SCHOOL OF COMPUTING

CS 4500
SENIOR CAPSTONE DEMO DAY
April 26, 2012

SCHEDULE

Room 130 WEB

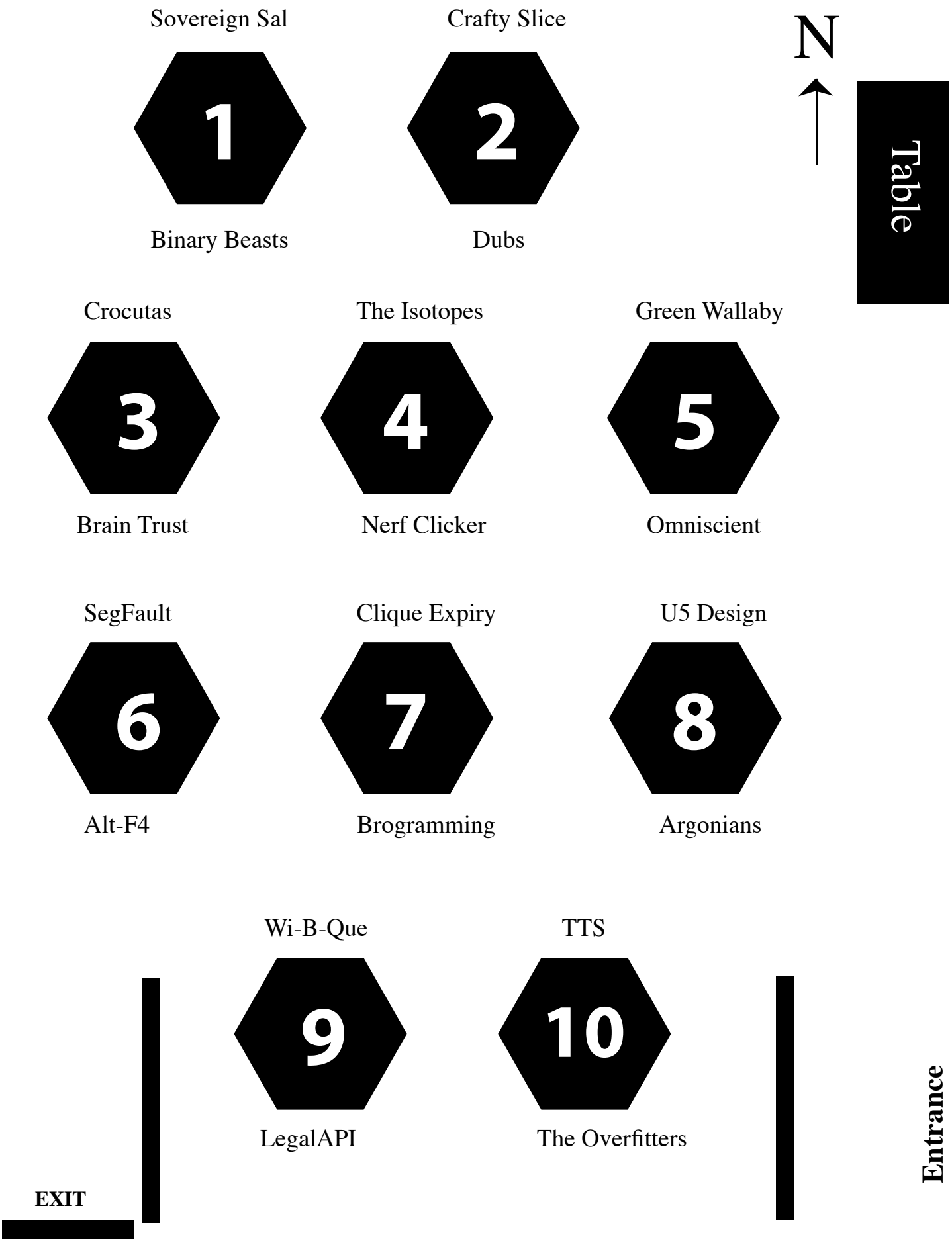
9:00 am - 12:00 pm
Demonstration viewing and judging

12:00 pm - 12:30 pm
Pizza (room 126 WEB)

12:30 pm - 1:00 pm
Awards ceremony

COURSE DESCRIPTION

CS 4500 is the senior software engineering laboratory where computer science students engage in a semester-long project to build a software system based on their own interests. Formally, the purpose of the course is the development of significant software systems by small student groups, with emphasis on applying sound, disciplined software engineering practice. Less formally, the purpose of the course is to give seniors the experience of planning, designing, and implementing a software system of their own choosing, while working collaboratively with a team of colleagues.

