

Chapter 1

In the Beginning: Introducing GarageBand

In This Chapter

- ▶ Finding out what GarageBand is
 - ▶ Checking out what you can do with GarageBand
 - ▶ Discovering what you can't do with GarageBand
 - ▶ Checking the system requirements for GarageBand
 - ▶ Taking a sneak peek at the recording sequence and GarageBand
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When GarageBand was introduced at Macworld Expo in January 2004, Apple C.E.O. Steve Jobs informed the audience that one out of two adults play a musical instrument but that almost none of them have recorded themselves playing.

Why not? Because before GarageBand came along, recording live music decently was just too darned complicated. It required expensive, hard-to-use software and expensive external hardware, not to mention a basic understanding of audio engineering.

GarageBand changes everything. Now if you want to record yourself singing or playing, GarageBand lets you do it without spending a lot of time or money. Better still; GarageBand will give you professional-sounding results even if you don't know the first thing about audio recording.

In this chapter you'll begin your acquaintance with GarageBand. First, you'll learn a bit about what it is and what you can do with it, along with what it is not and what it can't do. Then, we'll review GarageBand's system requirements followed by a quick look at the recording process.

What Is GarageBand?

GarageBand is the fifth and newest iLife application; it turns your Mac into a fully equipped recording studio, complete with hundreds of realistic-sounding musical instruments and audio effects, all preconfigured by experienced recording engineers.

In a nutshell, GarageBand is everything you need to record, mix, master, and share music with others.



GarageBand's default settings are a big part of the reason GarageBand is so great, especially for beginners. The instruments and audio effects sound great right out of the box, and they rarely require much (if any) tweaking. It's kind of like having a crew of professional engineers right inside your Mac.

GarageBand is the latest addition to Apple's iLife family of software, along with iTunes, iMovie, iDVD, and iPhoto. At Macworld Expo in January 2004, Apple CEO Steve Jobs described iLife '04 as "Microsoft Office for the rest of your life," which sums things up quite nicely.

There has never been a program like GarageBand; it is the *perfect* introduction to multitrack audio recording. I mean that. GarageBand is easy, friendly, forgiving, and fun. And you can't beat the price.



Multitrack recording means recording instruments or vocals with each instrumental or vocal performance recorded on its own track. The sound contained in each track can be adjusted independently of other tracks. Ultimately, the tracks are combined (that is, mixed) in a pleasing manner to create the final product.

I've used 'em all; if you're new to this audio thing, nothing else even comes close to GarageBand. You're gonna love it.

What Can You Do with GarageBand?

GarageBand does things that used to require hours in an expensive recording studio. The following is a fairly comprehensive list of what you can do with GarageBand:

- ✓ Record vocals
- ✓ Record acoustic instruments

- ✓ Record software instruments via MIDI (Musical Instrument Digital Interface; more on that in Chapter 2)
- ✓ Record electric guitars with GarageBand's virtual amplifier models, so that you can get just the sound you want
- ✓ "Punch in" to a section of an otherwise excellent track to re-record over your mistakes
- ✓ Adjust the volume (level) and other sonic characteristics (the way things sound) of anything and everything you've recorded
- ✓ Make music using prerecorded loops
- ✓ Combine multiple tracks of music and/or loops into a two-track (stereo) file (so that you can play all the parts and combine them into one song)
- ✓ Record a track while listening to other tracks
- ✓ Adjust the sonic characteristics — volume, equalization, echo, reverb, and so on — for each track individually (all these elements are part of mixing a song, which I cover in Chapter 10)
- ✓ Adjust the sonic characteristics — volume, equalization, echo, reverb, and so on — for the song as a whole (in other words, mastering, which I delve into in Chapter 11)

And, of course, being a member of the iLife family of Apple software, you can use any song you create in GarageBand in the other iLife apps; in your iPhoto slideshows, iDVD menus, and iMovie projects. And, of course, you can burn your GarageBand-created tunes into audio CDs with iTunes.

This list doesn't cover *everything* you can do with GarageBand, but it at least gives you the gist of the cool stuff you can do.

What Can't You Do with GarageBand?

