# Module 1 Day 5

Command-Line Programs

# What makes an application?

- Program Data
  - ✓ Variables & .NET Data Types
  - ✓ Arrays
  - ❑ More Collections (list, dictionary, stack, queue)
  - ❑ Classes and objects (OOP)
- Program Logic
  - ✓ Statements and expressions
  - ✓ Conditional logic (if)
  - ✓ Repeating logic (for, foreach, do, while)
  - ✓ Methods (functions / procedures)
  - ❑ Classes and objects (OOP principles)
  - ❑ Frameworks (MVC)
- Input / Output
  - User
    - ➢ Console read / write
    - ❑ HTML / CSS
    - ❑ Front-end frameworks (HTML / CSS / JavaScript)
  - Storage
    - ❑ File I/O
    - ❑ Relational database
    - ❑ APIs

# Command-Line Programs

- Console I/O (Standard I/O)
  - Console.Write method
  - Console.WriteLine method
    - Using Placeholders
  - Console.ReadLine method
- Converting a string to a number
  - Parse method

```
string numAsString = "123";
int num = int.Parse(numAsString);
```

# Splitting and joining strings

- Split method

```
string numbersString = "1,2,3,4";
string[] numbers = numbersString.Split(",");
```

  - Separates the string into pieces, looking for the “separator” character
  - Returns an array of strings
- Join method

```
string newString = string.Join('-', numbers);
```

  - Kind of “the opposite of” Split
  - Joins all elements of the array into a single string, inserting the “separator” character between them

# Creating a Command-Line Program

- Count, Average and Sum
- User enters a comma-delimited list of numbers
- Return to the user the Count, Sum and Average of the numbers
- Ask if they'd like to do another

# Creating a Command-Line Program

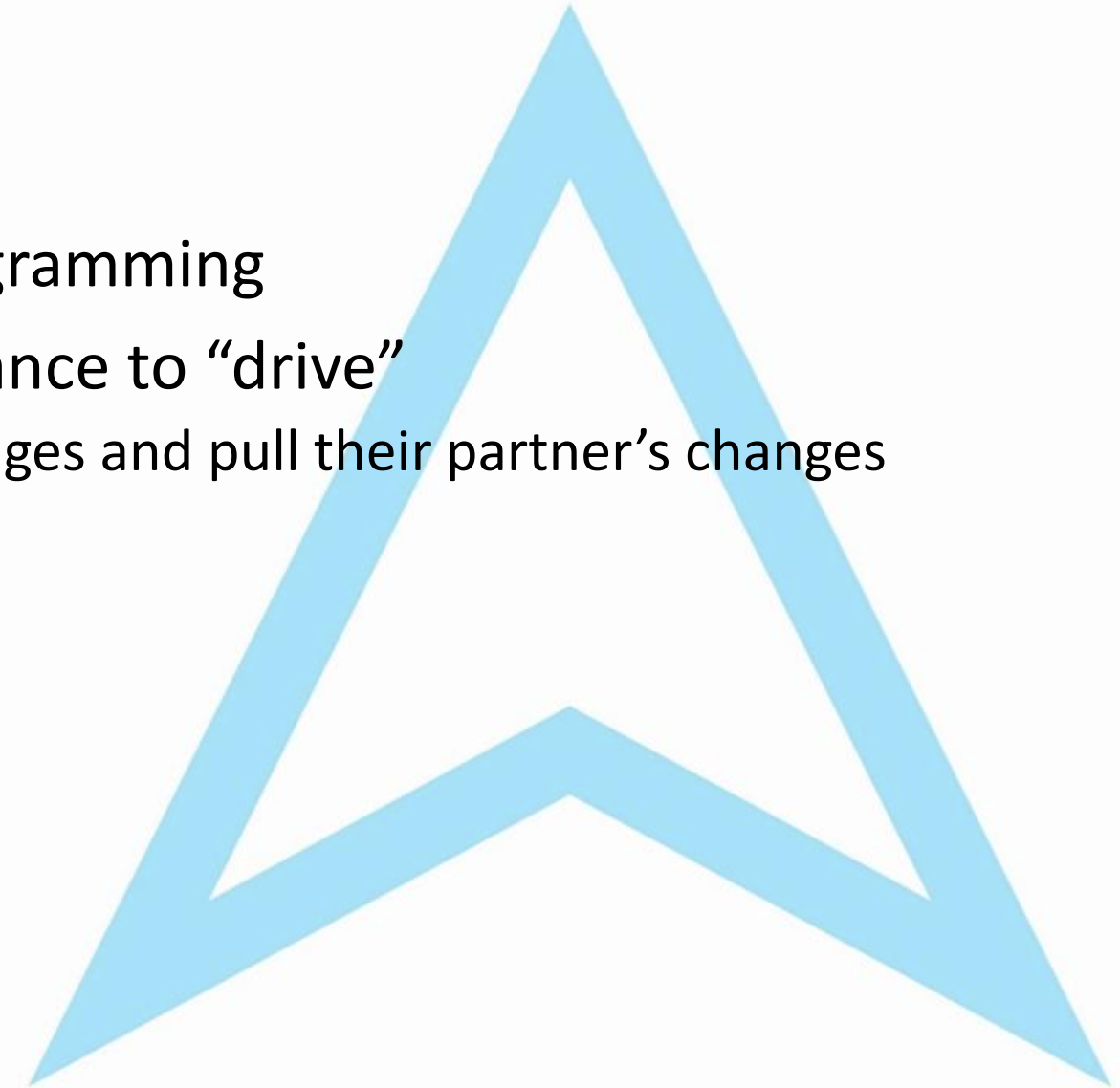
- “Proper-Nouner”
  - Accept a sentence from the user
  - Make every word start with a capital letter, remainder of the word lower case.
  - Make sure the sentence ends in a period
- Ask if they’d like to do another

# Creating a Command-Line Program

- Interest calculator
  - Initial Principal: p
  - Interest Rate: r
  - Investment time (years): t
- Calculate balance after n years:
  - Balance = p * ( 1 + r )**t
- Ask if they'd like to do another

# Pairs Exercises

- Pairs assigned
- Clone your repository
- Pair programming vs. parallel programming
- Make sure both partners get a chance to “drive”
  - Each partner should push their changes and pull their partner’s changes



# Week 1 Pairs

| Team | Student | Room |
|---|---|---|
| 0 | Alicia Barnhart | EUCLID |
| 0 | Richard Millard | |
| 1 | Keith Wier | GARAGE |
| 1 | Richard Bunce | |
| 2 | Bradley Grasl | GOLDBERG |
| 2 | Brett Kontur | |
| 3 | David Felson | GOSLING |
| 3 | William Lamar | |
| 4 | Domenico Boyadjian | HOPPER |
| 4 | Taylor Marshaus | |
| 5 | Cynthia Watson | JOHNSON |
| 5 | Dean Zhang | |
| 6 | David Perez | LOVELACE |
| 6 | Ryan Wilson | |
| 7 | Aiden Moses | ONTARIO |
| 7 | Michael Ball | |
| 8 | Reta Sober | PARTICIPATE |
| 8 | Taylor Piccorelli | |
| 9 | Brian Moody | PROSPECT |
| 9 | Zoe Moskalew | |