Link to test videos:
https://drive.google.com/open?id=1G9W3ytIjplh61CGegOpnRvRcfTFxyloE

Notes
- These aren't "full" games, as the stocks are only rigged for a few turns to portray requirements
- Requirements are in red
- Video commentary is in blue

Bonuses:
- AI tile reuse (see Game 14 and Game 15)
- Scoring

LEVEL 1

Game starts AND allows play via a GUI

from Iteration 1

hands organized (by color and/or ascending order)

test 1: 4 human players

p1 draws, p2 plays 1 meld of 30, p3 draws, p4 plays a run and a set amounting to 30+

test2: 4 human players

p1 draws, p2 plays a meld, p3 empties hand and wins (or p4 wins if you can't handle p3 winning)

test3: 2 humans 2 AIs

2 turns are played correctly with some players drawing first turn, some only in the second turn

test 4: a human player can play several runs and sets in one turn

simple board reuse:

tile is added to a run (see sample3.m4v)

tile is added to a set (ditto)

several tiles are added to several runs and sets

tile from a run of the board is used with tiles of hand

tile from a set of the board is used with tiles of hand

strategy 1:

p1 can play one meld on its first turn

p1 can play several melds on its first turn

p1 can play one meld on a subsequent turn

p1 can play several melds on a subsequent turn

p1 draws on first turn

p1 draws on a subsequent turn

strategy 3:

p3 plays 30+ points on its first turn

p3 plays 30+ on a subsequent turn

p3 wins without using the board

other player has 3 fewer tiles, but p3 has to draw as it can't play a thing

other player has 3 fewer tiles, p3 plays all tiles it can BUT does not reuse the board

no other player has 3 fewer tiles, p3 plays only tiles requiring board reuse

no other player has 3 fewer tiles, but p3 can't play and has to draw

p3 wins with board reuse
strategy 2:
a player has played 30+, and p2 plays 30+ points
a player has played 30+ but p2 can't play and draws
p2 wins without board reuse
p2 wins WITH board reuse
p2 plays with board reuse because can't win
p2 can't win and has nothing to play thus draws
new for Iteration 2
number of players can vary from 2 to 4
game of 2 works correctly
game of 3 works correctly
game of 4 works correctly
a strategy can be selected from GUI for each AI player
game can accommodate all human players
game can accommodate all AI players
pick-a-tile is supported to know who starts the game
tie-breaker on pick-a-tile is supported
play joker by putting on the board as part of a meld from hand
show valid substitution of a joker played on the table (where joker is a specific card)
show valid substitution of a joker played on the table (where joker could be one of 2 cards)
basic game rigging: GUI-based loading of initial hands from file
LEVEL 2: optional timer + Memento-based backtracking
before turns starts, option is given to have human players use a 2 minute timer
timer works correctly when player leaves board in a valid state
if at the end of the timer, board is invalid, then hand of current player and the board are both restored
to what they were before that turn started (and player picks up 3 tiles instead of 1)
code demonstrates use of Memento pattern to restore previous state(s)
LEVEL 3: board reuse, strategy 4, real-time suggestions
sample 1.m4v (or preferably something similar to avoid Ace after King)
simple2.m4v
complex.m4v
strategy 4: noticing the two instances of a tile are in play and adjusting playing accordingly
on demand highlighting of which tiles can be played with option of playing some of them or not
LEVEL 4: Game rigging (must take into account tiles in other hands and on board)
GUI-based selection of tiles for initial hands
GUI-based selection of tile to be drawn by the current player

Game 1 - PASS (Randy)

- Game starts AND allows play via a GUI
- hands organized (by color and/or ascending order)
- game of 4 works correctly
- game can accommodate all human players

- pick-a-tile is supported to know who starts the game
- tie-breaker on pick-a-tile is supported
- before turns starts, option is given to have human players use a 2 minute timer
- timer works correctly when player leaves board in a valid state
- test 1: 4 human players - p1 draws, p2 plays 1 meld of 30, p3 draws, p4 plays a run and a set amounting to 30+

- GUI-based selection of tiles for initial hands
- GUI-based selection of tile to be drawn by the current player

