

SCHOOL OF COMPUTING

CS 4500 SENIOR CAPSTONE

DEMO DAY

APRIL 26, 2017

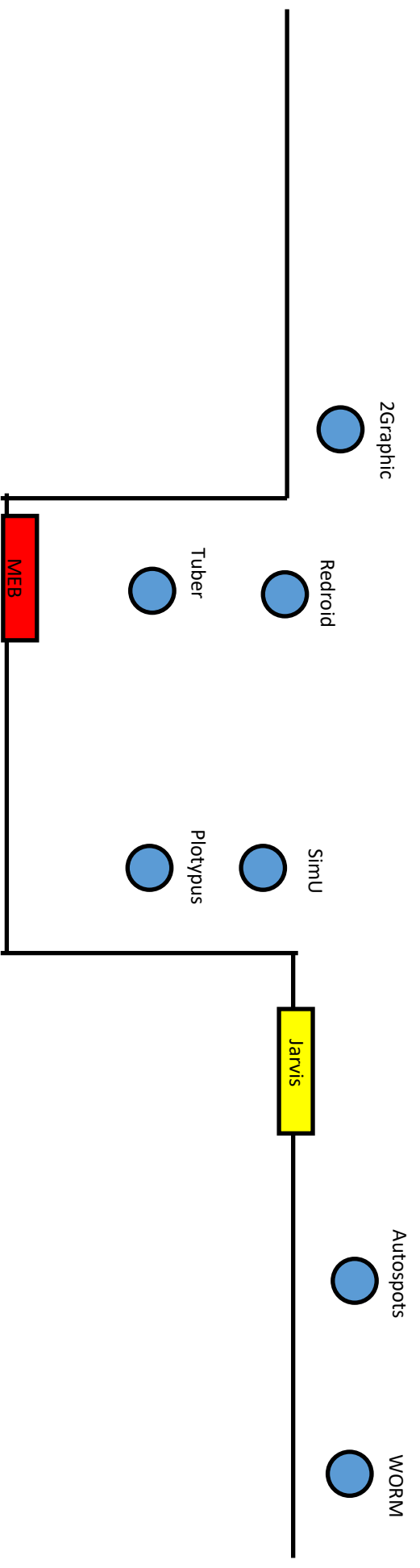
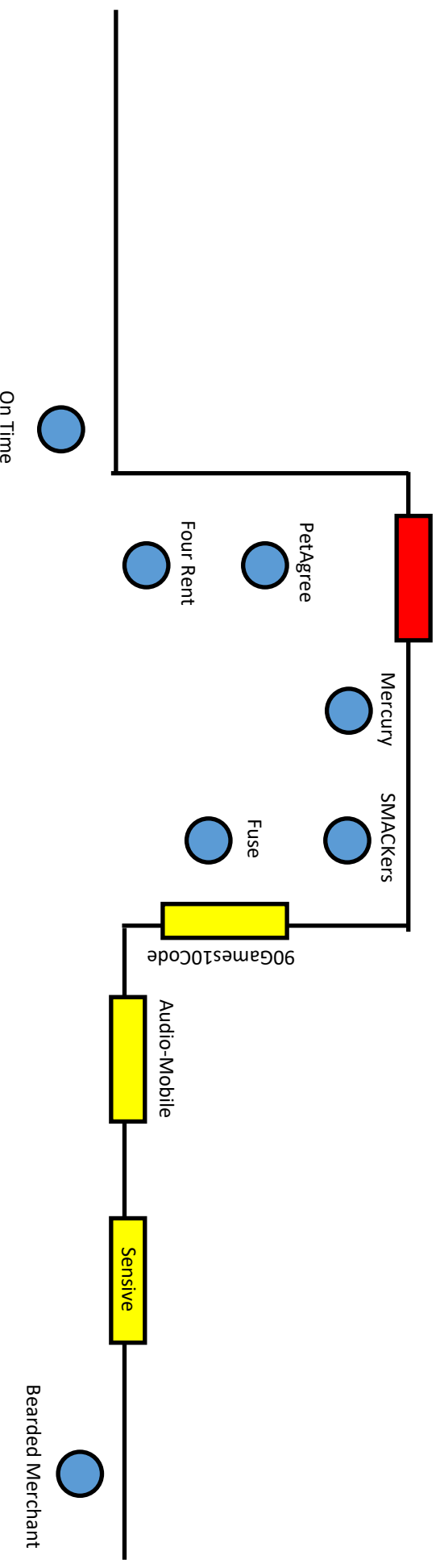
SCHEDULE

