**Project Name -** *QuickDraw Doodle Recognition System, A deep learning approach to recognizing quickDraw Game Doodles using depthwise convolution neural networks.*

**Data - /QuickDraw-Doodle-Recognition/data/**

**Categories to be used for doodle recognition**

|  |  |  |
| --- | --- | --- |
| train\_simplified/airplane.csv  train\_simplified/book.csv  train\_simplified/cake.csv  train\_simplified/lollipop.csv | train\_simplified/candle.csv  train\_simplified/fan.csv  train\_simplified/fork.csv | train\_simplified/fan.csv  train\_simplified/hat.csv  train\_simplified/house.csv |

**After Data Preprocessing -**

shuffled\_data/chunk0.csv.gz

shuffled\_data/chunk1csv.gz

shuffled\_data/chunk2.csv.gz

shuffled\_data/chunk3.csv.gz

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shuffled\_data/chunk9.csv.gz

**Model - /QuickDraw-Doodle-Recognition/model/**

my\_model\_weights\_v2.h5

my\_model\_v2.h5

**Modules - /QuickDraw-Doodle-Recognition/**

**DataPreprocessor.ipynb** - This module collects all the category specific files and creates the file chunks. Chunk8.csv and chunk9.csv are used for validation and test respectively.

**QuickDraw\_model\_building.ipynb** - This module trains the model on 12.5L of doodles and saves the best model using model.fit\_generator()

**QuickDraw\_using\_saved\_model.ipynb** - This module loads the existing model and performs predictions

**How to run?**

**Installation Specifications:**  
List of the important python libraries used in the project

|  |  |
| --- | --- |
| Python 3.6.5 numpy 1.14.3 pandas 0.23.0  Keras 2.2.4 Keras-Applications 1.0.6 Keras-Preprocessing 1.0.5 opencv-python 3.4.3.18 | matplotlib 2.2.2 seaborn 0.8.1 tensorflow 1.12.0 tensorflow-probability 0.5.0  simplification 0.3.9 tqdm 4.26.0 scikit-learn 0.19.1 |

To run:

1. Inside the directory, run.sh has the packages to be installed.
2. If you don't have brew then go to: <https://brew.sh/>, perform the steps then to verify, brew doctor. For opencv, you can either do brew install opencv or conda install cv2
3. The shuffled data is already available under data/ directory. If you still want to run, then run **DataPreprocessor.ipynb file**
4. If you want to train the complete model then play QuickDraw\_model\_building.ipynb. The graphs are plotted in this file as the model history was available here.
5. If you want to use the existing model we created, run QuickDraw\_using\_saved\_model.ipynb[**Recommended**]