MCCE NEWS

Montana Council for Computers and Technology in Education

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Detecting Randomness

by Dustin Clausen

(Editor's Note: In my Computer Application Design class at Billings Senior High, we routinely use the random number generator found in the QBasic programming language in our number guessing game assignment and in generating stars for our space game. In the second semester class, students use it to generate a list of up to 23,000 random numbers with no repeats. This evolved out of a prokect where a team of students in another class needed to place the contents of an Excel spreadsheet in random order. They placed the list of random numbers from 1 to 23,000 into a new column of their spreadsheet and then sorted the sheet in ascending order on that column. I've continued to use this project where students write the program in both QBasic and in PERL. Since there are several ways to approach the solution, with my requirement that the program complete execution in less than 6 seconds, we inevitably get into a discussion as to what approach produces a more random list. Without going off too far in math theory, we decided what we really wanted to know was how our lists compared to one another in terms of randomness. Below, Dustin explains his approach.)

Let's consider the random number generator assignment. The assignment is to write a program that will generate a list of n random numbers, where n is specified by the person running the program, and can range from 1 to 23000 (23000 was the true test.) There were, however, two catches. There could be no repeats, and it had to run in less than 2 seconds.

Now, at first, it would seem that satisfying the time condition would be rather easy. (You just have to generate random numbers, right?) But, since there can be no repeats, the process can be quite time-consuming. The real challenge was to come up with a good, speedy algorithm. Several solutions came up. The "logical" way to do it is to have one array which contains the

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Webmastering in the K-12 School

- Part 3 -

by Vince Long

In our last two issues we looked at the skill-set required of the school-based webmaster and at the steps involved in setting up a webserver. We left off getting our webserver software, Sambar, configured for additional users.

I am assuming that you were able to get the server software installed and got it launched, that is, running in the background on the machine you will be dedicating to being your webserver. As a reminder, unless you are streaming a tremendous about of media online, Sambar can run in the background while you use the computer for other tasks, like web surfing and word processing. In fact, I have been running it on a Pentium 266 with 32 megabytes of RAM under Windows 98 and have used all the standard Microsoft Office applications on the same machine and have noticed no slowdowns or other problems. Just remember not to shut this computer off at the end of the day.

We need to set up some user accounts on the server as well as configure a few other items so log back in as the system administrator. Start up your web browser and type your computer's IP address in the Address window. If you don't know your computer's IP address, double-click on the Sambar icon at the lower left corner of your desktop, near your clock. The Sambar status window will open and your IP address is listed on the left. To find

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In This Issue

President's Corner

by Suzie Flentie

Hello!

First of all I want to thank all of you who sent in applications to present at the MEA convention this fall. We really appreciate you taking the time to prepare a presentation and share your expertise with Montana teachers. If any of you forgot to send your application in, please contact me ASAP and we'll try to get you in the program before the June printing deadline. Sally, Cathy, Buck and I will be attending the MEA planning meeting on May 18th to schedule all of the presentations and begin finalizing the conference program.

I have reserved a block of rooms at the Hampton Inn in Bozeman for the MEA convention. If anyone wants to reserve one of those rooms, call 522-8000 and ask for one of the MCCE rooms for those dates. They are $58 per night. These rooms will be held until 3 weeks before the conference, but if you want one, you should call and reserve it soon. Remember that we will have an MCCE meeting on Friday morning at the conference and welcome any and all who want to attend. That is when we elect board members and officers, so if you are interested in being a part of the leadership of our organization, please come.

We are very privileged to have Del Siegle for our keynote speaker for the MEA convention. Del has extensive experience with integrating technology into the curriculum and is currently a professor at the University of Connecticut. Dell has also agreed to do two additional presentations for us besides his keynote address.

