

CS 311: Theory and Implementation of Programming Languages
Assignment 5 (from chapters 9)

Problem 1:

Consider the following program written in C syntax:

```
void swap(int a, int b) {
    int temp;
    temp = a;
    a = b;
    b = temp;
}
void main() {
    int value = 2, list[5] = {1, 3, 5, 7, 9};
    swap(value, list[0]);
    swap(list[0], list[1]);
    swap(value, list[value]);
}
```

for each of the following parameter-passing methods, what are all of the values of the variables *value* and *list* after each of the three calls to *swap*.

- a. Passed by value
- b. Passed by reference
- c. Passed by value-result

Problem 2:

Consider the following program written in C syntax:

```
void fun (int first, int second) {
    first += first;
    second += second;
}
void main() {
    int list[2] = {1, 3};
    fun(list[0], list[1]);
}
```

For each of the following parameter-passing methods, what are the values of the *list* array after execution?

- a. Passed by value
- b. Passed by reference
- c. Passed by value-result