

Vector sequence:

```
NNNNNNNNNNNNNNNNNNNNNNNGGCTGTGGCNAGTACTGCGACCTCCTAGCAAACCTGGGGCACAGATAATC
GATAGTTTGTGTTGAATGAGGCTTCAGTACTTTACAGAATCGTTGCCTGCACATCTTGGANCACTTGCTGG
GATTACTTCTTCAGGTTAACCCAACAGAAGGCTCGAGAAGGTATATTGCTGTTGACAGTGAGCGCGTAGT
GTGATGTGTCTGAACTTAGTGAAGCCNNNNNATGTAANNTTCAGACACATCACACTACATGCCTACTGNC
TCGGAATTCAAGGGGCTACTTTANGGNNNCAATTATNNTTGTTNNNNNAAAANNTGAANANCNTTGNNNN
TNNNCTTTGNNANNNTTTTNNNNANNGCNNNNNNNNNAAANNGGGNANAAANTNAANNNNNNTTTTTTTCA
NNNGNANNANNANNNNGNCNNGNNNNNNNNNNCNNNNNNNNNGNNTNGNNGNNNNNNNGNNNNNNCNNNNN
NTNANNNNNNNNNNGNNNNNANNNNNNNNNNNNTNNNNNNNNNNNNNNNNNNNNNTNNNNNNCCNNGGNN
NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNGNNNNNNNNNNNNNNNNNNNANNNNN
NNCNNNNNNNNNTNNNNNNNNNNNNNNNNNNNTNNNNNNNNNNNNNNNNNNNNNNNGANNNNNGNNNNN
NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
```

Short hairpin: GTAGTGTGATGTGTCTGAACT

Build a python script named sequence_locator.py saved to python_scripts folder that:

1. assigns the vector and short-hairpin sequences to variables – use these variables from here on
(Copy and paste the vector sequence into a text editor and then paste the sequence into terminal. The PDF does not format the sequence correctly.)

2. counts the number of occurrences of the short-hairpin sequence within the vector sequence

3. finds the start position of the short-hairpin sequence within the vector sequence

4. finds the end position of the short-hairpin sequence within the vector sequence (this will probably require two steps and some math)

5. Uses the start position and end position of the short-hairpin to find the sequence within the vector that supposedly matches

Hint: run each step interactively until you can get it to work. Save things that work to your script

Hint: you will want to assign each steps output to a variable

Expected output for this homework assignment included in powerpoint tutorial.