Well, there's not much GarageBand can't do. Perhaps its biggest shortcoming (versus more sophisticated recording studio-type software or an analog recording studio) is that GarageBand limits you to recording one track at a time. So, for example, if you sing and play acoustic guitar, you'll usually record your guitar track first, and then record the vocal track(s). A more sophisticated multitrack recording setup would allow you to sing and play at the same time, recording voice and guitar (on separate tracks) at the same time. Any decent recording studio allows the simultaneous recording of 8, 16, 24, or more tracks.



As you might expect, this shortcoming makes it extremely challenging to record drums using GarageBand. That's because drums usually require four, five, six, or more microphones, with each microphone recording to a separate track. You can find ways to work around this (and I look at some of them in Chapters 7, 8 and 15), but they're not pretty or easy to pull off. So if you happen to be a drummer, you may want to consider other software and hardware for recording your music. Or plan to spend a lot of time recording your drums track by track.

Another shortcoming in GarageBand is that you may not change the time signature in the middle of a song. If your song starts out in 4/4 time, the whole song has to be in 4/4 time. Although there are ways to creatively work around this limitation in GarageBand, none of them are simple or fun.



Most other audio recording software lets you change time signatures anywhere in a song without missing a beat (pun intended). So if you tend to write songs that have time changes in 'em, GarageBand may not be your best choice.

Finally, it's way too easy to create a song that has too many instruments or tracks for your Mac to handle. The older your Mac and the less RAM it has, the more likely you will encounter this issue sooner rather than later. Although this can also happen when you use higher-end audio software, it happens more often and with fewer tracks or instruments enabled in GarageBand.

The next section covers GarageBand's system requirements, so I'll hold the gory details until then. Suffice it to say that the newer Macs (G4 and G5) with plenty of RAM in 'em run GarageBand better than older Macs (for example, a G3, even one with plenty of RAM).

Other things you can't do with GarageBand include typesetting a book, removing red eye from a digital photograph, and sending your mom an e-mail message. Still, the issues I just described seem to be the ones that are the most likely to give you ulcers.

So there you have 'em — GarageBand's biggest boogers in my book (pun-induced groan).

Checking Your System Requirements

Whether you know it or not, GarageBand does a lot of intense processing behind the scenes. So, not surprisingly, GarageBand requires more Mac horsepower than the other iLife applications.

So before you go any further with GarageBand, make sure your Mac is up to snuff.

The official requirements

The official system requirements (copied right from the side of an iLife box) are as follows:

- ✓ Macintosh computer with a PowerPC G3, G4, or G5 processor
 - 600 MHz G3 or faster required for GarageBand
 - G4 or faster required for GarageBand software instruments
- ✓ 256MB of physical RAM
- ✓ Mac OS X v10.2.6 or later (Mac OS X v10.2.8 or later recommended)
- ✓ QuickTime 6.4 or later (QuickTime 6.5 included)
- ✓ Display with at least 1024 x 768 pixel resolution
- ✓ DVD drive required to install GarageBand (and iDVD)
- ✓ 4.3GB of hard drive space required to install GarageBand, iTunes, iPhoto, iMovie, and iDVD



If you purchased GarageBand as part of Apple's iLife '04 retail package, GarageBand and iDVD can only be installed from the iLife DVD. If you don't have your own DVD drive, you can use any FireWire DVD reader that you can beg or borrow, because after the installation, GarageBand doesn't care whether you have a DVD drive.



Unfortunately, iDVD not only needs to be installed from a DVD, it will not burn a DVD unless you have an authentic internal Apple SuperDrive. In this case, a FireWire DVD drive doesn't cut it. Luckily, the rest of the iLife '04 applications don't share this limitation.

The realistic requirements: Dr. Mac's advice

Now, please allow me to add *my* two-cents worth:

- ✓ **Cent #1:** GarageBand may *run* on a G3, but it won't run well.
- ✓ **Cent #2:** 256MB of physical RAM may be enough to play and record your one-finger rendition of "Mary Had a Little Lamb," but it's not enough to do a lot more than that. I recommend at least another quarter or half gigabyte of RAM; GarageBand will run much better if you have a total of 512MB or even 1024MB of RAM.



As a bonus, the more RAM you have in your Mac, the more tracks your songs can have before GarageBand chokes. If you want to know how much memory GarageBand actually uses, open up the Activity Monitor (in /Applications/Utilities). You'll see that even when GarageBand is open but minimized to the Dock, as shown in Figure 1-1, it uses more RAM and more processing power than any other program that's running.

