



# MCCE NEWS

MONTANA COUNCIL FOR COMPUTERS  
AND  
TECHNOLOGY IN EDUCATION

Vol. 20, No. 1

Fall 2007

## CAPTCHAs proliferate in fight against bots

### Reverse-Turing test used in fight against spam

by Vince Long

As the World Wide Web evolved from the static web sites of its earliest days to the dynamic, multimedia-driven pages we know today, one of its best features allows users to input information by way of online forms. This innovation has opened the doors to everything from web-based email to online shopping to blogging to gaming and much, much more. Of course, along with any Internet-based tool comes the problem of hackers who use it to compromise system security or spread their unwanted spam into online, public discussion areas. To combat the latter, the "CAPTCHA" has become a popular tool of defense.

First, let's look at the "form" itself. This tool provides web site designers with a half-dozen methods for gathering input from the user. These are implemented into page design using the HTML (HyperText Markup Language) tag, `<form>`, followed by a series of `<input>` tags that are configured to show a particular type of input option on the web page. These input types are

**the text box** – a single line box in which the user enters characters from the keyboard

Name (FIRST and LAST)

**the password box** – similar to the text box except that characters entered into it appear as asterisks for security reasons

Your Password

**the text area** – a multi-line text box for entering larger amounts of data

Special Instructions

We are in the rear apartment.

**the check boxes** – boxes that can be selected or deselected by clicking on them

Select Your Toppings

Artichokes

Olives

Onions

(Continued on Page 3)

### In This Issue

**CAPTCHAs fight bots** Page 1

New techniques to block spam from online discussions. What they are and how they work.

**President's Message** Page 2

**YouTube in the classroom** Page 5

YouTube blocked in your school? Here's how to solve that problem.

**PageFlakes for communication** Page 6

A unique way to share web content.

**FCKeditor builds web pages online** Page 6

Free application translates text into web pages online.

**MCCE Officers and Board and Membership Form** Page 9

by Staci Auck

Well, another successful MEA-MFT conference has come and gone. MCCE hosted, in conjunction with AGATE, Patrick Crispen for our keynote speaker. Patrick's keynote for MCCE "Crispen's Guide to What's New and What's Next" provided a great look at the future expectations of technology. He also presented two keynote addresses for AGATE, the first with so much information it left your head spinning. His second sectional entitled "Patrick Crispen's Complete and Total Waste of Time" was a fast paced and entertaining speech which made you excited to get back home and check out many of the websites he explained and demonstrated. He also presented to two sectionals on Googology and Teaching with PowerPoint for MCCE which were packed with information and people. If you missed any of his talks or even if you didn't, you can go to his website [www.netsquirrel.com](http://www.netsquirrel.com) and take a look through his presentations as well as others that he did not present at MEA.

I would like to encourage you to nominate someone for the Montana Outstanding Technology Teacher/Leader of the Year award given by MCCE. In addition to a very nice plaque and a \$500 stipend for the winning nominee, the winner's application is forwarded on to the ISTE Outstanding Technology Teacher/Leader Award. MCCE is an affiliate of ISTE so we are able to nominate one person for the award each year. The process is quite simple, go to our website at [senior.billings.k12.mt.us/mcce](http://senior.billings.k12.mt.us/mcce) and download the nomination form. Once I receive the nomination form, I will then forward on the application requirements (vitae, letter of recommendations, and a narrative) to the nominee. The deadline for completed nominee applications is January 25, 2008. After a review by the award committee, we will announce our selection and then complete the process of sending this on to ISTE. If your nominee is chosen we may be asking you to help us prepare a short narrative of why you chose this person for this award (as that is one of the requirements on our part) and it helps to have the person who nominated them give some feedback as you know them on a more personal level.

I would also like to encourage you to please use our list serve service [MCCE@billings.k12.mt.us](mailto:MCCE@billings.k12.mt.us). Whether you need hardware help or are looking for some feedback about an application, I hope you will utilize the expertise of those in our curriculum group. One of the main reasons I joined MCCE was to have a place to network with other educators and to draw on this group for their knowledge, as I am sure many of you did. I was also hoping to find a place where colleagues would share information in the area of technol-

ogy whether it is on an elementary or college level. So even if you have just stumbled upon an interesting web site or a software application, please share this information with our group, I am sure someone would find it of value.

