

Engaging AP Computer Science A Students Using a Class Wiki



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Poll: Are you a AP Comp Sci A Teacher?

No (107550)
Yes, first time (107555)
Yes, taught it before(107556)



Overview

1. What is a Wiki?
2. Wikis for Demos & Starter Code
3. Wikis to Submit Assignments
4. Wikis for Collaboration
5. Possible Starting Points

Wiki= Hawaiian for "fast"

a website that lets itself be edited

First was WikiWikiWeb by Ward
Cunningham

invites the reader to become part of the
development of the site

Helpful? How?

collaborative, unlike
email

evolves, rather than
diffuse, unlike blogs

easy to edit and update,
unlike a website



more readable = easy to edit

| MediaWiki syntax | Equivalent HTML | Rendered output |
|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| "Take some more <code>[[tea]]</code> ," the March Hare said to Alice, very earnestly. | <code><p>"Take some more <a >tea<="" a>,"="" alice,="" code="" earnestly.<="" hare="" href="/wiki/Tea" march="" p><="" said="" the="" title="Tea" to="" very=""></code> | "Take some more tea ," the March Hare said to Alice, very earnestly. |
| "I've had nothing yet," Alice replied in an offended tone: "so I can't take more." | <code><p>"I've had nothing yet," Alice replied in an offended tone: "so I can't take more."</p></code> | "I've had nothing yet," Alice replied in an offended tone: "so I can't take more." |
| "You mean you can't take 'less'," said the Hatter: "it's very easy to take 'more' than nothing." | <code><p>"You mean you can't take <code><i>less</i></code>," said the Hatter: "it's very easy to take <code><i>more</i></code> than nothing."</p></code> | "You mean you can't take <i>less</i> ," said the Hatter: "it's very easy to take <i>more</i> than nothing." |

We know its wonderful,
but what is it good for?



Wiki's for Demos & Starter Code



sandbox.javawide.org

But where to start?

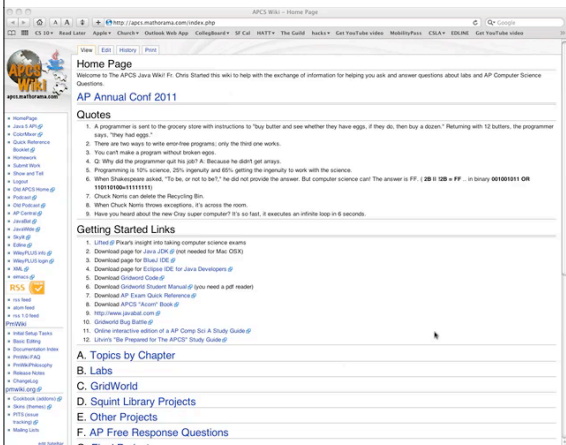


Every good cook has to start somewhere.
For her, there's no thrill quite like when she bakes that first Betty Crocker chocolate cake in her Easy-Bake Oven. More than all the fun she'll have, Easy-Bake n a great way for her to create love in warm little bites.

Easy-Bake has built-in safety features, is U. L. approved and bakes with two ordinary light bulbs. And comes with real Betty Crocker mixes. Easy-Bake. Because she'll love it.

