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```matlab
classdef ThreePlayerGamemode_exported < matlab.apps.AppBase

    % Properties that correspond to app components
    properties (Access = public)
        UIFigure                matlab.ui.Figure
        Image                   matlab.ui.control.Image
        cardDeck1Image          matlab.ui.control.Image
        HandImage1              matlab.ui.control.Image
        HandImage2              matlab.ui.control.Image
        HandImage3              matlab.ui.control.Image
        HandImage4              matlab.ui.control.Image
        HandImage5              matlab.ui.control.Image
        StartButton             matlab.ui.control.Button
        Hit1Button              matlab.ui.control.Button
        StandButton             matlab.ui.control.Button
        DealerHandImage1        matlab.ui.control.Image
        DealerHandImage2        matlab.ui.control.Image
        DealerHandImage3        matlab.ui.control.Image
        DealerHandImage4        matlab.ui.control.Image
        DealerHandImage5        matlab.ui.control.Image
        HandDisplayLabel        matlab.ui.control.Label
        DealerHandDisplayLabel  matlab.ui.control.Label
        BalanceLabel            matlab.ui.control.Label
        cardDeck2Image          matlab.ui.control.Image
        cardDeck3Image          matlab.ui.control.Image
        Hit2Button              matlab.ui.control.Button
        Hit3Button              matlab.ui.control.Button
        CompHandImage1          matlab.ui.control.Image
        CompHandImage2          matlab.ui.control.Image
        CompHandImage3          matlab.ui.control.Image
        CompHandImage4          matlab.ui.control.Image
        CompHandImage5          matlab.ui.control.Image
        CompHandDisplayLabel    matlab.ui.control.Label
        BetEditFieldLabel       matlab.ui.control.Label
        BetEditField            matlab.ui.control.NumericEditField
    end


    properties (Access = private)
        % properties used to store values and objects within app

        % cardDeckMemory = object with class deck
        % AIcontrolMemory = object that determines which difficulty of
AI
```

```matlab
        % Human = object with class player
        % Computer = object with class player
        % Dealer = object with class player
        % Balance = stored double value
        % Wager = stored double value
        cardDeck1Memory
        cardDeck2Memory
        cardDeck3Memory
        AIcontrolMemory
        Human
        Computer
        Dealer
        Balance
        TempBalance
        Bet

    end


    % Callbacks that handle component events
    methods (Access = private)

        % Code that executes after component creation
        function startupFcn(app)
            % startup is when player clicks play

            % giving cardDecks a placeholder
            cardDeck1 = []
            cardDeck2 = []
            cardDeck3 = []

            % setting akk DeckImages to cardback.jpg
            app.cardDeck1Image.ImageSource = imread('cardback.jpg');
            app.cardDeck2Image.ImageSource = imread('cardback.jpg');
            app.cardDeck3Image.ImageSource = imread('cardback.jpg');
            app.HandImage1.Visible = 'off';
            app.HandImage2.Visible = 'off';
            app.HandImage3.Visible = 'off';
            app.HandImage4.Visible = 'off';
            app.HandImage5.Visible = 'off';
            app.CompHandImage1.Visible = 'off';
            app.CompHandImage2.Visible = 'off';
            app.CompHandImage3.Visible = 'off';
            app.CompHandImage4.Visible = 'off';
            app.CompHandImage5.Visible = 'off';
            app.DealerHandImage1.Visible = 'off';
            app.DealerHandImage2.Visible = 'off';
            app.DealerHandImage3.Visible = 'off';
            app.DealerHandImage4.Visible = 'off';
            app.DealerHandImage5.Visible = 'off';

            % setting decks as a global variable
            % setting deckDraw as a global variable
            % setting AIDifficulty as a global variable
```

```matlab
            % assigning deckDraw value of 3
            global decks
            global cardDecks
            global AIDifficulty
            global jokers
            AIDifficulty = 0
            global deckDraw
            deckDraw = 3

            % assign level of difficulty of AI
            if AIDifficulty == 0
                AIcontrol = AIeasy
            else
                AIcontrol = AImedium
            end

            % hide cardDecks not being used
            switch cardDecks
                case 1
                    app.cardDeck2Image.Visible = 'off'
                    app.cardDeck3Image.Visible = 'off'
                case 2
                    app.cardDeck3Image.Visible = 'off'
                otherwise
                    app.cardDeck1Image.Visible = 'on'
                    app.cardDeck2Image.Visible = 'on'
                    app.cardDeck3Image.Visible = 'on'
            end

            % assigning objects cardDecks with class deck and amount
    of decks
            % depends on how many cardDecks intially set in
gameSettings
            switch cardDecks

                case 1
                    cardDeck1 = deck(decks,jokers);
                case 2
                    cardDeck1 = deck(decks,jokers);
                    cardDeck2 = deck(decks,jokers);
                case 3
                    cardDeck1 = deck(decks,jokers);
                    cardDeck2 = deck(decks,jokers);
                    cardDeck3 = deck(decks,jokers);
            end


            % shuffling the amount of decks we put in per cardDeck
            switch cardDecks
                case 1
                     cardDeck1.shuffleDeck;
                case 2
                     cardDeck1.shuffleDeck;
                     cardDeck2.shuffleDeck;
```

```matlab
            case 3
                    cardDeck1.shuffleDeck;
                    cardDeck2.shuffleDeck;
                    cardDeck3.shuffleDeck;
        end

        % setting displays as string(sum of hands)
        app.HandDisplayLabel.Text = "Your Hand: " + "0";
        app.DealerHandDisplayLabel.Text = "Dealer's Hand";
        app.CompHandDisplayLabel.Text = "Computer's Hand";

        % assigning app.Balance to 5000
        % assigning app.Bet to 0
        % setting displays with respected values
        % hide BetEditField until you click start
        app.Balance = 5000
        app.TempBalance = app.Balance
        app.BalanceLabel.Text = "Balance: " + string(app.Balance)
        app.Bet = 0
        app.BetEditField.Value = app.Bet
        app.BetEditField.Visible = 'on'

