Advanced Algorithms
UE20CS311

Assignment 3: Fast Fourier Transforms

Introduction

The goal of this assignment is to give a hands-on session to the students to implement Fast Fourier Transform algorithm in C++

Submit the assignment here (https://forms.gle/yvYJkhUPAVPQa7g77)

Assignment

You are given an integer N and an array of N integers which will form the input for the fourier transforms.
Print the output after implementing the FFT function.

Note:

1. N is always a perfect power of 2.
2. Do not change the boilerplate code provided. You may create additional functions if required.
3. You are not allowed to include the **bits/stdc++.h** header file.
4. Any other header file provided by the GCC compiler is allowed.
5. Your code should be able to run on G++ compiler on Ubuntu.
6. You are allowed to and recommended to use the Standard Template Library provided by C++
    a. For reference, you can use sites like http://www.cppreference.com/ and http://www.cplusplus.com/

Example:
Input:
4
347 60 499 183
Output:
(347,0) (499,0) (60,0) (183,0)

Constraints:

1. N is a perfect power of 2.
2. 1 <= log2(N) <= 5.

Submission Details

1. Submission deadline is: **Oct 8, Saturday, 6 PM.**
2. You are meant to code only in C++.
3. This assignment will be evaluated for 10 marks but will be scaled down to a total of 2 marks in the final evaluation scheme.
4. Late submission will be accepted till 6 pm on Oct 10, Monday, for a penalty of 50%.

Doubts

The teaching assistants can be reached in the WhatsApp group or at the email ID **advancedalgos2022@gmail.com**.