



## DESKTOP PUBLISHING



**(1) Desktop Publishing:** Teachers frequently need to develop newsletters, handouts, flyers, study guides and notes that incorporate graphics and text.

- Submit one or more course-based documents (handouts, flyers, etc.) that incorporate the following features. Your documents should be related to what you teach, professional in appearance and useful to you or your students or school. Please place your documents in the portfolio immediately following the assignment template.

**Note:** Use the help feature in Word to learn more about the specific functions mentioned in this assignment. You may also wish to use the Newsletter Wizard to give you some ideas (File/New/Other Documents/Newsletter). **In-class practice lesson:** Click on this link to proceed to the in-class practice lesson for this assignment. [Sample files](#).

### Requirements

Error checking	Two or more pages of text that has been checked for spelling, grammar, style, and readability.
Text	Text that includes different <a href="#">fonts</a> , special symbols or equations.
Tables	One or more well-formatted data tables.
Index/contents	Use automatic table of contents or indexing features if appropriate.
Styles	Use styles to format non-contiguous text within document.
Scanned graphics	One or more well-formatted, imported, and positioned scanned graphics.
Embedded graphics	Embedded graph, spreadsheet worksheet, organizational chart, word art, or equation.
<a href="#">Web graphics</a>	Two or more well-formatted and positioned graphics imported from the web.
Edited graphics	One or more graphics that you have edited and labeled (this may be one of the graphics above).
Charts & Graphs, Callouts	Include charts, graphs, or callouts
Movies, Music, speeches	Include a movie, speech or musical piece in your file
Text Boxes	Use text boxes to position and label graphics. Format your text using linked text boxes so text flows from one box to another.
Formatting	Two or more sections of text with distinctly different formats

	(margins, indents, spacing, number of columns etc.)
Annotations	Include three or more of the following: footnotes, endnotes, annotations, appropriate weblinks, headers, footers, or automatic pagination.
Hyperlinks	Download graphics to a local folder. Establish hyperlinks from text in your document to these graphics so you can access them by clicking on the document.

**Obtaining text:** There is a tremendous amount of classic [public domain text](#) on the Internet. This information can be incorporated into this assignment if you wish. There are ways of [copying public domain text](#) to your word processor while keeping the formatting. You may also search for text on the web using an advanced [search engine](#) such as [AltaVista](#) . For the Boolean query, enter the name of the document you desire in quotes (e.g. "Declaration of Independence"). For the sorting, select "full text".

**Image Sources:** You may acquire art for your document by [scanning](#) pictures, [capturing images](#) from a program or website, [download them from a website](#). Make certain to [cite](#) all material.

## Where to Begin<sup>i</sup>

by Michael Tyler  
Computer Music Products

Edited by Galene Martinez

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How do you put together a Computer Music System that will serve your needs? A good place to begin is to **write down** exactly what it is that you want to accomplish **before** making your final software/hardware purchasing decisions.

For example, one of our customer's desires was:

- 1) Print sheet music of original compositions**
- 2) Create custom instrumental soundtracks of favorite songs**
- 3) Transpose and reprint songs in a new key**

Pin-pointing just these three musical tasks allowed this person to select just the right software that would allow him to accomplish his desires and create the kind of system he needed.

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Of course, you have your own set of musical tasks in mind. **Write them down** -this will keep you focused on your goals as you make purchasing decisions for your music system, and can help you avoid costly mistakes in the process.

The following sections describe the components required for the most common MIDI/music applications. It is important, however, to find out if there are any additional or specific requirements for a particular piece of software or hardware component you may be planning to use. Any music technology manufacturer will be happy to inform you of any special requirements for their products. Also, you may contact [Computer Music Products](#) if you have questions regarding system requirements for any musical projects you have in mind.

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## Your Computer Music System Components

There are four main components characteristic of most computer music systems:

- 1. Computer**
- 2. MIDI interface**
- 3. MIDI instrument with speakers**
- 4. Music software**

Each component is described in the following sections.

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### Component #1: The Computer

Naturally, the computer itself is the most important component of your system. The computer industry is in a state of constant change which inevitably requires more memory and faster processing speeds to accommodate newer operating systems and software applications. Because of this, we recommend that you purchase whatever is “state-of-the-art” at the time you buy your computer system. At minimum, a Pentium4-based computer (or comparable) with 512 MB of RAM with at least a 60 gigabyte hard drive is recommended.

If you are planning to use digital audio software and hardware (for recording vocals, acoustic instruments, etc.), then you will certainly want to get the fastest processor (minimum 1.4 GHz) and as much RAM (512 MB+) as your budget will handle. I recommend you seriously consider at least a Pentium-based 3GHz, 1 GB RAM computer system if you plan to do a lot of audio recording with multiple tracks. Also, two large-

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capacity hard drives will help ensure a smooth running audio recording system (more details below).