4 human players

Show hand rigging on start screen
Rig hands using GUI
- human.1: {R1,R3,R5,R7,R9,R11,R13}
- human.2: {R10,G10,B10,O1,O2,O4,O5}
- human.3: {R1,R3,R5,R7,R9,R11,R13}
- human.4: {G8,G9,G10,O2,B2,G2,B5}

Show, in the file, how p1 and p2 draw the same tile so p2 redraws and gets a lower tile, allowing p1 to go first
Rig player order
- {R5 G5 G4 G3 G2}
- human.1 and human.2 both draw a 5 so p2 will redraw a 4, human.1 goes first (show the rigged order so TA knows human.2 redrew)

Rig stock
- {R12,R11,R10,R9,R8}

Game
Input tile you want to draw from GUI (if this is supported)
human.1 draws using GUI

human.2 plays {R10 G10 B10}
Hand: [O1,O2,O4,O5]
Table: [{R10,G10,B10}]

Input tile you want to draw from GUI (if this is supported)
human.3 draws using GUI

human.4 plays {G8,G9,G10}, {O2,B2,G2}
Hand: [B5]
Table: [{R10,G10,B10}, {G8,G9,G10}, {O2,B2,G2}]
Let the timer run out with table in valid state and note how it proceeds to the next player as expected

Game 2 - PASS (Randy)

- test2: 4 human players - p1 draws, p2 plays a meld, p3 empties hand and wins (or p4 wins if you can't handle p3 winning)
- basic game rigging: GUI-based loading of initial hands from file

4 human players

Show rigging of hands, stock, etc. via test file
Rig hands
- human.1: {R1,R3,R5,R7,R9,R11,R13}
- human.2: {R10,G10,B10,O1,O2,O4,O5}
- human.3: {R1,R2,R3,R4,R5,R6,R7}
- human.4: {O2,B2,G2,B1,B2,B3,O9}

Rig player order

- human.1 draws highest tile, goes first

Rig stock
- {R12,R11,R10}

Game
- human.1 draws
- human.2 plays {R10 G10 B10}
- human.3 plays {R1 R2 R3 R4 R5 R6 R7} and wins

Game 3 - PASS (Randy)

- a strategy can be selected from GUI for each AI player
- test3: 2 humans 2 AIs - 2 turns are played correctly with some players drawing first turn, some only in the second turn
- if at the end of the timer, board is invalid, then hand of current player and the board are both restored to what they were before that turn started (and player picks up 3 tiles instead of 1)
- test 4: a human player can play several runs and sets in one turn
- p3 plays 30+ points on its first turn
- p1 draws on first turn
- p1 draws on a subsequent turn

Show selection of strategies on GUI for each AI player
2 human, 2 AI

Rig hands
- human.1: {R1,R2,R3,G9,G10,G11,G2,R2,B2,O8}
- human.2: {R1,R3,R5,R7,R9,R11,R13}
- p3: {G10,O10,B10,B3,B4,O1,O2}
- p1: {B4,G8,G1,G3,O1,R4,R5}

Rig player order
- human.1 draws highest tile, goes first

Rig stock
- {R12,R11,R10,R9,R8,R7,R6,R5,R3,R2,R1}

Game
test 4: a human player can play several runs and sets in one turn
human.1 plays {R1,R2,R3}, {G9,G10,G11}, {G2,R2,B2}
Hand: [O8]
Table: [{R1,R2,R3}, {G9,G10,G11}, {G2,R2,B2}]

human.2 draws {R12}

p3 plays 30+ points on its first turn
p3 plays {G10,O10,B10}
Hand: [B3,B4,O1,O1]
Table: [{R1,R2,R3}, {G9,G10,G11}, {G2,R2,B2},{G10,O10,B10}]

p1 draws on first turn
p1 draws {R11}

human.1 draws {R10}

human.2 plays {R11,R12,R13}
Table: [{R1,R2,R3}, {G9,G10,G11}, {G2,R2,B2},{G10,O10,B10},{R11,R12,R13}]

p3 plays {O2} to {G2 R2 B2}
Table: [{R1,R2,R3}, {G9,G10,G11}, {G2,R2,B2,O2},{G10,O10,B10},{R11,R12,R13}]