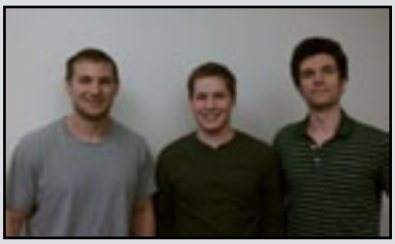

Sovereign Sal
1
Binary Beasts
Crafty Slice
2
Dubs
N
Table
Crocutas
3
Brain Trust
The Isotopes
4
Nerf Clicker
Green Wallaby
5
Omniscient
SegFault
6
Alt-F4
Clique Expiry
7
Brogramming
U5 Design
8
Argonians
Wi-B-Que
9
LegalAPI
TTS
10
The Overfitters
EXIT
Entrance

TEAMS

Team name: Alt-F4
Project name: FindMeAnApartment
Team members: Garrison Hansen, Jared Rose, Jonathan Muir, Robert DeJulis
Website: http://altf4.eng.utah.edu/index.html

Project description: Anyone who has ever been involved with rental properties knows how difficult it can be to collaborate and stay on top of things. Rental owners juggle the responsibilities of managing/repairing properties, attracting potential renters, and communicating with existing tenants. Renters face equally challenging issues when attempting to pay rent on time, request repairs and maintenance on their unit, and even just getting in touch with their property managers. Even looking for a place to rent that is available, affordable, and meets all of your needs can a daunting task involving hours of research. Whether you are an owner, renter, or apartment hunter, FindMeAnApartment.com is designed to ease your rental property troubles. We provide owners with the tools they need to manage any rental property, from a single basement apartment to large complexes. Renters can easily pay rent online, communicate with landlords, and monitor work orders (no more leaving hundreds of messages just to get that leaky faucet fixed)! Finally, all of your available properties are automatically listed on our searchable site in real time, easily connecting prospective owners to potential tenants. Whoever you are, dealing with rental properties has never been easier!

Team name: Argonians
Project name: Monocle
Team members: William Graham, Jonathan Browning, Allen Gregory
Website: http://maniacalmonocle.tumblr.com/



Project description: Monocle is a one stop media hub. It simplifies the search for movies and TV shows online by gathering available information and connecting you to multiple video streaming services in a unified media experience. By using multiple popular online services, such as IMDB, Netflix, and Amazon Instant Video, Monocle brings together a variety of the highest quality options available. Monocle gives you personal control over your media browsing through features such as a universal video queue, personalized organization through custom tags, and a tracking system for newly available media.

Team name: Binary Beasts
Project name: irked IRC Server
Team members: Cameron Matheson, Ashton Snelgrove
Website: https://bitbucket.org/yashton/binary_beasts/

Project description: irked is a modern IRC server implemented in Python. Multiple servers can be joined together to form an IRC network facilitating communication by tens of thousands of users. irked IRC servers can be extended with plugins (also written in Python), allowing for functionality that traditional IRC servers don't support. irked also provides a friendly dashboard interface allowing administrators to quickly assess the state of the network.

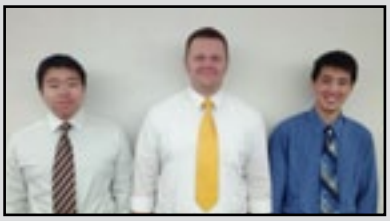
Team name: The Brain Trust
Project name: Sprite Animation Workshop (SAW)
Team members: Adam Hathaway, David Kemker,
Jasen Kennington, Matthew Murdock
Website: http://saw.davidkemker.com

Project description: Sprite AnimationWorkshop "SAW" is a tool that strives to present artists with all the tools they desire when creating sprite based animations for anything from animated gif files to sprite sheets for video games. SAW incorporates many features that can be found in other content creation packages but are taken a step further by incorporating many must have features into a single application as well as extending their usefulness. These features include layers (global and local), onion skinning, stamps, as well as animation previewing. By incorporating all these features into a single application artists can save large amounts of time because they are no longer required to switch between programs when a certain feature is required, but isn't found in the application that they are currently working in. Armed with all the tools that SAW provides in a single application artist are able to spend more time doing what they do best, creating gorgeous art instead of fighting with the tools.

