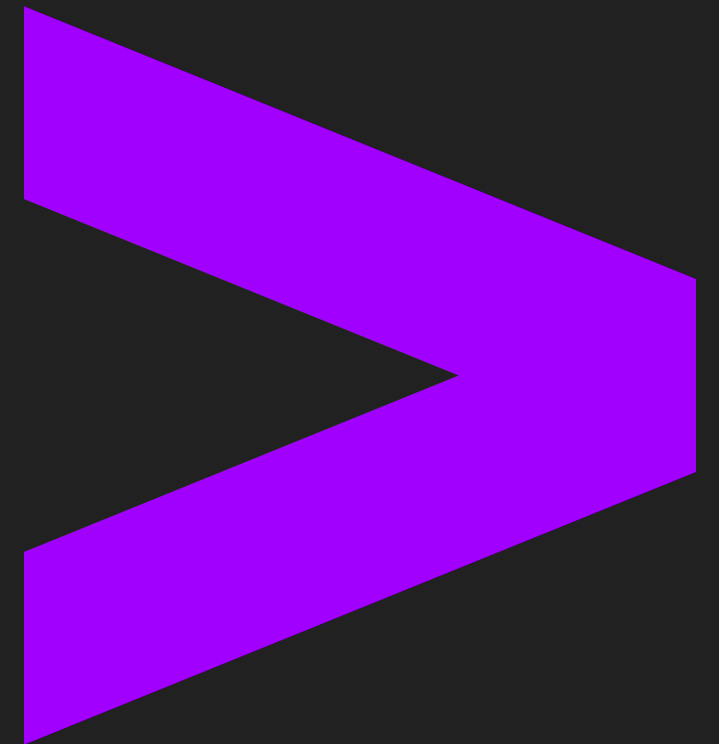


# Mini Project: Noughts & Crosses and Connect4



# Objectives

- Introduction to the scope.
- Breakdown of milestones.
- Show of running sample solution.

# Scope

- It's Noughts and Crosses to get you started.
- Then it's Connect-4.
- Individual projects.
- Your own Connect-4 version is due week 6.
- Use Javascript, HTML and CSS.

# Milestones

- Core goals
  - show key learning objectives have been met.
- Stretch goals
  - **not** mandatory, purely designed to challenge you.

# Solo Projects: Overall

Finish or understand well all the exercises in the JS modules and discussions

Get Noughts and Crosses working (detects a winner)

Create a working Connect-4 game from scratch (detects a winner)

# Solo Projects: Overall

- You can, and should, help each other!
- If you get ahead, help those who have not done as much
- Do what is right for you:
  - if you want to go over more exercises or NX then do that
  - if you want to practice HTML or CSS then do that
  - go at your own pace
- And, make your own Connect-4 that works for the end of Week 6.

# No right or wrong way, or pace



We all have different experiences and backgrounds

We all learn differently

You will all find different bits hard, medium, or easy

# Noughts & Crosses: Provided files

Some you do not *need* to change (but *can*)

- `skeleton/index.html` a pre-done file with a HTML 3×3 grid
- `skeleton/main.css` a pre-done file with some basic styles (css)
- `skeleton/connectors.js` a pre-done file of the code to manage DOM-interactions

One you **do** need to update, and should:

- `skeleton/academy.js` a file of empty functions for **you** to fill in



# Noughts & Crosses: Core Goals

- Place noughts and crosses on a grid.
- Alternate turns between noughts and crosses players.
- Detect a winner, and display them.
- Detect a draw, and display it.
- Unit tests of your pure functions.

# Noughts & Crosses: Stretch Goals

- Add player names and declare the victor!
- Reset the game for another round.
- Source control - use a github repo for you mini project(s).
- Unit tests of non-pure functions.

# Noughts & Crosses: Bonus Goals

- Have a computer player that plays randomly.
- Have a computer player that plays optimally.

# Connect4: Overall Goals

Start Connect4 from scratch in your github repo.

Grid displays and is clickable.

Detect a winner.

# Connect4: Core Goals

- Be able to place pieces on your connect4 grid; it should respond to click events
- All pushed to Git
- Detect victory conditions
- Display victory conditions
- Display the winner
- Have some unit tests that pass; test your (pure) functions

# Connect4: Some Stretch Goals

- Detect victory conditions
- Refactor your mini-project to use OOP or Functional styles
- Run a linter over your mini-project and correct issues
- Have some unit tests that pass; test your impure functions

# Connect4: Bonus Goals

- Detect victory conditions without using a for loop
- Add Player names and declare the winner
- Scoreboard tracking player victories

# Connect4: Super Bonus Stretch Goals

- Split into Client & Server
  - I.e an index.html with js that talks to
  - an express API server
- Use NPM scripts to manage lifecycle for your server
- Produce unit tests for the API server
- Store game scores in the server



Emoji Check:

