

Etch A Sketch

CST 205 Final Group Project
Byte Bistro



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Objective

- Create a python program that simulates the popular Etch-A-Sketch game.
- Have the user be able to draw an image in real time.
- Ask the user for input, then do as directed
- Most importantly to show all the manipulations we learned in this class for pictures, music files, and strings

Approach

- Create blank image.
- Create functions that will get user input and draw on the blank image.
- Be able to create lines going up vertically and horizontally
- Add shake feature that distorts image and restarts drawing.
- Add background game sound
- Add ability to save picture
- Test game and features.
- Debug game and make sure it runs properly.

Results

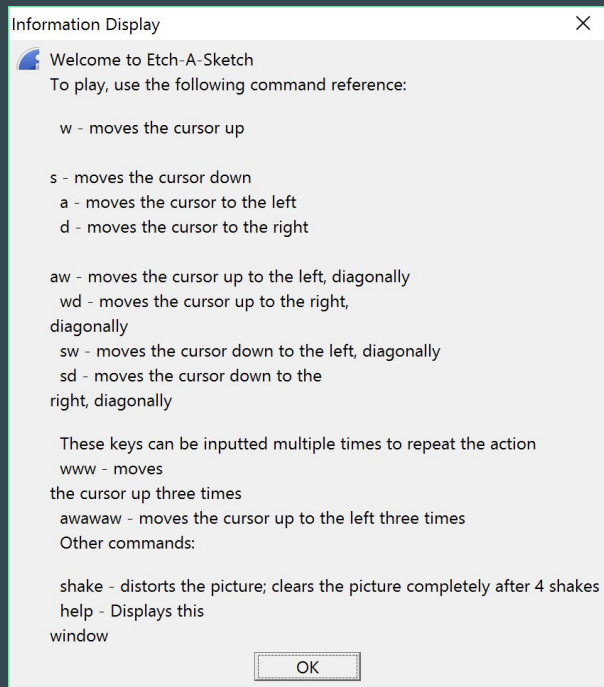
- The program copies an Etch-A-Sketch image into an empty picture.
 - The middle area of the Etch-A-Sketch is where the drawing occurs
 - Boundaries are set so that the drawing does not go past the borders, like the physical game itself
- The user is greeted with a dialog box and the background music begins playing
 - The dialog box contains a list of valid commands
- The user is then prompted to draw in any direction using the letters 'w', 'a', 's', or 'd'
 - Directional commands can be chained together to create lengthier results
 - i. wwwww will move upwards four times
 - Entering 'aw' will result in a diagonal line towards the upper left of the cursor
 - Likewise, 'sd' will result in a diagonal line moving below and to the right of the cursor

Results (cont.)

- When the user inputs 'shake,' the program randomly changes some pixels in the drawing area to white
 - For speed/efficiency, random pixels are selected, and from there, random pixels from that selection are chosen to be set to white
 - i. Otherwise, iterating through all pixels tends to slow JES down
 - Simulates the picture disappearing
 - After 4 shakes the picture resets
 - Each shake causes a sound effect to be played
- The user can save his/her current drawing by entering 'save' in the command window
 - A PNG will be saved in the project's current directory each time 'save' is called
 - The timestamp of when the picture was saved will be displayed at the bottom of the output PNG
- The user quits the game by inputting "exit"
 - This ends the game's music

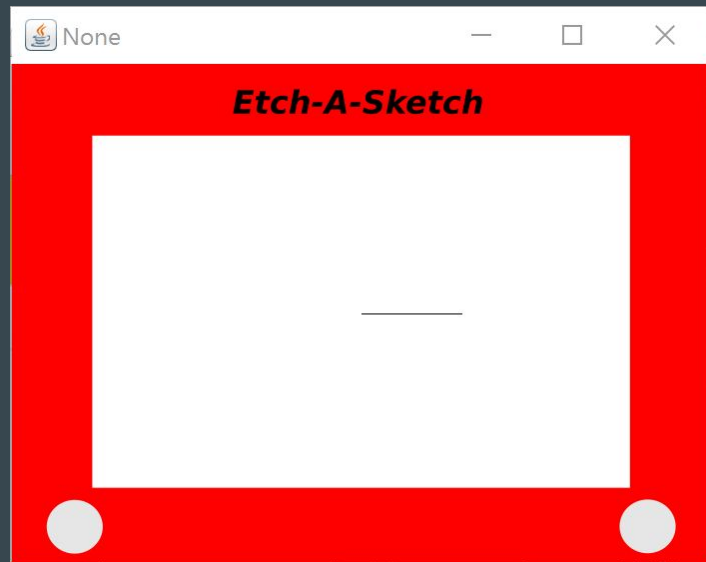
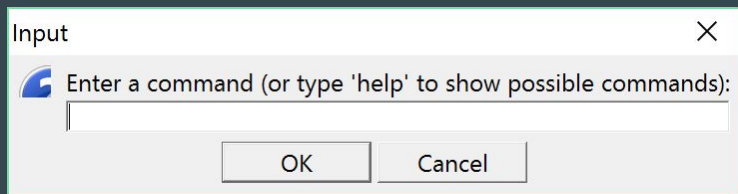
Demo

Screenshot of help dialog box(left) and starting Etch A Sketch game(right)



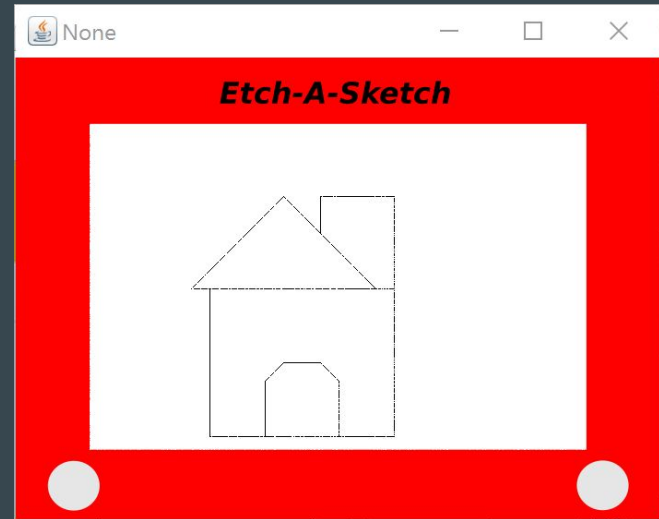
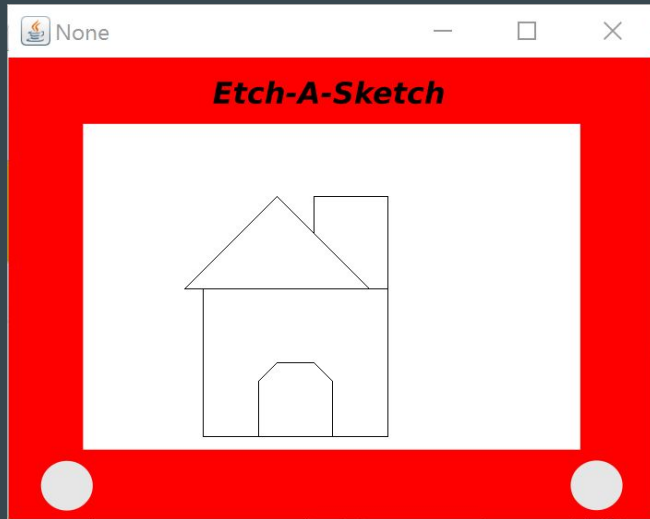
Demo

Screenshot of the program running. Input box for user to draw(left) and real time drawing(right):



