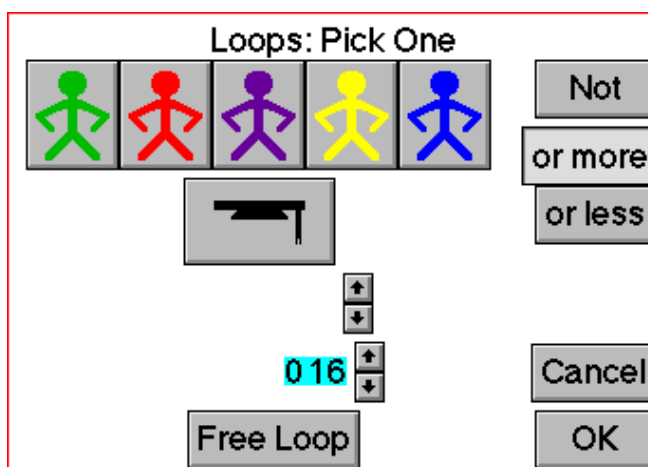
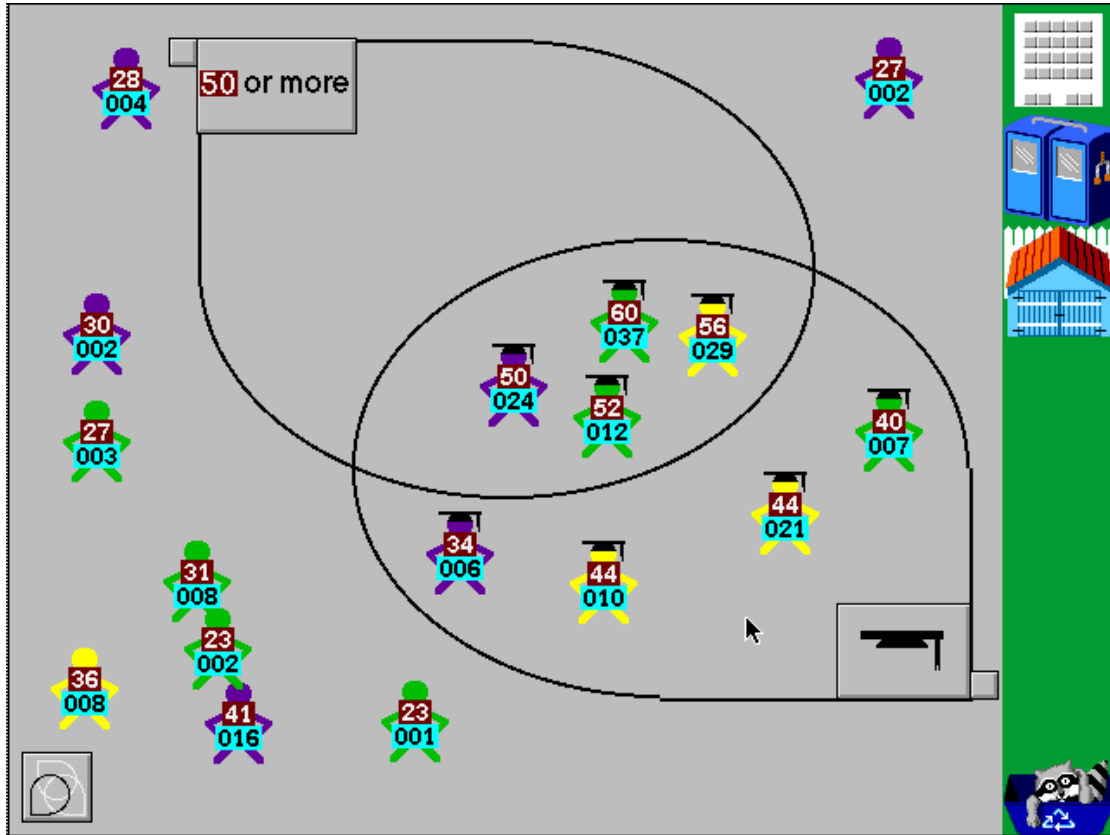


FIGURE 8: DOUBLE LOOP VENN DIAGRAM BY AGE AND TOOK TIME OFF?



