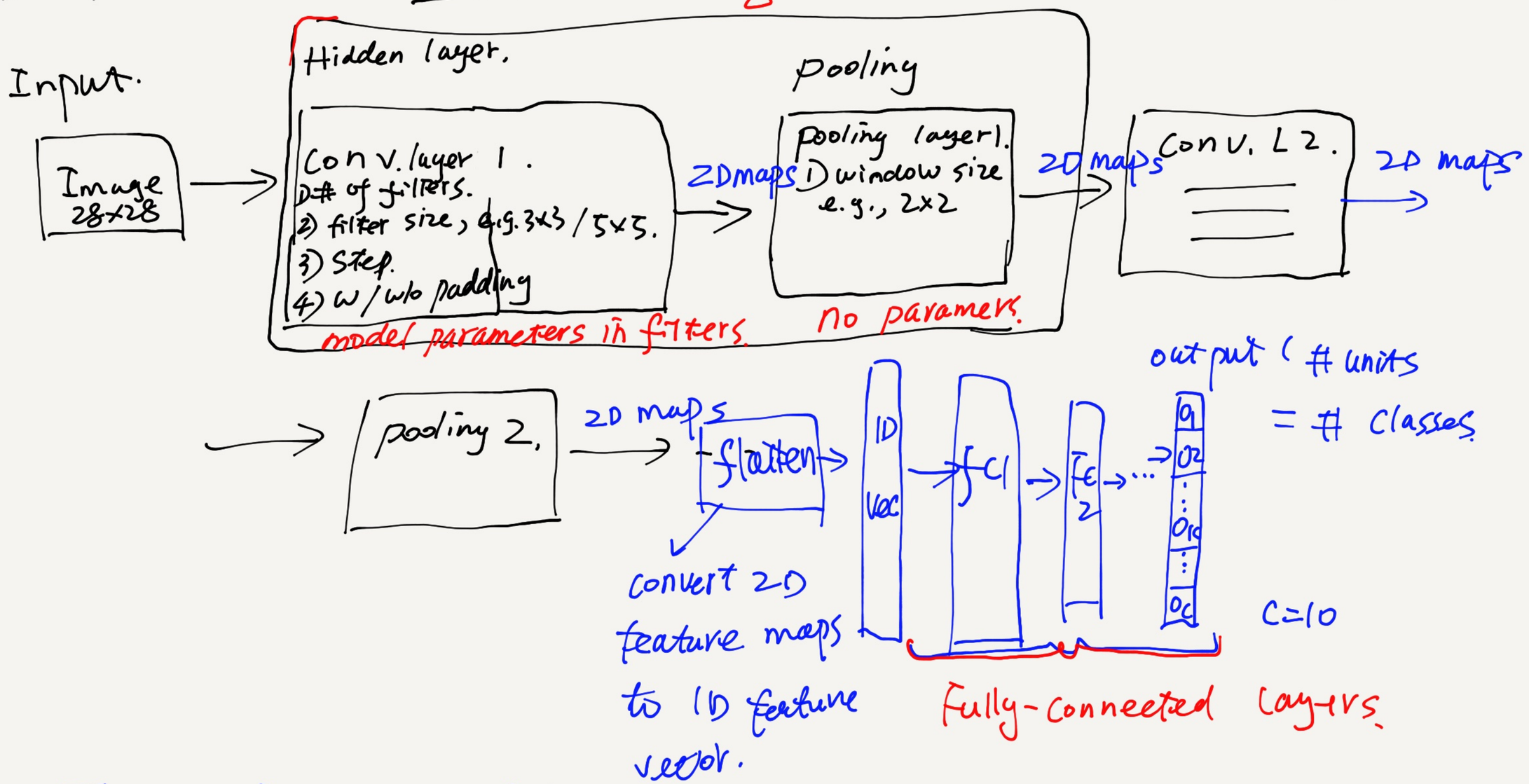
CNN architectures

1. Build CNNs for image classification. [image → class label.]

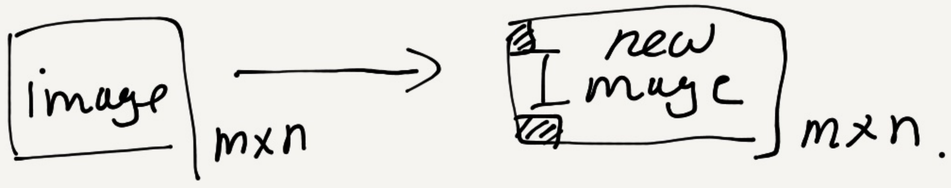


Two major components:

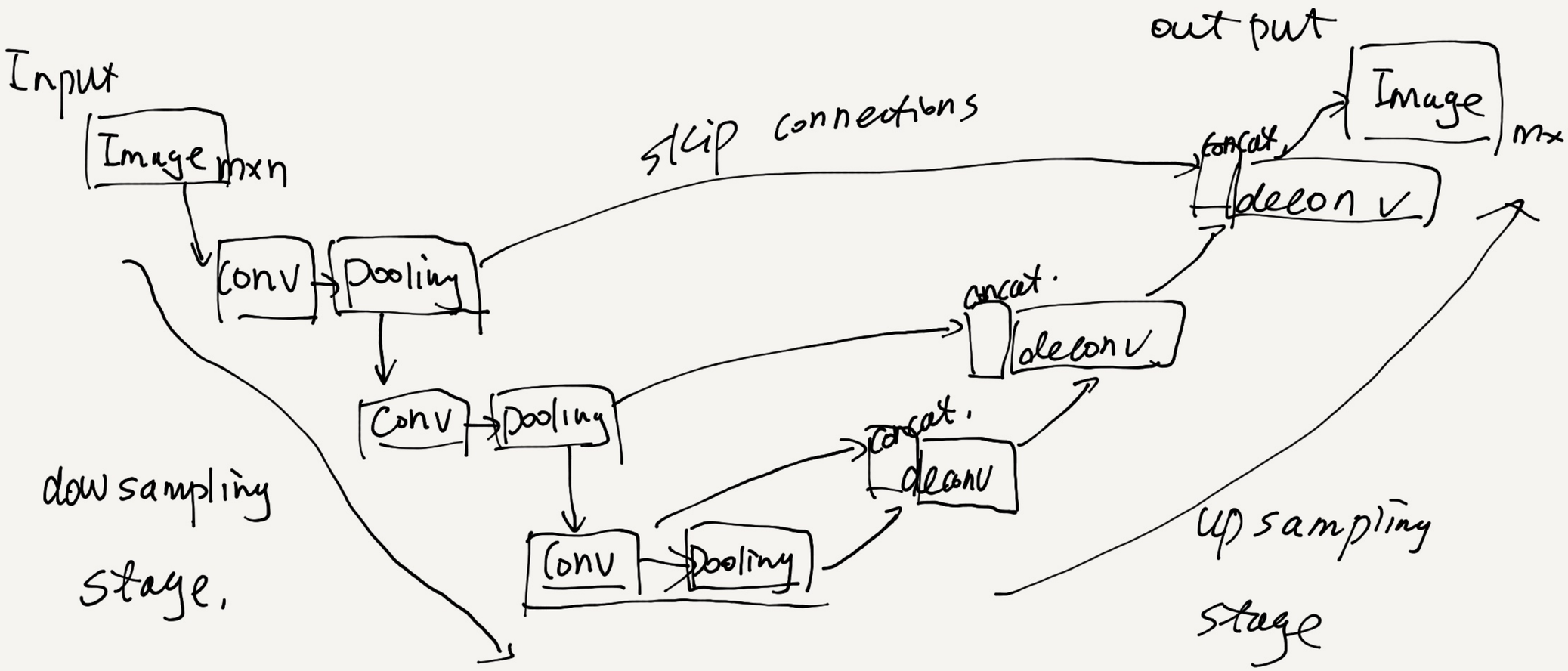
1. Convolutional layers including all convolution and pooling layers which learn/extract feature maps from the raw data.
2. Fully-connected layers.

