

CSC / BIO 310
Bioinformatics
Instructor: Dr. Laurie J. Heyer
Assignment #1
Due Tuesday, Jan 22

Write a perl program that contains the following line:
`$DNA = 'AcGTtTAtGcgaTtaGAcGTaGctAtCGaT';`

Write comments in your file to indicate the solutions to each of the following problems. You should also include the number of each problem in the print statement.

Write a comment at the top of the program containing the five lines at the top of this assignment page, in addition to the names of people in your programming team.

You may not consult with anyone outside of your programming team, other than me.

In addition to the accuracy of your solutions, you will be graded on the readability of your code and your output, and the use of good programming practices as discussed in the text and in class.

1. Print the above DNA sequence as is.
2. Use the `tr` command to toggle the case of the DNA sequence, and print the resulting sequence.
3. Assuming the given sequence is the template strand of a sequence that will be transcribed, use an appropriate perl command to create the corresponding RNA sequence, and print the RNA in upper case.
4. Considering the start codon ATG to be the first codon in the coding sequence, print out the fourth codon.
5. Use the `tr` command to determine the GC content of this DNA sequence, and print out the result as a percentage. You will need to look up the appropriate (but rather obvious) commands in Chapter 5.