Deliverable 1

Project Idea:

Quickdraw from pre approved list: Recognize hand drawn strokes as pictograms of predefined objects by analysing the shapes.

Dataset : Google Dataset https://github.com/googlecreativelab/quickdraw-dataset

Methodology:

Data Preprocessing: The dataset chosen records the order of strokes as well as the overall shape at the end. I plan on converting the matrix after every stroke, and analysing the shapes at each step. I plan on using this to more easily determine the components of each pictogram (Ex: a clock contains a circle/curve, arrows…).

Machine Learning Model: Since this is a classification problem, I believe a decision tree model, which can guess the object as it is being drawn, should be used. However, since the drawings will have inconsistencies, I believe that a neural network will also be needed. In other words, while the decision tree will give a more accurate guess for unfinished work, neural networks are necessary for recognition. The best-case scenario will be to find a way to construct a neural network which implements a decision tree in the last layers.

Final Conceptualisation: It is hard for me to do a poster presentation since, as I am now, it is hard to conceptualize a control for this program due to variability of the inputs (bad drawings, unrecognised objects…). I plan on making a WebApp, using JavaScript to construct the UI and inserting the program.