The Book of Fortresses

Basic Labeling of Cartographic Elements, ~500 present

1600 Braun Lisbon

Mapping History categorizes, labels, digitizes, and reconstructs 16th & 17th century maps & atlases of London and Lisbon

Increased Detail and Variety of Elements, ~4100 Present

MAPPING HISTORY

3D representation with Houdini

1616 Visscher London

Highly Specific Labeling of Cartographic Elements

Categorizing an Extensive Range of Structures & Iconography

---

```python
# method to check for image overlap
def match(big, small):
    # convert images to arrays
    arr_h = np.asarray(big) # forms pixel array of container
    arr_n = np.asarray(small) # forms pixel array of label
    arr_h = np.where(arr_h > 0, 1, arr_h) # set any values that are not 0 in container array to 1 for easy comparison
    arr_n = np.where(arr_n > 0, 1, arr_n) # set any values that are not 0 in label array to 1 for easy comparison
    freq_h = np.count_nonzero(arr_h == 1) # container pixels
    freq_n = np.count_nonzero(arr_n == 1) # label pixels
    print(freq_h, freq_n)
    print(freq_n)
    print(freq_n)
    print(freq_n)
    print(freq_n)
```

---