General Computer Science for Engineers
CISC 106
Lecture 19

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Computer and Information Sciences

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Sign up now for
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Offered by the Academic Enrichment Center

`http://www.aec.udel.edu/tutoring.html`

How does it work?
 When a group of students request a tutor, the AEC
 funds one and organizes a weekly tutoring session

What do I do?
 - Visit AEC in person, 2 houses south of Smith Hall
 - Ask for the tutor request folder
 - Sign up on the CISC 106 sheet

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Lecture Overview

- While loops
- Arrays
- Linear Search
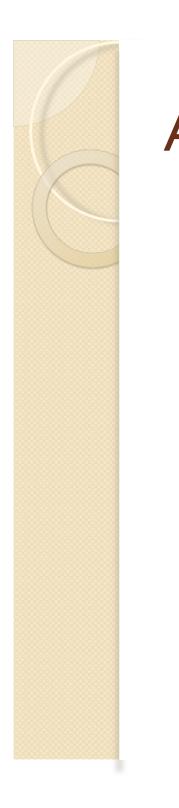
WHILE Loops

> i = 0;
> while (i < 5)   ← condition that gets tested

            i

            i = i+1;   ← increment loop variable

      end

In class assignment

- Code a while loop so that prints only even numbers up to and including 10

Arrays

- A = [5 4 3 2 1]

A

5	4	3	2	1

Arrays

- Change even positions to have 2

5	2	3	2	1

Arrays

- Easy way

A(2) = 2

A(4) = 2

5	2	3	2	1

What happens if have 100 elements!

Using a While loop for this.

```
>> x = 1;
>> while ( x <= length (a) )
    if (mod (x,2) == 0)
        a(x) = 2;
    end
    x = x + 1;
end
```

Finding a number in an array

Write pseudo code first!

. What are the data structures needed?

. Do I need a loop? What kind would work best?

. Write algorithm in English.

Pseudo code

- Store numbers in array
- Initialize array index to 1
- Initialize number found boolean variable
- while number not found or array length not exceeded
-    if current array position has num
-       set number found
- end
- If number found report!

Finding a number in an array

```
>> x = 1;
>> numberFound = false;
>> while (numberFound ==
        false)
    if (a(x) == 3.14)
        numberFound  = true;
    end
end
```

What else is missing?