

# **CSC 101 Lecture Notes Week 5**

## **Arrays and Strings**

# **I. Introduction to Arrays**

- A.** Chapter 8 provides good coverage.
- B.** Explains structure and has some good pictures.
- C.** These notes have additional array examples.
- D.** Code for all examples is online.

## II. Using an Array in the Stats Program

- A. A loop significantly improves things.
- B. Allows indefinite number of data points.
- C. However, it can't do standard deviation.
- D. Why not?

## Using an Array in the Stats Program, cont'd

**E.** Answer -- we need *arrays*.

**F.** Example in

`stats-while-array.c`

### III. Best Version Yet of Stats Program

#### A. Example

```
stats-loops-arrays-functions.c
```

#### B. As the name suggests:

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#### A. Example

```
stats-loops-arrays-functions.c
```

#### B. As the name suggests:

- uses a loop to read in data values

### III. Best Version Yet of Stats Program

#### A. Example

```
stats-loops-arrays-functions.c
```

#### B. As the name suggests:

- uses a loop to read in data values
- an array to hold values

### III. Best Version Yet of Stats Program

#### A. Example

```
stats-loops-arrays-functions.c
```

#### B. As the name suggests:

- uses a loop to read in data values
- an array to hold values
- functions to perform the computations



## Best Version Yet of Stats Program, cont'd

C. Look in particular `read_values`:

## Best Version Yet of Stats Program, cont'd

C. Look in particular `read_values`:

1. reads values from `stdin`

## Best Version Yet of Stats Program, cont'd

- C. Look in particular `read_values`:
  1. reads values from `stdin`
  2. returns array formal output parameter

## Best Version Yet of Stats Program, cont'd

- C. Look in particular `read_values`:
  1. reads values from `stdin`
  2. returns array formal output parameter
  3. section 8.5 of the book has good discussion

## **IV. Strings as Arrays of Characters**

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## IV. Strings as Arrays of Characters

- A. Arrays in stats example hold numbers.
- B. Arrays can hold any type of data value.
- C. Very common type is arrays of char, which are called *strings*.



## IV. Strings as Arrays of Characters

- A. Arrays in stats example hold numbers.
- B. Arrays can hold any type of data value.
- C. Very common type is arrays of char, which are called *strings*.
- D. Ch 9 of book does a good job explaining.

## Strings as Arrays of Characters, cont'd

**E.** `101/examples/strings` directory has:

## Strings as Arrays of Characters, cont'd

**E.** 101/examples/strings directory has:

1. `string-basics.c`

## Strings as Arrays of Characters, cont'd

**E.** 101/examples/strings directory has:

1. `string-basics.c`

2. `input-3-strings.c`

## Strings as Arrays of Characters, cont'd

**E.** 101/examples/strings directory has:

1. `string-basics.c`
2. `input-3-strings.c`
3. `input-loop.c`

## Strings as Arrays of Characters, cont'd

**E.** 101/examples/strings directory has:

1. `string-basics.c`
2. `input-3-strings.c`
3. `input-loop.c`
4. `strlen.c`

## Strings as Arrays of Characters, cont'd

**E.** 101/examples/strings directory has:

1. `string-basics.c`
2. `input-3-strings.c`
3. `input-loop.c`
4. `strlen.c`
5. `string-list.c`