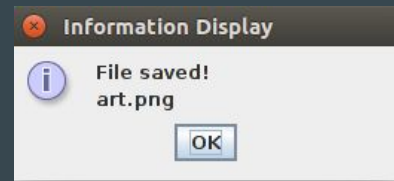
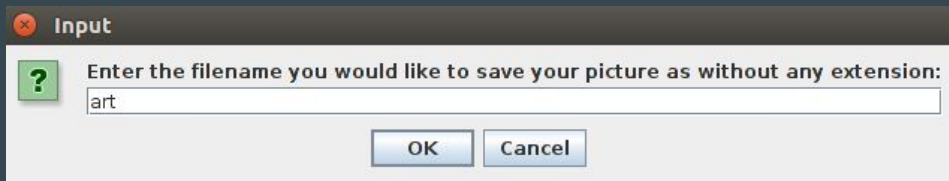
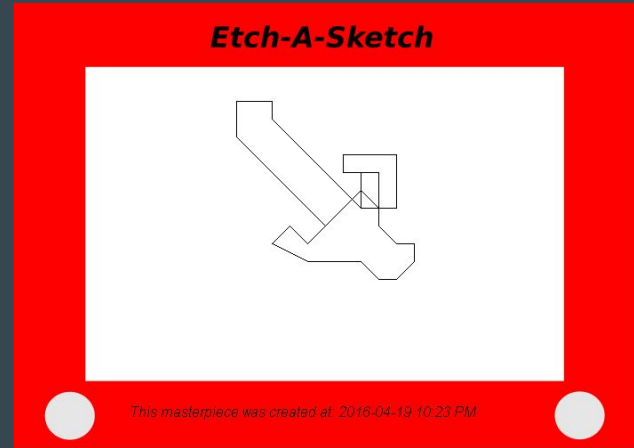
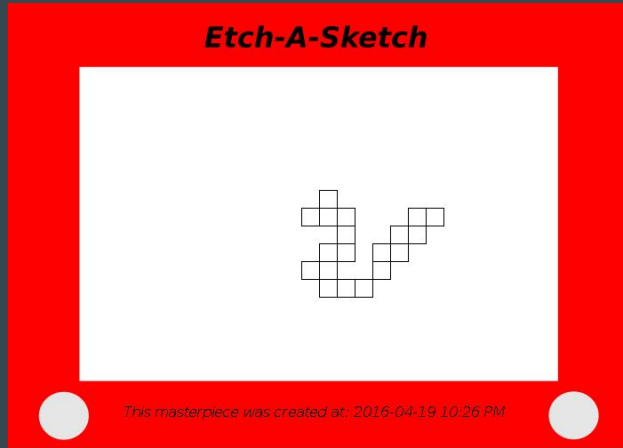
Demo

Screenshot of the end result of a house drawing by user(left) and image after use of shake function(right):



Demo

User is able to save their artwork by inputting “save” in the input box.



What we learned

- Jan Patrick Camaclang
 - Pair programming can be an efficient way of programming if participants are actively communicating and participating.
 - I learned how to manipulate images and sound using python
 - I learned how to use list and dictionaries to store and organize information
- Oswaldo Minez
 - I learned how to organize the group and get everyone on a Hangouts call at the same time
 - Most importantly, the fact that I watched my team program helped me understand how to code better
 - Also, it was my first time using github, so it was confusing at first but after a while I understood it
- Michael Goss
 - Working collaboratively with multiple contributors can seem difficult, but with the help of Git version control, staying organized is a lot less chaotic
 - Dictionaries and lists are simple, yet powerful, structures for storing data and are applicable in a multitude of use cases
 - Variable and method naming is essential in being able to comprehend both the code you and others write; often times, it can be more straightforward than verbose commenting
- Samuel Roy
 - I learned how to code a random() function, at first I was having issues but my colleagues helped me figure it out after much frustration
 - Working together as a group from start to finish simulates a real project when working for a real company, so in a way it helped me prepare for future employment as a programmer
- Keith Groves
 - I took the initiative and created all the necessary files to start working collaboratively on Github
 - Doing so helped me refine my leadership skills
 - I'm already proficient in programming, but working together as a group helped me refine my skills

Links

[Google Doc - Final Project Outline](#)

[Google Doc - Group Team Future Planning](#)