Game 4 - PASS (Randy)

tile is added to a run
tile is added to a set
tile from a run of the board is used with tiles of hand
p2 plays with board reuse because can't win
p1 can play one meld on its first turn
p2 wins WITH board reuse

4 AI

Rig hands
- p1: {B7,B8,B9,B10,G6,G7,O6,O8}
- p2: {R9,R10,R11,R13,R7,R1,R2,R3}
- p3: {R8,R12,B13,G13,O13,O1,O2,O4,O5}
- p3: {B6,B11,G8,G9,G10,G11,O3,O4}

Rig player order
- p1 draws highest tile, goes first

Rig stock
- {O1,O2,O3,O4}

Game
p1 can play one meld on its first turn
p1 plays {B7,B8,B9,B10}
Hand: [G6,G7,O6,O8]
Table: [{B7,B8,B9,B10}]

p2 plays {R9,R10,R11}
Hand: [R13,R7,R1,R2,R3]
Table: [{B7,B8,B9,B10}, {R9,R10,R11}]

p3.1 plays {B13,G13,O13}
Hand: [R8,R12,O1,O2,O4,O5]
Table: [{B7,B8,B9,B10}, {R9,R10,R11}, {B13,G13,O13}]

p3.2 plays {G8,G9,G10,G11}
Hand: [B6,B11,O3,O4]
Table: [{B7,B8,B9,B10}, {R9,R10,R11}, {B13,G13,O13}, {G8,G9,G10,G11}]

tile from a run of the board is used with tiles of hand
p1 plays {G8} from {G8,G9,G10,G11} into {G6,G7}
Hand: [O6,O8]
Table: [{B7,B8,B9,B10}, {R9,R10,R11}, {B13,G13,O13}, {G9,G10,G11}, {G6,G7,G8}]

tile is added to a set
p2 plays with board reuse because can't win
Could play {R1,R2,R3} but does not becuase it cannot win this turn
p2 plays {R13} to {B13,G13,O13}
Hand: [R7,R1,R2,R3]
Table: [{B7,B8,B9,B10}, {R9,R10,R11}, {B13,G13,O13,R13}, {G9,G10,G11}, {G6,G7,G8}]

p3.1 plays {R8} and {R12} to {R9,R10,R11}
Hand: [O1,O2,O4,O5]
Table: [{B7,B8,B9,B10}, {R8,R9,R10,R11,R12}, {B13,G13,O13,R13}, {G9,G10,G11}, {G6,G7,G8}]

p3.2 plays {B6} and {B11} to {B7,B8,B9,B10}
Hand: {O3,O4}
Table: [{B6,B7,B8,B9,B10,B11}, {R8,R9,R10,R11,R12}, {B13,G13,O13,R13}, {G9,G10,G11}, {G6,G7,G8}]

p1 draws {O1}
Hand: [O1,O6,O8]

p2 wins WITH board reuse
p2 plays {R7} to {R8,R9,R10,R11,R12} and plays new meld {R1,R2,R3}
p2 wins!

Game 5 - PASS (Randy)

p1 can play several melds on its first turn
p1 can play one meld on a subsequent turn
p3 plays 30+ on a subsequent turn
p3 wins with board reuse
tile from a set of the board is used with tiles of hand
game of 2 works correctly
game can accommodate all AI players

2 AI

Rig hands
- p1 (strategy1): {R9,B9,G9,R4,G4,B4,O4,B6,B8,B10}
- p3 (strategy3): {R10,R11,B4,R4}

