CS F364
Design and Analysis of Algorithms
BITS Pilani, Hyderabad Campus
Assignment -2
Due Date : 28th April 2024 (by Midnight)
Total Marks: 30 (weightage : 10%)

Objective: In this assignment, you have to implement the dynamic programming based algorithm for the RNA folding problem

Task 1: To implement the Dynamic Programming Algorithm to predict the secondary structure of a RNA. Please note that you should not implement any other algorithm but the one explained in class. [10]

Task 2: Run your algorithm on at least 5 different RNA sequences. You can use the data available on https://rnacentral.org/. Compare your algorithm's result with the actual secondary structure provided on this website. [10]

Task 3: Record your experimental results along with the documentation of algorithm. Develop HTML pages to document the results produced by your code, issues in coding, general discussion on the algorithm, timing analysis, references, and any other remarks. [7]

Task 8: Code documentation. [3]

Extra Credit: If you can visualize your secondary structure in 2D using your own algorithm and code, you will earn an extra credit of 3 marks.

General Instructions:

1. This assignment should be done in groups. Groups of assignment-1 should not change.
2. Design the classes and headers properly. The code should be well indented, well commented and easily readable. Points will be deducted for an unorganized and uncommented code.
3. The assignment has to be coded completely in C/C++/Java.
4. The name of the file should be id1_DAA_A2.zip or rar file, where id1 refers to the ID of only one member of the group.
5. There should be only one submission from a group.
6. You can discuss with your friends but refrain from copying the code and submitting. Copied codes will receive no credits for the entire assignment.
7. You have to demo the code to the instructor/TA on a scheduled date and timing after submission.
8. **During Demo all members must be present. Anybody not present will be awarded zero credit.**