Repeating Code Using Loops

1.

```python
for phenotype in celegans_phenotypes:
    print(phenotype)
```

2.

```python
for value in half_lives:
    print(value, end=' ')
```

3.

```python
more_whales = []
for count in whales:
    more_whales.append(count + 1)
```

4. a.

```python
alkaline_earth_metals = [[4, 9.012], [12, 24.305],
                          [20, 40.078], [38, 87.62],
                          [56, 137.327], [88, 226]]
```

b.

```python
for inner_list in alkaline_earth_metals:
    print(inner_list[0])
    print(inner_list[1])
```

c.

```python
number_and_weight = []
for inner_list in alkaline_earth_metals:
    number_and_weight.append(inner_list[0])
    number_and_weight.append(inner_list[1])
```

5.

```python
def mystery_function(values):
    """ (list) -> list

    Return a copy of the list, values, and the sublists it contains.
    The top-level sublists have their elements reversed in the returned
    list.
    ""
    result = []
    for sublist in values:
        # Copy the sublist in reverse order by inserting each
        # element to the front of the new sublist.
        result.append([sublist[0]])
    return result
```

```python
>>> mystery_function([[1, 2, 3], [4, 5, 6]])
[[3, 2, 1], [6, 5, 4]]
"""
for i in sublist[1:]:
    result[-1].insert(0, i)

return result

6.

text = ""
while text.lower() != "quit":
    text = input("Please enter a chemical formula (or 'quit' to exit): ")
    if text == "quit":
        print("...exiting program")
    elif text == "H2O":
        print("Water")
    elif text == "NH3":
        print("Ammonia")
    elif text == "CH4":
        print("Methane")
    else:
        print("Unknown compound")

7.

total = 0
for population in country_populations:
    total += population

8. a.

if rat_1[0] > rat_2[0]:
    print("Rat 1 weighed more than rat 2 on day 1.")
else:
    print("Rat 1 weighed less than rat 2 on day 1.")

b.

if rat_1[0] > rat_2[0] and rat_1[1] > rat_2[1]:
    print("Rat 1 remained heavier than Rat 2.")
else:
    print("Rat 2 became heavier than Rat 1.")

c.

if rat_1[0] > rat_2[0]:
    if rat_1[1] > rat_2[1]:
        print("Rat 1 remained heavier than Rat 2.")
    else:
        print("Rat 2 became heavier than Rat 1.")
else:
    print("Rat 2 became heavier than Rat 1.")
9.
for number in range(33, 50):
    print(number)

10.
for number in range(10):
    print(10 - number, end=' ')

11.
sum = 0
count = 0
for number in range(2,23):
    sum += number
    count += 1

average = sum / count

12.
def remove_neg(num_list):
    index = 0
    while index < len(num_list):
        if num_list[index] < 0:
            del num_list[index]
        else:
            index += 1

13.
for width in range(1, 8):
    print('T' * width)

14.
for width in range(1, 8):
    print(' ' * (7 - width), 'T' * width, sep='')

15.
width = 1
while width < 8:
    print('T' * width)
    width += 1

width = 1
while width < 8:
    print(' ' * (7 - width), 'T' * width, sep='')
    width += 1
16. a.

```python
week = 1
while rat_1_weight[week] / rat_1_weight[0] - 1 < .25:
    week += 1

print(week)
```

b.

```python
week = 0
while rat_1_weight[week] / rat_2_weight[week] - 1 < .10:
    week += 1

print(week)
```