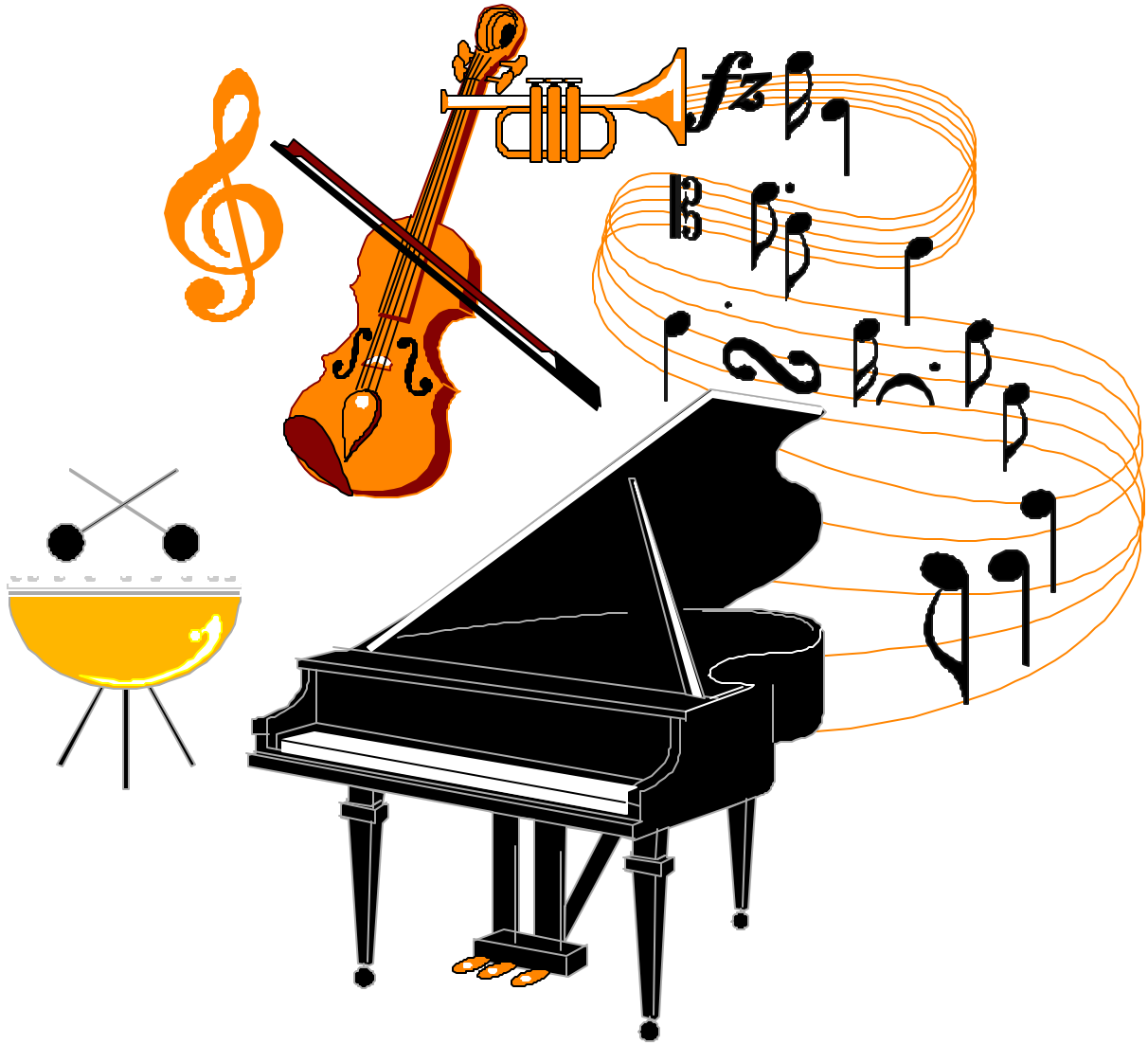# Jazz It Up, with Music Technology!