But wait; it gets worse: If GarageBand is merely running in the background, as shown in Figure 1-2, it uses three times more processor power than when it was minimized.



Any program or utility that uses that many CPU cycles even when it's minimized or in the background slows everything else down. I recommend that you quit all other apps when you use GarageBand and quit GarageBand (GarageBand⇨Quit GarageBand) immediately when you're done using it each and every time.

Figure 1-1: GarageBand is using 17% of my processor and over 100MB of my RAM just sitting minimized in the Dock.

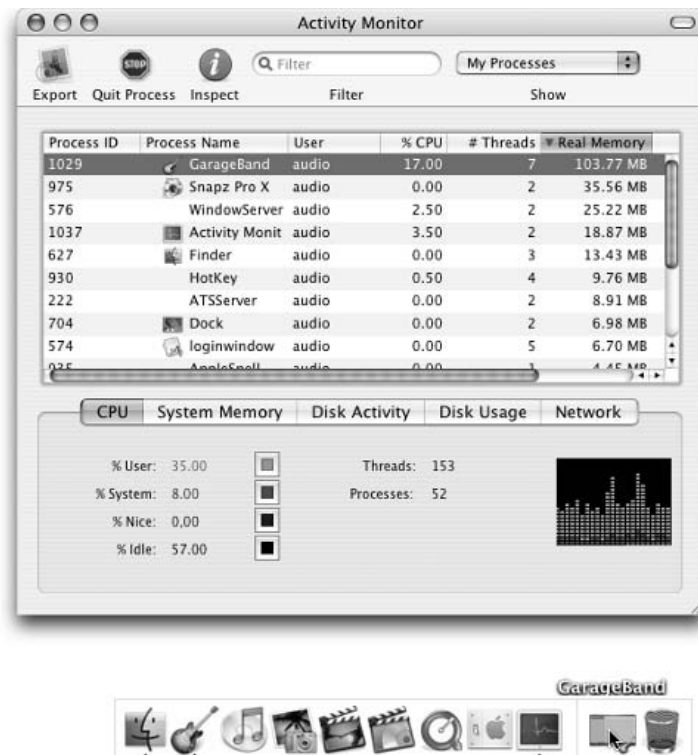
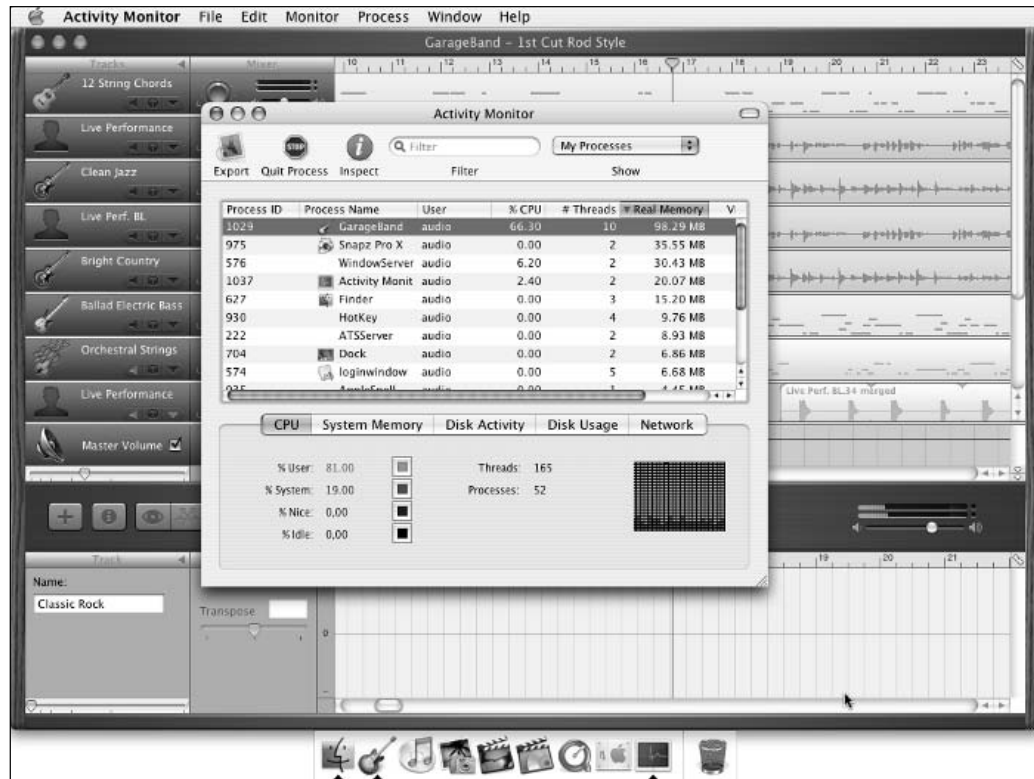