        % hide all buttons besides start
        app.StandButton.Visible = 'off'
        app.Hit1Button.Visible = 'off'
        app.Hit2Button.Visible = 'off'
        app.Hit3Button.Visible = 'off'

        % storing objects cardDeck within the app
        app.cardDeck1Memory = cardDeck1;
        app.cardDeck2Memory = cardDeck2;
        app.cardDeck3Memory = cardDeck3;
        app.AIcontrolMemory = AIcontrol;

    end

    % Button pushed function: StartButton
    function StartButtonPushed(app, event)
        % assigning the Dealer and Human their hands to start the
round

          % make sure player bets before round starts
        if app.BetEditField.Value==0
           msgbox('please enter a valid bet','you cheapskate!')
            return
        end

        % lower tempBalance by the input of BetEditField
        % display TempBalance
        % after everything is done, set BetEditField to 0
        app.Bet = app.BetEditField.Value;
        app.TempBalance = app.TempBalance - app.Bet;
        app.BalanceLabel.Text = "Balance: " +
string(app.TempBalance);
```

```matlab
                app.BetEditField.Value = 0;

                % setting cardDecks to be a global variable
                global cardDecks

                app.cardDeck1Image.ImageSource = imread('cardback.jpg');
                app.cardDeck2Image.ImageSource = imread('cardback.jpg');
                app.cardDeck3Image.ImageSource = imread('cardback.jpg');

                % assigning local objects cardDeck with the stored app
value
                % assigning local object AIcontrol with the stored app
value
                cardDeck1 = app.cardDeck1Memory;
                cardDeck2 = app.cardDeck2Memory;
                cardDeck3 = app.cardDeck3Memory;
                AIcontrol = app.AIcontrolMemory;

                % clearing table of cards from previous round
                % depends on how many cardDecks intially set in
gameSettings
                switch cardDecks
                    case 1
                        cardDeck1.clearTable;
                    case 2
                        cardDeck1.clearTable;
                        cardDeck2.clearTable;
                    case 3
                        cardDeck1.clearTable;
                        cardDeck2.clearTable;
                        cardDeck3.clearTable;
                end

                % if respected carddeck is less then 2
                % reshuffle discard pile into deck
                % logical will equal an array of zeros unless < 2 cards
left
                % if .cards < 2 then an element would = 1
                % if an element equals 1 then reshuffleDiscard will run
                % depends on how many cardDecks intially set in
gameSettings
                switch cardDecks
                    case 1 % if cardDecks = 1 only run for cardDeck1
                        logical =  ( size(cardDeck1.cards) < 2 );
                        if sum(logical) == 2
                            cardDeck1.reshuffleDiscard
                        end

                    case 2 % if cardDecks = 2 run for cardDeck 1 and 2
                        logical =  ( size(cardDeck1.cards) < 2 );
                        if sum(logical) == 2
                            cardDeck1.reshuffleDiscard
                        end
                        logical =  ( size(cardDeck2.cards) < 2 );
```

```matlab
                        if sum(logical) == 2
                            cardDeck2.reshuffleDiscard
                        end

                case 3 % if cardDecks = 3 run for cardDeck 1,2, and 3
                        logical =  ( size(cardDeck1.cards) < 2 );
                        if sum(logical) == 2
                            cardDeck1.reshuffleDiscard
                        end
                        logical =  ( size(cardDeck2.cards) < 2 );
                        if sum(logical) == 2
                            cardDeck2.reshuffleDiscard
                        end
                        logical =  ( size(cardDeck3.cards) < 2 );
                        if sum(logical) == 2
                            cardDeck3.reshuffleDiscard
                        end

            end

            % setting objects to class player
            player1 = player
            dealer = player
            computer = player
            [y, Fs] = audioread('flip.mp3');
            sound(y,Fs);
            % dealing two cards to the player1(Human) and
dealer(Dealer)
            % this is a reach feature because it deals from each ...
            % cardDeck consecutively
            % setting global variable Card as output
            % assinging needCard = 1 so player1 draws first
            global deckDraw
            needCard = 1

            % depends on how many cardDecks intially set in
gameSettings
            switch cardDecks
                case 1 % run game exactly the same as Gamemode1

                        player1 = player(cardDeck1)
                        dealer = player(cardDeck1)
                        computer = player(cardDeck1)

                case 2 % if cardDecks = 2 alternate between 2
cardDecks
                        for i = [1:6] % deal two cards to each person
                            if deckDraw == 1
                                deckDraw = 2
                            else
                                deckDraw = 1
                            end

                            switch needCard
```

```matlab
                            case 1 % player1 draws
                                if deckDraw == 1 % draw from cardDeck1
                                    player1.hit(cardDeck1)
                                else
                                    player1.hit(cardDeck2)
                                end
                                needCard = 2

                            case 2 % computer draws
                                if deckDraw == 1 % draw from cardDeck1
                                    computer.hit(cardDeck1)
                                else  % draw from cardDeck2
                                    computer.hit(cardDeck2)
                                end
                                needCard = 3

                            case 3 % dealer draws
                                if deckDraw == 1 % draw from cardDeck1
                                    dealer.hit(cardDeck1)
                                else %  draw from cardDeck2
                                    dealer.hit(cardDeck1)
                                end
                                needCard = 1
                        end
                    end

                case 3 % if cardDecks = 3 alternate between 3
cardDecks
                    for i = [1:6] % deal two cards each player (6
cards)
                        % alternating which deck to draw from
                        if deckDraw == 1
                            deckDraw = 2
                        elseif deckDraw == 2
                            deckDraw = 3
                        else
                            deckDraw = 1
                        end

