Elements of Graphics Class Format

❖ In this class, we will focus on group exploration and discussion rather than lecture

❖ Thus the day’s format will be:
  ❖ 10 minute student presentation of previous work
  ❖ 20-30 minutes of class material
  ❖ Periodic quizzes to test understanding
  ❖ 10-20 minutes of in-class work (groups encouraged)
Class Expectations

❖ Project-based work
  ❖ Team projects and reports
❖ Engaged and helpful attitude
  ❖ Mandatory attendance
  ❖ Ask and answer questions on Piazza
❖ Academic honesty
❖ Positive teamwork and interactions
❖ Preparedness for presenting your work in class
❖ Ability to read syllabus and schedule on your own
In-Class Presentations and Quizzes

- Attendance and discussion will be done using iClicker and in-class presentations
  - Be prepared / on time to present!
  - I will pick a student at random to discuss what they worked on!
- In-class quiz grades are credit-no credit (wrong answers are not penalized)
  - Checks individual attendance
  - Checks understanding of material
What is Graphics?
Graphics and Visualization

- Computer graphics creates imagery through computing
  - Simulation
  - Modeling
  - Games
  - Artist tools
- Computer Visualization conveys messages or information through computer graphics
  - Medical
  - Sociological
  - Biological
  - Physical
Big Hero 6 (Disney)

Combustion Engine (Sandia)
Topics Covered

- Processing language
- Graphics programming
- Image manipulation
- Data visualization
- Object-oriented programming
- Animation
- Simulation
- Interactivity
Processing

- Java-based language for visualization
- Designed for non-programmers
- All documentation can be found at https://processing.org/
- Recommended reading: *Processing* by Casey Reas and Ben Fry
Processing Examples

❖ Avena+ Test Bed (http://benedikt-gross.de/log/2013/06/avena-test-bed_agricultural-printing-and-altered-landscapes/)
❖ City Symphonies (http://markmckeague.com/work/city-symphonies/)
❖ Understanding Shakespeare (http://www.understanding-shakespeare.com/)
❖ Wayfarer (http://benhem.com/games/wayfarer/)
❖ Pond (https://processing.org/exhibition/works/pond/index_link.html)
Processing.py Setup

- Processing.py allows for Python-style syntax within the Processing language
- Both Processing and Processing.py files will be accepted within this class
- Class examples will be done using Java-based Processing
- Java Processing recommended
Processing “Hello World”