My parting comment...it is never too late to be thinking of presenting next year for the MEA-MFT conference. MEA-MFT pays \$30 an hour for sectional presentations and MCCE also kicks in a \$20 stipend for presenting under MCCE. Technology sectionals always seem to be in high demand so please consider presenting or encouraging someone you know to present. Deadline for presentations is in April which gives you some time to explore some ideas.

Wishing you a successful year.



### *MCCE NEWS*

**MCCE NEWS is published several times per year by the Montana Council for Computers and Technology in Education. The contents are Copyright © 2007, by MCCE and the authors of the individual articles.**

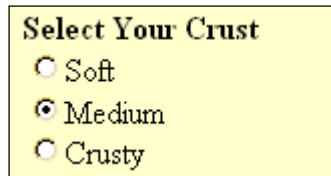
**Next Submission Deadline:  
January 12, 2008**

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

## CAPTCHAs fight spam

(Continued from Page 1)

**the radio buttons** – a series of buttons that the user can select, but only one of the series can be selected



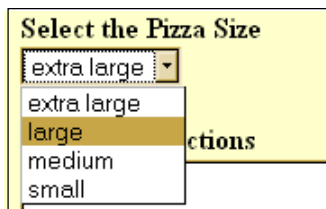
Select Your Crust

Soft

Medium

Crusty

**the option menu** – a pull-down menu that shows a list of choices for selection



Select the Pizza Size

extra large

extra large

large

medium

small

The form also has two button types, the Submit and Clear, that either send the form or set its input fields back to their default settings.



Submit Reset

While forms do exactly what they were designed to do, it didn't take long for hackers to exploit their ease of use by writing programs that scour the World Wide Web looking for forms they can fill out automatically. For example, an automated program could go to the Yahoo mail site and create thousands of free email accounts that can be used to send spam messages. Or, a program could look for blogs and automatically post advertisements for various schemes and pharmaceutical products in the online discussions.

A human moderator can eliminate some of these postings by screening them before they appear online, but the sheer volume of "bots" roaming the Internet on these nefarious missions simply overwhelms the manpower available. There are now several lines of defense employed by cautious webmasters to fight back against this scourge. Requiring users to create an account on a site prior to

posting helps, especially if the user is required to provide an email address and to check it for a confirming email before access is granted. These confirming emails usually have a link in them that brings the user back to the original site and verifies that they are not a bot.

As clever as web site designers can be in blocking out the bots, the bots always ratchet up their own cleverness as well. They have become exceedingly adept at following links as a human would, even creating and checking their own email to give themselves verified access to a site. When the stakes are high, especially when it means getting a spam message seen by thousands of viewers on a popular blog, the bot-makers have a strong incentive to build as much artificial intelligence as they can into their creations. Because of this, a method to separate the bots from the humans was needed and designers did not have to look far to find one.

In 1950, Alan Turing, a mathematician who was credited with cracking Germany's Enigma machine during World War II, and considered, by many, as the father of modern computer science, proposed a test where a human judge engages in a natural language conversation with both a human and a machine and must determine which is which. In Turing's day the test was done using teletype machines but today it can be accomplished with instant messaging. If the judge could not tell which was which, the software driving the machine was said to have passed the test. While there are various strengths and weakness inherent in this type of test, there has been much research into it since it was proposed and there is even an annual competition for Loebner Prize where designers compete for cash by submitting their Turing Test software. (<http://www.loebner.net/Prizef/loebner-prize.html>)

To combat the spammers using forms, a reverse-Turing test has been developed known as the CAPTCHA. This is an

(Continued on Page 4)

### Do you want near-immediate answers to your tech questions?

Join MCCE and have access to the expertise of our membership through our online mailing list. See our membership form on Page 9.

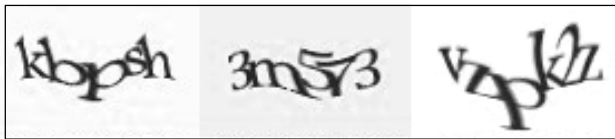


## CAPTCHAs fight spam

(Continued from Page 1)

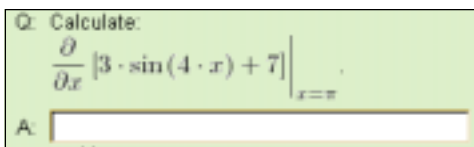
acronym for “Completely Automated Public Turing test to tell Computers and Humans Apart”, the name coined and trademarked by Carnegie Mellon University. It is referred to as a reverse-Turing Test because instead of a human challenging a machine to determine if it is human, the CAPTCHA challenges a user to prove they are human. The most common type of challenge is requiring the user to type in a series of random letters shown in a distorted image.