                        switch needCard
                            case 1 % player1 draws
                                if deckDraw == 1 % draw from cardDeck1
                                    player1.hit(cardDeck1)
                                elseif deckDraw == 2 % draw from
cardDeck2
                                    player1.hit(cardDeck2)
                                else % draw from cardDeck3
                                    player1.hit(cardDeck3)
                                end
                                needCard = 2

                            case 2 % dealer draws
                                if deckDraw == 1 % draw from cardDeck1
                                    computer.hit(cardDeck1)
```

```matlab
                                elseif deckDraw == 2 % draw from
cardDeck2
                                    computer.hit(cardDeck2)
                                else % draw from cardDeck3
                                    computer.hit(cardDeck3)
                                end
                                needCard = 3

                            case 3
                                if deckDraw == 1 % draw from cardDeck1
                                    dealer.hit(cardDeck1)
                                elseif deckDraw == 2 % draw from
cardDeck2
                                    dealer.hit(cardDeck2)
                                else % draw from cardDeck3
                                    dealer.hit(cardDeck3)
                                end
                                needCard = 1
                        end
                    end
            end
            app.HandImage1.ImageSource = player1.hand(1).image;
            app.HandImage2.ImageSource = player1.hand(2).image;
            app.HandImage1.Visible = 1;
            app.HandImage2.Visible = 1;
            app.CompHandImage1.ImageSource = computer.hand(1).image;
            app.CompHandImage2.ImageSource = imread('cardback.jpg');
            app.CompHandImage1.Visible = 1;
            app.CompHandImage2.Visible = 1;
            app.DealerHandImage1.ImageSource = dealer.hand(1).image;
            app.DealerHandImage2.ImageSource = imread('cardback.jpg');
            app.DealerHandImage1.Visible = 'on';
            app.DealerHandImage2.Visible = 'on';
            % calculate hand values for player1
            % calculate hand values for dealer
            player1.calcHandValue;
            dealer.calcHandValue;
            computer.calcHandValue;

            % display sum of players' hand values
            app.HandDisplayLabel.Text = " Your Hand: " +
string(player1.handValue);
            app.DealerHandDisplayLabel.Text = " Dealer's Hand";
            app.CompHandDisplayLabel.Text = " Computer's Hand";

            % if cardDeck is empty then reshuffle
            % logical will equal an array of zeros unless .cards = 0
            % if .cards = 0 then an element will equal 1
            % if an element equals 1 then reshuffleDiscard will run
            % depends on how many cardDecks intially set in
gameSettings
            switch cardDecks
                case 1
                    logical =  ( size(cardDeck1.cards) == 0 );
```

```matlab
                        if sum(logical) == 1
                            cardDeck1.reshuffleDiscard
                        end

                    case 2
                        logical =  ( size(cardDeck1.cards) == 0 );
                        if sum(logical) == 1
                            cardDeck1.reshuffleDiscard
                        end
                        logical =  ( size(cardDeck2.cards) == 0 );
                        if sum(logical) == 1
                            cardDeck2.reshuffleDiscard
                        end

                    case 3
                        logical =  ( size(cardDeck1.cards) == 0 );
                        if sum(logical) == 1
                            cardDeck1.reshuffleDiscard
                        end
                        logical =  ( size(cardDeck2.cards) == 0 );
                        if sum(logical) == 1
                            cardDeck2.reshuffleDiscard
                        end
                        logical =  ( size(cardDeck3.cards) == 0 );
                        if sum(logical) == 1
                            cardDeck3.reshuffleDiscard
                        end

                end

                % setting AIbust as a global variable
                global AIbust
                    AIbust = 0

                % display objects in Command Window
                cardDeck1
                cardDeck2
                cardDeck3
                player1
                computer
                dealer

                % make buttons visible if being used
                % depends on how many cardDecks intially set in
        gameSettings
                app.StartButton.Visible = 'off'
                app.StandButton.Visible = 'on'
                switch cardDecks
                    case 1
                        app.Hit1Button.Visible = 'on'
                    case 2
                        app.Hit1Button.Visible = 'on'
                        app.Hit2Button.Visible = 'on'
                    case 3
```

```matlab
                    app.Hit1Button.Visible = 'on'
                    app.Hit2Button.Visible = 'on'
                    app.Hit3Button.Visible = 'on'
                end

                % joker function
                if sum([player1.hand(:).value] == 0) > 0
                    if length(cardDeck1) > 0
                        app.cardDeck1Image.ImageSource =
cardDeck1.cards(1).image;
                    end
                    if length(cardDeck2) > 0
                        app.cardDeck2Image.ImageSource =
cardDeck2.cards(1).image;
                    end
                    if length(cardDeck3) > 0
                        app.cardDeck3Image.ImageSource =
cardDeck3.cards(1).image;
                    end
                end

                % storing objects within the app
                app.cardDeck1Memory = cardDeck1
                app.cardDeck2Memory = cardDeck2
                app.cardDeck3Memory = cardDeck3
                app.Human = player1;
                app.Dealer = dealer;
                app.Computer = computer;

            end

            % Button pushed function: Hit1Button
            function Hit1ButtonPushed(app, event)

                % drawing a card from respected deck
                % cardDeck1
                [y, Fs] = audioread('flip.mp3');
                sound(y,Fs);
                % assigning local objects with stored app values
                cardDeck1 = app.cardDeck1Memory;
                cardDeck2 = app.cardDeck2Memory;
                cardDeck3 = app.cardDeck3Memory;
                player1 = app.Human;
                computer = app.Computer;
                dealer = app.Dealer

                % lower tempBalance by the input of BetEditField
                % display TempBalance
                % after everything is done, set BetEditField to 0
                app.Bet = app.BetEditField.Value
                app.TempBalance = app.TempBalance - app.Bet
                app.BalanceLabel.Text = "Balance: " +
string(app.TempBalance)
                app.BetEditField.Value = 0
```

