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## Introduction



The second annual TechNow Summer Camp was held at South Central College during the third week in July, 2007.

This year the camp consisted of two sessions, Radical Web Design and 3D Programming with Alice.

23 students participated in the sessions. They were able to meet and interact with more than a dozen professionals from business and industry.

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## Goals



The goals of the summer camp included:

- Discover students that have an interest in computers and technology.
- Give students positive, hands-on programming experiences.
- Give the students a vision of career opportunities in the area of programming and computer technologies by having them interact with industry professionals.

## Radical Web Design



The first workshop for the week was Radical Web Design. This included learning modules covering:

- **XHTML** - XML-based HTML coding
  - the essential HTML elements
  - how the Web works (client/server concepts)
  - writing web pages that are accessible
  - web-based business opportunities
  - using FTP
- **CSS** - Cascading Style Sheets
  - change color and appearance of elements
  - design page layouts
  - layered development - separating CSS from XHTML code
  - including graphics
- **JavaScript** - getting pages to do things
  - Writing your first JavaScript
  - Creating and using functions
  - What is the DOM and what does dom do?

**Matt Potochnik**, Web Master from the City of Mankato spoke to the group about being flexible and using the tool that fits the job.

**Jesse Daniels**, Software Engineer from DayPort talked about his experience as a PHP programmer and his current challenges at DayPort using Flash.

**Aaron Bartell**, from Kregel, described how he created a new software program, RPG-XML suite and showed the students his web site:<http://MowYourLawn.com>. He also talked about writing articles for trade journals based on what you learn and showed the movie he created for IBM demonstrating what the "real" life as a programmer is really like.

**Steve Pottenger**, Web Master at South Central College, spoke about several web sites he has created and how the process works. He also talked about what a web master job entails.



Kathleen Peet, Rebecca Bohm, and Rick Mulvey from Wells Fargo, drove down from Minneapolis to visit with the students. We had a round-table discussion about job opportunities and different job scenarios that students will experience. The discussion stressed how the old careers of only doing one thing has changed into a multi-faceted career that involves lots of teams and communication.

Chris Styndl, Jason Retuer, and James Ward from James Tower came and spoke about job opportunities in the technical fields and how internships work at James Tower.

As the workshop progressed each participant created his or her own web site. We have set up a showcase showing the results of the three-day workshop at:

<http://southcentral.edu/cc/technow/showcase>

Each student received a CD-ROM containing all of the lesson modules as well as open-source software tools that they could install at home to help them explore web development further.

The students had access to a web server and were FTPing documents and graphic files up to the server by the second day.

On-line resources were used giving the students experience using Google to find information to technical questions.

This three-day workshop was led by Peter K. Johnson, Computer Careers instructor at South Central College.

## 3D Programming with Alice



The second workshop, held on Thursday and Friday, used the Alice programming environment from Carnegie-Mellon - <http://alice.org>

Alice is a 3-D programming environment that incorporates OOP (Object Oriented Programming) as an integral part of its design. Character classes are moved into the "world" window and can be manipulated using methods and by changing the parameters for each object.

Programming is accomplished by clicking and dragging commands into the program area. The results can be seen immediately by the programmer. This is a fun environment to learn in and the results of all the programming tools such as for loops and if statements are easily seen by the student. Also, the student doesn't get sidetracked by syntax and typing errors.



The learning modules for this workshop included:

- ❖ Writing algorithms
- ❖ Creating a world using Alice
- ❖ Zooming and panning the camera
- ❖ Controlling characters using loops
- ❖ Using arrays to keep track of objects
- ❖ Using event-driven programming for interactive graphics

Before the students started programming they explored algorithms. They wrote and then debugged an algorithm for making a peanut butter sandwich.

Jason Kapanke, John Meine, and James Titus from Wells Fargo drove down from Minneapolis to meet and visit with the students. They talked about their own experiences and discussed the many types of job opportunities at Wells Fargo.