For audio recording, you want to be sure you equip your system with a high-performance, large-capacity hard drive (or two!) for processing and storing the audio files you will be creating. The hard drive should be at least an ATA-4/UDMA 66, be A/V-Rated for audio and/or video applications - thankfully, most are now. High performance drives have a minimum rotation speed of 7200 rpm, with an average seek time of less than 12 milliseconds (< 9 milliseconds is the norm).

It's highly recommended that you install TWO hard drives in your computer audio recording system. The main hard drive is used for running your operating system and all your software programs, and the secondary hard drive is specifically dedicated for writing and reading the audio files you will be creating when recording and during playback. You should *not* install any software programs at all on this dedicated audio drive. It is to be used exclusively for your audio (and/or video) files.

Most new computers come with a hard drive that will be fine for audio recording applications (the exception to this may be laptop computers, since most laptop hard drives don't spin at the minimum recommended speed of 7200 rpm needed for audio recording - rather, it's more common for a laptop hard drive to spin at 5400 rpm - not quite fast enough for hassle-free audio recording!).

***NOTE: A computer that has been setup for recording digital audio is commonly referred to as a DAW (Digital Audio Workstation).***

***A final note for musicians planning on recording digital audio:*** Digital audio applications are far more demanding on a computer than "plain-ol'-MIDI", and it is extremely important to pay attention to whatever system requirements are recommended by your audio software/hardware manufacturer.

**TIP: Follow the "Recommended System Requirements" listed by the manufacturer for the particular hardware or software you will be using, *not* the "minimum system requirements!"**

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## Component #2: The MIDI Interface

You will need a MIDI interface if you want to connect your computer to an external MIDI instrument (such as a keyboard synthesizer). There are three main kinds of MIDI interfaces...

- **Internal MIDI interface**

A circuit board that you install into an ISA or PCI slot inside your computer, with the MIDI "IN" and "OUT" ports made accessible via an included adapter (usually on the back of the circuit board). Internally installed MIDI interfaces are not as common today,

as they once were, giving way to USB external MIDI interfaces instead.

[Descriptions and prices of computer music interfaces](#)

- **External MIDI interface**

An external "box" with MIDI "IN" and "OUT" receptacles that you connect to your computer via a standard serial or printer port on the back of your computer, or to a USB (**U**niversal **S**erial **B**us) port on the newer systems being sold today. Most serial and printer port MIDI interfaces have now been discontinued. The most common MIDI interfaces now are the USB type that simply plug into an available USB port on current model computers.

[Descriptions and prices of computer music interfaces](#)

- **Computer Gameport Soundcard MIDI interface**

this may be a built-in feature of your computer's soundcard. If it is, the MIDI "IN" and "OUT" connectivity is accessed via the soundcard's gameport, using a special [gameport-to-MIDI adapter cable](#) made for this purpose. Be aware that some soundcard manufacturers are no longer including a standard 15-pin gameport receptacle on their soundcards. You will need to check your particular soundcard manual and visually check for the 15-pin gameport, to see if MIDI connectivity is available via your soundcard. If not, you will need to purchase a USB MIDI interface instead. (*SoundBlaster® or "100% SoundBlaster® compatible" soundcards will usually have the built-in MIDI interface circuitry necessary for hooking up an external MIDI keyboard. However, you need to purchase an optional [gameport adapter cable](#) in order to access this feature.* )

#### Gameport-To-MIDI Cable Adapter

The **SBMID-12** is a simple MIDI interface adapter cable that plugs into your 100% compatible SoundBlaster® soundcard allowing you to connect a MIDI keyboard or any other MIDI device to your computer via your soundcard's gameport receptacle.



- **Products with a built-in MIDI interface**

there are several types of products that include a built-in MIDI interface. Many [digital audio recording cards](#) (internal PCI-type) will include a MIDI interface as an additional feature. Also, several models of [MIDI keyboards](#) are now able to connect to a computer via a USB port -this eliminates the need for purchasing a separate USB interface. [Sound modules](#), as well, will often include a USB hookup that negates the need for a separate

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MIDI interface. These products, if you need them, can often serve dual or triple duty, acting as an input device, MIDI interface and even an audio interface with certain types of soundcards and sound modules. An unusual product called the [Prodikeys](#), is a combination computer keypad and MIDI keyboard all-in-one unit that connects via a standard PS2 port found on all desktop computers.



