

WSIB Innovation Lab Problem Set

Welcome to the WSIB Innovation Lab pre interview problems. We ask that prospective candidates make an attempt at these problems to allow us to better evaluate your thinking processes and programming skill in the interview.

Problem 1: React Fundamentals

Phase 1:

- Create a React component using a class structure.
- Use this component to display 2 HTML Buttons.
- Each button must have a unique background colour.
- Clicking a button will change only its background colour.

Phase 2:

- Create a re-usable button React component using a class structure
- Pass props and a function from a parent component in order to define & change the button colours.

Phase 3:

- Duplicate the reusable component and convert into the newer React Hooks structure.

Problem 2: Logical Understanding

In a programming language of your choice, create a Tic Tac Toe game that can be played via the command line.

If you have already written a Tic Tac Toe game - please try something more fun and attempt a simplistic connect 4, where in turn players select a column to “drop” their piece in.

Rules:

- The game must be playable by 2 players
- The game must only allow legal moves

- If one player wins then the game ends, the winner is declared
- If the board fills up then the game ends in a draw, the result is declared

Optional:

- Add in a computer player that makes moves, doesn't have to be logical or smart moves, just legal.

Problem 3: Code Obfuscation

Time to test how badly you can write functional code. The only requirement for this problem is a working palindrome detector function. Allow for entry of a word and return true or false whether or not that word is a palindrome. Make this function as hard to read as possible; weird variables, complex relationships, roundabout algorithms, let your imagination go wild.

Example:

- racecar - TRUE
- baseball - FALSE
- rats live on no evil star - TRUE

Things to consider:

- The code must still be functional when executed!
- Programming language does not matter - just include the language used in the comments.
- Whitespace doesn't count, extraneous spaces and newlines will be removed.