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As the song goes , "Don't know much about His -to-ry, don't know much about Tech-no-lo-gy!" But what we do know is that music technology now plays a crucial role in most schools. Fully integrating this technology requires much greater awareness. From Mozart to Madonna, technology has forever changed the field of music. Although accessing music through the Web and through digital storage devices has been remarkably significant, perhaps to an even greater extent, music synthesizers and editing software have dramatically changed the very nature of music. Technology provides powerful aids to composing, notating, editing, and performing music that even elementary school students can learn to use.

Cakewalk Sonar (Image 1) represents affordable state-of-the-art digital recording software that compares to expensive studio facilities. There's a lot of flexibility built into Sonar to achieve a variety of musical forms including recording audio, creating MIDI files, looping and sequencing, and adding effects. Any style of music can be created using Sonar's MIDI and audio systems and there are also DX instruments and automated effects.

Band-in-a-Box (Image 2), described as an intelligent accompaniment software, is a powerful and creative music composition tool for exploring and developing musical ideas with near-instantaneous feedback. It contains features to display notation, enter lyrics, create melodies, add harmonization, and program a variety of musical styles. The Soloist generates professional quality solos over any chord progression. The Melodist creates songs from scratch with chords, melodies, intros, solos, and even a title.

Band-in-a-Box can add recordings of acoustic instruments or voices to the composition with special effects processing. Its built-in audio harmonies can turn an audio track into multiple harmony parts and even adjust its pitch by tracking the Band-in-a-Box melody track. Digital audio features make Band-in-a-Box the perfect tool for creating, playing, and recording music with MIDI, vocals, and acoustic instruments. You can print out your musical arrangement with repeats and endings, DC markings and codas, or save it as a graphic file for Web publication or even e-mail it to a friend. And when you're ready to let others hear your composition, you can burn it directly to an audio CD. Save your composition as a Windows Media File or other compressed formats for a file that's "Internet ready." It's a great way to create your won backup band!

PowerTracks Pro Audio (Image 3) provides a fully-featured MIDI and digital audio sequencer and multi-track recorder. Unlike Band-in-a-Box, you do not create music in PowerTracks by typing in the chords to a song. Rather, you 'layer' tracks of MIDI and digital audio, each of which must be recorded from scratch. This takes longer, but in exchange you have much more control over the nuances of your music. Band-in-a-Box does not allow you to edit the individual events of the accompaniment tracks. This is because the program generates the accompaniment for you, and it is different every time you play your song. PowerTracks also comes loaded with a host of effects to help you put the subtle, finishing touches on your work. Use a bit of reverb to create a 'spacious' feel; add some chorus and distortion to enhance the 'grind' of your guitar tracks; fiddle with the compressor to give your drums that extra 'punch.' PowerTracks (and patience) are all you need to infuse your songs with a refined, 'studio' feel.

If you've ever had an original song idea in your head and wished you could have it performed, MIDI is the way to do it. All you need is a MIDI Sequencer, plus a MIDI instrument to enter notes. You can also use MIDI Notation software to place notes on a musical staff without playing them at all. You can start with just a melody and then add backing chords, bass, and rhythm later, or add instruments in any order you like. If you make mistake, you can change it without having to play the part all over again. You can also make entire sections repeat without playing them again. And you can rearrange and re-orchestrate your song as many times as you like.

Many people enjoy arranging and orchestrating music as much as performing it. There are MIDI files available for songs from every style of music, as well as, software programs that generate the basic rhythm and chord patterns that define specific styles that you can use to create your own arrangements and orchestrations. Just change the instrumentation, add a verse or chorus here or there, even put in your own original phrase or section. All of this is easy to do with MIDI. You can also share your arrangements with other people, who can then rearrange them to fit their own needs. Many people download MIDI files from the Internet and arrange them to fit their own needs.

