Assignment 5 (5 points)

layers.py

TODO1:

```
pad = conv_param['pad']
stride = conv_param['stride']

N, C, H, W = x.shape
F, _, HH, WW = w.shape
H_filter = (H + 2*pad - HH)/stride + 1
W_filter = (W + 2*pad - WW)/stride + 1

out = np.zeros((N, F, H_filter, W_filter))

x = np.pad(x, pad_width=((0,), (0,), (pad,), (pad,)), mode='constant', constant_values=0)

for i in range(N):
  for z in range(F):
    for j in range(H_filter):
      for k in range(W_filter):
        out[i,z,j,k] = np.sum(x[i,:,j*stride:(j*stride+HH),k*stride:(k*stride+WW)]*w[z,:,:,:])+b[z]
```

TODO2:

```
N, C, H, W = x.shape
pool_H = pool_param['pool_height']
pool_W = pool_param['pool_width']
stride = pool_param['stride']
H_filter = (H-pool_H)/stride + 1
W_filter = (W-pool_W)/stride + 1

out = np.zeros((N,C,H_filter,W_filter))

for j in range(H_filter):
  for k in range(W_filter):
    out[:,:,j,k] = x[:,:,j*stride:(j*stride+pool_H),k*stride:(k*stride+pool_W)].max(axis=(2,3))
```