Rig player order:
- p1 draws highest tile, goes first

Rig stock
- {R12,B7,B6,B5,B4}

p1 can play several melds on its first turn
p1 plays {R9,B9,G9}, {R4,G4,B4,O4}
Hand: [O4,B6,B8,B10]
Table: [{R9,B9,G9}, {R4,G4,B4,O4}]

p3 draws {R12}
Hand: [R10,R11,R12,B4,R4]

p1 draws {B7}
Hand: [O4,B6,B7,B8,B10]

p3 plays 30+ on a subsequent turn
p3 plays {R10,R11,R12}
Hand: [B4,R4]
Table: [{R9,B9,G9}, {R4,G4,B4,O4}, {R10,R11,R12}]

p1 can play one meld on a subsequent turn
p1 plays {B6,B7,B8}
Hand: [O4,B10]
Table: [{R9,B9,G9}, {R4,G4,B4,O4}, {R10,R11,R12}, {B6,B7,B8}]

p3 wins with board reuse

p3 takes from {O4} from {R4,G4,B4,O4} and plays {B4,R4,O4}
Table: [{R9,B9,G9}, {R4,G4,B4}, {R10,R11,R12}, {B6,B7,B8}, {B4,R4,O4}]
p3 wins!

Game 6 - PASS (Altin)

p1 can play several melds on a subsequent turn
a player has played 30+ but p2 can't play and draws
a player has played 30+, and p2 plays 30+ points
p2 can't win and has nothing to play thus draws
other player has 3 fewer tiles, but p3 has to draw as it can't play a thing
other player has 3 fewer tiles, p3 plays all tiles it can BUT does not reuse the board
game of 3 works correctly

3 AI

Rig hands
        p1: {R1,R2,R3,R10,R11,R12,R13,G1,G2,G3,O5}
        p2: {R10,B10,R1,R4,B5,B2}
        p3: {O9,O10,O11,B1,B2,B4,B5,B7}

Rig player order:
   ● p1 draws highest tile, goes first

Rig stock
   ● {G10,B3,B7,G1,G2}

p1 plays {R10,R11,R12,R13}
Hand: [R1,R2,R3,G1,G2,G3,O5]
Table: [{R10,R11,R12,13}]

a player has played 30+ but p2 can't play and draws
p2 draws {G10}
Hand: {R10,B10,G10,R1,R4,B5,B2}

p3 plays {O9,O10,O11}
Hand: {B1,B2,B4,B5,B7}
Table: [{R10,R11,R12,13}, {O9,O11,O11}]

a player can play several melds on a subsequent turn
p1 plays {R1,R2,R3}, {G1,G2,G3}
Hand: [O5]
Table: [{R10,R11,R12,13}, {O9,O11,O11}, {R1,R2,R3}, {G1,G2,G3}]

a player has played 30+, and p2 plays 30+ points
p2 plays {R10,B10,G10}
Hand: [R1,R4,B5,B2]
Table: [{R10,R11,R12,13}, {O9,O11,O11}, {R1,R2,R3}, {G1,G2,G3}, {R10,B10,G10}]

other player has 3 fewer tiles, but p3 has to draw as it can't play a thing
p3 draws {B3}
Hand: {B1,B2,B3,B4,B5,B7,R5}

p1 draws {B7}
Hand: [O5,B7]

p2 plays {R4} to {R1,R2,R3}
Hand: [R1,B5,B2]
Table: [{R10,R11,R12,13}, {O9,O11,O11}, {R1,R2,R3,R4}, {G1,G2,G3}, {R10,B10,G10}]

p3 plays {B1,B2,B3,B4,B5}
Hand: {B7}
Table: [{R10,R11,R12,13}, {O9,O11,O11}, {R1,R2,R3,R4}, {G1,G2,G3}, {R10,B10,G10}, {B1,B2,B3,B4,B5}]

p1 draws {G1}
Hand: {O5,B7,G1}

p2 draws {G2}

Game 7 - PASS (Altin)

no other player has 3 fewer tiles, but p3 can't play and has to draw
no other player has 3 fewer tiles, p3 plays only tiles requiring board reuse
play joker by putting on the board as part of a meld from hand
p2 wins without board reuse