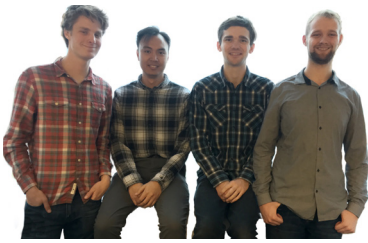
1:30 - 4:30PM

CATMULL GALLERY

AWARDS & PIZZA 4:30 - 5:00PM





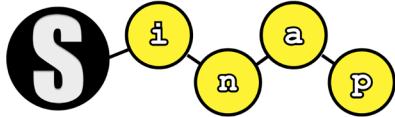


Team: 2graphic

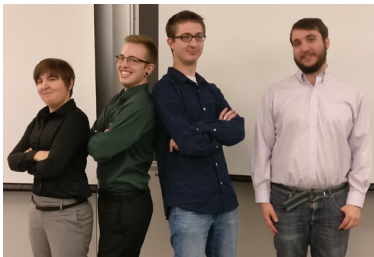
Project name: Sinap

Team members: Sheyne Anderson, Dyllon Gagnier, CJ Dimaano, Daniel James

Website: <https://2graphic.github.io>



Project description: Abstract graphs are used ubiquitously in Computer Science. They are a powerful utility for representing the structure of various algorithms. Sinap is an Open Source IDE that helps visualize, design, and interpret graph-based programs. The IDE has a simple plugin API to support any graph-based language. Some examples of these languages include automata, artificial neural networks, and even circuit designs. Users build graphs from scratch with the visual editor and modify the properties of the nodes and edges to create a program. Once created, they are able to run, test, and interactively debug their program. Sinap ships with a suite of formal language and automata plugins which we refer to as FLAP.

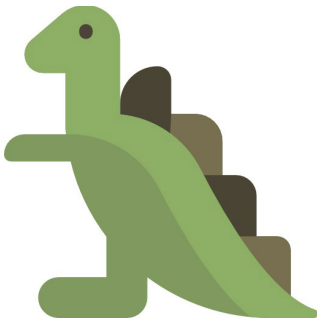


Team: 90 Boardgames 10 Code

Project name: Leagosaurus

Team members: Christyn Phillippi, Jackson Stafford, Braden Scothern, Jonathan Kraiss

Website: <http://www.leagosaurus.com/>



Project description: Forming a soccer league with your friends sounds like a great way to enjoy some healthy competition, but this idea quickly tarnishes when it becomes clear how annoying it is to organize a league. The very basics of league organization require providing some way for teams to form up, schedule matches with each other, and track their performance. For most leagues however, the basics are not good enough. It would be far more fun to be able to track personal performance, give access to all this information to the players for bragging rights, and organize a championship playoff at the end of the season. Our league management system will provide both the utility that league organizers need and the statistical tracking that players want for any kind of competition. This means that even if your friends decide they would rather play chess than soccer, you can still use our system to build a custom league and run a season. From video game leagues to sports leagues, our system aims to make life easier for organizers and competition more exciting for players.



