# CS250 Intro to CS II

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Office hours: MWF 10-11, TTh 1-2
Or by appointment

# Welcome!

- Web Page    http://zeus.cs.pacificu.edu/chadd/cs250s19

- Syllabus

- Calendar

- Text Book

- Visual Studio 2017

# Progression!

- CS 150
  - C++ mechanics
  - Visual Studio mechanics, Debugger
  - Structs, arrays
- CS 250
  - C++ mechanics (classes)
  - Object oriented programming and design
  - Graphics (SDL 2)
- CS 485 (Spring 2021)
  - C++ mechanics (C++11, C++14, templates, STL)
  - Object oriented design
  - Design patterns

# What I think you know

- Variables & data types (Ch. 2)
- Relational & logical operators (Ch. 3)
- Decision statements (Ch. 3)
- Repetition statements including nesting (Ch. 4)
- Functions (Ch. 5)
- Files (Ch. 6)
- Arrays (Ch. 7)
- Structs (Ch. 7)
- Visual Studio
- Debugger

# This class

- More C++ mechanics
  - Classes

- Graphics programming
  - SDL

- Object Oriented Design
  - UML
  - Inheritance
  - Composition

# Review

- Review Reading:

  - Grouping data: struct (section 7.12)

  - Structs and functions (section 7.13)

  - File input and output (section 6.5)

  - Array/vector concept (chapter 7)

  - Two-dimensional arrays (section 7.9)

# Files

- What is a stream?

- How do we create a stream for reading from a file?

- What header file do we need?

# Files

- Write code to read in the following file and sum up the integers. The file has at most 100 ints.

Input file: ints.txt

```
9
10
8
2
7
1
1
```

Output

```
Sum: 38
```

# One-dimensional arrays

- Consider
  ```
  int intArry[] = {1, 2, 3, 4, 5};
  double doubleArry[10];
  ```

1. What are the index values for each array?

2. How many elements does each array have?

3. Arrays consist of *homogeneous* data.
   What does this mean?

# Arrays

- Write code to read in the following file and print the integers in reverse order on the screen:

Input file: ints.txt

```
9
10
8
2
7
1
1
```

Output

```
1
1
7
2
8
10
9
```

# Arrays

- Write code to read in the following file and determine how many values are above average and how many values are below average:

Input file: ints.txt

```
9
10
8
2
7
1
1
```

Output

```
Average 5.42857

4 ints above average

3 ints below average
```