Finale (Image 4) offers the most features of any music software available using convenient templates, automated note entry, editing, and printing. To lay the melody down, you simply grab an instrument and play the melody into a microphone. Then you apply the Auto-Harmonizing assistant. Seconds later, a beautiful 6-part composition has been created. Using the Drum Groove Plug-in and the percussion section, you add a rhythmic background. To complete the arrangement, you employ the Rhythm Section Generator to instantly create piano, bass

and drum parts. Next you apply some simple edits to give it your personal touch. Finally, you extract and print the parts and burn it to an audio CD, then slap the CD into the portable player and enjoy the results. The newest version supports both Macintosh and Windows and features for music educators.

Imagine creating an instructional file for your students that can be opened in a downloadable shareware application called Finale Performance Assessment, or FPA (Image 5). Here they practice the music by adjusting the tempo, hearing how it is supposed to be played, and playing it over and over until ready for a performance. The student is automatically recorded in a file they can save to disk for their portfolio, or email to the instructor, family, or friends. Their performance is assessed on-screen with notes they played correctly appearing in green and incorrect notes in red. FPA provides for MIDI keyboard, woodwind and brass players.

After creating music, playback usually occurs through devices called synthesizers. Although most computers have built-in synthesizer capability on their sound cards, more serious performers use specialized hardware or software to generate the sounds through their computer. Musical-Instrument-Digital-Interface (MIDI) is a technology that represents music in digital form. Unlike other digital music technologies such as MP3 and CDs, MIDI messages contain individual instructions for playing each individual note of each individual instrument. So with MIDI it is actually possible to change just one note in a song, or to orchestrate and entire song with entirely different instruments. Since each musical part in a MIDI performance is separate from the rest, it's easy to listen to a single instrument and study it for educational purposes, or to mute individual instruments in a song so that you can play that part yourself. Hardware synthesizers can be expensive but software alternatives are quite inexpensive or even included with most arranging and composition programs. For example, the Edirol Virtual Sound Canvas (Image 6) allows you to customize playback of MIDI files using the same sounds and for a fraction of the cost of hardware synthesizers. You can even export your finished files into popular multi-media application formats.

The Superscope PSD300 (Image 7) is the world's first CD recording system for the performing arts that combines a professional quality portable CD recorder with a CD player that is designed specifically as a rehearsal and performance tool. The CD player features special controls that allow musicians to practice with their favorite artist or accompaniment CD and manipulate the key or tempo in real time. The voice reduction feature reduces specific sounds so a performer can sing along or play an instrument with a recording like a Karoke system. While not perfect, it certainly is useful.

From beginner to the professional, technology has forever changed the way we create music. Experimentation with music scanning and pattern recognition software may soon make it possible to capture not only existing scores and recordings but allow even non-musicians to explore their ideas and produce unique arrangements and compositions, all with simple clicks of a mouse!