2 AI

Rig hands
- p2: {B10,R10,G10,R1,R2}
- p3: {B11,R11,J,G10,B1,B2,B3}

Rig player order
- p3 draws highest tile, goes first

Rig stock
- {O10,J,O9,O8,O7}

p3 plays {B11,R11,J}
Hand: [G10,B1,B2,B3]
Table: [{B11,R11,J}]

p2 plays {B10,R10,G10}
Hand: [R1,R2]
Table: [{B11,R11,J}, {B10,R10,G10}]

p3 draws {O10}
Hand: [O10,B1,B2,B3,B10]

p2 draws {J}
Hand: [R1,R2,J]

Note how it could play {B1,B2,B3} but does not
p3 plays {O10} to {R10,B10,G10}
Hand: {B1,B2,B3,B10}
Table: [{B11,R11,J}, {B10,R10,G10,O10}]

p2 plays {R1,R2,J} and wins!
Hand: []
Table: [{B11,R11,J}, {B10,R10,G10,O10},{R1,R2,J}]

Game 8 - PASS (Altin)

several tiles are added to several runs and sets

p2 plays with board reuse because can't win
p3 wins without using the board

2 AIs

Rig hands
- p3: {B8,G8,O8,R1,R2,R3,O4,B4,G4,O13}
- p2: {B10,G10,O10,G5,G6,G7,R8,R4,R4,O13}

Rig player
- p3 draws highest tile, goes first

Rig stock
- {R13,G13R12,R11,R10,R9}

p3 plays {B8,G8,O8}, {R1,R2,R3}, {O4,B4,G4}
Hand: [O13]
Table: [{B8,G8,O8}, {R1,R2,R3}, {O4,B4,G4}]

p2 plays {B10,G10,O10}
Hand: [G5,G5,G7,R2,R4,R9,O13]
Table: [{B8,G8,O8}, {R1,R2,R3}, {O4,B4,G4}, {B10,G10,O10}]

p3 draws {R13}
Hand: [O13,R13]

several tiles are added to several runs and sets
p2 plays with board reuse because can't win
Note how it could have played {G5,G6,G7} but did not
p2 plays {R9} to {B8,G8,O8}, {R4} to {R1,R2,R3} and {R4} to {O4,B4,G4}
Hand: [G5,G6,G7,O13]
Table: [{B8,G8,O8,R8}, {R1,R2,R3,R4}, {O4,B4,G4,R4}, {B10,G10,O10}]

p3 draws {G13}
Hand: [O13,R13,G13]

p2 draws {R12}
Hand: [G5,G6,G7,O13,R12]

p3 wins without using the board
p3 plays {O13,R13,G13}
Hand: []
Table: [{B8,G8,O8,R8}, {R1,R2,R3,R4}, {O4,B4,G4,R4}, {B10,G10,O10}, {O13,R13,G13}]
p3 wins!

Game 9 - PASS (Altin)

show valid substitution of a joker played on the table (where joker is a specific card)
show valid substitution of a joker played on the table (where joker could be one of 2 cards)

2 humans

Rig hands
- human.1: {R10,B10,J,O10,B8,B10}
- human.2: {B11,B12,B13,G10}

Rig player order
- human1 draws highest tile, goes first

Rig stock
- {R12,R11,R10,R9,R13,G1,G2,G3,B1,B2,B3}

human.1 plays {R10,B10,J}
Table: [{R10,B10,J}]

human.2 plays {B11,B12,B13}
Table: [{R10,B10,J},{B11,B12,B13}]

show valid substitution of a joker played on the table (where joker could be one of 2 cards) - *first card*
Human.1 plays O10 to {R10,B10,J}
Table: [{R10,B10,O10},{B11,B12,B13},{J}]
-- Invalid state, reverting and applying 3-card penalty (player picks up 3 tiles instead of 1)

show valid substitution of a joker played on the table (where joker could be one of 2 cards) - *second card*
human.2 plays G10 to {R10,B10,J}
Table: [{R10,B10,G10},{B11,B12,B13}{J}]
-- Invalid state, reverting and applying 3-card penalty (player picks up 3 tiles instead of 1)

Human.1 plays O10 to {R10,B10,J}
Table: [{R10,B10,O10},{B11,B12,B13},{J}]