2. Build CNNs for **Dense prediction**, e.g., image segmentation, image generation, image denoising, ...

Input

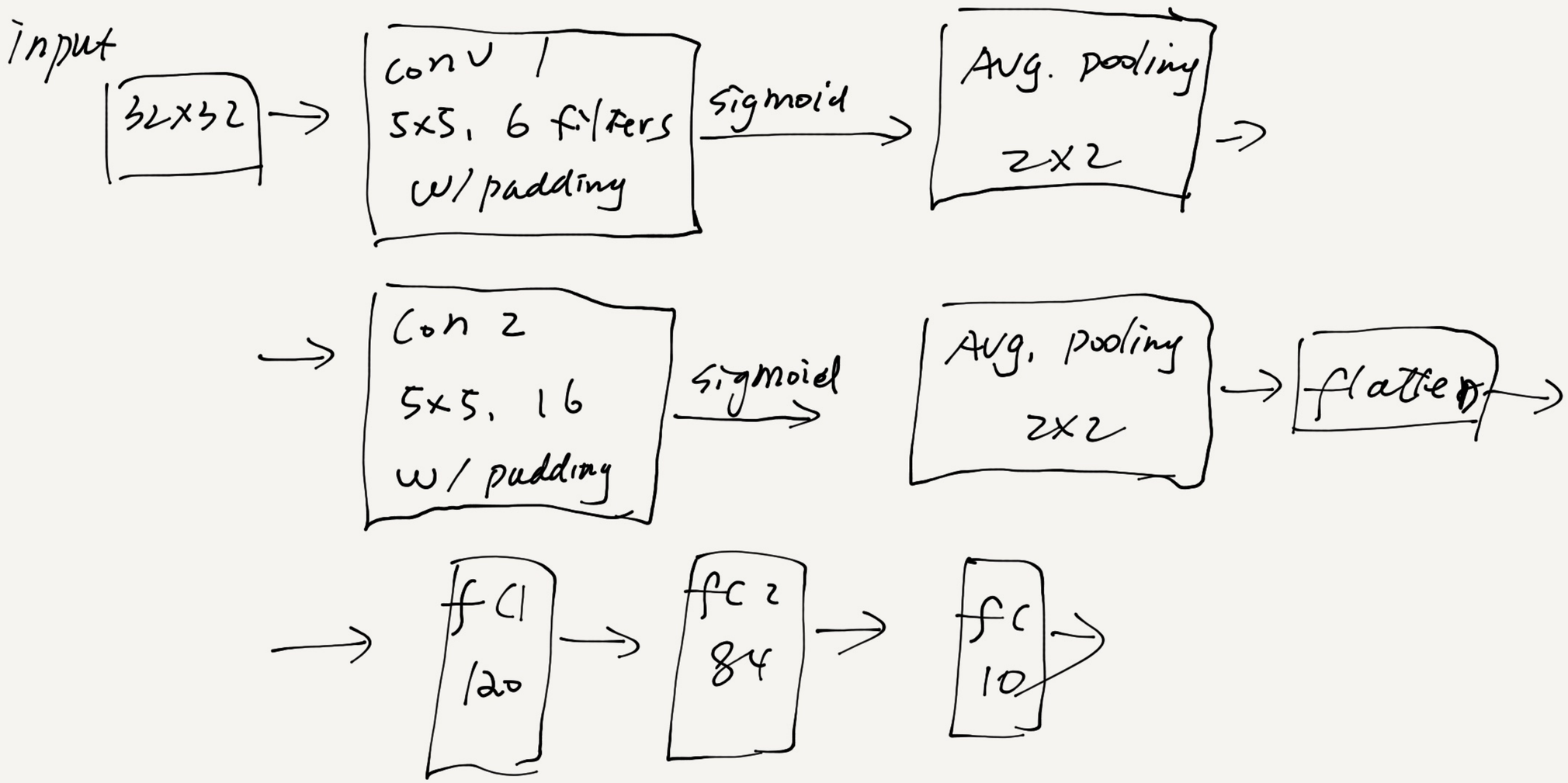


U-Net architecture.



