Arrays (extra)

Storing Data in Arrays

Data Lookup

- Consider three arrays storing information about baseball players:
  
  ```javascript
  let player = [4, 99, 66, 11]; // player number
  let atbats = [498, 370, 287, 501]; // "at bats"
  let hits = [101, 110, 79, 140]; // hits
  
  - How to “lookup” the number of “at bats” for a certain player number?
**Array Operation: lookup**

// find the number of "at bats" for player number p
// if no player number p found, return undefined

```javascript
function lookup(p) {
  for (let i = 0; i < player.length; i++) {
    if (p === player[i]) {
      return atbats[i];
    }
  }
  return undefined;
}
```

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**Storing Related Data in One Array**

- Can be convenient to store related but different data in one array
- For example, storing all baseball stats in one array:

```javascript
```
Array Operation: lookup2

// find the number of "at bats" for player number p
// if no player number p found, return undefined
function lookup2(p) {
    for (let i = 0; i < data.length; i += 3) {
        if (p === data[i]) {
            return data[i + 1];
        }
    }
    return undefined;
}

Storing Related Data in One Array

- Approach 1: Storing x and y coordinates in two arrays:

```javascript
let x = [20, 40, 60];
let y = [35, 55, 75];
```

- Approach 2: Storing x and y coordinates in one array:

```javascript
let xy = [20, 35, 40, 55, 60, 75];
```
**p5** approach1

```javascript
let x = [20, 40, 60];
let y = [35, 55, 75];

function setup() {
    // use the two coordinate arrays to draw shapes
    for (let i = 0; i < x.length; i++) {
        ellipse(x[i], y[i], 20, 20);
    }
}
```

**p5** approach2

```javascript
// store x and y coordinates in one array
let xy = [20, 35, 40, 55, 60, 75];

function setup() {
    // use the single coordinate array to draw shapes
    for (let i = 0; i < xy.length; i += 2) {
        ellipse(xy[i], xy[i+1], 20, 20);
    }
}
```