Human.1 plays J to {B11,B12,B13}
Table: [{R10,B10,O10},{J,B11,B12,B13}]

show valid substitution of a joker played on the table (where joker could be a specific tile)
Human.1 plays B10 to {J,B11,B12,B13}
Table: [{R10,B10,O10},{B10,B11,B12,B13},{J}]

Human.1 plays J to {B10,B11,B12,B13}
Table: [{R10,B10,O10},{J,B10,B11,B12,B13}]

Human.1 plays B8 to {J,B10,B11,B12,B13}
Table: [{R10,B10,O10},{B8,J,B10,B11,B12,B13}]

Game 10 - simple1 (human) - PASS (Altin)

sample 1.m4v (or preferably something similar to avoid Ace after King)

1 human, 2 AI

Rig hands
- p1.1: {R9,R10,R11,O1}
- p1.2: {B9,G9,O9,O1,O2,O3,O6}
- human: {R12,B10,B11,O9,O10,O11}

Rig player order
- p1.1 draws highest tile, goes first
Rig stock
- {R12,R11,R10,R9}

p1.1 plays {R9,R10,R11}
Table: [{R9,R10,R11}]

p1.2 plays {B9,G9,O9},{O1,O2,O3}
Table: [{R9,R10,R11}, {B9,G9,O9}, {O1,O2,O3}]

human plays {O9,O10,O11}

p1.1 draws {R12}

p1.2 draws {R11}

human moves {R9} from {R9,R10,R11} to {B9,G9,O9}
human plays {R12} to {R10,R11}
human plays {B9} from {B9,G9,O9,R9} to {B10,B11}
Hand: []
Table: [{R10,R11,R12}, {G9,O9,R9}, {O1,O2,O3}, {O9,O10,O11}, {B9,B10,B11}]

Game 11 - simple2 (human) - PASS (Layne)

simple2.m4v

1 human, 1 AI

Rig hands
- p1: {R7,R8,R9,R10,R11,R12,O1}
- human: {B10,O10,R13,G11,G12,G13}

Rig player order
- p1 draws highest tile, goes first

Rig stock
- {R12,R11,R10}

p1 plays {R7,R8,R9,R10,R11,R12}

human plays {G11,G12,G13}

p1 draws {R12}

human plays {R13} to {R7,R8,R9,R10,R11,R12}
human splits {R7,R8,R9,R10,R11,R12,R13} into {R7,R8,R9} and {R11,R12,R13} and {R10}
humans plays {R10} to {B10,O10}
Hand: []
Table: [{R7,R8,9},{G11,G12,G13},{R11,R12,R13},{B10,O10,R10}]
human wins!

Game 12 - complex (human) - PASS (Layne)

Complex.m4v

I made it as similar to the prof's example as I could, barring adding a king (13) onto an ace (1)

1 human, 2 AI

Rig hands
- p1: {O2,O3,O4,O5,G2,G3,G4,G5,R4,R5,R6,B4,B5,B6,B7,O13}
- p2: {R4,O4,G4,B4,G7,R7,O7,O13}
- human: {B5,G5,O6,O1,R10,B10,G10}

Rig player order
- p1 draws highest tile, goes first (then p2, then human)

Rig stock
- {R12,R11,R10,R9,R8}

p1 plays {O2,O3,O4,O5}, {G2,G3,G4,G5}, {R4,R5,R6}, {B4,B5,B6,B7}

p2 plays {R4,O4,G4,B4}. G7,R7,O7}

human plays {R10,B10,G10}

p1 draws {R12}

p2 draws {R11}

human splits {R4,R5,R6} into {R4}, {R5}, {R6}
human plays {R5} onto {B5,G5} (from hand)
human moves {B7} from {B5,B6,B6,B7} to {G7,R7,O7}
human moves {B6} from {B4,B5,B6} to {R6} and plays {O6} to it (from hand)
human plays {O1} (from hand) to {O2,O3,O4,O5} then removes the {O5}
human moves {B5} from {B4,B5} to the {O5}, then also adds the {G5} from {G2,G3,G4,G5}
Finally, human combines {R4} and {B4} in combination with either {O4} or {G4} from {R4,O4,G4,B4}

You know what, you're probably better off just watching the complex video example and adding +1 to every tile, substituting an O1 for an O13. Keep in mind that green is used instead of black (B is for blue).