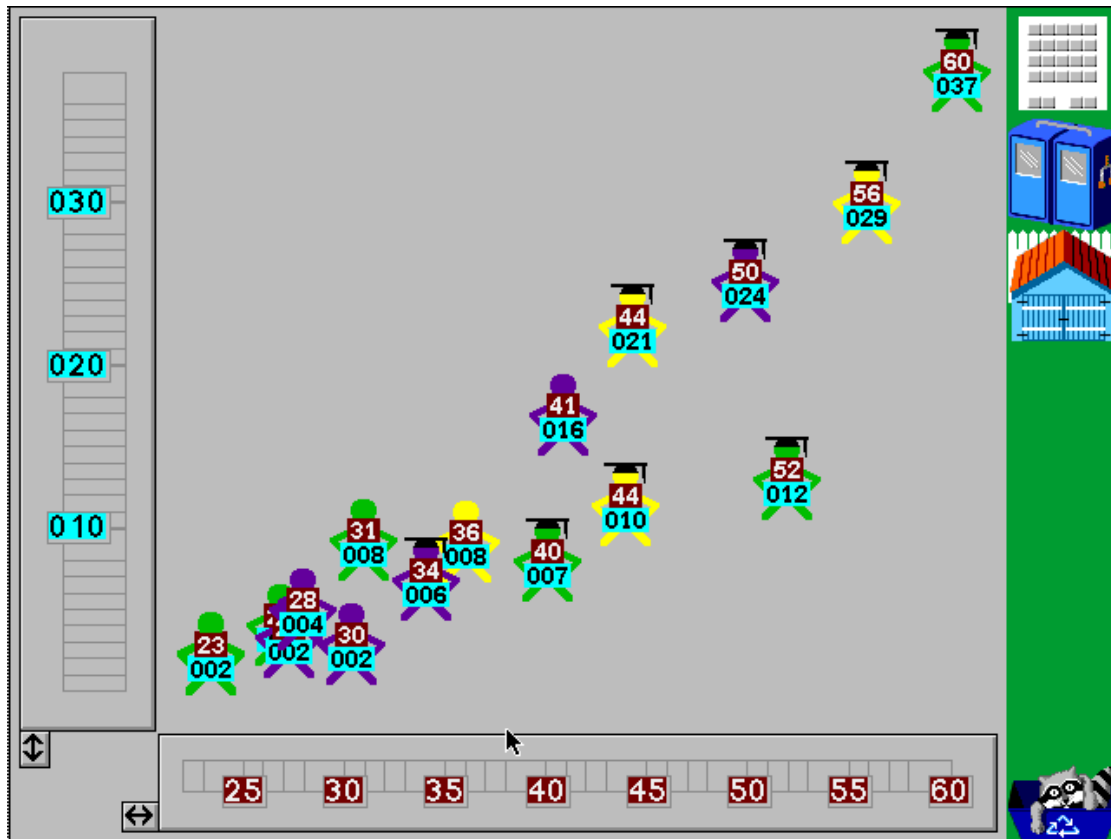
CREATING AN AXES PLOT

The Axes Plot is like the Stack Up plot, but allows you to set two axes, not just one. Follow these steps to create a plot with age on one axis and years of teaching on the other.

- From the "Plot" menu, select "Axes." The icons will arrange themselves randomly. There will be a vertical axis up the left side of the screen and a horizontal axis across the bottom. Both will be labeled "Free Axis."
- Click once in the horizontal Free Axis label across the bottom to define a rule by which the icons should be sorted.
- The dialogue box is the same as it was for the Stack Up plot (see Figure 5). Click once on the "99" in a brown box to sort by. Click "OK."
- Click once in the vertical Free Axis label on the left side of the screen.
- In the dialogue box, click once on the "999" in the blue box to sort by age. Click "OK."

- This graph should look like the one in Figure 9. What trends do you notice in the data?

FIGURE 9: AXES GRAPH OF AGE VS. YEARS OF TEACHING



Tabletop Jr. automatically determines the scale for the axis based on the size of your screen and the range of your data; in numerical plots (plots of age or years of teaching), there is little you can do to change this. You can modify the appearance of Stack Up or Axes plots of categories (e.g. educational level or took time off?) by using the squeeze button (Figure 10). Clicking this button will order the categories from that with the most objects in it to that with the fewest objects and also eliminate empty categories. Click on the squeeze button a second time to return to the default setting.

FIGURE 10: THE SQUEEZE BUTTON



From here, you can explore many other questions by using variations on these graphs. Experiment for yourself before you do the session. What questions are still unanswered

by the analyses you've done? What additional data would you have to collect to answer them?

LOADING AND LAUNCHING TABLETOP JR.

MACINTOSH

While TableTop Jr. runs on both Macintosh and Windows platforms it is not compatible with Macintosh system 8.5.1. Tabletop Jr. will only run on earlier versions of the Macintosh operating systems.

- Insert the Tabletop Jr. diskette into your floppy drive.
- Double-click on the icon labeled "Installer."
- Click the button "Install." The software will create a folder on your hard drive called "Tabletop Jr." You may select a location for this folder before you click "Install" or it will automatically be placed on your startup disk.
- To launch the software, double-click on the Tabletop Jr. icon in the new folder.
- An introductory screen appears. From here pull down the "File" menu and select "New" to create a new database or "Open" to open an existing database.

WINDOWS

- Insert the Tabletop Jr. diskette into your floppy drive.
- From the Windows File Manager, run the program called SETUP.EXE.
- A screen called Tabletop Jr. Setup appears, with three buttons at the bottom, labeled "Continue," "Exit," and "Help." Click "Continue."
- The Installation Directory screen appear. Now specify where the Tabletop Jr. files should be installed. The default location for the files is [Windows Drive]:\ TTJR. If this is where you want to install the files, simply click "Continue." Otherwise, type a different path name, and then click "Continue."
- To launch the software, double-click on the program item Tabletop Jr. inside the program group Tabletop Jr.
- An introductory screen appears. From here pull down the "File" menu and select "New" to create a new database or "Open" to open an existing database.

APPENDIX: TEACHING DATA BASE

Age	Years Teaching	Education	Time off? (6 mos. or longer)
23	2	Bachelor's	no
23	1	Bachelor's	no
27	3	Bachelor's	no
27	2	Master's	no
28	4	Master's	no
30	2	Master's	no
31	8	Bachelor's	no
34	6	Master's	yes
36	8	Master's	no
40	7	Bachelor's	yes
41	16	Master's	no
44	10	Doctorate	yes
44	21	Master's	yes
50	12	Bachelor's	yes
50	24	Master's	yes
56	29	Doctorate	yes
60	37	Bachelor's	yes