Discuss why data structure is useful and important in programming. Use your own examples to explain what an array is, and when to use array. You are welcome to discuss problems encountered in your assignments while using arrays, and how you resolved them.

Data structures are useful because, they provide a way to, store, organize, and access, data. They are important for optimization and efficiencies of running programs, processes.

An array is a quantity, stated at time of instantiation, of memory that is set aside to store a specific type of data. That data is defined at the time of declaration.

A multi-dimensional array is an array that has an array within each element and are of the same size/length.

Example: int[][] foo = new int[2][2]; 🡪 an array with 2 rows and 2 columns that stores int values

A jagged array is an array that has an array within each element, but of different sizes/lengths

Example int[][] bar = new int[3][]; int[] one = {3,4,5}; int[] two = {3,4,5,6}; int[] three = {1};

int[0] = one;

int[1] = two;

int[2] = three;