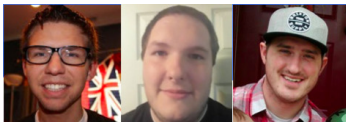
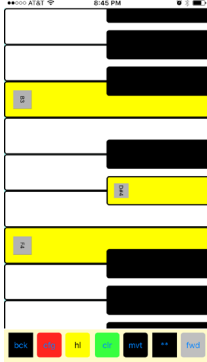
Team: Audio-Mobile

Project name: Audio-Mobile

Team members: Mike Fleming, Arash Tadjiki

Website: audiomobileplatform.wordpress.com

Project description: Team Audio-Mobile proposes a platform that uses mobile phones as musical instruments which can be used in live performance. The platform supports iOS devices, as well as a Host application for Windows. Mobile devices may be used individually, and can access additional functionality by connecting to the host, which manages mixing and output. Mobile devices are responsible for three major instrument contexts, one for percussion, melodies, and sampling. The first two contexts are designed so the user will not be required to look at the phone while performing, thus giving the user an opportunity to better engage the audience. Users are also able to expand the performance context by having a phone signal the Host application to produce playback of wirelessly triggered sounds out of the Host application's audio outputs. The primary users of Audio-Mobile are musicians performing on stage, however the platform can be used in more casual environments as well. If no external speaker is available, the user may play any of the apps with just the phone's speaker. Whether it be many devices, or only one, the platform is designed to be modular, in that it can be applied to any situation necessitating live instruments.



Team: Autospots

Project name: Autospots

Team members: James Jenkins, Geoff Lodder, Robert Corbett

Website: www.autospots.org

Project description: Why waste valuable time trying to find a parking spot? Parking is a daily annoyance for millions of people around the globe. Looking for a parking spot wastes your time and can cause frustration. However, we now have a solution to help you combat this problem: Autospots. Autospots is a mobile application that helps users find available parking spaces. The goal of the application is to alleviate frustration that often arises out of trying to find parking spots. Using cameras placed in parking lots, we process images and use computer vision to successfully find open parking spaces.





Team: Beard Merchant

Project name: Beard Merchant

Team members: Nicholas Moore, Nicholas Lloyd, Tanner Martin, Brian Labrum

Website: <http://www.beardedmerchant.com/>

Project description: Here at Bearded Merchant we can provide your company with a business facing, client independent tool for managing day to day sales, inventory, employee, and analysis needs. Our goal was to create an easy-to-use application while keeping your data secure in an affordable plug and play system. We have accomplished this by building our application from the ground up, focusing on every aspect from security to efficiency, all while the application runs solely on a Raspberry Pi. Our group hopes you will appreciate our hard work and attention to detail, and we think you'll agree: It's time to get bearded.



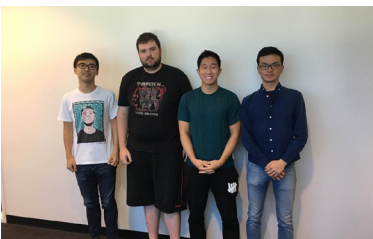
Team: Four Rent

Project name: Renter's Circle

Team members: Lance Hershey, Parker Cluff, Minwen Gao, James Lundgren

Website: <http://www.renters-circle.com/>.

Project description: Renter's Circle is a web and mobile application that provides a platform for individuals to rent items from others, and/or rent out their own possessions. Users are able to search for items that they want to rent, and narrow the results by location. When viewing an item, a user can see any reviews the item has accumulated, the daily rental rate, deposit amount, and can request to rent the item during specific dates and pay for the rental within the application. Once a transaction is completed, both parties will have the option to review each other and the renter can provide more information on the item and transaction experience in order to benefit future users.



Team: Fuse

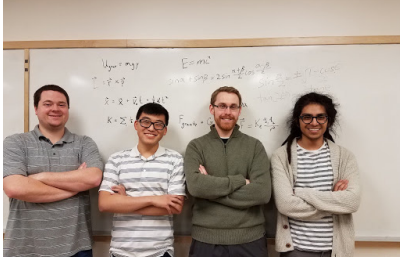
Project name: Project Fuse

Team members: Bailey Jiang, Parker Mitchell, Johnny Le, Chaofeng Zhou

Website: <https://www.projectfuse.io>

Project description: Project Fuse is a web application that allows users to either post ideas for projects and find people to join their team, or search through hundreds of project ideas and apply to join teams suited to their interests and skillsets. Detailed profile creation and messaging allow for an easy to use inter-connected experience that will help users find collaborators and hone their skills on real-world projects. Advanced search and filter features give users easy access to projects that intrigue them ensure that projects will be visible to a large range of potential collaborators.