The original CAPTCHAs were simply straight graphical versions of common fonts and it was not long before the bots developed the ability to convert those images to text through rudimentary character recognition techniques, similar to those used in scanners equipped with optical character recognition (OCR) software. The next generation of CAPTCHAs distorted the images giving humans an edge because of our superior perception ability.



CAPTCHAs are not fool-proof, have their own limitations, and can be circumvented. If the stakes are high enough, the hackers can employ humans at a minimum wage to manually enter the data while building a library of known images that may then be automated. Another problem with CAPTCHAs is that users with visual impairments may have difficulty accurately interpreting the images. To alleviate this problem, some sites include audio-CAPTCHAs in addition to the graphical versions.

Another scheme found on some web sites is the presentation of a non-graphical problem for the user to solve. For example, the page may give the user a math problem to solve by showing an equation that, or may not, be generated graphically. Some bots are known to look for math



problems and can solve them but with a picture of an equation, especially if it contains symbols, the bots will hit more of a change. Other sites use methods that rely on

human recognition talents, for instance, showing a series of images and the users checks which ones show animals or happiness or other attribute that a bot would be unlikely to determine.

After watching the development of technology over time, one could assume that the CAPTCHA will fall by the wayside eventually as the bots become more intelligent. However, for now, while inconvenient to use, they do provide humans the edge in the war against the bots.

---

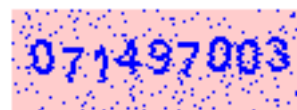
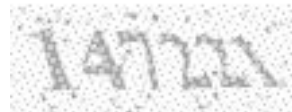
### More on CAPTCHAs

The Official CAPTCHA Site at Canegie-Mellon  
<http://www.captcha.net/>

Learn more about CAPTCHA, get plug-ins for your own web site, and help build new audio CAPTCHAs by added your voice.

reCAPTCHA - Digitizing Books One Word at a Time  
<http://recaptcha.net/learnmore.html>

Help clear up misunderstood words in online books that the scanner could not convert properly by using them as your CAPTCHAs.



## YouTube in the Classroom

by Desiree Caskey

To those teachers who want to show videos from YouTube in their classrooms, I say, "Put a sock in it...TubeSock that is!"

If your district is like mine, YouTube is blocked through the school filter to avoid violating school board policy, which simply states the school will not give students access to inappropriate material via the Internet. I am paraphrasing here, but you get the idea. YouTube is a website with a simple purpose...to share videos. It is a social site that lets users mark videos as favorites and to comment on a video. The issue for education is there is no filter at the YouTube site. You can find videos ranging from a virtual tour of our solar system to extremely explicit videos with R-rated (I say XXX-rated) standings.

When our Technology Director is asked about the blocking of YouTube, her reply is, "I realize that many of the videos on those sites do not fall under that category[R], but we cannot filter selectively and in my experience even the most benign videos on YouTube can have vulgar comments posted beneath them."

Teachers in our district have found some pretty amazing and useful videos via YouTube, but they are frustrated that they can't show these videos in their classrooms. Our Technology Director put me in charge of finding alternative websites to use or some other solution. That is when I told her, "Put a sock in it...TubeSock that is!"

TubeSock is a shareware program (\$15) that works on both the Mac and PC that allows you to extract videos from YouTube. Obviously, you can't extract them from school...you are blocked by the filter so you might have to do some prep work.

Using TubeSock is painless, I promise.

### Using TubeSock

Step 1: Download TubeSock. You can get it from Versiontracker.com or the company, StinkBot.

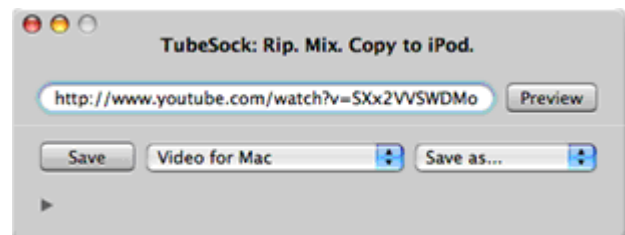


Step 2: Visit YouTube and find the video you want to extract. Here I am using a video that explains the concept of New Math:



Step 3: Copy the URL for the site.