Figure 1-2:
Now
GarageBand
is playing
in the
background
and using
66% of my
Mac's
processing
power.



What Else Do You Need to Run GarageBand?

Although there are hardware and software items you may want or need (which are discussed in loving detail in the very next chapter), even if you don't acquire a single item recommended in Chapter 2, you can have a lot of fun using nothing but GarageBand all by itself.

If your Mac has a built-in microphone, as most of them do, you can use *it* to record vocals and musical instruments. The quality will not be as good as any external microphone, but in a pinch, you *can* use built-in microphones to capture the moment.

And, you can use GarageBand's on-screen keyboard to play any of the software instruments, as shown in Figure 1-3. It's hard to play music by clicking a mouse, and you can't actually play chords on this keyboard, but it's better than nothing at all and it's free.

Speaking of which, be sure to pause for a brief interlude about tape — the old kind (cassette, ½-inch, 1-inch, and 2-inch) and the new kind (hard drive) in the sidebar, “Recording with tape versus a hard drive.”

Figure 1-3: GarageBand has a tiny on-screen keyboard you can use if you don't have an external piano-style keyboard handy.



Recording with tape versus a hard drive

In the old days, you recorded to tape. The more tracks you wanted to record at a time, the more expensive the studio time, equipment, actual tape, and so on. Hobbyists recorded two, four, or eight tracks at a time onto tape that was $\frac{1}{8}$, $\frac{1}{4}$, or $\frac{1}{2}$ -inch wide. Professionals tended to record 16 or more tracks at once onto 1-inch or 2-inch tape. The more tracks a studio could record at a time, the more you paid per hour to use that studio.

The specialized equipment used in the professional or semi-professional recording studio — particularly the multi-track tape recorders and mixing boards (or “consoles”) with 16 or more tracks, as shown in the following figure — were (and still are) quite expensive.

Luckily, hard drives work as well as tape recorders for storing recorded audio, and thanks to the popularity of the personal computer, big, fast hard drives are dirt cheap compared to almost any decent multitrack recording device. Better still, a hard drive doesn't come with a predefined track limit. Put another way, an 8-track tape recorder can only record eight tracks at a time, maximum. On the other hand, on a hard drive, you can record (and mix and

master) as many tracks as your software and hardware setup permit.

Much of the music you hear today has never been anywhere near magnetic audio tape. Instead, it has (usually) become cheaper, faster, and easier to forget about tape entirely and record tracks “direct to disk.” And that is precisely what GarageBand is doing when you record a track.



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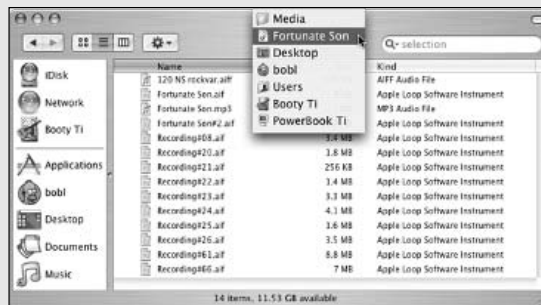
Packaging your music

Technically, the file you create when you use the Save or Save As command in GarageBand is a package. A *package* is a special kind of Mac OS X document that looks like a document icon but acts like a folder. In other words, a package document contains other files like a folder. But when you open a package (by double-clicking, choosing File→Open, or by using the ⌘-O shortcut), rather than revealing its contents, the package document launches into the application that created it. So when you open a GarageBand package document, GarageBand opens.



The secret to package documents is that when you Control-click them, the contextual menu offers the Show Package Contents option, as shown in the following figure.

Inside a GarageBand document package, you'll find a Media folder. Inside the Media folder, you'll find the individual files that represent the tracks in that song, as shown in the following figure.



