

Practice problems on structure

1. Do the followings in the same program.

(a) Write down a structure named **Point** that will be used to store a, y coordinates of a **point** in a 2-dimensional space.

(b) Using the **Point** structure take input of two points and calculate Manhattan distance between them. Manhattan distance (M.D.) between two points P(x1, y1) and Q(x2, y2) is defined as follows:

$$\text{M.D.} = |x1 - x2| + |y1 - y2|$$

2. . Do the followings in the same program.

(a) Write down a structure named **Time** that will be used to store hour and minute of a city's time in 24-hour clock.

(b) Using the **Time** structure take input of two city's time in your main function and calculate time difference between them.

Sample Input/output:

Enter Time of the first city

Hour: 10

Minute: 20

Enter Time of the second city

Hour: 9

Minute: 50

Time difference: 0 hours 30 minutes.

3. Do the followings in the same program.

(a) Write down a structure named **Point** that will be used to store a, y coordinates of a **point** in a 2-dimensional space.

(b) Write down a function **calDist** that will that will accept two **Point** variables as parameters and return the Euclidian distance between them. Euclidian distance (E.D.) between two points P(x1, y1) and Q(x2, y2) is defined as follows:

$$E.D. = \sqrt{(x1 - x2)^2 + (y1 - y2)^2}$$

(c) Using the **Point** structure take input of two points and calculate Euclidian distance between them using the above calDist function. Finally print the distance.