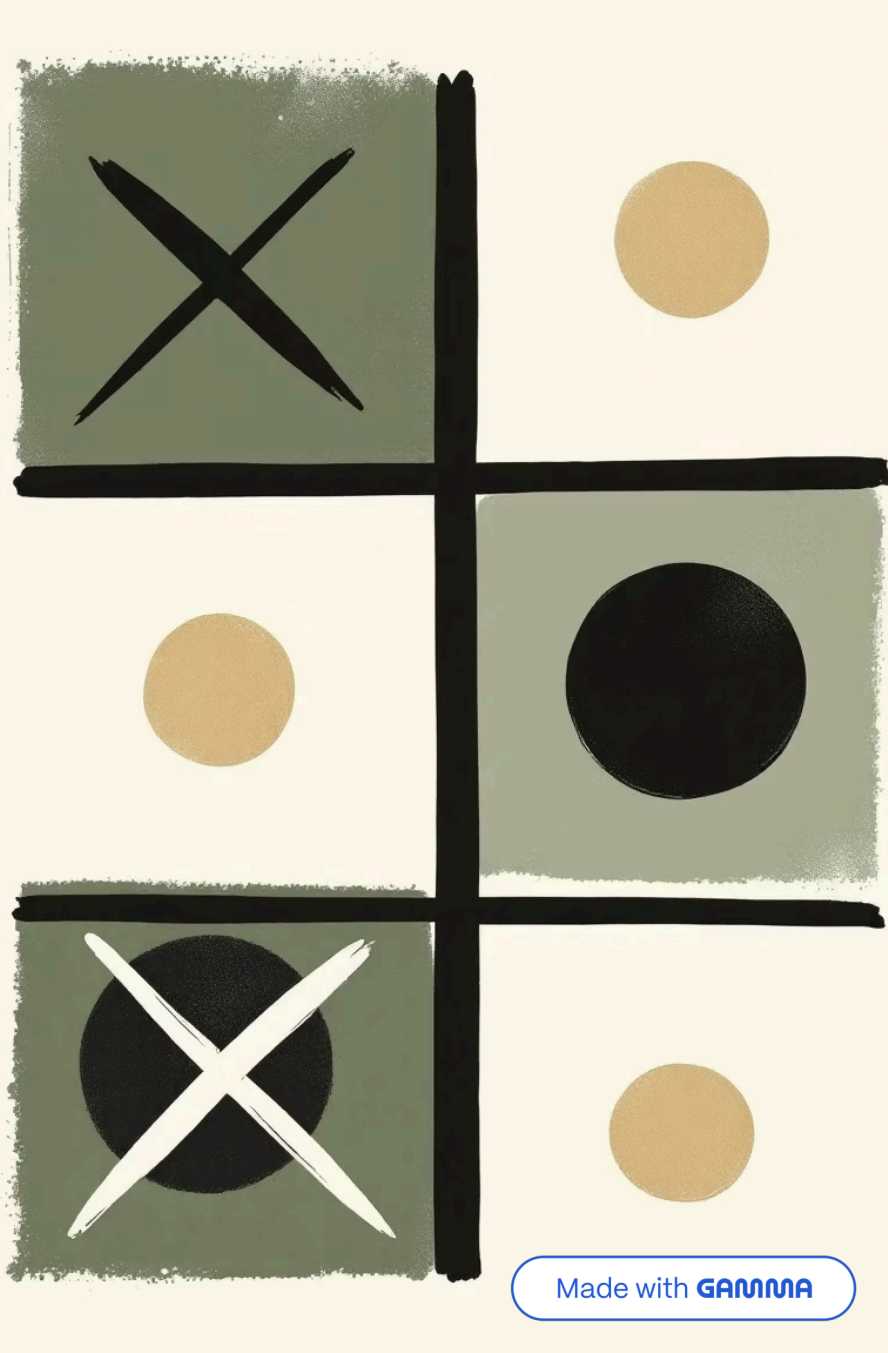
Tic-Tac-Toe in Java

A console-based implementation of the classic game built with Core Java, featuring intelligent win detection and robust input validation.



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Game Overview

Classic Gameplay

Two-player game (Human vs Human) bringing the timeless strategy game to your console. Players take turns marking spaces in a 3×3 grid, aiming to get three in a row.

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Core Features

Win Detection

Intelligent algorithms detect wins across rows, columns, and diagonals instantly.

Draw Detection

Automatically identifies game ties when the board fills without a winner.

Input Validation

Prevents invalid moves and occupied cell selections for smooth gameplay.

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Technical Architecture

Core Java

Built entirely with Java fundamentals

OOP Concepts

Object-oriented design principles

2D Arrays

Efficient board representation

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Game Logic Flow

01

Initialize Board

Create empty 3×3 grid for gameplay

02

Player Input

Accept row and column coordinates (0-2)

