Below is a comprehensive test suite that has been used to test the functionality of our program. Note that for many tests, queens are omitted, as the queen movement logic is the same as adding the rook and bishop logic.

For an entire game, with en passant, check, castling, pawn promotion, and checkmate, see the bottom.

Setup Tests

What is being tested?	**Input**	**Test Input File**
Adding / removing pieces	setup + K a1 + k a8 + R a2 + r a8 + k a8 + r a7 done setup + P b2 + p b7 - a2 - a7 done	setup-adding.in
Exit with no kings on board, exit with more than one king of a colour on board	setup + P a2 + P b2 + P c2 + P d2 + P e2 + P f2 + P g2 + P h2 + Q d1 + p a7 + p b7 + p c7 + p d7 + p e7 + p f7 + p g7 + p h7 + q d8 done + K e1 done - e1	setup-wrong-king.in

	+ k e8 done + k h8 + K e1 done - h8 + K g1 + K h1 done - g1 - h1 done	
Exit while king is in check	setup + K a1 + k a8 + R a2 done - a2 + p b7 done - b7 + r h1 done - h1 done	setup-king-in-check.in
Assign which colour starts	setup + K a1 + k a8 done game human human move a8 a7 move a1 a2 resign setup + K a1 + k a8 = black done game human human move a8 a7 move a1 a2 resign setup + K a1 + k a8 = white	setup-assign-colours.in

	done game human human move a8 a7 move a1 a2 resign	
Pawns on back rank	setup + K a1 + k a8 + P c8 + p d8 + P c1 + p d1 done - c8 done - d8 done - c1 done - d1 done	setup-pawns-back.in

Piece Movement

What is being tested?	**Input**	**Test Name**
Rook	setup + K a1 + k a8 + R b2 done game human human move b2 b3 move a8 a7 move b3 c3 move a7 a8 move c3 c2 move a8 a7 move c2 b2 move a7 a8 move c2 b3 move c2 b4 move c2 f5 move c2 c8 move a8 a7 move c8 h8	rook-movement.in

	move a7 a6 move h8 h1 move a6 a7 move h1 b1 resign	
Knight	setup + K a1 + k a8 + N c3 done game human human move c3 e4 move a8 a7 move e4 e5 move e4 d5 move e4 g4 move e4 d6 move a7 a8 move d6 b5 move a8 a7 move a8 b8 move b5 c3 resign setup + K a1 + k a8 + N d5 done game human computer1 move d5 c3 move move c3 e2 move move e2 f4 move move f4 d5 resign	knight-movement.in
Bishop	setup + K a1 + k a7 + B e4 done game human human move e4 f5 move a7 b8 move f5 e6	bishop-movement.in

	move b8 a7 move e6 d5 move a7 b8 move d5 e4 move b8 a7 move e4 g6 move a7 b8 move g6 e8 move b8 a7 move e8 c6 move a7 b8 move c6 e1 resign	
Queen	// run the bishop and rook tests, but replace the 'B' and 'R' with a 'Q'.	queen-movement.in
King	setup + K a1 + k a8 done game human human move a1 a2 move a8 a7 move a2 b2 move a7 a8 move b2 b1 move a8 a7 move b1 a1 move a7 a8 move a1 b2 move a8 a7 move b2 a3 move a7 a8 move b2 a1 resign	king-movement.in
Piece in the way: rook, pawn, bishop, king	setup + K a1 + k a8 + P c2 + p c4 + P d2 + P d4 + r d8 + P e2 + p e3 + b h7	piece-in-path.in

	+ P f5 done game human human move c2 c4 move d2 d4 move e2 e3 move c2 c3 move d8 d3 move d8 d1 move h7 d3 move h7 g5 resign	
Trying to move your king into check, trying to move a piece blocking your king from the vision of another piece	setup + K a1 + k a8 + r h2 + r b8 + R b4 done game human human move a1 a2 move a1 b1 move b1 a1 move b1 b2 move a8 a7 move b4 c4 move b4 b5 resign	move-into-check.in
Capturing	setup + K a1 + k a8 + r b2 + P e3 + b f4 + N f5 + p e7 + p c7 + P d6 + R g7 + r g3 done game human human move a1 b2 move f4 e3 move f5 e7 move c7 d6 move g7 g3	capturing.in