3. Handcrafted CNNs

① LeNet-5 (Lecun Yan. 1998)

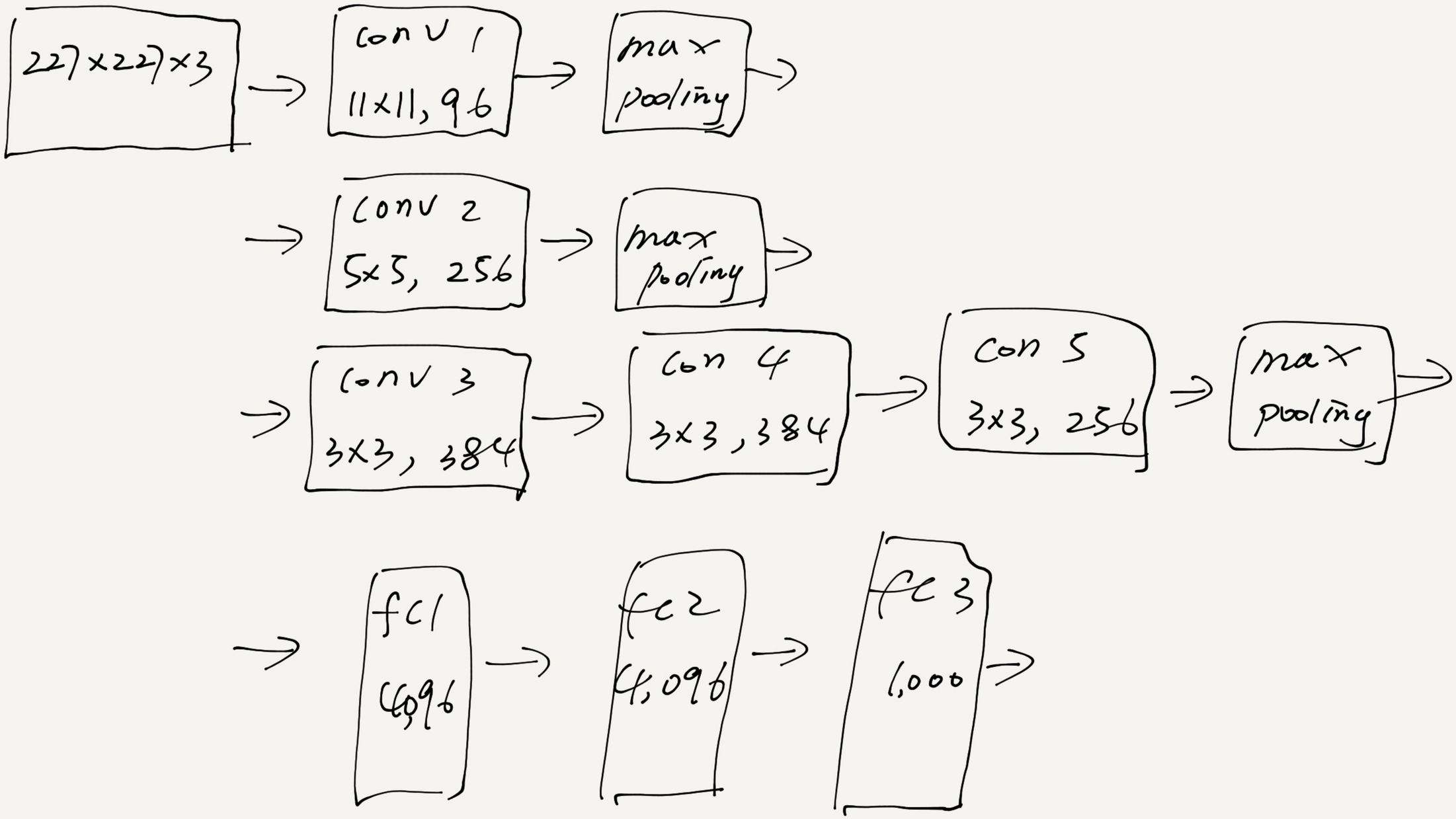


1) 2 conv layers + 3 fc layers.

2) 60k model parameters

3) sigmoid activation.