Recording with GarageBand: A Few Teasers

Before I move on to the discussion of your recording space and audio gear, I think you should have a slightly clearer picture of the way this whole

recording-studio-in-a-box thing works. This material is covered throughout the book in glorious detail, but these brief “sneak peeks” should make the big picture a little clearer.

Sneak peek 1 walks (actually, more like sprints) you through the process of making songs with GarageBand. Sneak peek 2 is a quick look at GarageBand itself.

Sneak peek 1: The recording sequence

When the folks at Apple say GarageBand contains everything you need to create songs, they aren’t kidding. It really does give you everything you need: recording, editing, loops, software instruments, overdubbing, mixing, mastering, and the ability to make your own audio CDs that you can share with friends or even sell.

I delve further into every step of the process in upcoming chapters. For now, I’d like to provide a painless introduction to the process of making a multi-track audio recording:

1. Select or write the material.

I know this seems obvious, but it bears mention just the same. Creating an audio recording, like so many things in life, is subject to the GIGO effect — Garbage In, Garbage Out.

There are, of course, exceptions. If you prefer jam bands, aural soundscapes, random noise, trance music, or Brian Eno, you can probably skip right over this step. As for the rest of you: It’s better if you have an idea of what you want to record *before* you launch GarageBand.

’Nuff said.

2. Rehearse (and/or record your rehearsals).

Rehearsal can make your recording sessions faster and easier.

Later in the book, I countermand this advice and tell some of you to record every note you ever play. When I produced the band Vengeance, who were all really good players, I would say: “Tape is cheap. Studio time isn’t. I record every note from the moment you plug in until you walk out of the studio. I’m not losing a single usable note just because the tape wasn’t rolling.”

As for me, I’m such a terrible musician that I never even record a take until I can play the part without mistakes (or at least play the part without a mistake in every measure).



If you have more than a drop of musical talent, though, you might want to record your practice takes. Sometimes, that first or second “practice” take turns out to be the best.

If tape is cheap, hard drives are cheaper, which is a good thing because GarageBand chews up hard drive space at a rapid clip. My songs range from 30 or 40MB for the simple ones to over 100MB for more complex tunes. At any time, I may be working on a dozen different tunes or more. It doesn’t take long to accumulate several gigabytes of GarageBand song files.



If you find that your main hard drive is getting full, you can either buy a big external FireWire drive (the best option; you find out my reasoning for this in Chapter 2), or delete (or archive to another hard drive, to CD, or to DVD) files that are less important to you than your GarageBand songs.

3. Record tracks.

When you know what you’re trying to do, record the tracks for it. Record as many tracks as the song requires and record them until your performances are as good as they can be.

4. Edit and overdub.

As soon as all (or most) of your song’s tracks are “in the can,” it’s time to fix what ails them. Most people, including many professional musicians, can’t record every track perfectly in a single “take.” There are often imperfections, major and minor — an unwanted breath in the wrong place, guitar string noise in a quiet passage, a dog barking in the background, or whatever. So listen to your tracks with a critical ear, and then fix or replace anything that doesn’t sound right to you.

5. Mix.

When all (or most) of your tracks represent the best performance you can possibly create, it’s time to begin mixing. When you *mix*, you adjust each track’s individual level (volume), equalization (tone), and pan (placement left, right, or center in the stereo sound field), and add audio effects such as echo or reverb, striving for a perfect “mix” of the tracks that blends together well and sounds good to your ears.

6. Master.

If you’ve made it through Steps 1 through 5, you’re so close to completing the song that you should be able to taste it. But before you break out the bubbly, you probably want to master your masterpiece. In the very simplest of terms, *mastering* is the same as mixing, but you adjust audio controls such as level, equalization, compression, expansion, and limiting, applying them to the entire song, rather than any single track.

Mastering isn't rocket science. All you're doing is adjusting the tonal qualities and dynamics of the song the same way you adjusted those things for individual tracks when you mixed it. Just play with the mastering effects until the song has the sound you're looking for, and you're done.

You can find out more about Steps 4, 5, and 6 in Part III.

