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## CS1 course overview

### Students

Mostly CS majors or minors  
Significant minority of other majors  
Mostly first-year students

### Course sections

3-5 sections per semester  
20-30 students per section

### Pedagogical approach

Since fall 2013:  
Python  
Media computation  
Peer instruction  
Pair programming

### Semester progression

Introduce computational and programming concepts in the context of **image manipulation**

*Project: Introductory*  
*Project: Image manipulation*  
**Project: Image collage and art show**

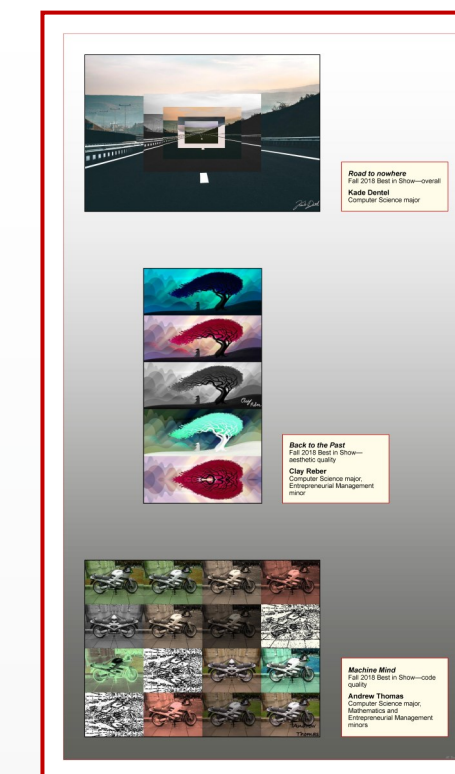
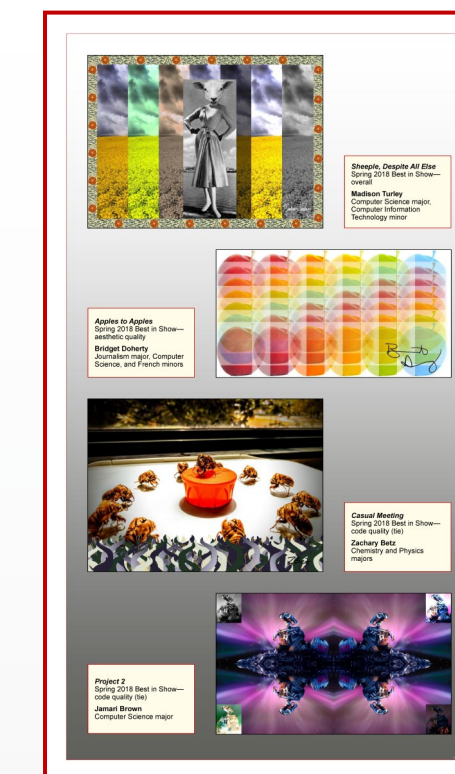
Revisit similar skills and concepts but apply to **sound**

*Project: Sound manipulation*

Revisit similar skills, but apply to **text**, and reading from and writing to **files**

*Final project: incorporates images, sounds, text, files, and user interaction into a text-based game*

# USING AN ART SHOW IN CS1 TO SPARK INTEREST IN COMPUTER SCIENCE



### Image collage project

Third project, occurring in middle of semester

Program creates a collage of modified images

Open-ended: student may create any image they want

Becomes part of art shows

### Art shows

**Section:** Every submitted project collage is displayed and judged by students from that section.

**Public:** Best collages from each section advance to public all-section art show. Judges determine awards for best collages.

### Public Art Show Logistics

**Poster:** Includes student's name, collage title, 8.5" x 11" color print of collage, small print of original image(s), and program code. Items are printed on paper and mounted on 20" by 30" foam-core poster board.

**Show handout:** Compilation of show entries. Contains thumbnail of collage image, collage title, student's name, major, and brief artist statement.

**Web pages:** Provides same information as handout. A winners page is created after the show.

**Winner posters:** We create and post 21" by 36" printed posters displaying top all-section show winners for each semester. Recent semesters' posters are posted in highly-visible hallway display case. Older posters are framed and hanging in a CS classroom.

### Art show goals

Highlight ability to be creative in CS.

Allow students to showcase their work to peers and others.

Motivate students to be creative and engaged.

Raise department visibility within university.

Hope of attracting students to CS major or minor.