The NECC Conference is being held in Chicago this year on June 25th – 27th. The mission of the National Educational Computing Association (NECA) is to advance educational philosophies, practices, policies, and research that focus on the appropriate use of current and emerging technologies to empower all individuals to reach their full potential. The primary vehicle is the National Educational Computing Conference (NECC) for those interested in improving teaching and learning with technology in K-12 and teacher education. NECC is in its 22nd year of providing K-12 and university-level educational professionals with an annual forum to learn, exchange, and survey the leaps and bounds being made in the field of education technology. If you're interested in finding out more about this conference, check out the conference website at http://confreg.uoregon.edu/necc2001.

Have a good summer and we'll see you in the fall.

Suzie Flentie
702 W. Farewell
Lewistown, MT 59457
sflentie@lewistown.net

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Newsletter Editor
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Submit articles to:

Vince Long
Billings Senior High
425 Grand Ave.
Billings, MT 59101
longv@billings.k12.mt.us

Del Siegle Selected as MCCE Keynote Speaker at Fall 2001 MEA/MFT Conference

Del Siegle is an assistant professor in residence at the University of Connecticut. He is on the board of directors for both the National Association for Gifted Children, where he is co-chairperson for the NAGC Education Commission, and the Council for Exceptional Children--The Association for the Gifted, where is a member of the Publications Board and webmaster. He also serves as coeditor of The National Research Center on the Gifted and Talented Newsletter and editor of the NAGC Technology Division Newsletter. Dr. Siegle is past president of the Montana Association for Gifted and Talented Education. Prior to earning his PhD in gifted education, he coordinated and taught for eight years in an academically gifted program in Montana, where he was a Montana semi-finalist for U.S. West Teacher of the Year. He lectures on issues related to educational technology and gifted and talented education.

Joint MCCE/AGATE Keynote Address

Differentiating Curriculum in the Information Age ("Teacher, the Server Ate My Homework")

Differentiating the curriculum for learners of different achievement and interests levels can be a daunting challenge for classroom teachers. During this keynote we will explore ways to use technology to create differentiated learning activities in the classroom. Topics to covered included developing electronic learning centers and incorporating technology into student directed independent projects.

Dell will also present two sectionals of the following:

Helping Students Construct Knowledge with Technology: The Best Educational Software Begins with a Blank Screen -- (K-12)

While computer tutorial and drill and practice programs abound in educational settings, some of the best educational software begins with a blank screen. During this session we'll explore the hidden power of Microsoft's office suite. With it and similar programs, classroom teachers can provide opportunities for students to construct and share knowledge. Projects that are appropriate for a variety of grade levels will be shared.

MCCE NEWS

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This and past issues of MCCE News are available on the World Wide Web at: http://senior.billings.k12.mt.us/mcce/

www.Twang to Play at the MEA/MFT Dance

The band will be playing at the MEA/MFT all conference dance on Thursday night. $2.00 on registration form, $3.00 at the door. It will be at the Elks club on Babcock. Get a preview of the band by visiting their web site at **www.twang.org**

Detecting Randomness

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random numbers already generated.

When generating new random numbers, you must check against all of the others to make sure it hasn't been used already. This works, but it's slow. When it gets down to the 23,000th number, it must check 22,999 different array positions!

There are, however, fast alternatives. The first, used by my teacher, Mr. Long, and the most common solution used by the students, was to have two arrays. One would contain the list of the random numbers, and the other would be indexed by all of the possible random numbers and would contain information about whether or not that number has been used. (0 or 1)

So, when going through and getting new random numbers, you just have to check the number in the second array. If it has already been used, you must generate a new one. Again, though, there is a speed problem. When you get down to the 23,000th number, the chances are you're not going to generate the last number in your first try. It should take about 23,000 tries! But, still, generating random numbers doesn't take that long, so this method is infinitely better than the other, and it runs in less than 2 seconds.

A third method, which is faster, is to use one array to hold all of the possible numbers indexed by themselves as such:

ARRAY A:

Index	Result
1	A[1]=1
2	A[2]=2
3	A[3]=3

Etc.

Then, to get the list of random numbers, one would only have to randomly rearrange numbers 1 through n of the array A. This is very fast. The more times one randomly switches numbers, the more random the list gets, naturally.