```matlab
                % using function hit to draw a card from the respected
deck
                % calculating player1's hand value
                player1.hit(cardDeck1);
                player1.calcHandValue;
                switch length(player1.hand)
                    case 3
                        app.HandImage3.ImageSource =
player1.hand(3).image;
                        app.HandImage3.Visible = 1;
                    case 4
                        app.HandImage4.ImageSource =
player1.hand(4).image;
                        app.HandImage4.Visible = 1;
                    case 5
                        app.HandImage5.ImageSource =
player1.hand(5).image;
                        app.HandImage5.Visible = 1;
                        app.Hit1Button.Visible = 'off';
                end
                % if deck is empty then reshuffle
                % logical will equal an array of zeros unless .cards = 0
                % if .cards = 0 then an element will equal 1
                % if an element equals 1 then reshuffleDiscard will run
                logical =  ( size(cardDeck1.cards) == 0 );
                if sum(logical) == 1
                    cardDeck1.reshuffleDiscard
                end

                % display sum of Human's hand values
                app.HandDisplayLabel.Text = " Your Hand: " +
string(player1.handValue)

                % condition statement to determine if handValue is too
high
                % if too high, you lose
                % Balance is lost
                % if handValues are too high, hide all buttons besides
start
```

this should be a function called from script

```matlab
                if player1.handValue > 21

                    msgbox('Tough Luck, You Lose')
                    app.Balance = app.TempBalance
                    app.BalanceLabel.Text = "Balance: " +
string(app.Balance)
                    [y, Fs] = audioread('defeat.mp3');
                    sound(y, Fs);
                    app.StandButton.Visible = 'off'
                    app.Hit1Button.Visible = 'off'
```

```matlab
                app.Hit2Button.Visible = 'off'
                app.Hit3Button.Visible = 'off'
                app.StartButton.Visible = 'on'

            end

            % computer's turn after all player1 code is finished
            % assigning local objects with stored app values
            % setting cardDecks as a global variable
            global cardDecks
            global AIbust

            AIcontrol = app.AIcontrolMemory;
            AIchoice = randi(cardDecks);

            if (AIbust == 0)
                if computer.handValue > 21 % AI lost so set AIbust to
1
                    AIbust = 1
                else % AI is less than 21
                    switch AIchoice
                        case 1
                            AIdraw = cardDeck1
                        case 2
                            AIdraw = cardDeck2
                        case 3
                            AIdraw = cardDeck3
                    end
                    if AIcontrol.AImove(AIdraw,computer)
                        computer.hit(AIdraw)
                        [y, Fs] = audioread('flip.mp3');
                        sound(y,Fs);

                        % if cardDeck is empty then reshuffle
                        % logical will equal an array of zeros
unless .cards = 0
                        % if .cards = 0 then an element will equal 1
                        % if an element equals 1 then reshuffleDiscard
will run
                        % depends on how many cardDecks intially set
in gameSettings
                        switch cardDecks
                            case 1
                                logical =  ( size(cardDeck1.cards) ==
0 );

                                if sum(logical) == 1
                                    cardDeck1.reshuffleDiscard
                                end

                            case 2
                                logical =  ( size(cardDeck1.cards) ==
0 );

                                if sum(logical) == 1
                                    cardDeck1.reshuffleDiscard
```

```matlab
                                            end
                                            logical = ( size(cardDeck2.cards) ==
0 );

                                            if sum(logical) == 1
                                                cardDeck2.reshuffleDiscard
                                            end

                                    case 3
                                            logical = ( size(cardDeck1.cards) ==
0 );

                                            if sum(logical) == 1
                                                cardDeck1.reshuffleDiscard
                                            end
                                            logical = ( size(cardDeck2.cards) ==
0 );

                                            if sum(logical) == 1
                                                cardDeck2.reshuffleDiscard
                                            end
                                            logical = ( size(cardDeck3.cards) ==
0 );

                                            if sum(logical) == 1
                                                cardDeck3.reshuffleDiscard
                                            end

                                end
                            end
                    end
                end

                % calculate computer's hand value
                computer.calcHandValue;
                switch length(computer.hand)
                            case 3
                                    app.CompHandImage3.ImageSource =
computer.hand(3).image;
                                    app.CompHandImage3.Visible = 'on';
                            case 4
                                    app.CompHandImage4.ImageSource =
computer.hand(4).image;
                                    app.CompHandImage4.Visible = 'on';
                            case 5
                                    app.CompHandImage5.ImageSource =
computer.hand(5).image;
                                    app.CompHandImage5.Visible = 'on';
                    end
                % display sum of Computer's hand values
                app.CompHandDisplayLabel.Text = " Computer's Hand";

                % Joker function
                if sum([player1.hand(:).value] == 0) > 0
                        if ~isempty(cardDeck1)
                                app.cardDeck1Image.ImageSource =
cardDeck1.cards(1).image;
                        end
```

```matlab
                if ~isempty(cardDeck2)
                    app.cardDeck2Image.ImageSource =
cardDeck2.cards(1).image;
                end
                if ~isempty(cardDeck3)
                    app.cardDeck3Image.ImageSource =
cardDeck3.cards(1).image;
                end
            end

            % storing local objects within the app
            app.cardDeck1Memory = cardDeck1;
            app.cardDeck2Memory = cardDeck2;
            app.cardDeck3Memory = cardDeck3;
            app.Computer = computer;
            app.Human = player1;

        end

        % Button pushed function: StandButton
        function StandButtonPushed(app, event)
            % keep current value of hand
            % dealer starts trying to beat you

            % hide all buttons during dealer's turn
            app.StandButton.Visible = 'off'
            app.Hit1Button.Visible = 'off'
            app.Hit2Button.Visible = 'off'
            app.Hit3Button.Visible = 'off'