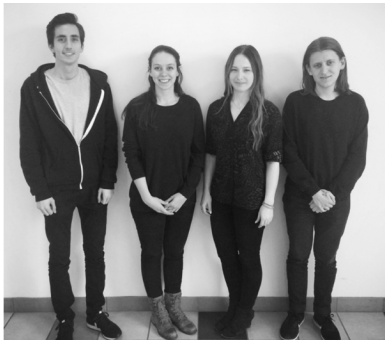
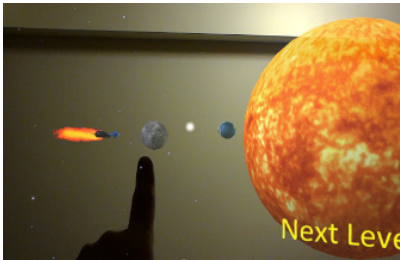
Team: JarPhys

Project name: Jarvis

Team members: Lance Petersen, Yu Song, Greg Anderson, Jesus Zarate

Website: <https://jarphys.herokuapp.com/>

Project description: Physics is a field of study that focuses on the basic forces of nature and the interaction of objects with these forces. One principal challenge of learning about physics is that the basic subject matter (forces) are invisible and the concepts are often unintuitive. Over a million high school students take physics classes every year in the United States alone. High school physics teachers strive to help their students come to grips with these invisible forces and concepts, but often have to resort to series of 2D pictures to try to represent 3D processes occurring over time. In the best cases, they are able to have the students perform experiments, but these can feel disconnected from the lectures students have heard. In order to empower physics students to learn about these exciting, but difficult physics concepts, we created HoloPhysics: an augmented reality (AR) physics visualization software system that runs on the Microsoft HoloLens. HoloPhysics is a suite of educational modules that cover a wide range of physics principles, including kinematics, particle physics, and astronomy. Each module utilizes 3D holograms and the AR capabilities provided by HoloLens to create an engaging and informative experience for students. These modules consist of progressively more difficult levels that challenge the user to dynamically apply the forces they have learned in physics in order to navigate around obstacles and reach objectives. These obstacles engage learners in the process and deepen their understanding of physics through directly manipulating forces and being able to see the effects, not just through the motion of the objects but by displaying the actual velocities and accelerations. AR is particularly well suited to this type of engaging educational software because it helps bring the subject matter to life in the real world, while leveraging the power of digital content to display otherwise invisible subject matter. HoloPhysics harnesses the power of cutting edge technology to provide an educational app with the power to strengthen students' understanding of physics principles in a way that is fun and engaging.



Team: Mercury

Project name: Mercury

Team members: Jake Pitkin, Michael Pregman, Alice Griffin, Ellyx Jolley

Website: packwithmercury.com

Project description: Going on trips is fun, planning what to pack is not. Our application takes the worry out of packing by managing it all for you. You will receive suggestions on what to bring given your trip destination. Additionally, it will be simple to coordinate and collaborate with your travel companions. During the packing process, you will be able to leverage our tool by compartmentalizing your items into virtual bags, check the percentage of items packed, and receive reminders for unpacked items. Our application will ensure that a last minute trip won't leave you stranded in a new city without your toothbrush. From business traveler to college student on spring break, our application will bring the packing process to one centralized and easy to use platform.