This raises an interesting question. How can one tell how random a certain list of random numbers is? An Internet search yielded insufficient information on the subject. Several ideas were formulated, some of which were only very simple tests, such as measuring how many times the index matches the result. Using the above method, it matched over ten percent of the time! Yikes!

I had been using that method, and this bit of information caused me to rethink it. I quickly arrived at an alternative solution: Instead of randomly generating both the original position in the array and the final position, only randomize the final position. In pseudo-code words (n is the number of numbers to generate, m is the maximum size of random number [for example, 9999999]), it went from:

```
While I < n
{
     swap a[random * n],
a[random * m]
I = I + 1
}
```

To:

```
While I < n
{
     swap a[I], a[random
* m]
     I = I + 1
}
```

This got rid of the problem, and also sped the program up by a factor of two. Doubly good! But, still, detecting how many times the index matches the result is not a good test of randomness.

I had a talk with Mr. Long, and he suggested many methods, such as measuring how far on average the result is from the index. But this makes one critical assumption: that the opposite of random is a situation where the index always equals the result.

In graphical terms, if you plot the index on the x axis and the result on the y-axis, the result would be a ray pointing to the upper right. However, this is not necessarily the opposite of random. The graph $y = x * x$ is just as non-random as the graph $y = x$. The same goes for $y = \sin(x)$, and every other function that exists.

A program cannot reasonably check against all possible functions, so there has to be a better way. A graph of a perfectly random set of numbers should have the dots distributed pretty much evenly along the section of the graph from 1 to n on the x-axis and 1 to m on the y-axis.

From now on, I'll refer to this area on the graph as "the section." Now, since, with perfect randomness, dots are distributed evenly within the section (See Figure 1), it would make sense that that could be something that we could check. And it is.

If we split up the section into smaller rectangles, there should be approximately equal numbers of dots in each rectangle (each should be about equal to the average number of dots per square). This is the basis

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Detecting Randomness

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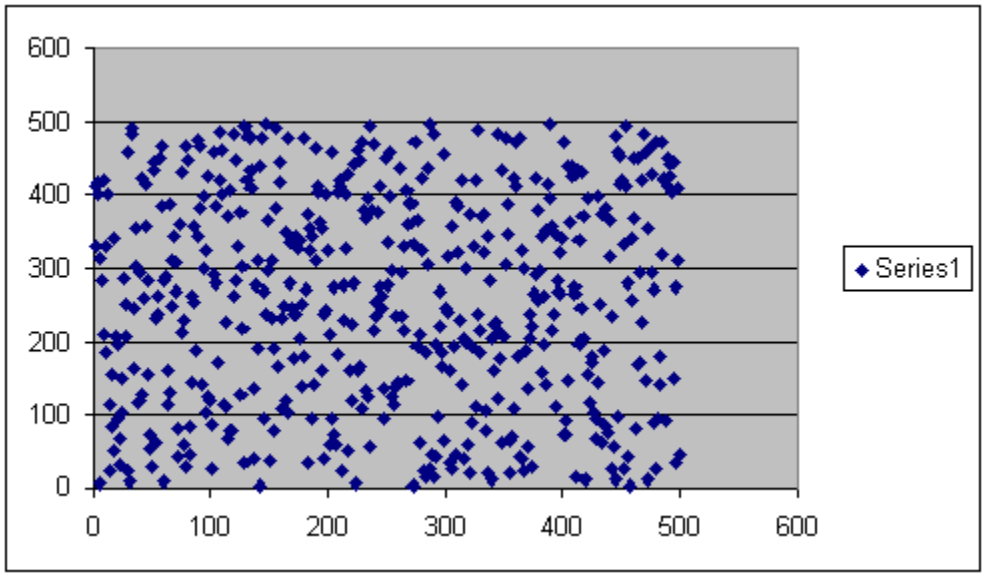

Figure 1. Generated by going through the x values, one by one, and generating a random y value for each x value

of my theory. It works, too; it was able to distinguish between a function like y = x * x and computer-generated randomness to a great degree of accuracy, and it also showed that Mr. Long's approach to the original problem was slightly more random than my final approach. This was to be expected.