That's a very simplistic overview of the process, but that's the process: rehearse, record, edit and overdub, mix, and master. There is one more step, but it's purely optional, which is:

7. Share your work with others.

If you did a good job on the song, you'll want to share your brilliance with others by burning the song to an audio CD, or by creating an MP3 or AAC file of the song and attaching it to an e-mail message or making it available on the Web.

Seven simple steps are all it takes to make a magnum opus of your very own.

Before I close out this chapter, I give you a quick gander at the program that makes the magic happen. So let me introduce to you the app you've known for all these days (it's okay to sing along — I know you know the tune): Apple's Awesome Program GarageBand.

Sneak peek 2: GarageBand

They say a picture is worth a thousand words; if so, this should be worth around five grand. I'll start this quick pictorial of GarageBand with something you see often: The No Song Open dialog box shown in Figure 1-4. You'll see this dialog box the first time you launch GarageBand, and again any time you close the active (only) GarageBand document.



GarageBand, like other iLife programs, forces you to work with only one document at a time. If you close the active document, you see the No Song Open dialog box, no ifs, ands, or buts. This is actually a very good thing: GarageBand uses an inordinate amount of your Mac's processor and memory (as I mention earlier, in the section, "The realistic requirements: Dr. Mac's advice").

Figure 1-4:
The No
Open Song
dialog box.



Here are the basics of working through the GarageBand interface from the No Song Open dialog box:

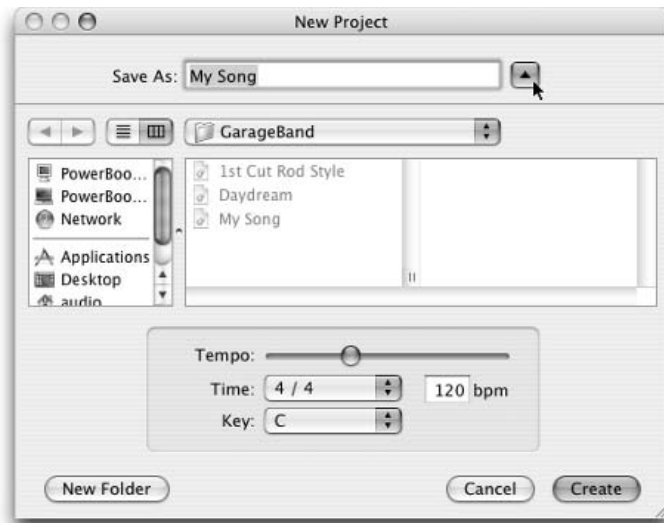
1. If you click the **Create New Song** button (in the **No Open Song** dialog box), the next thing you see is the **New Project** dialog box; you can see one rendition of it in **Figure 1-5**.

Figure 1-5:
Garage
Band's
unexpanded
New Project
dialog box.



2. Clicking the down-pointing arrow, as shown in **Figure 1-5**, expands the dialog box so that you can navigate to a folder other than the one GarageBand uses as its default, as shown in **Figure 1-6**.

Figure 1-6:
Garage
Band's
expanded
New Project
dialog box.