Product References

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Cakewalk Sonar	http://www.cakewalk.com/Products/SONAR/
BIAB	http://www.pgmusic.com/
PowerTracks	http://www.pgmusic.com/powertracks.htm
Finale Notepad	http://www.finalemusic.com/notepad/
Finale FPA	http://www.finalemusic.com/finale/features/new/fpa.asp
Edirol Synth	http://www.edirol.com/products/software.html
Superscope	http://www.superscopetechnologies.com/products/psd300/
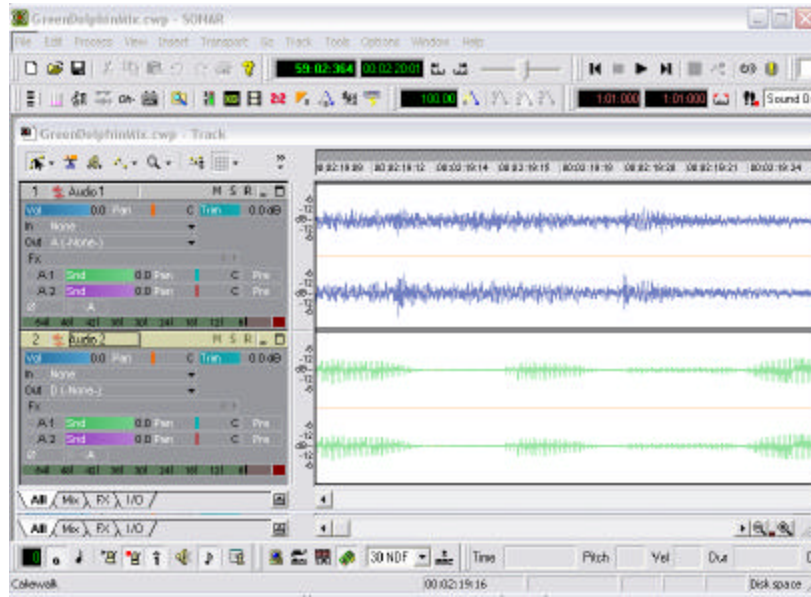
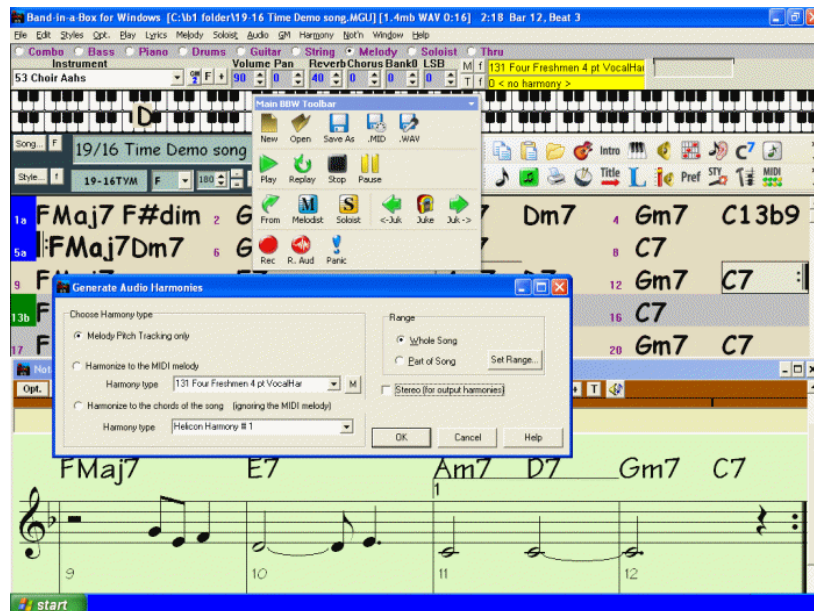Image 1: Cakewalk Sonar Audio Recording Software