Also, my original solution was much less random than them both, which was also to be expected. Some might argue that hexagons as opposed to rectangles would somehow be a better test, but the rectangles method has its advantages.

It's easier to code, faster when run, and rectangles will always fit perfectly into the section. This method of detecting randomness doesn't pretend to be a way to tell between computer-generated random numbers and true randomness found in nature, but it does work very well for detecting how random "fake" randomness is.

Of course, the same method of generating random numbers won't always yield the same randomness factor according to the above theory; it depends upon two factors: the number of numbers generated in the series, and the number of rectangles used.

As to the number of numbers generated, of course, the more numbers generated, the closer the randomness factor yielded by the program will be to its actual randomness. If you generate only four numbers, for instance, they probably will each be in separate squares, but still some squares will have zero dots in them, skewing the results. The more data you have to work with, the more exact it gets.

The number of rectangles used to check also makes a considerable difference. When you have only one, everything will be perfectly random according to the program. When you have four, the chances of the program telling you that a non-random series is random are still pretty high. So, at least at the start, the more rectangles used, the more accurate the reading.

But, consider this: when you have as many rectangles as you have possible locations for dots, of course the randomness factor outputted by the program will be very small, as only one in n rectangles will contain a dot. Now, that is an extreme case, but it helps show that, eventually, as you increase the number of rectangles used, the randomness factor will go down (See Figure 2). This happens at about 400 rectangles with n being 23,000 and m also being 23,000. If looking at a graph where the number of rectangles is on the x-axis and the randomness factor returned by the program is on the y-axis, the graph will increase greatly up to 400 rectangles, where it will round off and slowly decrease at a near constant rate.

But here's an interesting point. On the part of the graph that is decreasing, there are found to be waves in the graph; it's not quite a steady line downwards. It ripples down, and the ripples are of seemingly random height. Before you jump to conclusions, think about it

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Detecting Randomness

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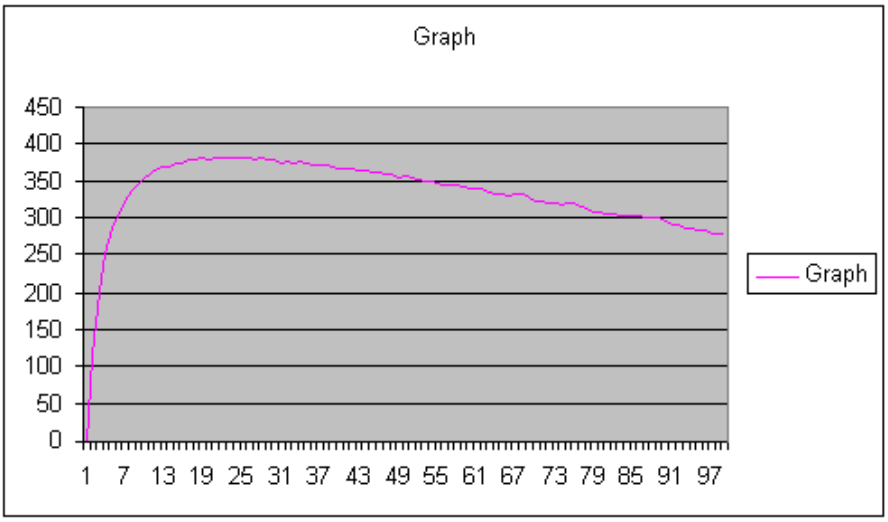

Figure 2. Graph drawn with randomness factor (0-640) on y-axis and square root of number of rectangles used on x-axis for n = 23,000 and m = 23,000

logically.

If you have a rectangle, (50 x 50, let's say) where, by chance, lots of the dots are located on the edge, when you add more rectangles, that rectangle's size will decrease, and it will lose those lots of dots. Another rectangle will gain them. This will push the number of dots in those rectangles towards the average, far away from the average, or both.