Game 13 - Strategy 4 - PASS (Layne)

strategy 4: noticing the two instances of a tile are in play and adjusting playing accordingly

2 AI

Rig hands
- p1: {R1,R2,R3,G2,R2,B2,O11,B11,G11,O13}
- p4: {O2,G2,B1,B2,B3,B4,O10,B10,G10,O13}

Rig player order
- p1 draws highest tile, goes first

Rig stock
- {R12,R11,R10,R9,R8}

p1 plays {O11,B11,G11}
Hand: [R1,R2,R3,R2,B2,G2,O13]
Table: [{O11,B11,G11}]

p4 plays {O10,B10,G10}
Hand: [O2,G2,B1,B2,B3,B4,O13]
Table: [{O11,B11,G11}, {O10,B10,G10}]

P1 plays {R1,R2,R3}, {R2,B2,G2}
Hand: [O13]
Table: [{O11,B11,G11}, {R1,R2,R3}, {R2,B2,G2}, {O10,B10,G10}]

strategy 4: noticing the two instances of a tile are in play and adjusting playing accordingly
Instead of opting to play the largest meld, {B1,B2,B3,B4}, it instead plays {O2,G2,B2} because it recognizes that both copies of {R2} are already in play. This is because, if it has instead played {B1,B2,B3,B4}, they would be left with {G2,O2} and they were be unlikely to pick up another tile of value '2' to complete the meld. There's only one possible 'B2' left.
p4 plays {O2,G2,B2}
Hand: [B1,B2,B3,B4,O13]
Table: [{O11,B11,G11}, {R1,R2,R3}, {R2,B2,G2}, {O10,B10,G10}, {O2,G2,B2}]

BONUS: Game 14 - simple1 (AI) - PASS (Layne)

sample 1.m4v (or preferably something similar to avoid Ace after King)

3 AI

Rig hands
- p1.1: {R9,R10,R11,O1}
- p1.2: {B9,G9,O9,O1,O2,O3,O6}
- p1.3: {R12,B10,B11,O9,O10,O11}

Rig player order
- p1.1 draws highest tile, goes first (then p2, then human)

Rig stock
- {R12,R11,R10,R9}

p1.1 plays {R9,R10,R11}
Table: [{R9,R10,R11}]

p1.2 plays {B9,G9,O9},{O1,O2,O3}
Table: [{R9,R10,R11}, {B9,G9,O9}, {O1,O2,O3}]

p1.3 plays {O9,O10,O11}

p1.1 draws {R12}

p1.2 draws {R11}

sample 1.m4v (or preferably something similar to avoid Ace after King)
p1.3 moves {R9} from {R9,R10,R11} to {B9,G9,O9}
p1.3plays {R12} to {R10,R11}
p1.3 plays {B9} from {B9,G9,O9,R9} to {B10,B11}
Hand: []
Table: [{R10,R11,R12}, {G9,O9,R9}, {O1,O2,O3}, {O9,O10,O11}, {B9,B10,B11}]

BONUS: Game 15 - simple2 (AI) - PASS (Layne)

simple2.m4v

2 AI

Rig hands
- p1.1: {R7,R8,R9,R10,R11,R12,O1}
- p1.2: {B10,O10,R13,G11,G12,G13}

Rig player order
- p1.1 draws highest tile, goes first

Rig stock
- {R12,R11,R10}

p1.1 plays {R7,R8,R9,R10,R11,R12}

p1.2 plays {G11,G12,G13}

p1.1 draws {R12}

simple2.m4v
p1.2 plays {R13} to {R7,R8,R9,R10,R11,R12}
p1.2 splits {R7,R8,R9,R10,R11,R12,R13} into {R7,R8,R9} and {R11,R12,R13} and {R10}
p1.2 plays {R10} to {B10,O10}
Hand: []
Table: [{R7,R8,9},{G11,G12,G13},{R11,R12,R13},{B10,O10,R10}]
p1.2 wins!