© General Mills, Full Group, Inc. **Easy-Bake Oven** from Kenner

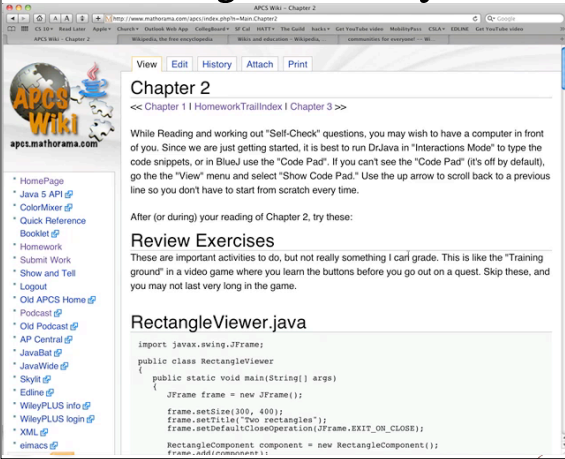
Demo Code on a Wiki



Humble beginnings ...greater ends



Change on the Fly



Chapter 2

While Reading and working out "Self-Check" questions, you may wish to have a computer in front of you. Since we are just getting started, it is best to run DrJava in "Interactions Mode" to type the code snippets, or in BlueJ use the "Code Pad". If you can't see the "Code Pad" (it's off by default), go the "View" menu and select "Show Code Pad." Use the up arrow to scroll back to a previous line so you don't have to start from scratch every time.

After (or during) your reading of Chapter 2, try these:

Review Exercises

These are important activities to do, but not really something I can grade. This is like the "Training ground" in a video game where you learn the buttons before you go out on a quest. Skip these, and you may not last very long in the game.

RectangleViewer.java

```
import javax.swing.JFrame;
public class RectangleViewer
{
    public static void main(String[] args)
    {
        JFrame frame = new JFrame();
        frame.setSize(300, 400);
        frame.setTitle("Two rectangles");
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        RectangleComponent component = new RectangleComponent();
        frame.add(component);
    }
}
```



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WOW - RESEARCHERS TAUGHT A COMPUTER TO BEAT THE WORLD'S BEST HUMANS AT YET ANOTHER TASK. DOES OUR SPECIES HAVE ANYTHING LEFT TO BE PROUD OF?

WELL, IT SOUNDS LIKE WE'RE PRETTY AWESOME AT TEACHING.



HUH? WHAT GOOD IS THAT?

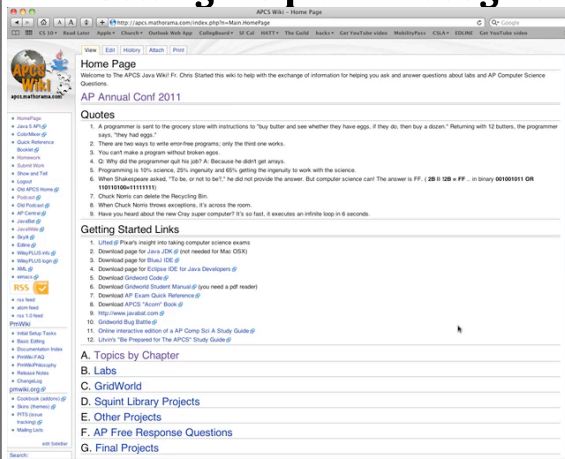
<http://xkcd.com/894/>

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Getting Help and Recognition



Home Page

Welcome to the APCS Wiki! Fr. Chris started this wiki to help with the exchange of information for helping you ask and answer questions about labs and AP Computer Science Questions.

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Quotes

1. A programmer is sent to the grocery store with instructions to "buy butter and see whether they have eggs, if they do, then buy a dozen." Returning with 12 butter, the programmer says, "they had eggs."
2. There are two ways to write error-free programs: only the first one works.
3. You can't make a program without broken eggs.
4. I try, but the programmer can't get it. Because he don't get advice.
5. Programming is 10% science, 20% ingenuity and 60% getting the ingenuity to work with the science.
6. When Shakespeare asked, "To be, or not to be?" he did not provide the answer. But computer science can! The answer is `FF (2B x 0B x FF ... in binary 00010011 OR 10101000111111)`.
7. Chuck Norris can delete the Recycling Bin.
8. When Chuck Norris throws exceptions, it's across the room.
9. Have you heard about the new Croy super computer? It's so fast, it executes an infinite loop in 8 seconds.

