EE 200 Lecture 5: Arrays

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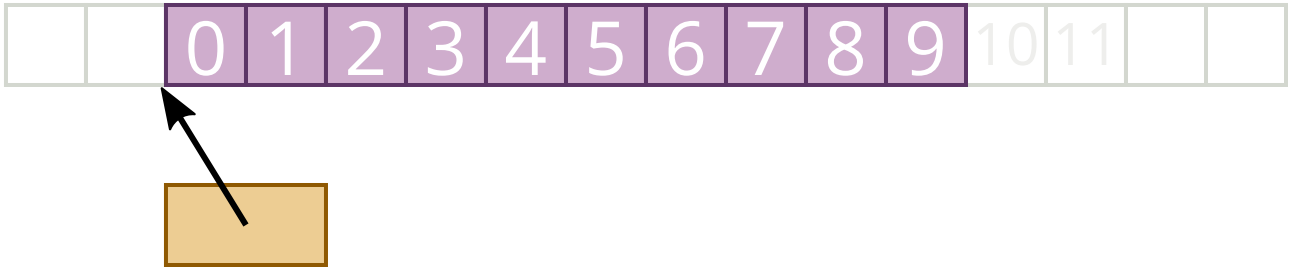
Tufts UNIVERSITY

Indexing arrays

```
int grape[10]
```




```
int* raisin = grape;
```

```
grape[0]
grape[10]
*(grape + 1)
*(raisin + 1)
```

```
raisin[1]

int i = 1;
i[grape];
```

sizeof

The quiz didn't cover all the cases:

```
char pear[100];
char* pear_p;


sizeof pear[1]

sizeof pear

sizeof *pear_p

sizeof pear_p
```

```
int howBig(char arr[])
{
  return sizeof arr;
}

howBig(pear[1])

howBig(pear)

howBig(pear_p)
```

sizeof

The quiz didn't cover all the cases:

```
char pear[100];
char* pear_p;


sizeof pear[1]

sizeof pear

sizeof *pear_p

sizeof pear_p
```

GCC will warn you about this:

```
int howBig(char arr[])
{
  return sizeof arr;
}
```

```
howBig(pear[1])

howBig(pear)

howBig(pear_p)
```

sizeof an array

Unlike Python, MATLAB, Java, etc., C doesn't track how big its arrays are.

So once you're outside the unit where it was declared, you have to track the size yourself.

Dangling pointers

Any pointer whose memory has been deallocated

Why is this bad?

A) You're reading data that might have changed

B) You're writing to memory that might be used for something else

C) The behavior is unpredictable

D) All of the above

Dangling pointers

For now, you can avoid dangling pointers by never returning a pointer to a local variable.

Once we can dynamically allocate memory, it will get more complex.

Office hours

I'd like to check in with everyone at some point in the next two weeks
I'll send out a spreadsheet; sign up for a time.

Grading

Classwork 1 grades will be published today

Don't worry about build failures for Classwork 3;
we're fixing the autograder.

Make

Use "." to redo an action

Use visual mode to make edits to many lines at once:

Ctrl+v

navigate with h/j/k/l

Shift-i

make edit

Escape

now you're back in normal mode

Use `:s/one/two/g` for quick find-and-replace

Make

Make is a tool for automating compilation

Homework 5 is hosted on Github

Homework 3 regrades are due by Monday 9/23 at 4:30pm

Homework 4 due Monday 9/23 at 4:30pm

Homework 5 due Wednesday 9/25 at 4:30pm