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Arduino Proposal (Group 42)

For our project, our goal is to create a storage device that will receive files from an online network and store it into a SD card attached to a ethernet shield. A graphic user interface will be created and the user will be able to upload and download files through the GUI. The form of the GUI will be either a website or an app, which has yet to be decided upon.

The major software components of this project involve creating a GUI for the user to interact with the storage system (implemented by a non-C language) and implementing a protocol for Arduino to communicate with the server and read/write accordingly.

Our experimental prototype will involve an Arduino mounted with a ethernet shield and a SD card. Through an Internet webpage that is to be created, data and files can be transferred into the SD card connected to the Arduino. Once the files are received by the Arduino, the Arduino will write the files onto the SD card, and the Arduino will tell the website how the job is done (success or fail). Then the website will update the state of the contents in the SD card by asking Arduino. Ideally, we want to make it accessible for multiple users.

The major hardware components of our project include a ethernet shield, which will be used to connect the Arduino to the Internet as well as to mount a SD card for storage space. We also expect to use some LED light, although they would likely be present out of convenience rather than necessity.

We expect to encounter difficulties in learning how to upload files onto an online server. For example, we believe it will take some time to learn how to allow the Arduino to respond correctly to protocols telling it to read or write files accordingly, since all of us are beginners to web development and networking.