Getting Started Links

1. List of Phras insight into taking computer science exams
2. Download page for Java IDE (not needed for the CS09)
3. Download page for BlueJ IDE for Java Developers
4. Download page for Eclipse IDE for Java Developers
5. Download OpenStax Code
6. Download OpenStax Student Manual (you need a pdf reader)
7. Download AP Exam Quick Reference
8. Download APCS Student Book
9. <http://www.greatall.com/>
10. Download Bug Battle
11. Online interactive version of a AP-Comp Sci A Study Guide
12. Livin' 'n' Prepared for the APCS' Study Guide

A. Topics by Chapter

B. Labs

C. GridWorld

D. Squent Library Projects

E. Other Projects

F. AP Free Response Questions

G. Final Projects



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How to Keep Students Attention?



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Project Based Learning



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Projects and Collaboration



Make Custom Pictures For GridWorld Actors

if you save a .gif file with the same name as your Actor, it will be shown in your instance of ActorWorld.

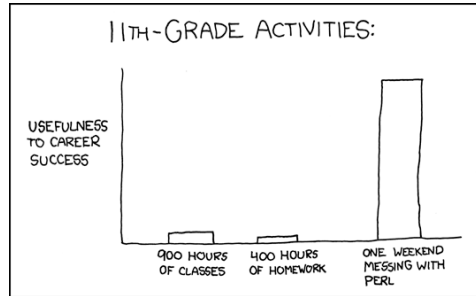
For best results:

1. Make it square (like 48 x 48 pixels, 96 x 96, or 480 x 480)
2. Make it shades of grey, black and white (so it can be tinted when you change colors)
3. Put the head at the top (so it moves head first)

You can make the grid larger or smaller with Ctrl-PageUp or Ctrl-PageDown (Cmd-PgUp and Cmd-PgDn on a Mac)



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xkcd.com/519

So where to start?



Various Kinds of Wikis

Javawide - IDE, FANG engine

PmWiki,MediaWiki,... - on your site

keytoschool.com, ninehub.com,...
-Moodle with Wiki Module

Wikia,SeedWiki, wikidot,...
-hosted wiki farm

Resources

<http://apcsjava.blogspot.com/>

My APCS Video Webcast ([click here](#) fo subscribe with iTunes)

www.piazza.com

"The new way to Q&A" While not quite a wiki, or a blog, or a Class Management Tool, this hybrid has a great way for having students answer and ask questions where you can track hot topics. Instructors can condone or "bless" students' answers to other students' questions.

Adding a Wiki to a Class Moodle

Many teachers use the moodle Class Management or learning environment system for their classes. There is a Wiki module for moodle you can add to your course's moodle

<http://www.pmwiki.org/>

PmWiki is a popular open source wiki you can install on your own website (This is the one I'm using at <http://apcs.mathorama.com>)

<http://www.mediawiki.org>

This open source wiki can also be installed on your website. This is the one <http://www.javawide.org> and <http://www.wikipedia.org/> uses

<http://www.javawide.org>

You dont have to install anything, to have not only working Java IDE, but also a way to have students work on the same file. You can get your own javawiki site for free (for the asking)

<http://codingbat.com/java>

Formerly known as javabat. While not a wiki, this too wonderful for me to leave out, just in case you don't know about it already. Various programming exercises can be answered online and evaluated with something like a JUnit test for each question.

<http://www.000webhost.com/>

A place that offers anyone a free website (they make their money by having you need more space, but the first 1500MB is free)

<http://installingmoodle.blogspot.com/>

A tutorial for installing moodle on a 000webhost.com website, but helpful for tips on installing a wiki like pmwiki or mediawiki or moodle on any website.

http://en.wikipedia.org/wiki/Wikis_and_education

Wikis in software article

http://en.wikipedia.org/wiki/Comparison_of_wiki_software

Comparison of wiki software

<http://www.wikia.com/Wikia>

Offers free wikis on their wiki farm, so you dont have to install anything or have you own website. This can be handy if you want your students to host a wiki for their group project.

Using the Internet to Teach APCS

Links are found at
apcs.mathorama.com
(Click on AP Annual Conf 2011)

