Manual

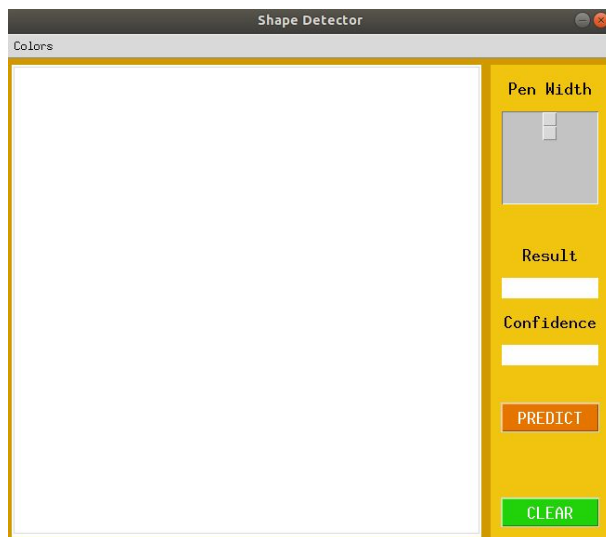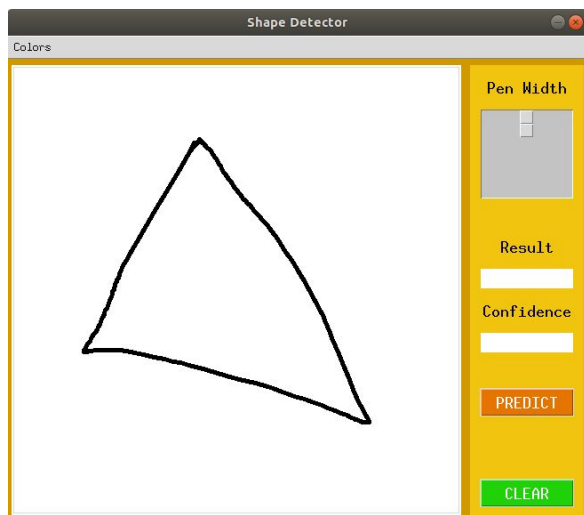## Basic Requirement :

1. Python Tkinter module
2. Python
3. Tensorflow
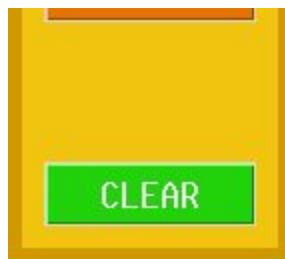4. Python PIL package

Commands :

1. Type "python app3.py"

This is the initial window you will see.

Draw a triangle or square or rectangle or circle with the mouse cursor.
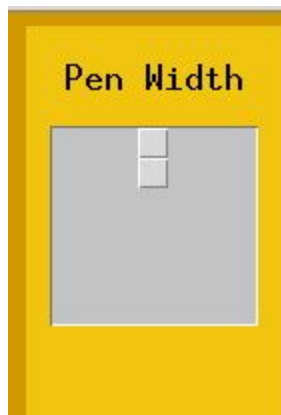
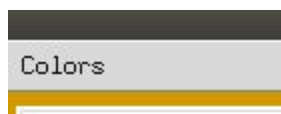Click the "PREDICT" button on the right side of the window to predict the shape.

Click the "CLEAR" button to clear the screen to redraw another shape.

Extra features :

You can change the pen's width.

Also change the background and brush color and play with the tool.

Note :

You may require a few extra python and tensorflow packages for running the program. I created a python conda environment for doing machine learning projects. So I'm providing the whole requirements of my conda environment. You may not need all of the packages but that's the specification of my computer so it's best to provide that if so if you encounter any issues you can check your specifications with mine.

