CIS241

System-Level Programming and Utilities

C Arrays and Loops

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Fall 2025

Based on material provided by Erin Carrier, Austin Ferguson, and Katherine

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C arrays

All elements in a C array have the same type

For now, we are talking about static arrays

• i.e., fixed size

Declaring:

```
• int arr[10];
```

```
• int arr[3] = \{2, 4, 6\};
```

- char arr[5];
- char arr[] = "hello world";

Array indexing

We still access elements like in every other language (zero-indexed)

- int arr[3] = $\{2, 4, 6\}$;
- int x = arr[1];
- arr[2] = 0;

For loops

```
unsigned int i;
for (i = 0; i < 10; i++)
{
    ...
}</pre>
```

Newer versions of C allow you to create an iterative variable inside the loop line

While loops

```
while (condition)
{
    ...
}
```

Do-while loops

```
do
{
    ...
} while (condition);
```

Same as while, but the block executes at least once!