Week 1: The Computer and the Human

Overview

During this week's module, you will explore what data visualization is, as well as various types of data visualization. You'll also begin to understand how computers display 2-D and 3-D shapes, as well as draw some simple 2-D shapes of your own. In addition to this, you will learn about how humans perceive, learn, and reason about information.

Time

This module should take **approximately 5-6 hours** of dedicated time to complete, with its videos and assignments.

Activities

The activities for this module are listed below (with assignments in **bold**):

Activity	Estimated Time Required
Week 1 Video Lectures	2 hours
Read the How the Programming Assignments Work Page	1-2 hours
Week 1 Quiz	30 minutes
Week 1 Discussion Initial Post	30 minutes
Week 1 Discussion Response Posts	30 minutes

Goals and Objectives

Upon successful completion of this module, you will be able to:

- Understand what data visualization is and the different kinds of data visualization.
- Understand how computer graphics are used to display shapes in 2-D and 3-D, and draw simple 2-D shapes on a web page using Scalable Vector Graphics
- Understand how we perceive, learn, and reason about information.

Guiding Questions

Develop your answers to the following guiding questions while completing the readings and working on assignments throughout the week.

- What is data visualization and how is it used?

- How does the computer display information?
- How does the user perceive information?

Key Phrases and Concepts

Keep your eyes open for the following key terms or phrases as you complete the readings and interact with the lectures. These topics will help you better understand the content in this module.

- Interactive visualization, presentation visualization, and interactive storytelling
- Scalable Vector Graphics and the difference between how graphics' shapes are described versus how they are displayed.
- Photorealistic rendering and non-photorealistic rendering
- The Model Human Processor and Fitts's law
- Lateral inhibition

Tips for Success

To do well this week, I recommend that you do the following:

- Review the video lectures a number of times to gain a solid understanding of the key questions and concepts introduced this week.
- When possible, provide tips and suggestions to your peers in this class. As a learning community, we can help each other learn and grow. One way of doing this is by helping to address the questions that your peers pose. By engaging with each other, we'll all learn better.
- It's always a good idea to refer to the video lectures and chapter readings we've read during this week and reference them in your responses. When appropriate, critique the information presented.
- Take notes while you read the materials and watch the lectures for this week. By taking notes, you are interacting with the material and will find that it is easier to remember and to understand. With your notes, you'll also find that it's easier to complete your assignments. So, go ahead, do yourself a favor; take some notes!

Getting and Giving Help

You can get/give help via the following means:

- Use the **Learner Help Center** to find information regarding specific technical problems. For example, technical problems would include error messages, difficulty submitting assignments, or problems with video playback. If you cannot find an answer in the documentation, you can also report your problem to the Coursera staff by clicking on the **Contact Us!** link available on each topic's page within the Learner Help Center.
- Use the **Content Issues** forum to report errors in lecture video content, assignment questions and answers, assignment grading, text and links on course pages, or the content of other course materials. University of Illinois staff and community TAs will monitor this forum and respond to issuesHow the Programming Assignments Work