The reason that this would happen randomly as shown by the graph is that, of course, the dots are generated randomly. And indeed, the ripples are hardly detectable when the graph is drawn using a set of non-random numbers, such as by using the function y = x * x.

Dustin Clausen is a sophomore at Billings Senior High.

Tech Tip

Mouse Wheel Zoom

If your computer's mouse has one of those wheels between the buttons you can use it to psuedo-zoom in and out on web pages. Just hold down your Control key and roll the wheel and the text size on the web page you are viewing will change size. Graphics remain their same size but you do get a "zoom" effect allowing you to see more of a web page when you are viewing on a small monitor or finally read the text on a page that has been set too small by its designer.

Have a Great Summer 2001

Webmastering in the K-12 School

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out more of this type of information about your computer, see the sidebar on this page. You can also log in by entering 127.0.0.1 into the browser's address window but this only works when you are on the machine that is the server, not from a remote location.

If you have not modified the files in Sambar's Docs folder you should be presented with a Sambar web page. If you changed the name of the administrator page, as suggested in the last issue, type in the name you gave it after the IP address. For Example: 127.0.0.1/admin.htm. Look for the "System Administration" link on the main page and click on it. You will be asked for your user name and password. If this is your first time here, just type in "admin" for your name, do not enter a password, and then click on "OK," otherwise enter your name and password.

Finding Your Computer's IP Address and Other Sometimes Useful Information

There is a wealth of data hidden in your computer if only you know where to find it. One way is to launch a little utility called "IP Configuration" that comes with Windows 98 but is not generally found in your Start Menu. To launch it, click on the "Start" button in the lower-left corner of your desktop and then click on "Run." In the text box that appears, type "winipcfg" and then click "OK." A new window will open and show you the status of all your Internet Protocol settings. Click on the "More Info" button to see all of the data.

You will them be on the Server Administration page. As I mentioned in our last issue, you really should read through the Server Documentation as it is not very technical and has a wealth of information about configuration and security issues. For now, click on "User Management" and we will set a password for you, the webmaster. You will see the user named "admin" listed on the left side of the screen and you should click on it. The data in the frame on the right side of the screen will change and you should see an empty password field. Go ahead and type your password in here.

Scroll down and set the directory to which you will have access when you log in. By default it is set to the "Docs" directory but you can set it to the root of the hard drive, which is probably advisable. Type "C:/" into the "Root Directory" window. Give yourself Read/Write access to the FTP server by selecting the appropriate radio button. The last step is to click on the "Update User" button at the bottom of the page.

If you have any other users to whom you wish to create FTP accounts, you can add them on this page by clicking on "New User" and filling in the information for that user. It is advisable to restrict users to certain directories and not the entire drive.

Go back to the System Administration page by clicking on the computer monitor icon in the upper left corner of the browser window. Click on "Server Configuration." You can leave most of the settings on this page as they are, but a few you probably want to change. Under "Home Page" type the default name of the web page users will use on the server, for example, "index.htm." The purpose of this is that if someone goes to a page on your server by specifying only the directory, for example, www.mysite.com/widgets/ the server will look for this "index.htm" file in that directory. If it is not found the server can serve the directory listing to the user.

Under "Documents Directory" you can change the default "/docs/" directory to whatever directory you plan to keep you web pages in. It does not have to be in the Sambar directory but can be anywhere on the computer.

The last setting to change on this page is to activate the FTP server. Sambar not only acts as a webserver, but also can function as your FTP server. With FTP (File Transfer Protocol), you can log into the computer from a remote location to transfer, delete, and rename files.

After making these changes, scroll to the bottom of the page and click on "Update Server Configuration." It will be necessary to restart the server. You can restart it from the System Administration page by clicking on "Restart Server" which will update the server with your new settings.