            % assigning local objects with stored app values
            % setting deckDraw as a global variable
            % setting cardDecks as a global variable
            cardDeck1 = app.cardDeck1Memory;
            cardDeck2 = app.cardDeck2Memory;
            cardDeck3 = app.cardDeck3Memory;
            player1 = app.Human;
            computer = app.Computer
            dealer = app.Dealer
            global cardDecks
            global deckDraw
            app.DealerHandImage2.ImageSource = dealer.hand(2).image;
            % let the Computer do whatever it wants until it decides
to
            % stand
            % assign AIstand to 0
            AIstand = 0
            global AIbust
            AIcontrol = app.AIcontrolMemory;

            while (AIstand == 0) & (AIbust == 0)

                AIchoice = randi(cardDecks);
```

```matlab
                    if computer.handValue > 21 % AI lost so set AIbust to
1
                        AIbust = 1
                    else % AI is less than 21
                        switch AIchoice
                            case 1
                                AIdraw = cardDeck1
                            case 2
                                AIdraw = cardDeck2
                            case 3
                                AIdraw = cardDeck3
                        end

                        if AIcontrol.AImove(AIdraw,computer)

                            computer.hit(AIdraw)
                            computer.calcHandValue

                            % update object cardDecks
                            switch AIchoice
                                case 1
                                    cardDeck1 = AIdraw
                                case 2
                                    cardDeck2 = AIdraw
                                case 3
                                    cardDeck3 = AIdraw
                            end

                            % if cardDeck is empty then reshuffle
                            % logical will equal an array of zeros
unless .cards = 0
                            % if .cards = 0 then an element will equal 1
                            % if an element equals 1 then reshuffleDiscard
will run
                            % depends on how many cardDecks intially set
in gameSettings
                            switch cardDecks
                                case 1
                                    logical =  ( size(cardDeck1.cards) ==
0 );

                                    if sum(logical) == 1
                                        cardDeck1.reshuffleDiscard
                                    end

                                case 2
                                    logical =  ( size(cardDeck1.cards) ==
0 );

                                    if sum(logical) == 1
                                        cardDeck1.reshuffleDiscard
                                    end
                                    logical =  ( size(cardDeck2.cards) ==
0 );

                                    if sum(logical) == 1
                                        cardDeck2.reshuffleDiscard
```

```matlab
                                    end

                        case 3
                            logical =  ( size(cardDeck1.cards) ==
0 );

                                if sum(logical) == 1
                                    cardDeck1.reshuffleDiscard
                                end
                                logical =  ( size(cardDeck2.cards) ==
0 );

                                if sum(logical) == 1
                                    cardDeck2.reshuffleDiscard
                                end
                                logical =  ( size(cardDeck3.cards) ==
0 );

                                if sum(logical) == 1
                                    cardDeck3.reshuffleDiscard
                                end
                        end
                else
                    AIstand = 1
                end
            end
        end

         % calculate computer's hand value
        [y, Fs] = audioread('flip.mp3');
        sound(y,Fs);
        computer.calcHandValue;

        % display sum of Computer's hand values
        app.CompHandDisplayLabel.Text = " Computer's Hand";

        % loop that makes the Dealer play the game til it gets >=
17
        while dealer.handValue < 17

            % using function hit to draw a card from cardDecks
            % consecutively
            % depends on how many cardDecks intially set in
gameSettings
            switch cardDecks
                case 1 % run exactly like Gamemode1

                    dealer.hit(cardDeck1)

                case 2 % playing with 2 cardDecks
                    if deckDraw == 1
                        deckDraw = 2
                    else
                        deckDraw = 1

                    end
```

```matlab
                        if deckDraw == 1 % draw from cardDeck1
                            dealer.hit(cardDeck1)
                        else % draw from cardDeck2
                            dealer.hit(cardDeck2)
                        end

                    case 3 % playing with 3 cardDecks
                        if deckDraw == 1
                            deckDraw = 2
                        elseif deckDraw == 2
                            deckDraw = 3
                        else
                            deckDraw = 1
                        end

                        if deckDraw == 1 % draw from cardDeck1
                            dealer.hit(cardDeck1)
                        elseif deckDraw == 2 % draw from cardDeck2
                            dealer.hit(cardDeck2)
                        else % draw from cardDeck3
                            dealer.hit(cardDeck3)
                        end

                end
                [y, Fs] = audioread('flip.mp3');
                sound(y,Fs);
                % calculating dealer's hand value
                dealer.calcHandValue;
                switch length(dealer.hand)
                        case 3
                            app.DealerHandImage3.ImageSource =
dealer.hand(3).image;
                            app.DealerHandImage3.Visible = 'on';
                        case 4
                            app.DealerHandImage4.ImageSource =
dealer.hand(4).image;
                            app.DealerHandImage4.Visible = 'on';
                        case 5
                            app.DealerHandImage5.ImageSource =
dealer.hand(5).image;
                            app.DealerHandImage5.Visible = 'on';
                end
                % if cardDeck is empty then reshuffle
                % logical will equal an array of zeros unless .cards =
0
                % if .cards = 0 then an element will equal 1
                % if an element equals 1 then reshuffleDiscard will
run
                % depends on how many cardDecks intially set in
gameSettings
                switch cardDecks
                    case 1
                        logical =  ( size(cardDeck1.cards) == 0 );
                        if sum(logical) == 1
```

```matlab
                                    cardDeck1.reshuffleDiscard
                                end

                            case 2
                                logical = ( size(cardDeck1.cards) == 0 );
                                if sum(logical) == 1
                                    cardDeck1.reshuffleDiscard
                                end
                                logical = ( size(cardDeck2.cards) == 0 );
                                if sum(logical) == 1
                                    cardDeck2.reshuffleDiscard
                                end

                            case 3
                                logical = ( size(cardDeck1.cards) == 0 );
                                if sum(logical) == 1
                                    cardDeck1.reshuffleDiscard
                                end
                                logical = ( size(cardDeck2.cards) == 0 );
                                if sum(logical) == 1
                                    cardDeck2.reshuffleDiscard
                                end
                                logical = ( size(cardDeck3.cards) == 0 );
                                if sum(logical) == 1
                                    cardDeck3.reshuffleDiscard
                                end

