

September, 2026
SSP100 How Computers See Fall 2026
In class exercise

Start with this image:

```
10 10 10 10 10 10 10 10 10 10 10 10
10 10 10 10 10 10 10 10 10 10 10 10
10 10 40 40 40 50 60 60 10 10 10 10
10 10 40 40 40 50 60 60 10 10 10 10
10 10 40 40 40 50 60 60 10 10 10 10
10 10 40 40 10 10 10 10 10 10 10 10
10 10 40 10 10 10 10 10 10 10 10 10
```

which looks like this visually:



this is a 7 rows x 12 columns image

convolve that with a 3x3 filter will
produce a smaller resulting image (5 rows, 10 columns)

do edge detection with this horizontal edge filter which
is the Prewitt filter

```
1 1 1
0 0 0
-1 -1 -1
```

use a threshold of 70 to determine if the pixel is an edge or not
(that is if the abs of the result is > 70 it is an edge
otherwise it is not) In the output image, 0 represents not edge and
255 represents edge.

Note: once you start the computations should speed up (also there are
many 3x3 areas in the image that are identical)