UNITED INTERNATIONAL UNIVERSITY
DSA1 LAB MID EXAMINATION

Create 3 separate CPP files/Java classes for solving each problem.

Q1. Take a number N as input. Take 2 arrays of size N name Weight and Height as input from the user. Create a new array of size N called BMI. Calculate BMI using the formula BMI = Weight/Height, and then sort the BMI array using any sorting algorithm you prefer. Print the sorted array. **(3 Marks)**

Q2. Take a number N as input. Take an array of size N as input from the user. Write a function named SearchPair, which will take the array as input and two integers A and B as input. Using any search method you like, the function will search for the element A and B inside the array. If both the elements are found, print "PAIR MATCHED". If only one of the elements is found, print "ONLY ME". If none of the elements are found, print "BETTER LUCK NEXT TIME". **(3 Marks)**

Q3. Create a singly linked list implementation. Your code will contain 3 functions, PrintList, InsertAtPos, DeleteAtPos. PrintList will take the head pointer as a parameter and print out the entire linked list. InsertAtPos will take three parameters: the head pointer, the item to be inserted, the position at which the item is to be inserted. For example: InsertAtPos(head,30,1) will insert 30 at the start of the list. DeleteAtPos will take 2 parameters, the head pointer and the position at which the element is to be deleted. Both functions will return the head pointer of the edited list. **(1 + 4 + 4 Marks)**