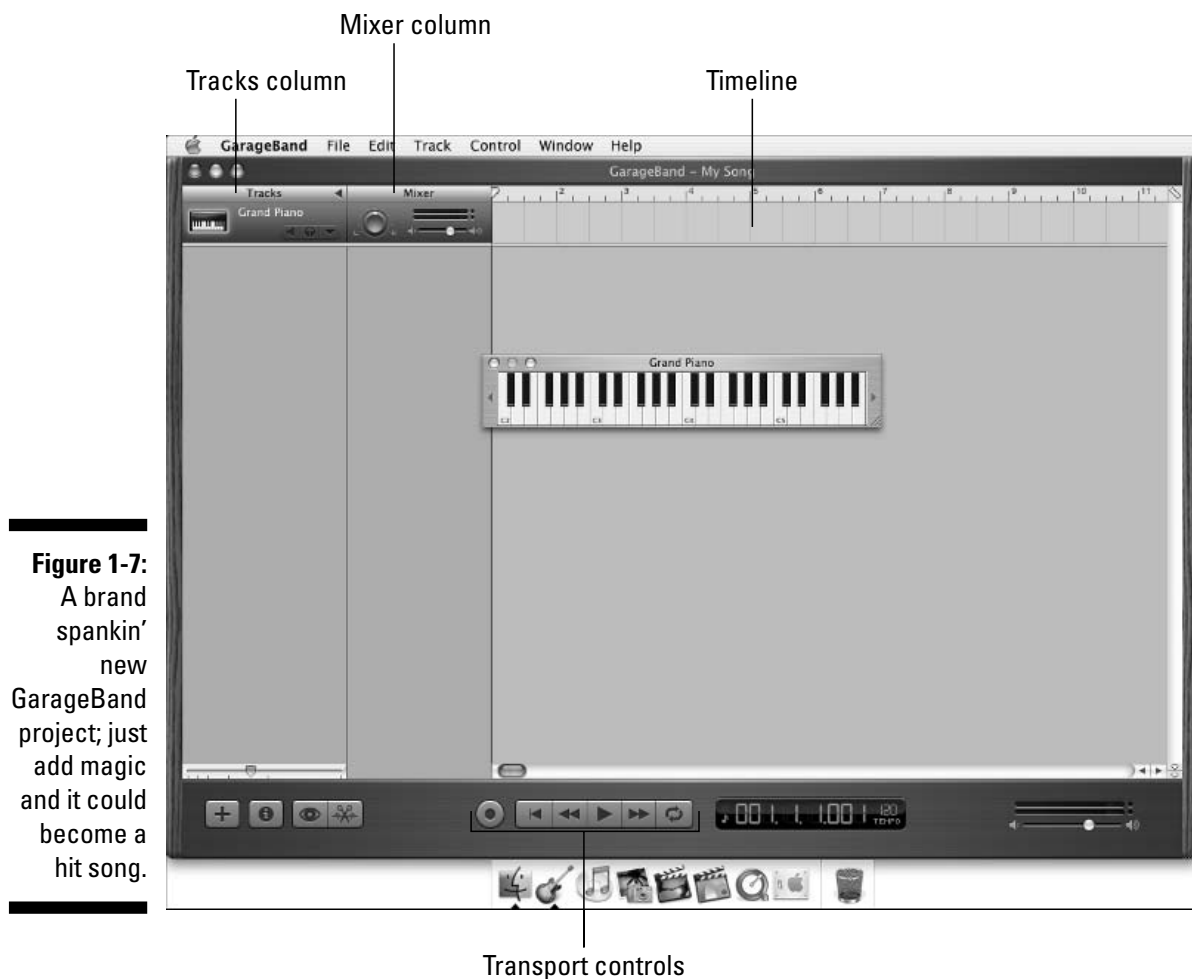
GarageBand wants to save all new projects into the GarageBand folder, which should be in your Music folder (which is in your Home folder). This folder is installed automatically when you install GarageBand. If the folder doesn't exist when you save a new project, GarageBand creates a new one for you automatically.

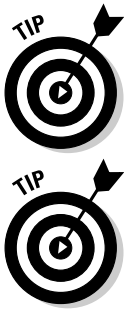
Also, the New Project dialog box appears in the same state as the last time you saved a project. So if you had expanded the dialog box in the past, it would look like Figure 1-6. And if you clicked the down-pointing arrow as shown in Figure 1-6, the dialog box would again look like Figure 1-5.

By the way, don't worry about all that strange stuff you see in both versions of the New Project dialog box — namely tempo, time, bpm (beats per minute), and key. You can read all about them in Chapters 6 through 8.

3. Okay . . . now click the Create button in the New Project dialog box.

The next thing you see is an empty GarageBand project (song) with a single software instrument track (always the Grand Piano) created for you, as shown in Figure 1-7.





If the little piano isn't on your screen, choose Window⇧Keyboard or use the keyboard shortcut ⌘-K. If the little piano is on your screen and you want it to go away, do the same. It's a toggle. Each time you use it, the little piano appears or disappears. Go ahead and try it a few times if you like — you can't hurt anything.

You can make the little piano wider by clicking and dragging its lower right corner to the right.

Other interface elements shown in Figure 1-7 include:

- **The Timeline:** Shows where music appears after you record it or drag it onto a track from the Loop Browser (not shown) or the Finder (not shown either).
 - **The Tracks column:** Displays the name of the current instrument.
 - **The Mixer column:** Use the slide control to adjust the track's volume and the Pan control to manage its placement left, right, or center in the stereo sound field.
 - **The Transport Controls (left to right):** Record, Go to Beginning, Rewind, Play/Pause, Fast Forward, and Cycle Region.
4. **Finally (at least for this sneak peek), when you want to create a new track, you choose Tracks⇧New Track (or use the keyboard shortcut ⌘-Option-N).**

The New Track dialog box enables you to choose a real or software instrument to assign to the new track, as shown in Figures 1-8 and 1-9.

Figure 1-8:
Click the Real Instrument tab at the top of the New Track dialog box if you want to record a track using a real instrument.

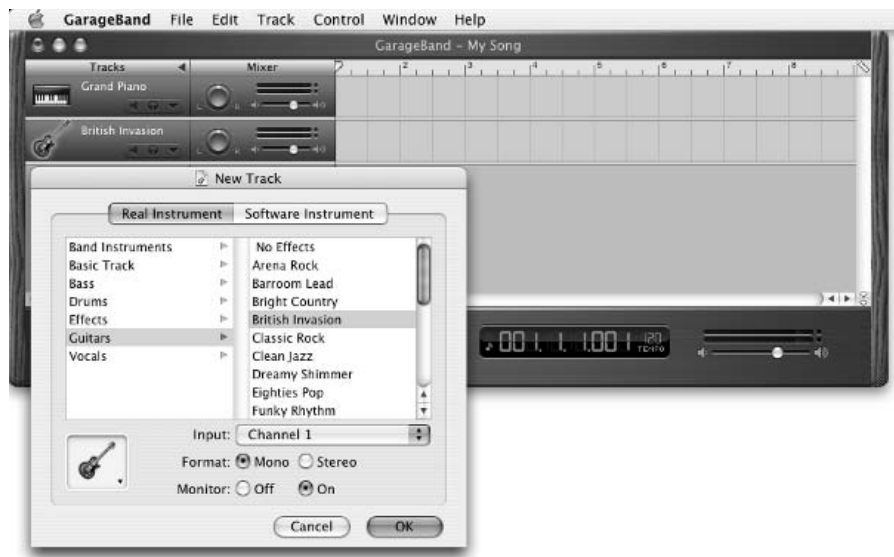
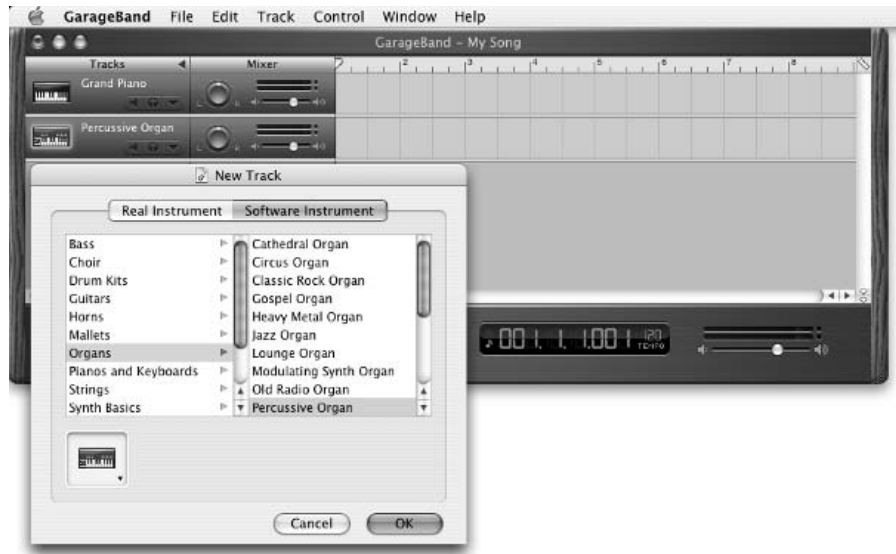


Figure 1-9:

Click the Software Instrument tab if you want to record a track using a software instrument.



The difference between software and real instruments is simple: Real Instrument tracks contain things you record with a microphone (vocals, acoustic guitar, flute, and so on) or by connecting the instrument to your Mac (or an audio interface). Software Instrument tracks contain music that's been synthesized by GarageBand and recorded by playing notes on either the little onscreen keyboard or an external MIDI keyboard.



That's all you need to know for now. If you can't wait to find out more, Chapter 6 has more info on using software instruments; Chapters 7 and 8 have the scoop on using real instruments.