Team name: Brogramming Incorporated
Project name: Chat
Team members: Jake Kirshner, Carlos Brenneisen,
Octavio Pimentel, Tucker McKnight
Website:

Project description: Chat is a communication application that allows you to have traditional SMS conversations as well as instant message exchanges from all of your devices. Chat's servers ensure that all of your conversations have a full up-to-date record of your message history as well as keep track of which conversations you had open last and mirroring that to your other devices accordingly. All of this means that you will never have to search for speci!c messages on different devices or worry about which computer, tablet or phone you were last having a conversation with. Chat makes it easier than ever before to manage your online buddy lists and text message dialogues.

Team name: cliqueExpiry
Project name: Killer Sheep
Team members: Yodai Miura, Owen Lovell, Kevin Wong
Website: http://atr.eng.utah.edu/~wong/killersheep

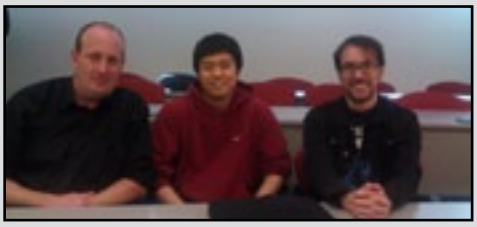


Project description: Dr. Mortimer L. Makinsky (M.S.) has been busy in his lair and has created a new breed of Killer Sheep. The local town has heard of this abomination and they are determined to stop him! Dr. Makinsky must not let anyone stop his work! Killer Sheep is a brand new and exciting tower defense game for the Android platform. You play as Dr. Makinsky's minion attempting to prevent the townsfolk from destroying your master's work. Employ a variety of unique towers to stop your foes. In addition to the spellbinding single player mode, there are competitive multiplayer modes you can enjoy with your friends!

Team name: Crafy Slice
Project name: Kinventory
Team members: Esmerelda Bess, James Penman,
Jessica Lemon, Lewis Walther, May Bo Hubbard
Website: atr.eng.utah.edu/Kinventory

Project description: Kinventory is a web-based kitchen organizer application. The application is used to keep inventory of your pantry, store your recipes, make monthly/weekly menus, and make shopping lists. An additional Ipod application is used for easy kitchen data access on a mobile device. The application aids with cooking and menu planning by letting the user know what ingredients they are missing for a specific recipe. The application can also make a shopping list of the missing ingredients.

Team name: Crocutas
Project name: Crocutas
Team members: Troy Briggs, Grant Larimer,
Sungjin "Samuel" Mo
Website: www.crocutas.com

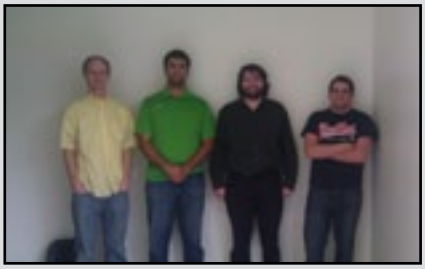


Project description: Crocutas is a collaborative problem-solving designed to help groups of people solve a wide variety of problems. The idea is that there are a lot of problems out there that can't really be solved by one person, such as how respond to a recent natural disaster, or how to ensure sustainability in the U.S. social security system. The way it works is a person posts a problem, and then others can post solutions, or modify other people's solutions. By allowing people to collectively edit solutions, they can come up with a succinct solution that encompasses multiple people's ideas, rather than simply having a collection of ideas, as in a forum. Crocutas also comes with other tools, such as a document library to post supplementary material, and discussion groups to allow people to discuss aspects of a solution before editing.

Team name: Dubs (check 'em)
Project name: MonsterQuest
Team members: Elias Bagley, Alex Doub
Website: www.eng.utah.edu/~ebagley/monsterquest

Project description: MonsterQuest is an strategy adventure RPG for iOS. The objective of the game is to explore the world to collect monsters, and use these monsters to battle enemies. The player manages a team of monsters, each with their own level, type, spells and items. By using a monster in battle, the monster will gain experience and level up. After a monster has enough experience, it will evolve into a more powerful monster, and unlock new spells. Monster types and items are used to customize each monster to complement their strengths and weaknesses. MonsterQuest is also multiplayer, so friends can test their monster's strength by battling them head to head.

Team name: Green Wallaby
Project name: Space Manager
Team members: Colton Felts, Mitchell Hullick, Zach Lewis, Sam Saif
Website: http://kellogg.emcb.utah.edu/



Project description: This software provides the ability to manage space, connect that space with clients, and provide meaningful services to those clients in conjunction with that space. The software is ideal whether the space consists of rooms in a hotel, storage space, or seats in a theater. The software provides a visual interface that allows managers to build custom layouts and manage their information via that custom interface. The software is network-based and thus only requires the setup of a server on a local network. Other computers can then securely login via any web browser and access the same data. The way this software is built is that it can easily be expanded and modified to fit the needs of the user. and grow as the user needs grow.

