These are the set of commands used in all three devices:

* Windows
  + Jupyter notebook and python 3.6 was used to train models from scratch using keras framework with tensorflow backend (CUDA enabled)
  + The model generated can be found in the model folder of this repository
  + SSH was done to the linux machine running ubuntu to execute git related commands
* Linux(Ubuntu)
  + The vitis-ai-tutorials was cloned from the following git repository to convert keras model into elf models. <https://github.com/Xilinx/Vitis-AI-Tutorials.git>
  + Commands run inside the repository:
    - ./docker\_run.sh xilinx/vitis-ai:latest (to start the docker)
    - source ./0\_setenv.sh (initializing many of the parameters for the specific model)
    - source ./2\_keras2tf.sh (starting the keras to tensorflow conversion)
    - source ./4\_quant.sh (quantization of the images placed inside the calib\_images folder)
      * A custom datagen.py script was written to convert the calib\_images into proper format for the model input shape
    - source ./6\_compile.sh ( compiling the model with path to the dcf and arch json file inside the DOUCZDX8G path)
  + The above command must have generated an elf file if executed properly.
* Ultra96V2 (Petalinux)
  + The DPU runner was used to utilise the built elf model. Threads were used for the static version and no threads were utilised for the live feed version
  + The target board being Ultra96V2 obtained the code via git function. The original git repo with all the commits can be find here : <https://github.com/version0chiro/DPU_Covid_19_detection_target>
  + The repository has a run.py script that uses the dpu to run the elf model with xrays provided.
  + We have tested two of our own data that was not feed into the model, both of them were covid-19 positive and the model returned accurate results.