Specifications of my machine learning environment:

absl-py==0.10.0
argon2-cffi @ file:///tmp/build/80754af9/argon2-cffi_1596828496740/work
astor==0.8.1
astroid==2.3.3
astunparse==1.6.3
attrs==19.3.0
backcall==0.2.0
bleach==3.1.5
cachetools==4.1.1
certifi==2020.4.5.1
cffi @ file:///tmp/build/80754af9/cffi_1596809862272/work
chardet==3.0.4
colorama==0.4.3
configparser==5.0.0
crayons==0.3.0
cycler==0.10.0
decorator==4.4.2
defusedxml==0.6.0
entrypoints==0.3
flatbuffers==1.12
gast==0.3.3
google-auth==1.20.1
google-auth-oauthlib==0.4.1
google-pasta==0.2.0
grpcio==1.32.0
h5py==2.10.0
idna==2.9
imageio==2.9.0
importlib-metadata @ file:///tmp/build/80754af9/importlib-metadata_1593446433964/work
imutils==0.5.3
ipykernel @
file:///tmp/build/80754af9/ipykernel_1596206602906/work/dist/ipykernel-5.3.4-py3-none-any.whl
ipython @ file:///tmp/build/80754af9/ipython_1593447367857/work

```
ipython-genutils==0.2.0
ipywidgets==7.5.1
isort==4.3.21
jedi @ file:///tmp/build/80754af9/jedi_1592841914522/work
Jinja2==2.11.2
joblib==0.16.0
jsonschema==3.2.0
jupyter==1.0.0
jupyter-client @ file:///tmp/build/80754af9/jupyter_client_1594826976318/work
jupyter-console==6.1.0
jupyter-core==4.6.3
Keras==2.2.4
Keras-Applications==1.0.8
Keras-Preprocessing==1.1.2
kiwisolver==1.2.0
lazy-object-proxy==1.4.3
Markdown==3.2.2
MarkupSafe==1.1.1
matplotlib==3.3.0
mccabe==0.6.1
mistune==0.8.4
nbconvert==5.6.1
nbformat==5.0.7
networkx==2.4
notebook @ file:///tmp/build/80754af9/notebook_1596838602091/work
numpy==1.19.2
oauthlib==3.1.0
opencv-contrib-python==4.4.0.40
opencv-python==4.2.0.34
opt-einsum==3.3.0
packaging==20.4
pandas==1.1.0
pandocfilters==1.4.2
parso==0.7.0
pexpect==4.8.0
pickleshare==0.7.5
Pillow==7.1.2
progressbar2==3.51.4
prometheus-client==0.8.0
prompt-toolkit==3.0.5
protobuf==3.13.0
ptyprocess==0.6.0
pyasn1==0.4.8
pyasn1-modules==0.2.8
```

```
pycparser @ file:///tmp/build/80754af9/pycparser_1594388511720/work
pygame==1.9.6
Pygments==2.6.1
pylint==2.4.4
pyparsing==2.4.7
pyrsistent==0.16.0
pytesseract==0.3.4
python-dateutil==2.8.1
python-utils==2.4.0
pytz==2020.1
PyWavelets==1.1.1
PyYAML==5.3.1
pyzmq==19.0.1
qtconsole @ file:///tmp/build/80754af9/qtconsole_1592848611704/work
QtPy==1.9.0
requests==2.23.0
requests-oauthlib==1.3.0
rsa==4.6
scikit-image==0.17.2
scikit-learn==0.23.2
scipy==1.4.1
seaborn==0.10.1
Send2Trash==1.5.0
six==1.15.0
sklearn==0.0
SpeechRecognition==3.8.1
tb-nightly==2.4.0a20201024
tensorboard==1.12.2
tensorboard-plugin-wit==1.7.0
tensorflow-estimator==2.3.0
tensorflow-gpu==1.12.0
termcolor==1.1.0
terminado==0.8.3
testpath==0.4.4
tf-estimator-nightly==2.4.0.dev2020102301
tf-nightly==2.5.0.dev20201024
threadpoolctl==2.1.0
tifffile==2020.7.24
tornado==6.0.4
tqdm==4.50.2
traitlets==4.3.3
typed-ast==1.4.1
typing-extensions==3.7.4.3
urllib3==1.25.9
```

virtualenv==16.7.9
wcwidth @ file:///tmp/build/80754af9/wcwidth_1593447189090/work
webencodings==0.5.1
Werkzeug==1.0.1
widgetsnbextension==3.5.1
wrapt==1.12.1
zipp==3.1.0

If you face any issues and don't know what to do, create a conda environment and then run the following commands so that the environment duplicates my environment. Go to the file path and open terminal and write this

1. "pip install -r requirements.txt"

This will duplicate my environment and then you will be able to fully run the "app3.py" file

[some of the versions might turn obsolete and so if any prompt suggest you to install the latest versions just install those]