Team name: LegalAPI
Project name: LegalAPI
Team members: Matthew Bates, Nick Cummings, Jeremiah Turner
Website: http://web.me.com/turner.jeremiah/LegalAPI

Project description: LegalAPI is a program designed to save time and money by expediting the process of document generation primarily targeting lawyers. The software provides an intuitive interface significantly cutting the learning curve allowing users to shave at least one minute per page off the time it takes to generate documents. LegalAPI has a "drill-down" style that hides unnecessary information from the user. The goal is for the user to have all the information and functionality he or she needs but no more. Our drag-and-drop or click-to-add system eliminates as much typing as possible. With average legal transactions consisting of many documents each containing dozens to nearly one hundred pages each, one minute per page adds up fast. The core functionality of LegalAPI is not necessarily new, however, existing products have failed to overcome the need for a heavy knowledge of scripting to be able to do anything meaningful, or months of training just to get proficient at doing things that should be relatively trivial in nature. LegalAPI overcomes both of these obstacles by providing a product that is smart enough to do anything that a lawyer would need, and intuitive enough that you don't have to be a lawyer to use it.

Team name: Nerf Clicker
Project name: NoClicker
Team members: Stephen Fiskell, Josh Gramoll, Brad King, Tyson Lawrence
Website:

Project description: At the heart of any quality classroom experience lies the interaction between professor's and their students. This interaction enhances the professor's ability to teach, and the students ability to learn. Increasing class size has caused a disconnect in this interaction. NoClicker will reconnect the classroom by giving professors the capability to track student participation and progress. Students benefit from NoClicker through analyzing their own responses and the responses of their peers. Come demo our product to see how NoClicker utilizes laptops and mobile devices in the classroom environment.

Team name: Omniscient
Project name: Visitors
Team members: Adam Walz, Nathan Swenson, Keeyon Ebrahimi
Website: www.omniscientapps.info

Project description: Visitors, by Omniscient, is an exciting new 3D augmented reality game for mobile device platforms. The game involves an alien race attempting to overtake Earth's most precious monuments and treasures by shooting the structures and destroying them. What separates this from other 3D destruction game though is that the player physically becomes the alien ship! It uses computer vision to link the gaming world with the player's own environment and produce a 3D model directly on the surface in front of you. Visitors is an entirely immersive gaming experience that is both new and addicting. You have to play to believe!

Team name: SegFault
Project name: Graduate Tracker
Team members: Aaron Heyman, Matt Taylor, Kai Hatch
Website:

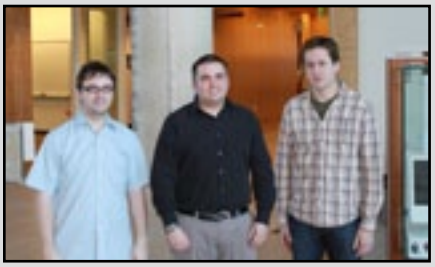
Project description: Our system implements a graduate student management system for the University of Utah Computer Science Department office staff. The software will track all aspects of the student data required for the office staff to work efficiently. This software will allow new ways of accessing the data to more readily meet the needs of professors and students within the CS department. Consistent data and instant analysis is the overall goal of the system. In addition, many requests come in from various individuals in the department that require an answer. A professor may ask, "How many students am I overseeing?" This is a question that is not easily answered by the current system, but will be with our project.

Team name: Sovereign Salamander
Project name: Maitre U
Team members: Alex Austin, Adam Hartvigsen, Fariz Sutsanyah, Gavin Earley, Zach Adams
Website: www.a2computing.com

MAÎTRE U

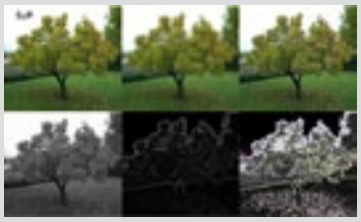
Project description: Team Sovereign Salamander has developed Maître U, a web based, iPad focused, restaurant management suite with the aim to serve up some delicious technology by creating a unique management system and dining experience. Our system connects the host/hostess, server, kitchen, and patron(s) in a way that not only speeds up their communication but also presents much of the information related to the restaurant at their fingertips. At a glance a host/hostess will know what tables are available for seating and where patrons are at in the dining experience; interactive web based menus showcase entrees and lets them request a waiter, intuitive feedback and enhanced communication are just the beginning.