03

Validate Move

Check for valid and unoccupied positions

04

Update Board

Place player's mark on the grid

05

Check Status

Evaluate for win, draw, or continue

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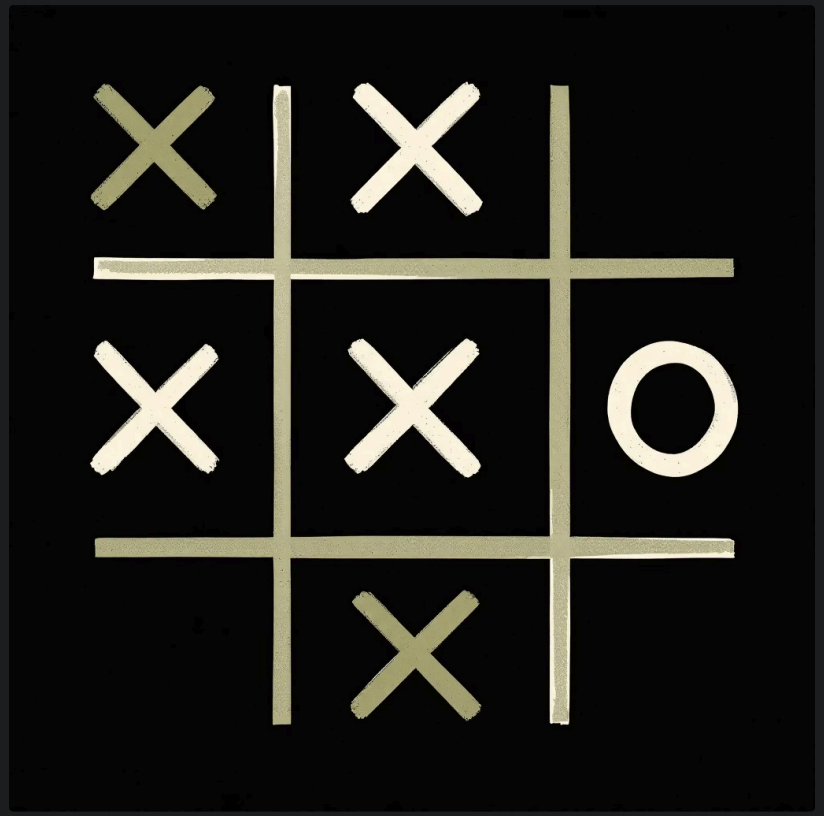
Win Detection System



Comprehensive Checking

The game evaluates all possible winning conditions:

- Three horizontal rows
- Three vertical columns
- Two diagonal lines

Each move triggers instant validation across all eight possible winning combinations.

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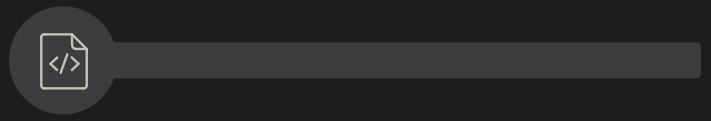
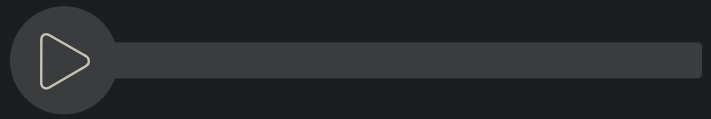
Getting Started



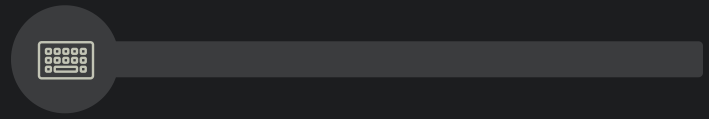
Compile Files

Compile all `.java` files in your Java environment



Run Game

Execute `StartGame.java` to launch the application



Enter Moves

Input row and column values ranging from 0 to 2

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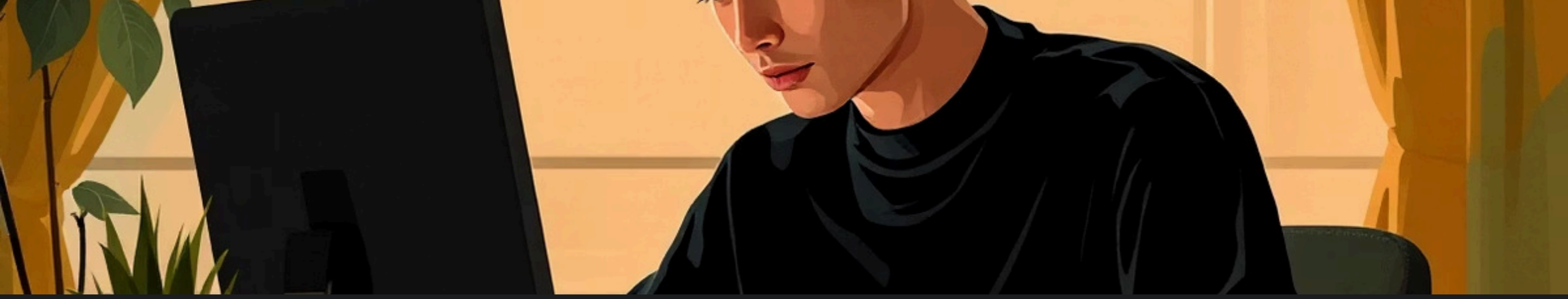

Input System

Coordinate Entry

Players enter two values: row (0-2) and column (0-2) to place their mark on the grid.

Validation Rules

The system checks that coordinates are within bounds and the selected cell is unoccupied before accepting the move.

Error Handling

Invalid inputs prompt clear error messages, allowing players to retry without disrupting gameplay flow.

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Project Structure

File Organization

The project consists of clean, modular Java files:

- `StartGame.java` - Main entry point
- Game logic classes
- Board management
- Player interaction handlers

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About the Developer

Mohith Sreenivas

Creator of this Tic-Tac-Toe implementation, demonstrating proficiency in Core Java, object-oriented programming, and game logic development.

This project showcases fundamental programming concepts including 2D array manipulation, conditional logic, and user input validation.

> A simple yet elegant demonstration of classic game development using Java fundamentals.

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