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Week 4

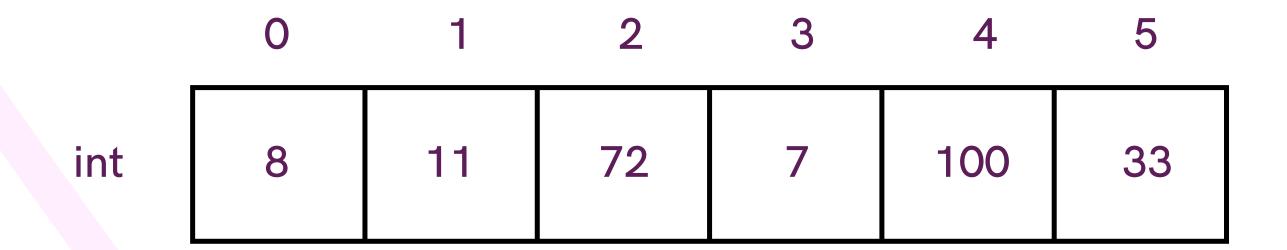
Arrays, Functions

Census Date: This Sunday!

Get started on Assignment 1

Arrays

• Create an integer array



Print out all the variables in the array

Array Round Robin

Instructions

In your groups:

- Discuss a plan to write these procedures.
- Only 2 people at whiteboard at a time.
- Every member must do a task.
 Divide equally!
- No talking at the whiteboard.

Odd Only

- 1. Create an integer array with at least 5 elements.
- 2. Create a while loop which loops through every element of the array.
- 3. Write an if statement which adds 1 to each even value. Do this within the while loop.
- 4. Write another while loop which goes through the array with a different iterator (i.e. if you used i last time, use j)
- 5. Print out the values in the array.

Copy Array

- 1. Create an array of doubles with 3 elements, each with a non-zero value.
- 2. Create another array of doubles with 10 elements where every element initialised to 0.0.
- 3. Create a while loop that loops through every element of the first array.
- 4. Copy the elements of the first array into the second array (leave 0's at the end)
- 5. Create a while loop that prints out all the elements of the second array.

Array Round Robin Extension

Instructions

In your groups:

- Discuss a plan.
- Only 2 people at whiteboard at a time.
- Every member must do a task. Divide equally!
- No talking at the whiteboard.

Largest Character

- 1. Create a character array with exactly 8 elements.
- 2. Create a character variable called largest_character, equal to the first character of the array.
- 3. Create a while loop to loop through the character array.
- 4. Create an if statement to check if the current character has a higher ascii value than "largest_character"
- 5. Print out the largest character you've found.
- 6. Ensure your code would pass "1511 style"
- 7. Go join other teams, and sit with their groups to help them finish.

Scanning into an Array

Scan 6 temperatures into an array and print the highest temperature

Plan together, write pseudocode in in your groups on the board

Scanning Until CTRL+D

What if you didn't know how many inputs would be entered?

Modify the highest temperature code to scan in up to 100 temperatures.

17 36 44 25 38 44 ... 1 ctrl+d

Food for thought:

- How big should you size this array?
- What does scanf return?

Function Practice

```
struct colour {
    int red;
    int green;
    int blue;
};
struct colour make_colour(int red, int green, int blue) {
    struct colour new colour;
    new colour.red = red;
    new_colour.green = green;
    new_colour.blue = blue;
    return new_colour;
```



Lab Time!