**Project Charter**

**Name of Project**

**5/12/23**

# PROJECT STATEMENT

Tic Tac Toe is what is known as a “solved game” in which every game scenario has a known optimal response. Thus, if you are playing by the most optimal strategy, you will win or tie every time. However, this “optimal strategy” is obscure and difficult to recognize. I will be creating a Tic Tac Toe simulation in Java, complete with an adversarial search algorithm for responding to the player’s actions with the correct response. Furthermore, The Width and height of the tic tac toe board is adjustable, so games will be able to be played on 4x4, 5x5, and 3x3 boards too.

# CONCISE PROJECT OVERVIEW

A short narrative on the duration, budget, approvals needed, key stakeholders, assumptions, constraints and major risks

There is no budget necessary to conduct this project. There are no external APIs that I will be needing, so there is no opportunity to spend money. The stakeholders of the project include myself (developer), and any competitive or recreational tic tac toe players who wish to understand the best strategy available to them. This is being made under the assumption that these people share the same curiosity I do to understand what optimal tic tac toe looks like. The constraints I am operating under is primarily the small time limit given to work on this project, so I will be restricting this application to a terminal based application.

# SCOPE STATEMENT

SMART goals or objectives would include deliverables. Clarify as necessary what the scope includes and does not include.

Specific: I will be creating a terminal based Java simulation of tic tac toe, where the player plays against an adversarial search algorithm which wins or ties every time.

Measurable: The algorithm must win every time, and take less than 20 seconds each turn to think.

Attainable: The project requires no budget, APIs or premade assets.

Realistic: While tic tac toe is a simple, causal game, the logic behind an optimal algorithm for winning in tic tac toe would be applicable to any game with a net zero outcome.

Time specific: I will achieve creating the tic tac toe within the first week, and spend the other two weeks creating the algorithm for winning.

# STAKEHOLDERS

List all stakeholders, their roles, communication needs and satisfaction requirements.

# TIMELINE

Draw a timeline, including milestones to serve as the basis for a work breakdown structure (WBS) and appropriate Gantt or PERT charts. For this class, you can refer to the Work Breakdown Excel Sheet.

# BUDGET ESTIMATE(S)

List all costs known and estimated and other resource needs that can be identified. For this project, you can list the time available until the due date, and the people and resources (classroom computers in this case) to get the project done.

# RISKS AND CONTINGENCY PLANS

List known and potential risks by estimated probability, with mitigation plans.