# Moen Interview Project

## OVERVIEW

Build an application that solves the Water Jug Riddle for dynamic inputs (X, Y, Z). The simulation should have a UI to display state changes for each state for each jug (Empty, Full or Partially Full).

You have an X-gallon and a Y-gallon jug that you can fill from a lake. (Assume lake has unlimited amount of water.) By using only an X-gallon and Y-gallon jug (no third jug), measure Z gallons of water.

## GOALS

1. Measure Z gallons of water **in the most efficient** way.
2. Build a UI where a user can enter any input for X, Y, Z and see the solution.
3. If no solution, display “No Solution”.

## LIMITATIONS

- No partial measurement. Each jug can be empty or full.
- Actions allowed: Fill, Empty, Transfer.
- Use one of the following programming languages: Javascript, Typescript

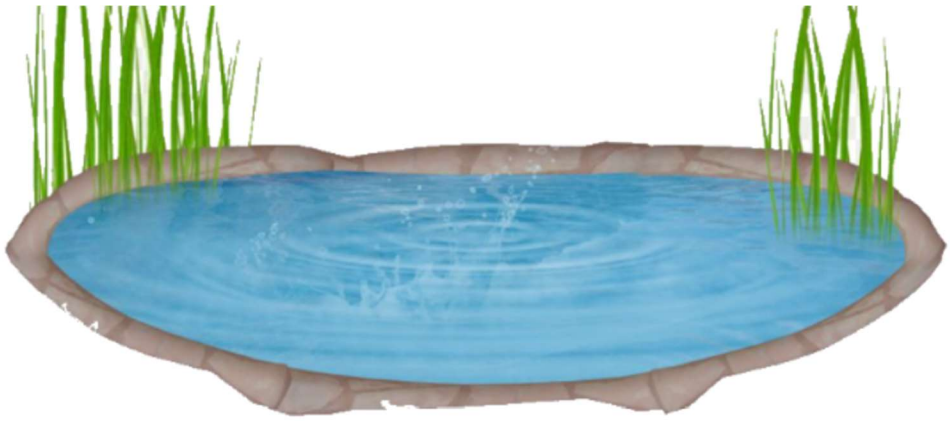
## DELIVERABLES

The application source code should be on Github and a link should be provided. If this is not an option, a public link to the application source code or a zip archive is also acceptable. Any executable must be provided, no assumptions must be made about environment or os this will be tested on. Ideally executed inside a docker image or build inside docker and executed.

## EVALUATION CRITERIAS

- Functionality
- Efficiency (Time, Space)
- Code Quality / Design / Patterns
- Testability
- UI/UX design ( cli, website, etc )

# Example



 = 5 gal  = 3 gal

Goal: exactly 4 gallons of water

1. Can fill buck from lake in full - no "half" full bucket fill
2. Can transfer from bucket to bucket
3. Can dump water from buck in full
4. Cannot eyeball it or estimate