[Prodikeys](#) - a standard computer keypad with an integrated MIDI keyboard

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### Component #3: The MIDI Instrument

The MIDI instrument of choice is usually a keyboard synthesizer, since it provides the most logical way of getting music into your computer. You simply play the keyboard and the computer receives the music via your MIDI interface connection. A computer soundcard can also be considered a "MIDI instrument" and is commonly used in conjunction with a MIDI keyboard controller (a controller is a keyboard that has no built-in sounds of its own -all the sounds originate from the soundcard as the controller is played).

- [Descriptions and prices of MIDI controller keyboards](#)

#### What is a "MIDI controller"?

A MIDI controller is an economical choice for desktop musicians! You don't pay for built-in sound chips (like conventional MIDI keyboards).

MIDI controllers normally **do not** have their own built-in sounds or speakers. They are specifically designed to "trigger" the sounds in other devices...such as your computer's sound card or external sound module, when used with your music software.



- [KeyRig 49](#)

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• [Keystation Pro 88](#)

• [Descriptions and prices of sound modules and cards](#)
















	<p><b><a href="#">Fast Track PRO</a></b>          Combination USB Audio/MIDI interface - Stereo Audio IN and 4 OUT, with SPDIF (digital coaxial I/O), plus 1x1 MIDI IN/OUT</p>
	<p><b><a href="#">Firewire Audiophile</a></b>          Combination USB Audio/MIDI interface - Stereo Audio IN and OUT, with SPDIF (digital coaxial I/O), plus 1x1 MIDI IN/OUT</p>
	<p><b><a href="#">FireWire Solo</a></b>          Economical 6 x 4 24-bit/96kHz FireWire audio interface.</p>
	<p><b><a href="#">Audiophile USB</a></b>          Combination USB Audio/MIDI interface - Stereo Audio IN and OUT, with SPDIF (digital coaxial I/O), plus 1x1 MIDI IN/OUT</p>
	<p><b><a href="#">Mobilepre USB</a></b>          Economical 2 x 2 16-bit/48kHz USB audio interface.</p>

Table of Midi/Audio Interfaces:

**MIDI Interfaces**  
 (for MIDI recording only)

	<b><u>UNO 1x1 - 1 in x 1 out (MIDI)</u></b> Economical 16 channel, USB port MIDI interface for PC or Mac
	<b><u>MidAir Wireless MIDI interface- 1 in x 1 out (MIDI)</u></b> <b>NEW! Wireless</b> 16 channel, USB port MIDI interface for PC or Mac
	<b><u>MIDISport 2x2 - 2 in x 2 out (MIDI)</u></b> 32 channel, USB port MIDI interface for PC or Mac
	<b><u>MIDISport 4x4 - 4 in x 4 out (MIDI)</u></b> 64 channel, USB port MIDI interface for PC or Mac
	<b><u>MIDISport 8x8/S - 8 in x 8 out (MIDI)</u></b> 128 ch., USB MIDI interface w / SMPTE, for PC or Mac
<b>Audio Interfaces</b> (for audio recording only)	
	<b><u>FireWire Solo</u></b> Economical 6 x 4 24-bit/96kHz FireWire audio interface.
	<b><u>Mobilepre USB Audio Interface</u></b> Economical 2 x 2 16-bit/48kHz USB audio interface.
<b>COMBINATION MIDI and Audio Interfaces</b> (for recording BOTH audio and MIDI)	
	<b><u>Fast Track PRO</u></b> Combination USB Audio/MIDI interface - Stereo Audio IN and 4 OUT, with SPDIF (digital coaxial I/O), plus 1x1 MIDI IN/OUT
	<b><u>Firewire Audiophile</u></b> Combination Firewire Audio/MIDI interface - Stereo Audio IN and OUT, with SPDIF (digital coaxial I/O), plus 1x1 MIDI IN/OUT
	<b><u>Audiophile USB</u></b> Combination USB Audio/MIDI interface - Stereo Audio IN and OUT, with SPDIF (digital coaxial I/O), plus 1x1 MIDI IN/OUT



## Component #4: Music Software

Refer to the list you made of your musical goals. This will help you make your software selections.

- For transpositions, compositions and arrangements that require sheet music printout choose a [notation/scoring program](#).
- For recording and playback, choose a [recording \(sequencing\) software program](#).
- If your interests include music education, self-taught piano lessons and the like, there are a variety of music [education programs](#) that will fill these needs.
- Other software products include [specialty applications](#) for music scanning, pitch-to-MIDI conversion, audio editing and restoration, auto-accompaniment composition, and more.

Here is a video from a professional music studio that I have embedded on my Extras page:

<http://www.csun.edu/~ggm63821/SED514/Extras/extras.html>

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<sup>i</sup> Source of the article <http://www.musicmall.com/cmp/article1.htm>