Where Do We Go Next? The Next Phase of Content Development

Now that your server is up and running you can start doing what is the most difficult part of running a website: creating and keeping up with the content. No one wants static, unchanging website anymore and the real challenge for today's webmaster, especially when it is only a part-time activity, is to keep the site

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How to setup and run your own Server

By Chris Claus

(Editor's Note: Chris is a sophomore in his 3rd semester of Computer Applications Design at Billings Senior High. One of his assignments was to setup a web server that would support PHP and mySQL and to create documentation for the process. PHP performs similar duties as PERL does in CGI applications, but is used extensively with database server mySQL.)

I. Installing Sambar.

1. Go to http://www.sambar.com
2. Download Latest Production version of sambar server.
3. Download to temp Directory, Extract zip archive using WinZip, or other zipping utility.
4. Open Folder and double click on "Setup.exe"
5. Run through setup, setting up Sambar in "c:\sambar44" and install Typical Settings.
6. Leave folder as Sambar Server
7. When setup completes, check "Yes I want to view Readme File"
8. Read all of README.
9. Open c:\sambar44\bin\server.exe
10. Now click on the 'S' in the icon tray on your start menu.
11. Congratulations, you are now running Sambar Server.

To Login as the Webmaster:

1. Get your IP address, From the Sambar window. (ie. 172.17.1.129)
2. Open Internet Explorer or other web browser.
3. Go to the IP address you got in Step 1. You will see a page that look identical to Sambar's home page.
4. Click on "System Administration."
   Username is : admin
   Leave Password field blank.
5. If all goes well you will see the Sambar Server Administration Page. Click on Server Documentation and read up on Samber.
6. Click on server Configuration.
7. Leave System Administrator IP alone. Unless you know what you are doing, leave all fields alone!!!
8. If you have a web page you want as your home page, first rename the existing "index.htm" page to "oldindex.htm." DO NOT DELETE OR OVERWRITE THAT BECAUSE THAT PAGE IS NEEDED FOR YOUR LOGIN!!!
9. Copy your "index.htm" or "index.html" file to "c:\sambar44\docs\"
10. Go to the home page field in the server configuration page and change it to your homepage name, i.e. "index.html."
11. Go to the CGI field in the server configuration page . If you want to be able to run cgi and perl files in folders other than /cgi-bin/, make that field blank.
12. Go to the CGI Extensions field and input the following line: *.pl *.cgi
13. Go to the "Act as FTP Server" and click on "Yes."
14. Now click on "Update Server Configuration."
15. Now, close out Sambar like you would any other program. Then go to your "Start Menu," "Programs," "Sambar Server," and click on "Sambar Server 4.4."
16. You're done with the Configuration.

Now we are ready to setup Sambar's User Management.

1. Click on user management.
2. Click on the Trashcan next to billy-bob
3. Click ok
4. Now do the same for Anonymous.
5. Now click on admin.
6. In the password field, put in your own password.
7. Click on update user.
8. If you want to create more users, just fill out the form, and in the folder c:\sambar44\docs\ create a folder for them and put that in the root directory, i.e. for somebody named tim you would put

   Username: Tim
   Password: (anything)
   Group: User
   Leave account name blank
   Root Directory: /docs/tim/
   Access: Read/Write
   Click on Create New User

You're done setting up Sambar for now. For anything else, you can learn from the FAQ on Sambar's web site.

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How to setup and run your own Server

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II. PHP Installation

1. Go to http://www.php.net and Download the latest version of php.
2. Click on Downloads. Under Win32 Binaries, download php 4.0.5. The size should be like 4,590kb.
3. Download to a temp directory.
4. Extract archive like you did with Sambar. Extract to "c:\php4"
5. Open "c:\php4"
6. Copy "php.ini-dist" to "c:\windows\" and rename it "php.ini"
7. Now copy "php.ini" from "c:\windows" to "c:\windows\system"
8. Now go into "c:\php4\" and copy "php4ts.dll" to "c:\windows" and "c:\windows\system\"
9. Now to configure Sambar to work with PHP, open the Sambar Server Administration Page (as shown above), and under the WWW Server section click on "Mappings/Aliases." At the bottom of the page, under ISAPI Extension Associations, put in the following fields:

*.php	c:\php4\sapi\php4isapi.dll
*.php4	c:\php4\sapi\php4isapi.dll

10. Click on "Update Configuration" and restart the server like you did before. Now php should work

III. MySQL Database Server Installation

1. Go to www.mysql.com or www.donwload.com and download latest copy of mysql.
2. Download and extract to temporary folder.
3. Run setup.
4. Now to test your php and mysql copy the following code, and save it as: "c:\sambar44\docs\test.php"

```
<?php
phpinfo()
?>
```

If you need help or have any questions email me at

cc_viper2000@yahoo.com

Remembering Older Technology

Our students seem to adapt to technology with an ease that makes its existence transparent in their world. They look at our sometimes clumsy approach to these tools with humor, but I would like to look at it from another vantage point. We, of the older generation, have experienced a tremendous amount of technological change in our lives and have the wisdom of age to discern that which we need to get excited about and that which we don't.

Looking back, do you remember:

8-track tapes
telephones that you dial
telephone party lines
stacking 45 RPM records on a player
wax Coca-Cola-shaped bottles with colored sugar water
pop machines that dispensed bottles
jukeboxes
newsreels that ran before the main feature at the movies
double features at the movies
drive-in movies
butch wax
telephone numbers with a word prefix (HArrison 3-4534)
tooth powder
trading stamps
store clerks who could make change without a calculator
cameras with one-use flash bulbs
home movies without sound
skate keys
mimeographs
slide rules
wind wings on cars
silver dollars
stuff that wasn't made out of plastic

And somehow we got by without:

credit cards
microwave ovens
CD players
pocket calculators
VHS video tape
latte coffee
e-mail
and the whole Internet.

VL

Personal Technology In the Classroom: A Worthwhile Tool or a Worthless Distraction?

by Vince Long

As technology-using educators we are seen, correctly, as advocates for the use of technology in the learning process. However, do we see ourselves as advocates for all forms of technology, anywhere, everywhere, and all of the time, or do we temper our enthusiasm with a mind to its appropriate use as well?

As a Technology Education teacher I am used to talking with students about the impacts of technology. For example, in the workplace we have seen many traditional jobs disappear over the last 100 years, replaced by various forms of automation, such as robotics. While we may decry the loss of many positions in the industrial and manufacturing sectors, we also know that new jobs are created by these innovations. This is an impact of technology and the primary message to students here is that the newer jobs require a higher skill level than the jobs that were replaced.

When we look at the implementation of technology in the classroom, do we look at its impacts, both positive and negative? In the mad rush to bring computers, the Internet, and other hi-tech tools to the schools, we tend to overlook not only the training needs of staff, but also the downside of providing too many toys in the classroom. Are we sure that we want the students to have access to every technological gizmo at every point of their school day?

In the April 2001 issue of Learning and Leading with Technology, published by the International Society for Technology in Education, there is an article promoting the deployment of palm-sized computers to every student in the k-12 education system. The author accurately indicated the positive impacts that these devices can have in the learning process from collaborative concept mapping to data gathering to the sheer advantage of their portability. What the article does not mention are any of the negative impacts that this type of technology can have in the classroom.

When we look at the implementation of technology in the classroom, do we look at its impacts, both positive and negative?

Interestingly, at the same time that this article came out, the faculty at Billings Senior High was looking at the impacts of personal electronic devices in the classroom. A proposal was brought to the faculty council, by this author, to look at the proliferation of these devices in the school, not one provided by the school, but devices that the students are bringing from home. These include pagers, cell phones, personal CD players, cassette players, and MP3 players. I have, in the past, allowed students to listen to personal stereos while at work in my classroom, which is a lab type class (drafting and computer programming). My concern was initiated by finding students listening to, and exchanging, CDs containing, content that would be considered inappropriate in played for all to hear. I began to ask myself, how I would answer a parent who wanted to know why I let their child have access to music by "Eminem" in my room when they are not given access to it at home? I could not come up with a good answer nor could I think of a way to control the content in my classroom short of an outright ban on the devices, which is what I did. I then posed the question of these devices to our faculty council and focused on the following points:

Issue #1 - Content

The music found on many of these devices contains objectionable lyrics. Students share this content with each other creating two immediate problems. First, some parents do not want their children exposed to this material and, second the sexual and violence against women nature of the content raises the possibility of sexual harassment. Looking at CD labels to determine what they are listening to is difficult as many students are burning their own CDs and these are not labeled. It is also possible that the content may be non-musical and contain answers to test questions.