Step 4: Paste the URL into TubeSock:



Step 5: Save your video. You are done.

The cool part of TubeSock is that you can save your video into several different file formats (H.264, .mp4, .flv or .mp3) and you can set the resulting video file to go directly to your Movies or Music directory, or choose the final destination yourself. When the video has been saved, you can use any basic player to view your movie, such as QuickTime, Flash, Media Player...whatever you like.

This inexpensive and easy to use program is a solution for those educators that find videos on YouTube. Now, typically those same videos can be found on appropriate sites, so I have to ask...what are you really watching on YouTube. Oh! Put a sock in it!

*Desiree Caskey is a Technology Integration Specialist in the Billings Public Schools*

## PageFlakes as a communication tool

by Jennifer Harrison

I know all of us are tired of adding



yet another page to our bookmarks that may or may not be used at some point in our career. Usually, by the time we go to use it, it's been moved or removed. I think PageFlakes will be a different kind of page for us all.

What is a flake? A flake is similar to a sticky-note that sits on a designated page. The only difference is that this "sticky" is actually a page, a bit of news, a blog, or one of several other types of pages, that sits side-by-side with other stickies--each changing as the content from their pages change.

PageFlakes is an ever-changing set of pages (you can add as many pages as you need to fit the needs of each as you find reasons to share) where the viewer dictates the content. Because it's a simple-to-use format, I've created an MCCE tab in PageFlakes. If you'd like to be a co-contributor to the MCCE content, please send me your email address so I can add you in. You will be able to post messages, add to the useful bookmarks, include an important date on the calendar, or even add "flakes" of content that may be useful to other members of the group, or even add to the "to do" list.

PageFlakes is a way to keep connected with one-another on a website without requiring a webmaster or specific content that someone must create and submit. Give it try, create an account, then email me the address you're logged in with to get connected to MCCE in PageFlakes.

PageFlakes can be found at: <http://www.pageflakes.com/>

**WANTED: Newsletter Articles for MCCE News.** Software Reviews, Classroom Technology Tips, Student-Written Stories, Web Site Reviews. Submit your articles to:  
[longv@billings.k12.mt.us](mailto:longv@billings.k12.mt.us)

## FCKeditor makes building web pages online a snap

by Vince Long

**Task to be Accomplished:** Getting teachers in a school to each have a web page where they can list class rules, assignments, and other information.

**Problem:** Most teachers do not possess the skill set required to accomplish the task which includes:

- creating the HTML (HyperText Markup Language) for the web page or using a program such as DreamWeaver or FrontPage
- uploading the web page and images using an FTP(File Transfer Protocol) client

**Solution:** Utilize an online editor within the web browser that operates like a word processor.

This was the task I wanted to accomplish last spring for the teachers at Billings Senior High for deployment this fall. A few teachers knew how to build their own pages and already had them online using FTP accounts I had set up for them on our web server, however, training the rest of the staff to gain this skill set is a daunting task so I figured there must be an easier way for them. That's when I found the FCKeditor.

The editor, originally developed by



Frederico Caldeira Knabben, hence the name, is part of the open source software movement meaning that not only is it available at no cost, it includes the source code and can be modified. It is written in the Javascript and PHP languages and is under constant improvement and revision by the many programmers contributing to its ongoing development. There have been over 2,000,000 downloads of the product and thousands of installations.

From a descriptive point of view, the FCKeditor is a WYSIWYG (what you see is what you get) text editor that converts content entered by the user into standard HTML. It is a "server-side" application meaning that the user does not have to install it but only access it with a web browser. In practice, the editor opens automatically within a web page that the user opens, usually after entering a password.

*(Continued on Page 7)*

## FCKeditor for web page building

(Continued from Page 6)

### Installing FCKeditor on the web server

Setting up the software is extremely easy. The package is downloaded from <http://www.fckeditor.net> in the .zip format, decompressed, and then uploaded to a folder on the server. The editor itself does not require configuration for basic operation, all of that is taken care of in the web pages that call the editor. It does take a little knowledge to PHP to implement that portion, but the tutorials available online show how that is done.