                        end


                        % display sum of Dealer's hand values
                        % pause the loop for 1 second
                        app.DealerHandDisplayLabel.Text = "Dealer's Hand";

                        pause(1);

                    end

                    % Display objects in the Command Window
                    cardDeck1
                    cardDeck2
                    cardDeck3
                    player1
                    dealer

                    % when dealer is done, make start button visible
                    app.StartButton.Visible = 'on'

                    % determine a winner of the round using conditional
statement
                    if (dealer.handValue > 21) & (AIbust == 1)
                        msgbox('Winner Winner Chicken Dinner')
                        app.Balance = app.Balance + (app.Balance -
app.TempBalance)
```

```
                app.BalanceLabel.Text = "Balance: " +
string(app.Balance)
                app.Hit1Button.Visible = 'off';
                [y, Fs] = audioread('victory.wav');
                sound(y, Fs);
                app.DealerHandDisplayLabel.Text = "Dealer's Hand: " +
string(dealer.handValue);
                app.CompHandDisplayLabel.Text = " Computer's Hand: " +
string(computer.handValue);
                app.CompHandImage2.ImageSource =
computer.hand(2).image;
            elseif (dealer.handValue > 21) & (player1.handValue >
computer.handValue)
                msgbox('Winner Winner Chicken Dinner')
                app.Balance = app.Balance + (app.Balance -
app.TempBalance)
                app.BalanceLabel.Text = "Balance: " +
string(app.Balance)
                app.Hit1Button.Visible = 'off';
                [y, Fs] = audioread('victory.wav');
                sound(y, Fs);
                app.DealerHandDisplayLabel.Text = "Dealer's Hand: " +
string(dealer.handValue);
                app.CompHandDisplayLabel.Text = " Computer's Hand: " +
string(computer.handValue);
                app.CompHandImage2.ImageSource =
computer.hand(2).image;
            elseif (player1.handValue > dealer.handValue) & (AIbust ==
1)
                msgbox('Winner Winner Chicken Dinner')
                app.Balance = app.Balance + (app.Balance -
app.TempBalance)
                app.BalanceLabel.Text = "Balance: " +
string(app.Balance)
                app.Hit1Button.Visible = 'off';
                [y, Fs] = audioread('victory.wav');
                sound(y, Fs);
                app.DealerHandDisplayLabel.Text = "Dealer's Hand: " +
string(dealer.handValue);
                app.CompHandDisplayLabel.Text = " Computer's Hand: " +
string(computer.handValue);
                app.CompHandImage2.ImageSource =
computer.hand(2).image;
            elseif (player1.handValue > dealer.handValue) &
(player1.handValue > computer.handValue)
                app.CompHandImage2.ImageSource =
computer.hand(2).image;
                msgbox('Winner Winner Chicken Dinner')
                app.Balance = app.Balance + (app.Balance -
app.TempBalance)
                app.BalanceLabel.Text = "Balance: " +
string(app.Balance)
                app.Hit1Button.Visible = 'off';
                [y, Fs] = audioread('victory.wav');
```

```matlab
                sound(y, Fs);
                app.DealerHandDisplayLabel.Text = "Dealer's Hand: " +
string(dealer.handValue);
                app.CompHandDisplayLabel.Text = " Computer's Hand: " +
string(computer.handValue);
            elseif (player1.handValue == dealer.handValue) &
((computer.handValue <= player1.handValue) | (AIbust == 1))
                msgbox('Draw')
                app.BalanceLabel.Text = "Balance: " +
string(app.Balance)
                app.Hit1Button.Visible = 'off';
                [y, Fs] = audioread('defeat.mp3');
                sound(y, Fs);
                app.CompHandImage2.ImageSource =
computer.hand(2).image;
                app.DealerHandDisplayLabel.Text = "Dealer's Hand: " +
string(dealer.handValue);
                app.CompHandDisplayLabel.Text = " Computer's Hand: " +
string(computer.handValue);
            elseif (player1.handValue == computer.handValue) &
((dealer.handValue <= player1.handValue) | (dealer.handValue > 21))
                msgbox('Draw')
                app.BalanceLabel.Text = "Balance: " +
string(app.Balance)
                app.Hit1Button.Visible = 'off';
                [y, Fs] = audioread('defeat.mp3');
                sound(y, Fs);
                app.CompHandImage2.ImageSource =
computer.hand(2).image;
                app.DealerHandDisplayLabel.Text = "Dealer's Hand: " +
string(dealer.handValue);
                app.CompHandDisplayLabel.Text = " Computer's Hand: " +
string(computer.handValue);
            else
                msgbox('Tough Luck, You Lose')
                app.Balance = app.TempBalance
                app.BalanceLabel.Text = "Balance: " +
string(app.Balance)
                app.Hit1Button.Visible = 'off';
                [y, Fs] = audioread('defeat.mp3');
                sound(y, Fs);
                app.CompHandImage2.ImageSource =
computer.hand(2).image;
                app.DealerHandDisplayLabel.Text = "Dealer's Hand: " +
string(dealer.handValue);
                app.CompHandDisplayLabel.Text = " Computer's Hand: " +
string(computer.handValue);
            end

            % storing local objects within the app
            % hide BetEditField until StartButton is pushed
            app.cardDeck1Memory = cardDeck1;
            app.cardDeck2Memory = cardDeck2;
            app.cardDeck3Memory = cardDeck3;
```

```matlab
            app.Computer = computer;
            app.Human = player1;
            app.Dealer = dealer;
        end

        % Button pushed function: Hit2Button
        function Hit2ButtonPushed(app, event)

            % drawing a card from respected deck
            % cardDeck2
            [y, Fs] = audioread('flip.mp3');
            sound(y,Fs);
            % assigning local objects with stored app values
            cardDeck1 = app.cardDeck1Memory;
            cardDeck2 = app.cardDeck2Memory;
            cardDeck3 = app.cardDeck3Memory;
            player1 = app.Human;
            computer = app.Computer
            dealer = app.Dealer