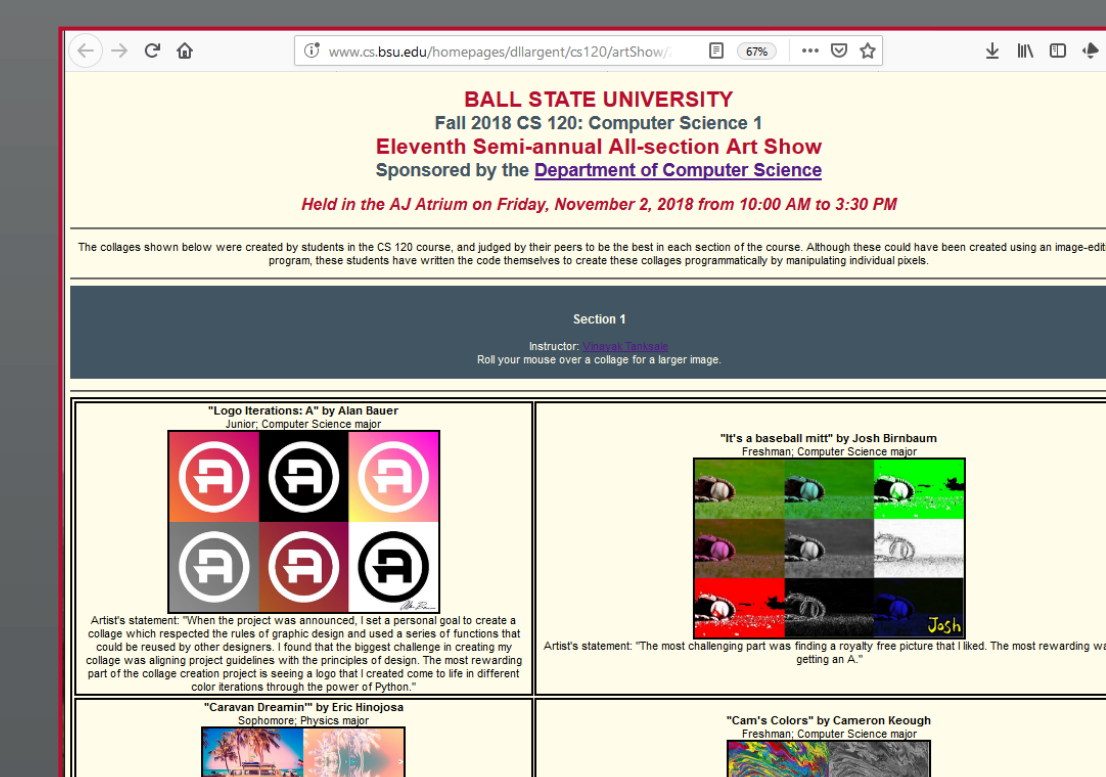
### Judging

**Section Show:** Students in section vote in two rounds.

**Public Show:** Judges are CS faculty and graduate assistants, other faculty, administrators, and students from specific upper-division CS course.

All judges evaluate aesthetic quality. Judges with programming background evaluate code quality.

Multiple awards are presented.



STUDENT OPINIONS	Strongly Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree	Total
The possibility of having my collage selected for the art show enticed me to work harder on the project than I might have otherwise.	61	74	19	17	14	185
I did more than what the project requirements asked because I was trying to get in the art show.	34	56	48	33	14	185
I was surprised at how engaged I became while working on the art show project.	55	83	25	14	8	185
I like having students in each section select which collages will be exhibited in the art show.	87	65	23	7	3	185
The art show project was a turning point for me during the semester.	19	48	71	25	22	185
Participation in the art show increased or reaffirmed my desire to continue taking computer science courses.	16	31	18	2	7	74
Participation in the art show motivated me to declare computer science as my major or minor, or to remain a computer science major or minor.	7	23	31	3	10	74
Not having my collage selected for the art show discouraged me.	3	13	22	31	42	111
I appreciate having the art show web pages for each semester available for viewing.	111	42	26	4	2	185

JUDGE OPINIONS	Strongly Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree	Total
I was impressed with the exhibited work.	8	11	3	1	0	23
I consider the exhibited work art, not simply pictures.	9	9	3	2	0	23
I was surprised the exhibited work was created by computer science students.	4	6	7	1	5	23
I enjoyed the exhibition as an art show.	10	8	3	2	0	23
The art show changed my opinion of computer science students.	1	7	9	3	3	23
The art show changed my opinion of the computer science department.	1	8	6	4	4	23
I have an above average interest and understanding of art.	6	4	6	6	1	23
I consider myself an artist.	5	4	6	4	4	23

### Conclusion

The addition of an art show has a generally positive impact on our students, the department, and how others view us.