CISC471 - Homework 4

Due Friday, March 12, 2021 at **11:59PM EST**

Submission

Please submit the programming and theory as multiple files in OnQ. **Using a zip file will result in a mark of zero.** The programming component should be submitted as a Python3 program with the main file `main.py` and any other python files you wish. The theory component should be submitted as a single PDF file. These should be done in groups of either one or two people. In your PDF file, you *must* have each student name and student number present at the beginning of the file.

Failure to follow these instructions will result in a mark of zero. Late assignments are not accepted and will result in a mark of zero. Only the best 4 of 6 assignments will be used for your final grade.

E.g. Directory structure:

- OnQ Submission Directory:
    - `hw4.pdf`
    - `main.py`
    - `main_test.py`
    - ...

1 Programming - 4 points

Write a program in Python and verify that it works on the sample data (using the on-line Rosalind platform). For each problem, add three unit tests using the Rosalind sample data, and some of your own. There must be at least one positive and one negative unit test.

Problems

1. Lesson 4.2: Translate an RNA String into an Amino Acid String http://rosalind.info/problems/ba4a/ in `rna_translate.py` with unit tests in `rna_translate_unit.py`.

2 Theory - 4 points

1. Lesson 4.2: How could a bacterium produce a peptide that is not encoded by the bacterium's genome?   / **2**

2. Lesson 4.4: How many subpeptides does a cyclic peptide of length n have?   / **2**