            % lower tempBalance by the input of BetEditField
            % display TempBalance
            % after everything is done, set BetEditField to 0
            app.Bet = app.BetEditField.Value
            app.TempBalance = app.TempBalance - app.Bet
            app.BalanceLabel.Text = "Balance: " +
string(app.TempBalance)
            app.BetEditField.Value = 0

            % using function hit to draw a card from the respected
deck
            % calculating player1's hand value
            player1.hit(cardDeck2);
            player1.calcHandValue;

            % if deck is empty then reshuffle
            % logical will equal an array of zeros unless .cards = 0
            % if .cards = 0 then an element will equal 1
            % if an element equals 1 then reshuffleDiscard will run
            logical =  ( size(cardDeck2.cards) == 0 );
            if sum(logical) == 1
                cardDeck2.reshuffleDiscard
            end

            % display sum of Human's hand values
            app.HandDisplayLabel.Text = " Your Hand: " +
string(player1.handValue);

            % display objects in the Command Window
            cardDeck2
            player1

            % condition statement to determine if handValue is too
high
```

```
                    % if too high, you lose
                    % Balance is lost
                    % if handValues are too high, hide all buttons besides
start
```

this should be a function called from script

```
                    if player1.handValue > 21

                        msgbox('Tough Luck, You Lose')
                        app.Balance = app.TempBalance
                        app.BalanceLabel.Text = "Balance: " +
string(app.Balance)
                        [y, Fs] = audioread('defeat.mp3');
                        sound(y, Fs);
                        app.StandButton.Visible = 'off'
                        app.Hit1Button.Visible = 'off'
                        app.Hit2Button.Visible = 'off'
                        app.Hit3Button.Visible = 'off'
                        app.StartButton.Visible = 'on'

                    end

                    % computer's turn after all player1 code is finished
                    % assigning local objects with stored app values
                    % setting cardDecks as a global variable
                    global cardDecks
                    global AIbust

                    AIcontrol = app.AIcontrolMemory;
                    AIchoice = randi(cardDecks);

                    if (AIbust == 0)
                        if computer.handValue > 21 % AI lost so set AIbust to
1
                            AIbust = 1
                        else % AI is less than 21
                            switch AIchoice
                                case 1
                                    AIdraw = cardDeck1
                                case 2
                                    AIdraw = cardDeck2
                                case 3
                                    AIdraw = cardDeck3
                            end

                            if AIcontrol.AImove(AIdraw,computer)
                                computer.hit(AIdraw)

                                % if cardDeck is empty then reshuffle
                                % logical will equal an array of zeros
unless .cards = 0
                                % if .cards = 0 then an element will equal 1
```

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```matlab
                                % if an element equals 1 then reshuffleDiscard
will run
                                % depends on how many cardDecks intially set
in gameSettings
                                switch cardDecks
                                    case 1
                                        logical =  ( size(cardDeck1.cards) ==
0 );

                                        if sum(logical) == 1
                                            cardDeck1.reshuffleDiscard
                                        end

                                    case 2
                                        logical =  ( size(cardDeck1.cards) ==
0 );

                                        if sum(logical) == 1
                                            cardDeck1.reshuffleDiscard
                                        end
                                        logical =  ( size(cardDeck2.cards) ==
0 );

                                        if sum(logical) == 1
                                            cardDeck2.reshuffleDiscard
                                        end

                                    case 3
                                        logical =  ( size(cardDeck1.cards) ==
0 );

                                        if sum(logical) == 1
                                            cardDeck1.reshuffleDiscard
                                        end
                                        logical =  ( size(cardDeck2.cards) ==
0 );

                                        if sum(logical) == 1
                                            cardDeck2.reshuffleDiscard
                                        end
                                        logical =  ( size(cardDeck3.cards) ==
0 );

                                        if sum(logical) == 1
                                            cardDeck3.reshuffleDiscard
                                        end

                                end
                            end
                        end
                    end
                    [y, Fs] = audioread('flip.mp3');
                    sound(y,Fs);
                    % calculate computer's hand value
                    computer.calcHandValue;

                    % display sum of Computer's hand values
                    app.CompHandDisplayLabel.Text = " Computer's Hand";

                    % Joker function
```

```matlab
                if sum([player1.hand(:).value] == 0) > 0
                    if length(cardDeck1) > 0
                        app.cardDeck1Image.ImageSource =
cardDeck1.cards(1).image;
                    end
                    if length(cardDeck2) > 0
                        app.cardDeck2Image.ImageSource =
cardDeck2.cards(1).image;
                    end
                    if length(cardDeck3) > 0
                        app.cardDeck3Image.ImageSource =
cardDeck3.cards(1).image;
                    end
                end

                % storing local objects within the app
                app.cardDeck1Memory = cardDeck1;
                app.cardDeck2Memory = cardDeck2;
                app.cardDeck3Memory = cardDeck3;
                app.Computer = computer;
                app.Human = player1;

        end

        % Button pushed function: Hit3Button
        function Hit3ButtonPushed(app, event)

            % drawing a card from respected deck
            % cardDeck3
            [y, Fs] = audioread('flip.mp3');
            sound(y,Fs);
            % assigning local objects with stored app values
            cardDeck1 = app.cardDeck1Memory;
            cardDeck2 = app.cardDeck2Memory;
            cardDeck3 = app.cardDeck3Memory;
            player1 = app.Human;
            computer = app.Computer;
            dealer = app.Dealer

            % lower tempBalance by the input of BetEditField
            % display TempBalance
            % after everything is done, set BetEditField to 0
            app.Bet = app.BetEditField.Value
            app.TempBalance = app.TempBalance - app.Bet
            app.BalanceLabel.Text = "Balance: " +
string(app.TempBalance)
            app.BetEditField.Value = 0

            % using function hit to draw a card from the respected
deck
            % calculating player1's hand value
            player1.hit(cardDeck3);
            player1.calcHandValue;
```

```matlab
            % if deck is empty then reshuffle
            % logical will equal an array of zeros unless .cards = 0
            % if .cards = 0 then an element will equal 1
            % if an element equals 1 then reshuffleDiscard will run
            logical =  ( size(cardDeck3.cards) == 0 );
            if sum(logical) == 1
                cardDeck3.reshuffleDiscard
            end

            % display sum of Human's hand values
            app.HandDisplayLabel.Text = " Your Hand: " +
string(player1.handValue);

            % display objects in the Command Window
            cardDeck3
            player1

            % condition statement to determine if handValue is too
high
            % if too high, you lose
            % Balance is lost
            % if handValues are too high, hide all buttons besides
start
```