### Setting up the department and teacher pages

The first step to implement this solution was to set up a more or less standard web page for each of the curriculum departments at the school. These pages were written in a combination of HTML and PHP. Including PHP lets me automate certain portions of the web page, for example, I set up a folder for each teacher within the department folder and the PHP program retrieves that list of teachers and create links to their individual pages. Teachers are added or removed from the list by adding or removing their individual folders.

For the teacher's page I also created a standard layout using a mixture of HTML and PHP. Each teacher actually has 15 pages that include the main page, a page for each of seven possible class periods, and 7 pages for posting their Open Disclosure (class rules) for each class period. The main page has a password entry form that gives the teacher access to an administrator page where they select which page they wish to edit and a form for changing their password. Once they select a page for editing, the FCKeditor opens and shows the contents of that page.

### Using the editor

The FCKeditor looks like a word processor, in fact, there is

even a "skin" that can make it look very much like Microsoft Word. Most of the standard formatting tools are available from the tool bar: font type and size, bold, italic, justification, and color. Hyperlinks are easily created with a tool that opens a dialog box for URL insertion. Tables are available with a table tool.

The editor also supports the insertion of images, Flash animations, and links to files. This is really the only tricky part for the user because before these objects can be inserted they must be uploaded to the server. A dialog box is provided for this but it is not as intuitive as it might be but after a few attempts even the most novice user will be successful clicking through the various options. Images should be sized before uploading but the display size can be changed right in the editor. The editor also provides an

**Billings Senior High School**  
The web site of Vince Long

Welcome to my school web site.

The Class Period and Open Disclosure links of the left will provide you information about each class.

My class schedule for the Fall 2007 semester is:

- ◆ Period 1 - Computer Application Design 1, 2, 3
- ◆ Period 2 - Computer Application Design 1, 2, 3
- ◆ Period 3 - Technology Education
- ◆ Period 4 - Computer Application Design 1, 2, 3
- ◆ Period 5 - Drafting 2, 3, 4, Technology Education
- ◆ Period 6 - Drafting 1

My school email is: [longv@billings.k12.mt.us](mailto:longv@billings.k12.mt.us)  
My phone is: 247-2117

assortment of alignment options for how the image will appear in the final web page, whether it will have border, and the amount of white space that appears around it.

One of the best features of the FCKeditor is that users can paste right into the editor from another application, such as Word or Excel. The only trick to this operation is that it is necessary to paste using the Control-V method rather than by right-clicking. While it is certainly handy to write up the content in Word or another word processor and copy and paste right into the editor, there are some limitations. The editor cannot handle all the fonts that might be available to the user on their own computer and some complex formatting might not make the translation from word processor to

(Continued on Page 8)



## MCCE 2007-2008

### Officers

**President**

Staci Auck

**President-Elect**

John Jenkins

**Past-President**

Kevin Croff

**Secretary**

Tami Scott

**Treasurer**

Desireé Caskey

**Newsletter Editor**

Vince Long

### Board Members

**Terms through 2008**

James Gregg

Archie Harris

Randy Chase

**Terms through 2009**

Susan Flentie

Cathy Stone

Sherry McMorris

**Terms through 2010**

Kathy Hoyt

Jan Van Dyke

Bob Gunderson

### Montana Council for Computers and Technology in Education Membership Form

Last Name \_\_\_\_\_ First Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Home Phone \_\_\_\_\_ E-mail \_\_\_\_\_

New Member \_\_\_\_\_ Renewal \_\_\_\_\_

Area of Interest: College \_\_\_\_\_ High School \_\_\_\_\_ K-8 \_\_\_\_\_

Please be an active member by indicating your area(s) of interest:

\_\_\_\_\_ willing to be an officer \_\_\_\_\_ willing to submit articles for the newsletter

\_\_\_\_\_ willing to be on the Board of Directors \_\_\_\_\_ willing to work on MCCE committees

\_\_\_\_\_ willing to be on a committee for a convention

Dues: \_\_\_\_\_ \$12.00 per year \_\_\_\_\_ \$30.00 for 3 years

Mail the completed membership form and dues to:

Desireé Caskey  
2932 Kincaid Rd  
Billings, MT 59101