Team: On Time

Project name: On Time

Team members: Tanner Marshall, Camille Rasmussen, Victor Johnson, Priyanka Parekh

Website: <https://ontime.tk/about/>

Project description: On Time is designed to provide users with a smart scheduling application allowing for flexible schedules to be more easily maintained. Existing scheduling and calendar applications are static and require a lot of effort to keep up to date as plans change. Each time an event needs to be added or modified, the user needs to manually change all of the information associated with that event. On Time would take a list of tasks and events and automatically schedule them, and each time you miss a task or something else comes up, the schedule will be rebuilt to accommodate the changes. Regular activities will appear as a suggestion to the user, along with estimations for the duration of each activity. On Time will have configurable notifications to inform users of upcoming tasks or events. With these features, a user will be able to easily manage their schedule no matter how dynamic it may be.

OnTime



Team: PetAgree

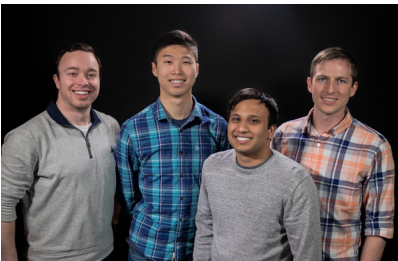
Project name: PetAgree

Team members: Qiaofeng Wang, Fred Yao, Sean Allen, Douglas Canada

Website: <http://www.petagree.pet/>

Project description: PetAgree is an application designed for pet owners to track and manage their pet's health care. The app will feature tracking of medications and dosages, vaccinations, breed, weight, age, exercise, diet, and alarm notifications. The owner would be able to create a highly customizable profile, for each of their pets, with a unique care plan to meet their individual pet's needs. That profile will then be able to be shared with other users that might take care of the pet like a pet sitter or dog walker. The application will keep track of the history of the pet and will be able to link with a veterinarian to assist in appropriate diagnosis. A pet profile can also be shared with a business so the employees can update aspects of the pet profile as is necessary.

PetAgree



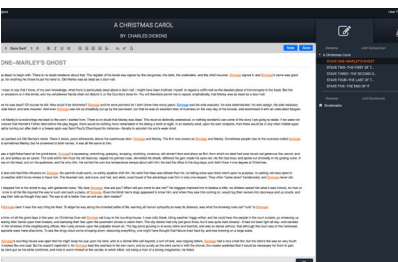
Team: Plotypus

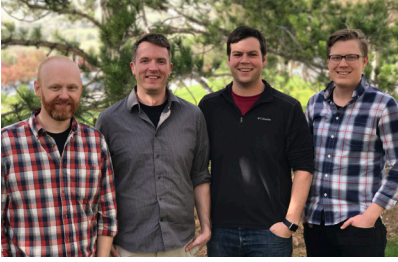
Project name: Inkweaver

Team members: Pierce Darragh, Kyle Pierson, Charles Khong, Bharath Gunasekaran

Website: <https://plotypus.net>

Project description: Inkweaver is an intelligent writing environment, helping authors and other story-writers achieve their peak potential with minimal effort. For the first time, quintessential elements of the modern programmer's code-writing toolbox have been merged into a cohesive writing experience. Specifically, Inkweaver is focused on supporting authors who want to keep track of all of their various notes on characters, locations, events, and other story elements, while also providing live updates of critical statistics authors use to monitor and evaluate their writing process. Built to be secure and easy, Inkweaver is the ideal solution for authors looking for a modern writing experience.





Team: Redroid

Project name: Redroid

Team members: Derek Johnson, Greg Smith, Matt Madden, Scott Wells

Website: <http://redroid.net>

Project description: Many Android users have several retired Android phones in a drawer, while a newer phone serves as their daily go-to device. But as these retired devices remain packed with valuable tools like cameras and sensors, many of these users would benefit from software to repurpose these devices for useful tasks. The Redroid project aims to provide a flexible toolset to unlock the full utilization of an Android phone's hardware, providing new usefulness to otherwise obsolete devices. Examples include: a home security camera, GPS tracker, open garage door detector, bicycle rear-view camera, and many more.



