

## CSE 115L: Programming Language I Lab (Section: 06)

Spring 2020

### Lab-11 Tasks (Structures)

---

1. Create a structure named Student with the following components and appropriate data types: Name, ID, CGPA
  - i. Create an Array of Students of size three and take user input to fill the array.
  - ii. Now find the student with the least CGPA and display his or her Name, ID and CGPA.
2. Create a structure named Player with the following components and appropriate data types: Name, Age, Country, Ranking
  - I. Create an Array of Players of size n (user input) and take user input to fill the array.
  - II. Now prompt the user to enter a player's name. Search the whole array and print the corresponding age, country and ranking if the name is found. Print "not found" otherwise.
3. Write a program to add two complex numbers using structure. Create a structure called Complex with two components, real number and imaginary number. Write a function that takes two structure variables as input, then return the sum of the two complex numbers.
4. Manhattan distance between two points  $P(x_1, y_1)$  and  $Q(x_2, y_2)$  is defined as follows:  
 $M.D. = |x_1 - x_2| + |y_1 - y_2|$ 
  - (i) Write down a structure that will model a point in 2-dimensional space. Using the above structure, take input of two locations and calculate Manhattan distance between them.