After lunch we toured the computer room to see the mainframe and mid-range computers. Jason,



John, and James described a project they worked on together dealing with a disaster control program they created, emphasizing the importance of having the mainframe data available 24 hours, 7 days a week to their financial customers.

The students also got to meet **Dan Boetcher**, lab manager and student-worker coordinator for all the computer labs at South Central. Dan described many of the opportunities for students here at South Central.

**Chris Styndl** from James Tower came and spoke about his educational background and his current position as quality control manager and internship coordinator at James Tower.



**Steph Stoffel** from Coughlan Companies gave a brief presentation about the growing need for skilled programmers.

All the visiting speakers spent time talking with the students and seeing the projects that they were creating using Alice.



This session was taught by Tom Edwards, Computer Careers instructor at South Central College. He was assisted by Peter Johnson.

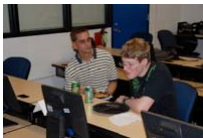


## Student Feedback



The following emails were received from the participants of the TechNow 2007 summer camp.

We would like to thank everyone who made the Alice programming class possible. It was an adventure I enjoyed sharing with my kids. I enjoy learning new creative programs. It was great to learn a little bit of what it takes to make the games Chris loves to play.



I hope to some day use the computer knowledge I have gleaned by taking classes and teaching myself programs to help others learn. Thanks again.

-Donna, Kim, and Chris

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Three things I learned at the TechNow camp:

- 1.) How to build an animated story using 3D characters in Alice.
- 2.) How to structure commands that I send to the computer (and how to tinker with the commands to get what I wanted).
- 3.) That, if pursuing a career involving programming, that I should look for opportunities in "smaller" jobs to improve my skills and my chances of getting a "bigger" job.



I thought that Alice made it really easy to create animated stories and brought out some creativity from myself. It further fueled my interest in possibly pursuing a career in animation.

In my future, I see some career involving art using computers, maybe in animation or graphic design. If not this, I might try to get into programming or another field involving computers.



Thanks James Tower, Inc. and Wells Fargo for providing money (and food) for this camp.

-Dylan

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Three things I learned: I learned how to create animations with Alice (and how fun it is to make up your own story with it); I learned how to make my world and its characters respond to the user's interaction (so I learned of a relatively easy way to make a video game without all the sometimes-complicated coding and stuff); I also talked to the company guys who stopped in during lunch, and received some useful advice (one of them suggested getting a book with programming tutorials in it). For me I think the step-by-step instructions and examples might help me learn stuff better than a class (I took one Computer Science class last year in high school).



My thanks to the James Tower and Wells Fargo employees who took the time to come to the workshop to talk about their jobs. It gave me a better idea of what kinds of jobs would be available to me if I decided to go into a career as a programmer.



I'm not really sure yet what I'm planning to do in the future...I'm interested in maybe trying to get into animation or some kind of art-related field. If I ever do the animation for a video game somewhere down the road, I think that knowing how to program (at least a little) would help me work together better with the team's designers/programmers.

-Dustin

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Thank you for running TechNow! It was a very fun experience where I learned a lot about the field I'm interested in. I didn't expect that guests would be coming in to talk about their jobs, and I found that very informative. I was able to see that there are places that I never even thought about before that require programmers; having the guests was very eye-opening for me! Also, it was nice to be introduced to people I might possibly work with in the future. Having people come in who are both local and from outside of Mankato helped me see just how wide-spread this field is and how many opportunities there are for many different kinds of jobs.

Other than that, I also learned a lot in class. The thing I find myself doing most is the new keystrokes I learned. I never knew of "alt+tab" before, and I've already used it here at home! I learned a few new HTML tags like <pre> for example. My knowledge of CSS is a lot firmer now. I'd known how to use it before, but now I can use it a lot more effectively, neatly, and precisely. I never had a sound understanding of how CSS tables worked before, but now that I've seen the code, I can easily



recognize when they're being used, and more importantly, how to use them myself.