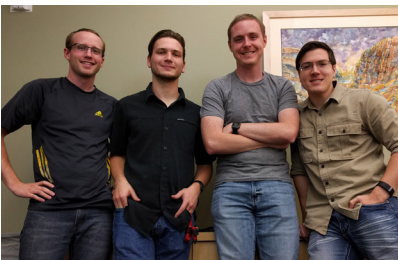
Team: Sensivenow

Project name: Sensivenow

Team members: Ryan Keepers, Braden Caywood, Curtis Clements, Kevin Glaville

Website: www.sensivenow.com

Project description: Measurement equipment for home, lab, or field use is expensive and often relies on manual operation. DIY automated sensors are available, but have a steep learning curve that requires programming and hardware building skills to get working. In both cases, users can be left with poorly managed and unwieldy data. As a solution, Sensitive offers open source hardware configurations and software that give users: module assembly specifications, software for recording data from automated sensor modules, and a web service to tie it all together.



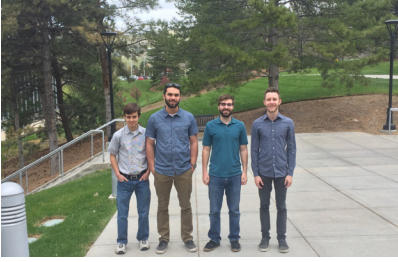
Team: SimU

Project name: SimU

Team members: Leland Stenquist, Jaxon Brewer, Brant Nielsen, Eric Budd

Website:

Project description: SimU is a framework and content management system for scientists and engineers looking to share command-line simulation applications with their communities of students and colleagues in an easy, accessible web-based format. The SimU API allows researchers to add new and existing command-line simulations to their online deployments, and simulation results can be displayed to users with any combination of text, files, and custom data visualizations. SimU is capable of offloading intensive simulation computations to separate machines, allowing the application to scale up with increasing users and the processing power needed by the simulations it runs. To further manage processing load, administrators can take advantage of result caching and user access controls to prevent simulation runs from overwhelming available resources. Researchers creating these simulations need no longer spend considerable time and resources developing their own front-ends and GUIs to share the valuable work that they do.



Team: SMACKers

Project name: SMACK Online

Team members: Matthew Mendez, Ryan Kingston, Christopher Bowcutt, Jake Sebright

Website: <http://about.smack-online.com>

Project description: SMACK Online is a web application that provides users immediate access to a community-driven environment for the static analysis tool, SMACK. Users can upload and run their software projects through SMACK with desired command-line options and save these projects to their profile for later viewing and/or editing. A community page is provided for users to view and clone other user's previously created public projects. Statistical usage information is provided for SMACK developers to gain insight on the frequency and location of the the application's usage.



Team: Tuber

Project name: Tuber

Team members: Fahad Alothaimeen, Fumiko Anne Aoki, Ali Momeni, Hyunjin Cho, Brandon Tobin

Website: <http://www.eng.utah.edu/~tobin/>

Project description: Tuber is a mobile application that pairs students and tutors based on time availability or location. Currently, there is no efficient way to socially network students to qualified tutors. Our application locates available and capable tutors to students at any given time using geolocation. Students can also request tutoring appointments in advance. After a tutoring session, students pay their tutors from within the application, to compensate for the services offered by the tutor. Then, students and tutors evaluate each other based on the quality of the session. This reciprocal rating scheme adds to the reliability and reputation of the service as a whole. Additional features include a group study broadcasting feature, messaging capabilities, and discussion forums. Tuber will revolutionize the way students learn and receive help.



Team: Worm

Project name: Spice

Team members: Russell Johnston, Tarik Courdy, Elliot Hatch, Samuel Davidson

Website: <https://team-worm.github.io/spice>

Project description: Spice is an experimental debugger that works across time. Rather than step through a program line by line, Spice traces the execution of a whole function at once, such that altering its arguments immediately shows the corresponding changes in its behavior. Spice visualizes control flow and changes in data structures- for example, the values of variables as they change across loop iterations, the path of a pointer as it traverses a graph, or the motion of array elements as they are sorted.