1. **Chicago Ikenobo Web Site**

The Chicago Chapter of the Ikenobo Ikebana society is dedicated to teaching and exploring Japanese flower arranging as taught by the Ikenobo School in Kyoto Japan. The first reference to Ikenobo is in 657 AD and the school has over 1,000 years of tradition. It is considered the source of all Japanese flower arranging (there are currently over 1,000 schools of flower arranging in Japan) and is in the 45th generation of the Ikenobo family. It is located on the grounds of the Rokkakudo Buddhist temple in Kyoto. The Chicago Chapter is the 4th oldest in North America and the makeup of the entire North American organization is aging with less and less younger people getting involved. The ideal web site would be one that gets away from the older generation’s concept of imitating a book on the web – going from page to page to find information as you proceed. Other ikenobo web sites have beautiful images but are boring in concept. I would like this web site to have some interaction – cookies to reveal surprises on various pages, links to various other friendly web sites and social media links.

Other ikenobo web sites:

[www.**ikenobo**.jp/english/](http://www.ikenobo.jp/english/)

[www.ikebanahq.org](http://www.ikebanahq.org)

[www.chisu**ikenobo**.org](http://www.chisuikenobo.org)

[www.prairieikebana.org](http://www.prairieikebana.org)

1. **Web Portal for 4K Remote Instrument Management**

The remote controlled, UltraHD streaming microscope application developed at the University of Southern California and piloted at the STEM School Chattanooga became one of the leading examples for high bandwidth, advanced connectivity applications. Currently the architecture of this system is at best laboratory grade, and a more robust prototype is needed to ensure accessibility to additional classrooms. Furthermore, no capacity for automated recording or dissemination of experiment data was provided for in the original prototype. The project would comprise of two main components, a back end piece that is connected to the video infrastructure and capable of programmatic recording of the video stream from the instrument, and a front end web portal that would provide an easy way to launch the local executables that setup and decode the stream. For this class, the project will focus on the automated recording portion of the project. Initially we would only support the microscope that will be located at the STEM School Chattanooga, but we would want to bake in the flexibility of adding additional types of instruments, as well as multiple locations.

Review this video for more background on the project:

https://vimeo.com/123622637

**Web Portal Requirements:**

**● Support authentication and authorization**

● Support scheduling of access to instrument

● Support “oneclick” initiation of control session

● Support viewing, downloading and tagging of experiment data

**Video Distribution Backend Requirements:**

● Recorder will either have to be a Maninthemiddle architecture on a central server, or on a dedicated piece of hardware at the instrument site.

● Needs to support remote control of starting and stopping the recording session, ideally each clip would be compiled into a single video for the session

● If dedicated hardware, needs to accept an SDI/HDMI input from the instrument camera

● Will upload to either a cloud infrastructure like AWS S3, or directly to youtube/Vimeo

1. **Minecraft Server Mod Project**

Minecraft, the wildly successful 2011 voxel adventure game, can be used to build everything from Mt. Fuji to Tolkien's Middle Earth. But they're stuck in Minecraft; if only you could re-use these amazing builds in your own games!

Your project is to mod a Minecraft server so it can dump all the data in the game world. By exporting all the data from Minecraft into our game, we're basically repurposing Minecraft into a collaborative voxel-based level editor.

Experience in Java expected.

Some relevant points about my proposed project:

* The students will be building a reusable open-source library.
* The library will be used for procedurally generating voxel game worlds.
* The students will use Java, not web technologies like Javascript and HTML5.
* The students will be responsible for writing fuzzy tests to run against their library.

1. **#Mall**

***“M-commerce via Social Networks”***

    #Mall pronounced “**Hashtagmall**” is dual m-commerce platform for social media networks. Social media host billions of active users on platforms. These users engage and interact daily with “Liking” and “Sharing” store or individual products or service information across the network, extending a product. This app targets individuals and companies looking to market their products and services via social networks with the intent to sell to interactive buyers. This allows sellers to gain exposure and awareness that converts traffic to their commerce website. For more details see: <https://docs.google.com/document/d/1QPgpx2fuVSO-BE0hHUZqkoscMYdAsQjihIYrSl5RSRQ/edit?usp=sharing>

1. **Android awareness monitoring system:**

In this project, the students will work on developing an Android based application that will focus on monitoring the access permission of other applications currently running on the mobile device. During the time of installation, an application comes packages in a “.apk” file that contains any data needed for the application along with a permission manifest. The manifest details a list of permissions that outlines what features and functionalities the application needs to function correctly. The user has to accept these permissions to be able to install the application. These permissions will be set at installation time and will be granted access by the user. One of the issues that need to be addressed is that when the application gets future updates, these permissions might be updated as well and might be overlooked by the user. To address this issue, this project will focus on developing an application that works as a monitoring system to assist the user and inform him/her in case of any suspicious unnecessarily permission update.