Issue #2 - Hearing Damage

If the volume of the personal players is loud enough that the sound is "bleeding" from the headphones, hearing damage is occurring. Sound this loud is likely in excess of 100 decibels. OSHA requires hearing protection for workers when sound exceeds 90 decibels. Studies have documented hearing loss among teenagers who regularly use these devices compared to those who do not

Issue #3 - Classroom Distraction

In a lab-type class, listening to a personal stereo might not be a problem, but over the last year or so several teachers have noticed an increase in the amount of time messing about with the player, the

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Personal Tech in the Classroom

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CDs, and other students related to the use of these players. In my computer lab they use, or attempt to use the players in the computers and can spend an excessive amount of time messing with computer settings, headphones, speakers, etc.

Issue #4 - Sense of Community

During our brainstorming sessions regarding the remodeling of Senior High, restoring a "sense of community" was high on the priority list and drove much of the new design for the building. As students retreat into their own world under their headphones, establishing this community becomes improbable.

Issue #5 - Safety

If we have an emergency situation in the building, students under headphones might miss out on some potentially life saving information.

Issue #6 - Future Technology

The Discman is not the final development in personal electronic devices. Portable DVD players, which play full movies, are already on the market. The next wave of devices converges the cell phone, the CD/DVD player, and the web browser with wireless technology. These devices would allow students web access in school that bypasses our content filter. Already some of the calculators on the market allow users to chat over an infrared connection. Students could employ this technique in the classroom to cheat on tests.

I included excerpts of lyrics from Eminem and Limp Bizkit, two popular musical "artists" that I have found students listening to in my classroom. After a short discussion it was decided to go back to our departments and bring it up again at the next meeting.

In April we revisited the topic and after a brief discussion, it was apparent that the staff overwhelmingly wanted the devices banned from the school altogether, which will begin this coming fall. We will not search for them but they have to keep them put away during the school day while inside the building.

Is Senior High unique in how we are dealing with this issue? Not at all. A search on the World Wide Web for other schools' rules on this topic yielded scores that indicate that this kind of control on technology is far from unusual and not unlike the message that we give our elementary students to "leave your toys at home."

Initial student reaction in my class was the anticipated raising of constitutional rights, however, when presented with the issues as described above, the discussion ended and it has not been a problem. In fact, I am seeing an increase in student collaboration now that they are tuned into each other instead of their personal sound tracks.

Vince Long is a technology teacher at BillingsSenior High and editor of the MCCE News.

Webmastering in the K-12 School

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updated. Many sites are using some new tools to handle this task for them. Web authoring software like Front Page, Dreamweaver, and GoLive are helpful, but even these are labor intensive, have a steep learning curve, and it is unlikely that most people in the educational community will find the time to utilize them.

Several initiatives in the open source community are attempting to remedy this by producing products that allow users to add data to a website by logging in and filling out a form. Designed primarily as a news portal or discussion board, these products offer some advantages to the educational community, primarily as a way to let faculty members provide web content without needing much technical expertise.

If you would like to take a look at how some of these work, here are a few sites that utilize this feature:

www.montanalinux.org
www.phpnuke.org

To run one of these yourself, you'll need to install PHP and mySQL on your server. See the instructions on page 8 of this newsletter.

Montana Council for Computers and Technology in Education

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6480 Linda Vista
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MCCE NEWS
Vince Long, Editor
Billings Senior High
425 Grand Avenue
Billings, MT 59101

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