Though I already knew a lot about web pages to begin with, this class really helped me put everything together and fill in the holes that I never would have learned simply through self-teaching. Before I never even thought about making my website accessible to those who are handicapped—the thought had never occurred to me—and now not only do I recognize this, but I also know how to fix it and make my future sites better!

Once again, thank you for all your help! I hope to see you again at next year's TechNow!

- Cory

ps. All the free food was a really, really nice bonus; it was all very, very good!

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I would like to take this time to thank you for your wonderfully generous contributions to the SCC TechNow 2007 program. I do not believe that I would have else had the wonderful opportunity to expand my knowledge of computer technology, and the likelihood of a successful career in a computer related field. I was encouraged to ask questions at any point that I did not follow the proceedings, and was given aid in recognizing the minute errors that can throw off a webpage code. The course was taught efficiently and well, and I enjoyed working with the programs. I also made friends through the class, with whom I intend to keep correspondence.

I had a thoroughly enjoyable experience, and am looking forward to attending next year's session, whether it be more of the same, or if we move on to, say, Flash. Thank you for this wonderful opportunity!

-Mack

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I really enjoyed the time I spent here at South Central. At first I wasn't so sure about signing up for the Tech Now summer camp, but after these three days that I've been learning about web programming, I am extremely excited to go back to school in the fall. The reason for this is because I had never had any programming to speak of before this camp so I never knew what it was all about, and now I really enjoy it. All it took was three days to make me realize that I want to pursue this



career. I took PSEO (Post Secondary Education Option) classes at MSU last year and started working on a Management Information Systems degree. I always knew I wanted to work with computers somehow, I just didn't know what exactly I would be doing and it seems like everyone thinks that there is a rise in demand for programmers lately (especially main frame programmers). I enjoyed web programming so much, I think I am going to take Web I at SCC this fall. Now my plan is to get my bachelors degree in MIS at MSU, and a 2 year degree in programming here at SCC. I just want to say thank you for spending your time teaching this camp. I learned so much in these three days and it set me on a more concrete career track.

-Matt

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I would like to thank all of the companies that help found the tech now program this summer. During the 3 days of web programming I have learned a lot. When I was in 9th grade we did have a class in school and I took it but coming here I learned a lot more than what I learned in school. I learned that when working with CSS when you wanted to make your text a different size that u don't have to put fonts-size: "12: you can just small or large were the 12 was. Same with the colors you don't have to out the 6-digit code you could just spell out the color. I had a good time this summer here at South Central learning about CSS and JavaScript.

-Wesley

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## Future Plans

The TechNow Summer Camp will be held again on the third week of July, 2008.

Each year new modules are added to the TechNow Summer camp, encouraging interested students to return for continued learning.

Students taking the Radical Web Workshop were asked what they would like to learn next summer. They responded with an enthusiastic vote for Flash. Steph Stoffel recommended introducing Flex as well, which is a higher-level Flash development tool.

Next year's topics will include:

- ❖ 3D Programming using Alice
- ❖ Radical Web Programming with CSS
- ❖ Creating Flash Animations

In addition, we will be setting up a **Job Experience Network** with Wells Fargo Bank. This will take place the week after TechNow. Students will visit the Twin Cities, taking the light rail from Bloomington to the Wells Fargo building in downtown Minneapolis. They will spend the day experiencing a variety of different technology-based jobs.

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## Closing



The TechNow Summer Camp was very successful. The participants included two students from last year's camp and we almost doubled our enrollment from last year.

We continue to receive strong support from business and industry and lots of enthusiasm from the students.



We look forward to expanding the program in 2008 to include more students, more high schools, and more activities.

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## Industry Support

The TechNow program was supported by donations and support from the following organizations:



- Wells Fargo - Minneapolis, MN



- IBM - Rochester, MN



- James Tower, Inc. - North Mankato, MN

- Marathon Multimedia - Faribault, MN



- Coughlan Companies - Mankato, MN

- South Central College - North Mankato, MN



- Krengel Technology - Hutchinson, WI



- DayPort - Mankato, MN