Team name: Isotopes
Project name: Feedback
Team members: Charles McGarvey,
Brady Dial, Daniel Van Orman
Website: feedback.eng.utah.edu/Capstone/docs/



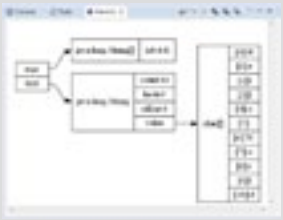
Project description: Feedback, a new digital comment card service, helps business owners collect meaningful feedback from their customers. This service allows an organization to create custom campaigns consisting of mobile surveys and printable 'hangers' to display in their place of business. Patrons of the business can scan the QR code from the hanger with their smartphones to fill out a series of questions. After the questions have been answered, the business owner can review all feedback they have received, either online or via email updates. Essentially, Feedback modernizes the often-unused pen and paper comment card system. Feedback helps customers to positively influence their favorite businesses while assisting business owners in improving their services.

Team name: The Overfitters
Project name: ScIP Mobile
Team members: Brandon Gibson, Nathan Wingert,
Jamis Johnson
Website:



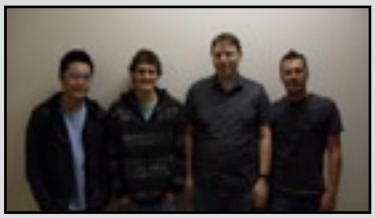
Project description: ScIP Mobile is an application for Android and iOS that implements scientific image processing algorithms in order to transform and convert images, detect image features, and provide a multitude of experimentation options for the curious user. Features include the ability to apply processing algorithms to images taken from either the device camera or local memory, the ability to save transformed images, and the ability to apply algorithms in real-time to the camera image feed or local videos. Algorithms include basic point operations such as brightness/contrast enhancement and thresholding, conversions between grayscale and different color spaces and visualized manipulation of different components within those color spaces, spatial filters operations such as Gaussian blurring and Unsharp Masking using optimized convolution routines, edge detection operations, color image segmentation, and complex combination algorithms such as the "Cartoon" algorithm which produces a cartoon transformation of any input image.

Team name: TTS
Project name: MemVis
Team members: Anthony Neal, Chris Nance,
Jordan Hansen
Website: http://www.eng.utah.edu/~jordanh/memvis



Project description: MemVis is an Eclipse plugin that allows the user to view what is in memory while debugging his/her program. With no modification to the user's code, he/she just has to set a break point and MemVis will graphically show what is in memory. MemVis was developed for early Computer Science course instructors to use in lectures. It gives instructors more time in lecture so they don't have to spend time drawing memory on the blackboard. MemVis also allows students an opportunity to see what the code is doing to memory during the runtime of the program.

Team name: U5 Designs
Project name: Journey to the East
Team members: Stephen Lu, Dylan Riddle,
Kendal Gifford, Seth Walsh
Website:



Project description: Journey to the East is an exciting single player action adventure game for the PC platform. Players take on the role of a monkey that dreams of one day becoming as powerful as the great Monkey King from Asian mythology. The game follows his adventures along the path of fulfilling his dream. What truly sets this game apart from other action adventure games is a unique camera element that allows the player to switch views from a standard 2D view into a 3D view. This is not just a cute camera gimmick, but rather a tool that the player must use during play in order to overcome enemies and obstacles. Nearly all game elements have been created in house, including the game engine, state manager, AI, and art.

Team name: Wi-B-Que
Project name: Wi-Fi Smoker
Team members: Ben Zeeman, Josh Ruesch,
Taewon Kim, Deokhyun Ko
Website: http://www.wibque.com

Project description: The Wi-B-Que Wi-Fi smoker is a smart phone controlled smoker/barbecue. Using a microcontroller we control the heat and monitor the temperatures inside of the cooker. Our software receives the data from the server and the server receives data from the microcontroller on the barbecue. The software on the smartphones allows the user to continually monitor this state of the food they are cooking. It also allows them to keep track of cooking history, find recipes, write recipes, and automate the cooking process. It also will receive notifications of significant events such as reaching a certain temperature, timer events, or dangerous events such as overheating. There is also a web interface that is used to monitor the cooking, view recipes, and view cooking history.

Thanks to the following companies for donating prizes:

Avalanche Software
Blue Coat Systems
Google
No Dropouts
Novell

CS 4500 Course Web Page
www.cs.utah.edu/classes/cs4500

Instructor: Jim de St. Germain (germain@cs.utah.edu)

TA: Stephen DeBies (s.debies@utah.edu)