② AlexNet : 2012

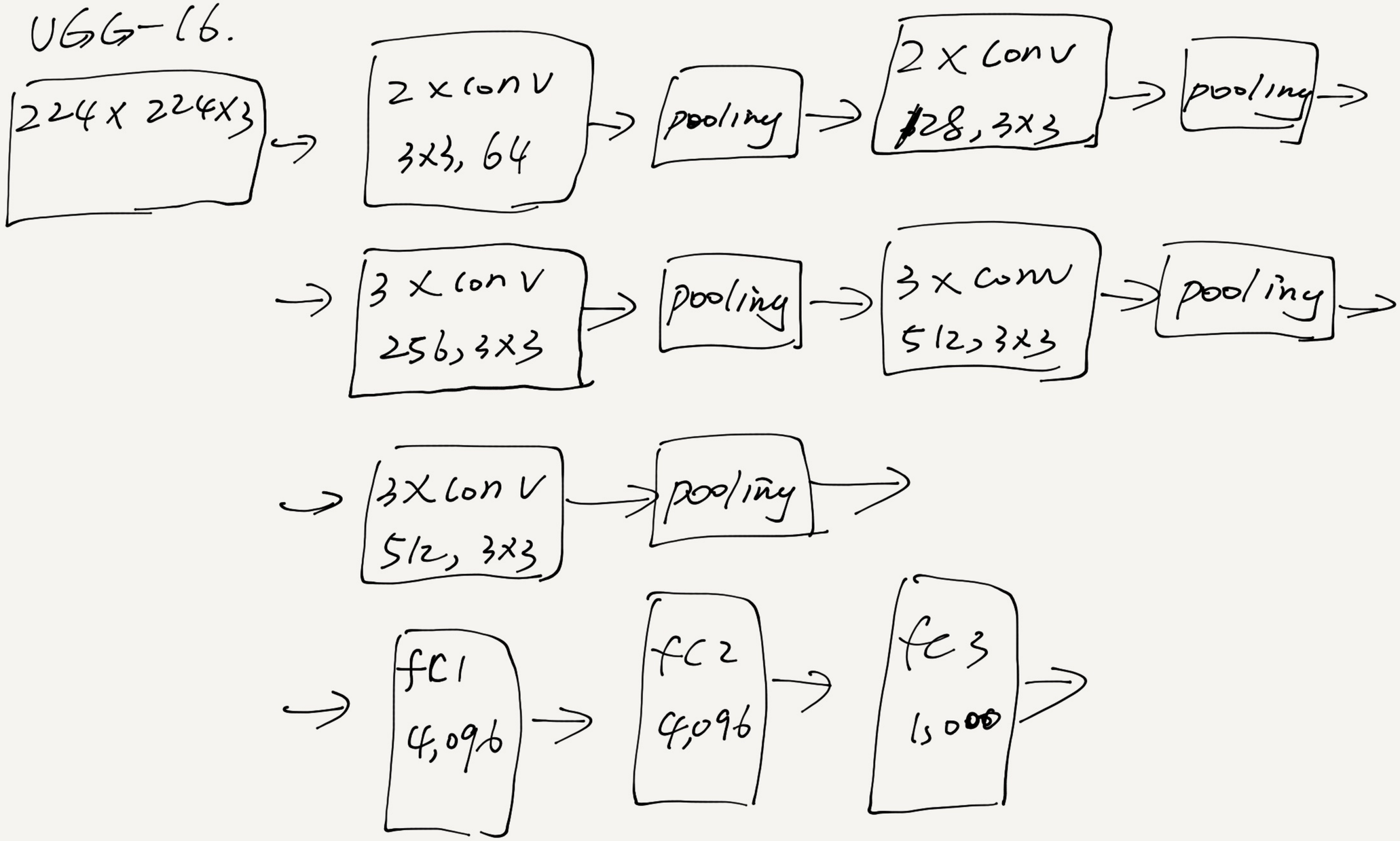


1) 60 million parameters.

2) Relu activation.

3) padding applied.

③ VGG-16.



1) 13 conv (3x3 filters) + 3 fc layers.

2) 138 million model parameters