Image 2: Band-In-A-Box Auto-accompaniment Software
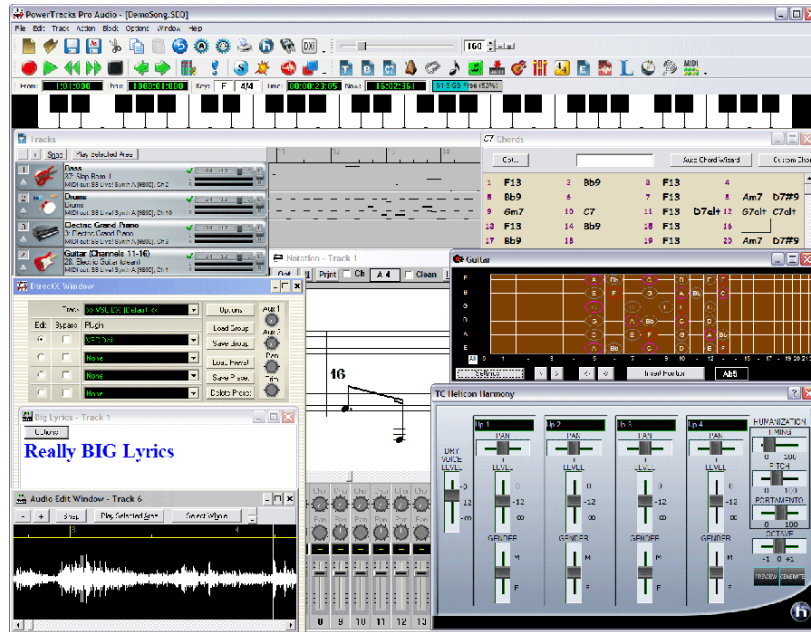
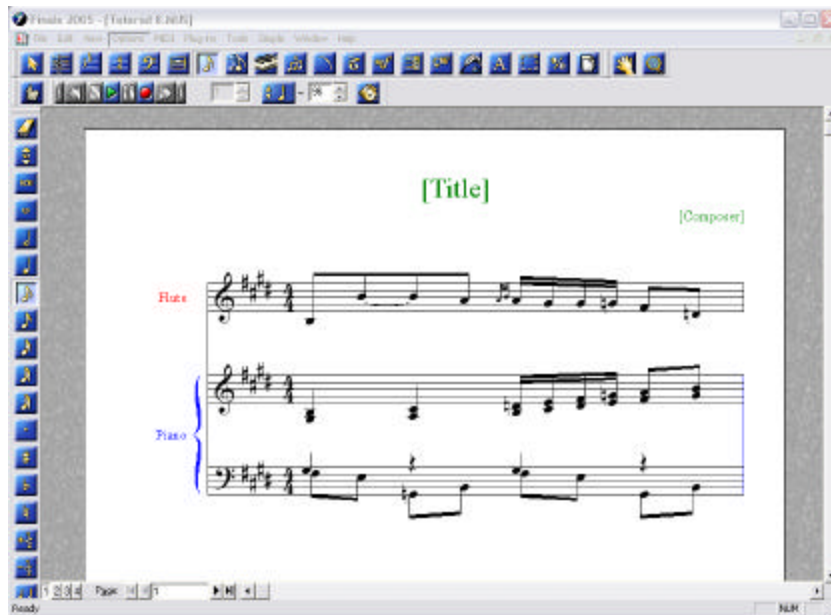Image 3: PowerTracks Pro Audio Sequencer Software

Image 4: Finale Music Composition Software

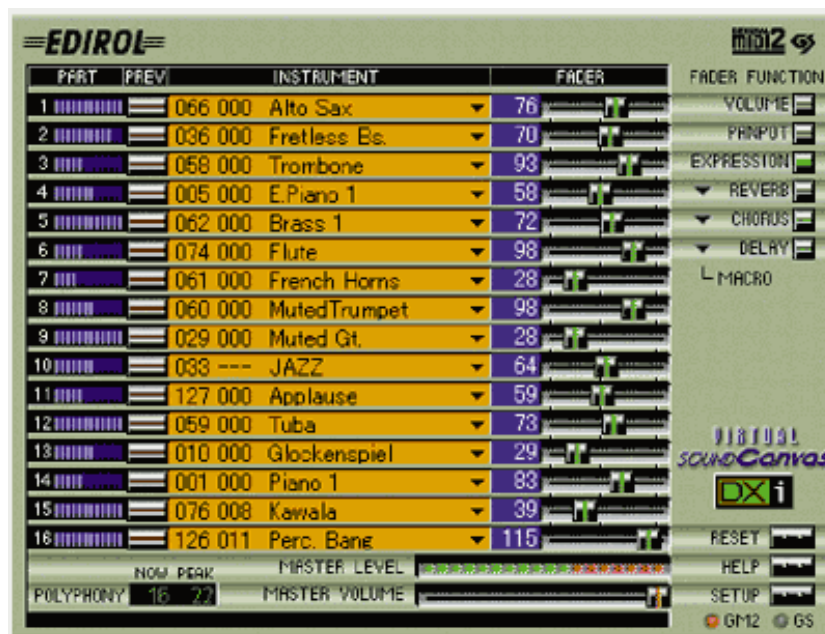Image 5: Finale Performance Assessment Software

Image 6: Edirol Virtual Sound Canvas Software Synthesizer

Image 7: Superscope PSD300 Dual-Well Portable CD Recorder