CS 101: Project 1

October 4-10

Timeline

- **Tuesday**: class project overview and information. Everyone should come to class with an idea for their project and have done some initial exploration so they can come with specific questions for the professors and TAs.
- **Thursday**: prototype showcase. Come to class prepared to speak about your project for approximately 2 minutes to address any questions about approach or scope with a professor or TA. Your project should be a working prototype to showcase and get feedback.
- **Sunday**: submit final project and write-up on Canvas by 10pm.

Grade Breakdown

- Tuesday in-class discussion: 10 points
- Thursday in-class prototype presentation: 30 points
- Write-up: 60 points (due Sunday 10/10 by 10pm)

Project Expectations

This project is an opportunity to explore further the content we've covered so far this semester and take your learning to a new level. We hope that you find a topic that you are interested in and pursue an end product that is meaningful to your skill development.

Your final project demonstration will depend on your platform, but all projects should include:

- Screenshots that illustrate the project's development. You should create a clear documentation of your learning through this project. This can be submitted as PowerPoint slides (or something equivalent) or you can incorporate the screenshots into your write-up document.
- PDF of your write-up.

Write-Up Expectation

In addition to your project, you will submit approximately 1-page of text

- A synopsis of the CS concepts your project demonstrates (approximately 1-2 paragraphs)
- A description of the challenges you encountered and the lessons you learned while creating your project (approximately 2-3 paragraphs).

Starting Points

Here are project starting points with ideas of a reasonable scope and expectations for your project. We are happy to explore other ways for you to pursue this project; please meet with the instructors or TAs with any questions or concerns.

- **Create a CS 101 lab**
  Develop a CS 101 for future students to learn a new facet of Machine Language or Cryptography. Your lab should include a progression of learning to help a student understand the content. You will need to submit a lab file and the key with the solutions.

  - **Brookshear machine**
    Machine language program(s) that make use of more of the language than we covered in class. Consider implementing a loop and inside loop sum until reach a max value and then move the resulting sum to memory.
    Your lab key should include the algorithm used.

  - **Cryptography**
    Decrypt ciphers by hand and show your work. (We suggest Playfair!) Rumkin.com has some encrypt and decrypt methods. Do not use the ones we did for the unit; discover others.

- **Web Development**
  Create your own website where you have multiple web pages and your index.html links to other pages you created. Incorporate images, colors, use new html tags, tables and lists. Your website must be created around a particular topic or theme and be error-free. Consider creating a personal portfolio that includes information about yourself, academic projects, extracurriculars, etc.

  Your website should be a minimum of three pages housed on stu.cs.jmu.edu (index.html plus two others), and you should include links to a minimum of two external sites. All links should work and a user should be able to navigate easily among the pages. While you are encouraged to take inspiration from other HTML and CSS pages, but all content on your site should be your own, including your own photos and original text.

  We recommend Cyberduck or FileZilla for file transfer to Stu. Or sftp if you want to stick to terminal commands!

  We have tutorials for Cyberduck and on HTML (from last year) available on Canvas > Files > Project 1

You may think of something not on this list, wonderful! Be inquisitive and explore what interests you. Check with us if you want to go over your ideas.