

Introduction to Computer Science Lab II

CIEE102, Spring 2021

Lab 2

1. Assume a C program has the following statements:

```
int b[5] = { 10, 20, 30, 40, 50};
```

```
int *bptr = &b[0];
```

What are values of the following expressions?

(a) `*(bptr + 3)`, (b) `&b[3]`, (c) `*(b+3)`, (d) `bptr[1]`

Please answer these questions by using the results computed by your PC.

2. Write the following function:

```
void largest (int a[], int n, int *largest);
```

to find the largest integer stored in array a where a is an integer array, n is the number of elements in a, and largest is the pointer pointing to the largest element.

3. What do the following two functions do? Use your PC to find your answers.

```
void mys1 (char *s1, const char *s2)
{
    while (*s1 != '\0') { s1++;}
    for (; *s1 = *s2; s1++, s2++) {;}
}
```

```
int mys2(const char *s)
{
    int x;
    for(x = 0; *s != '\0'; s++) { x++;}
    return x;
}
```

- 4 Write a function which calculates the inner product of two one dimensional arrays. The function prototype should be as: `int inner_product(const int *a, const int *b, int n)` where a and b are the two arrays and n is the length of both arrays. Use pointer arithmetic to visit array elements.
- 5 Write a function which accepts a string as a parameter and swaps the 1st symbol with the nth symbol (the last symbol), the 2nd symbol with the (n-1)th symbol, the 3rd symbol with the (n-2)th symbol, etc.
- 6 Write a function which accepts two integer pointers as parameters and swap those two integers pointed to by these two pointers. Also write a

main program to test your function.

- 7 Rewrite the following function by using void return type.

```
int SumofArray (int a [], int length)
{
    int i, j, sum;
    sum = 0;
    for (i = 0; i < length; ++i)
        for (j = 0; j < length; ++j)
            sum += a[i][j];
    return sum;
}
```

- 8 Write a void function which accepts an integer array and other parameters from a main program and finds the largest and smallest integers in the array the results should be return to the main program.