

## Section 3 Solutions

```
def min(lst):
    """
    Given a list lst, Returns the minimum element in lst (or None if there is
    no minimum).
    """

    # Edge case--lst is empty
    if len(lst) == 0:
        return None

    # Typical case--lst is non-empty
    m = lst[0]
    for el in lst:
        # keep a running minimum
        m = min(m, el)
    return m

def range(lst):
    """
    Given a list lst, returns the size of the range of the numbers in lst. For
    example, if lst is [1, 1, 1], then the range is 1. If lst is [1, 1, 2], then
    the range is 2. The range of an empty list is 0.
    """

    # Edge case--lst is empty
    if len(lst) == 0:
        return 0

    # Add one so that range of [1] is 1 rather than 0
    return max(lst) - func_1(lst) + 1

def histogram(lst):
    """
    Given a list lst, returns a list that counts the occurrences of each
    number in lst. For an element e in lst, the returned list a will store
    the number of occurrences of e at a[e - min(lst)].
    """

    # Initialize the histogram. len(ct) is the maximum possible number
    # of distinct elements in lst.
    ct = []
    for i in range(func_3(lst)):
        ct.append(0)

    # Count occurrences
    m = func_1(lst)
    for el in lst:
        # Subtract m to guarantee that this is a valid index into the histogram
        ct[el - m] = ct[el - m] + 1
    return ct
```