

### Function to Check for Checkmate

```
def is_in_check(board, white_king):
    """Check if the specified King is in check."""
    king_pos = find_king(board, white_king)
    if king_pos is None:
        return False
    r, c = king_pos
    # Is the King attacked by enemy pieces?
    return is_square_attacked(board, r, c, not white_king)

def generate_all_moves(board, white_turn):
    """Generate all possible moves for a color."""
    moves = []
    for r in range(8):
        for c in range(8):
            piece = board[r][c]
            if piece == '.':
                continue
            if piece.isupper() != white_turn:
                continue

            # Generate moves based on piece type
            piece_moves = generate_piece_moves(board, r, c, piece)
            for move in piece_moves:
                moves.append((r, c, move[0], move[1]))

    return moves

def is_checkmate(board, white_king_in_mate):
    """
    Check if the specified King is in checkmate.
    white_king_in_mate=False means: is the Black King in mate?
    """
    # Condition 1: The King must be in check
    if not is_in_check(board, white_king_in_mate):
        return False

    # Condition 2: There must be no legal move that removes the check
    available_moves = generate_all_moves(board, white_king_in_mate)

    for move in available_moves:
        r1, c1, r2, c2 = move
        # Simulate the move
        board_copy = copy.deepcopy(board)
        board_copy[r2][c2] = board_copy[r1][c1]
        board_copy[r1][c1] = '.'

        # After this move, is the King still in check?
```



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```
if not is_in_check(board_copy, white_king_in_mate):  
    return False # There is at least one escape move  
  
return True # No escape = Checkmate!
```



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