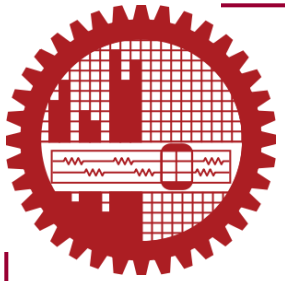


ICT 5101

Lecture 6

Dr. Hossen A Mustafa

Pointers

- A regular variable has 2 properties:
  - A value, and
  - An address
  - int x
  - x = 100
    - x denotes the value of the variable x, i.e., 100
    - &x denotes the address of the variable x in memory

Pointers

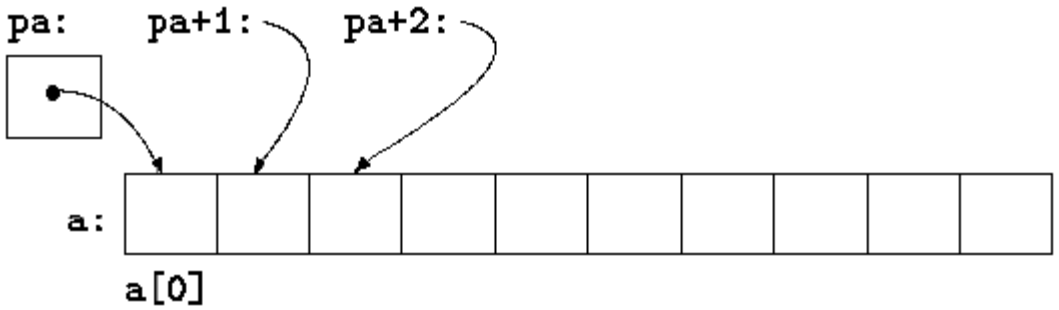
- A pointer variable is a spatial type of variable which holds the address of another variable as value:
  - int x
  - int *p
  - p = &x;
    - p denotes the value which is address of variable x
    - *p denotes the value of the variable pointed to by p, i.e., the value of x
    - *p = 10 is same as x = 10
    - p is analogous to &x

Pointers

```
int x = 1, y = 2, z[10];
int *ip; /* ip is a pointer to int */
ip = &x; /* ip now points to x */
y = *ip; /* y is now 1 */
*ip = 0; /* x is now 0 */
ip = &z[0]; /* ip now points to z[0] */
*ip = 20; /* z[0] is now 0 */
```

Pointers and Arrays

- Pointers can be used to traverse an array
- int a[10]
- int *pa;
- ps = a;
- *(pa+1) is a[1]



Homework Assignment

- Write a program named hwassignment2.c
- The program should take 10 numbers as input and save those in an array.
- The program should use loop to sort the array in high-to-low order.
- The program should output the array.
- Example:
  - Input = 30 1 5 45 6 99 33 12 19 24
  - Output: 99 45 33 30 24 19 12 6 5 1

- Deadline: 11/07/17