Lab 6

October 13, 2021

For all questoins, please use the pointer notation. That is, please donot use $arr[i]$ to access to the location i of the array in the functions that you are supposed to write. The aim of this lab is to learn about pointers. And it will be helpful for you to write programs using the pointer notation.

1. Minimum using pointers

   You are given an array. You have to find the minimum of the array using the function as follows:

```c
#include<stdio.h>
int getMinimum( int *p, int n)
{
// write your code here
}

int main()
{
  int arr [1000];
  int min,n;
  // get your array from the Input
  min = getMinimum( arr,n ) ;
  // print the minimum
  return 0;
}
```

   Input: The first input line contain an integer $n (1 \leq n \leq 1000)$. In the second line, n numbers are separated by a space (all numbers are ≤ 1000).

   Output: The smallest element in the array.

   Input : 5
   3 4 1 2 5
   Output : 1

2. Insertion Sort using pointers

   Sort an array using Insertion Sort by calling the function as follows:

```c
#include<stdio.h>
void InsertionSort(int *p, int n)
{
   //write your code here
}

int main()
{
    int arr[1000];
    int n;
    // get your array from the Input

    InsertionSort(arr,n) ;
    //print the Sorted Array
    return 0;
}
```

Input: The first input line contains integer $n (1 \leq n \leq 1000)$. The second line n numbers seperated by a space (all numbers are ≤ 1000).

Output: n numbers written in increasing order separated by a space.

Input : 5
1 2 5 3 4
Output : 1 2 3 4 5

3. Structure

You are given a data of employees in your organisation. Add all the elements using a ”struture”. At the end, print the name of the employee whose salary is the highest. Use the following function to do this job:

```
#include<stdio.h>
struct employee
{
    //write the structure definition here
};

char* printMaximum(struct employee *p, int n)
{
   //find the name of the employee and print it
}


int main()
{
    struct employee e[1000];
    int n;

    // get your input into the structure

    printMaximum(e,n) ;
    return 0;
}
```

Input: The first line contains an integer n. The next $2n$ lines contains the name and salary of the employee on seperate lines. Output: Print the name of the employee that has the highest salary.

Constraints: $n < 1000$. All numbers are ≤ 1000. The name of the employee is atmost of size 100.

Sample Input

Input : 3
Kiran
2
Anshuman
100
Vinod
6
Output : Anshuman