Special Movements

What is being tested?	Input	Test Name
En passant: white and black, en passant after delay	setup + K a1 + k a8 + P a2 + p a7 + p b4 + P b5 + P g2 + p f4 done game human human move a2 a4 move b4 a3 move g2 g4 move a7 a5 move b5 a6 move f4 g3 move f3 f2 resign	en-passant.in
Castling: white, black (kingside)	game human human move e2 e4 move e7 e5 move f1 c4 move f8 c5 move g1 f3 move g8 f6 move e1 g1 move e8 g8 resign	castling-kingside.in
Castling: white, black (queenside)	game human human move d2 d4 move d7 d5 move c1 f4 move c8 f5 move b1 c3 move b8 c6 move d1 d2 move d8 d7 move e1 c1 move e8 c8 resign	castling-queenside.in

Attempting to castle out of, through, and into check	setup + K e1 + P h2 + R a1 + k f8 + r d8 = black done move d8 e8 move e1 c1 move h2 h3 move e8 d8 move e1 c1 move h3 h4 move d8 c8 move e1 c1 move h4 h5 move c8 a8 move e1 c1 resign	castle-check.in
Promoting a pawn (human), promoting a pawn (computer), promoting into check	setup + K b1 + k a8 + R e7 + R b2 + P h7 + p h2 done game human computer1 move h7 h8 n move	promotion.in

Win Conditions

What is being tested?	**Input**	**Test Name**
Checkmate	setup + K b1 + N c4 + k a8 + r a7 + r b8 + b b7 done	

	game human human move c4 b6	
Check with king moving to safety, check with piece blocking, check with piece capturing attacker	setup + k a8 + r d8 + r c7 + K b1 + P a2 = black done game human human move d8 b8 move b1 a1 resign setup + k a8 + r d8 + r c7 + K b1 + R a2 = black done game human human move d8 b8 move a2 b2 resign setup + k a8 + r d8 + r c7 + K b1 + B a7 = black done game human human move d8 b8 move a7 a8 resign	avoid-check.in
Stalemate	setup + Q b3 + k a1 + K e5 = black done game human human	stalemate.in

Resigning	game human human resign game human human resign game computer1 human move resign	resigning.in

Computer Logic Tests

What is being tested?	Input	Test Name
Computer1 - What happens, can it avoid checks?	setup + k a8 + r d8 + r c7 + K b1 + P a2 = black done game human computer1 move d8 b8 move b1 a1 resign	computer1.in
Computer2 - Will it capture pieces or give checks, given the chance?	setup + K a1 + R b1 + k a8 + r b8 done game computer2 human move resign	computer2.in
Computer3 - Will it prioritize keeping its pieces safe, as well as capturing and giving checks? (run multiple times to ensure whites rook cannot be captured)	setup + R a2 + R b2 + R c2 + R d2 + R f2 + R g2 + R h2 + K a1 + k e8	computer3.in

	+ r e7 + R d1 done game human computer3 move a1 b1 move	

Computer vs Computer

What is being tested?	Input	Test Name
Computer vs Computer	game computer3 computer3 move move // just keep going with "move" until you feel satisfied or the game ends	computer-computer.in

Other (program functionality/general)

What is being tested?	Input	Test Name
Bad inputs (trying to crash program)	xxx 123 resign setup dffjdhf done + K a1 + k a8 done game random words game x D game computer computer game human human move a9 j8	bad-inputs.in

	move a1 a9 move x y move a1 a2 resign resign	
Multiple games, finishing with checkmate, stalemate, and resignation	setup + Q b3 + k a1 + K e5 = black done game human human setup + K b1 + N c4 + k a8 + r a7 + r b8 + b b7 done game human human move c4 b6 game human human move d2 d4 move d7 d5 move c1 f4 move c8 f5 move b1 c3 move b8 f6 move d1 d2 move d8 d7 move e1 c1 move e8 c8 resign	multiple-games.in
Somewhat intricate game: en passant, castles, pawn promotion, checks, checkmate	game human move e2 e4 move d7 d5 move e4 e5 move d8 d5 move b1 c3 move d5 d8 move g1 f3 move a7 a5 move f1 b5 move c8 d7 move e1 g1	full-game.in

	move d7 b5 move c3 b5 move a5 a4 move b2 b4 move a4 b3 move b5 c7 move d8 c7 move c1 a3 move b3 b2 move d1 c1 move b2 c1 move f3 e5 move c7 e5 move f1 e1 move e5 e1	