this should be a function called from script

```matlab
            if player1.handValue > 21

                msgbox('Tough Luck, You Lose')
                app.Balance = app.TempBalance
                app.BalanceLabel.Text = "Balance: " +
string(app.Balance)
                [y, Fs] = audioread('defeat.mp3');
                sound(y, Fs);
                app.StandButton.Visible = 'off'
                app.Hit1Button.Visible = 'off'
                app.Hit2Button.Visible = 'off'
                app.Hit3Button.Visible = 'off'
                app.StartButton.Visible = 'on'

            end

            % computer's turn after all player1 code is finished
            % assigning local objects with stored app values
            % setting cardDecks as a global variable
            global cardDecks
            global AIbust
            AIcontrol = app.AIcontrolMemory;
            AIchoice = randi(cardDecks);

            if (AIbust == 0)
                if computer.handValue > 21 % AI lost so set AIbust to
1
```

```
                    AIbust = 1
                else % AI is less than 21
                    switch AIchoice
                        case 1
                            AIdraw = cardDeck1
                        case 2
                            AIdraw = cardDeck2
                        case 3
                            AIdraw = cardDeck3
                    end

                    if AIcontrol.AImove(AIdraw,computer)
                        computer.hit(AIdraw)

                        % if cardDeck is empty then reshuffle
                        % logical will equal an array of zeros
unless .cards = 0
                        % if .cards = 0 then an element will equal 1
                        % if an element equals 1 then reshuffleDiscard
will run
                        % depends on how many cardDecks intially set
in gameSettings
                        switch cardDecks
                            case 1
                                logical =  ( size(cardDeck1.cards) ==
0 );

                                if sum(logical) == 1
                                    cardDeck1.reshuffleDiscard
                                end

                            case 2
                                logical =  ( size(cardDeck1.cards) ==
0 );

                                if sum(logical) == 1
                                    cardDeck1.reshuffleDiscard
                                end
                                logical =  ( size(cardDeck2.cards) ==
0 );

                                if sum(logical) == 1
                                    cardDeck2.reshuffleDiscard
                                end

                            case 3
                                logical =  ( size(cardDeck1.cards) ==
0 );

                                if sum(logical) == 1
                                    cardDeck1.reshuffleDiscard
                                end
                                logical =  ( size(cardDeck2.cards) ==
0 );

                                if sum(logical) == 1
                                    cardDeck2.reshuffleDiscard
                                end
```

```matlab
                                                logical =  ( size(cardDeck3.cards) ==
0 );

                                                if sum(logical) == 1
                                                    cardDeck3.reshuffleDiscard
                                                end

                            end
                        end
                    end
                end
                [y, Fs] = audioread('flip.mp3');
                sound(y,Fs);
                % calculate computer's hand value
                computer.calcHandValue;

                % display sum of Computer's hand values
                app.CompHandDisplayLabel.Text = " Computer's Hand: " +
string(computer.handValue)

                % joker function
                if sum([player1.hand(:).value] == 0) > 0
                    if length(cardDeck1) > 0
                        app.cardDeck1Image.ImageSource =
cardDeck1.cards(1).image;
                    end
                    if length(cardDeck2) > 0
                        app.cardDeck2Image.ImageSource =
cardDeck2.cards(1).image;
                    end
                    if length(cardDeck3) > 0
                        app.cardDeck3Image.ImageSource =
cardDeck3.cards(1).image;
                    end
                end

                % storing local objects within the app
                app.cardDeck1Memory = cardDeck1;
                app.cardDeck2Memory = cardDeck2;
                app.cardDeck3Memory = cardDeck3;
                app.Computer = computer;
                app.Human = player1;

            end
        end

        % Component initialization
        methods (Access = private)

            % Create UIFigure and components
            function createComponents(app)

                % Create UIFigure and hide until all components are
created
                app.UIFigure = uifigure('Visible', 'off');
```

```matlab
            app.UIFigure.Position = [100 100 648 434];
            app.UIFigure.Name = 'UI Figure';

            % Create Image
            app.Image = uiimage(app.UIFigure);
            app.Image.Position = [-14 -40 707 505];
            app.Image.ImageSource = 'background.jpg';

            % Create cardDeck1Image
            app.cardDeck1Image = uiimage(app.UIFigure);
            app.cardDeck1Image.Position = [80 303 100 100];

            % Create HandImage1
            app.HandImage1 = uiimage(app.UIFigure);
            app.HandImage1.Position = [24 148 56 65];

            % Create HandImage2
            app.HandImage2 = uiimage(app.UIFigure);
            app.HandImage2.Position = [88 152 57 58];

            % Create HandImage3
            app.HandImage3 = uiimage(app.UIFigure);
            app.HandImage3.Position = [149 151 59 58];

            % Create HandImage4
            app.HandImage4 = uiimage(app.UIFigure);
            app.HandImage4.Position = [49 88 68 64];

            % Create HandImage5
            app.HandImage5 = uiimage(app.UIFigure);
            app.HandImage5.Position = [121 88 59 60];

            % Create StartButton
            app.StartButton = uibutton(app.UIFigure, 'push');
            app.StartButton.ButtonPushedFcn = createCallbackFcn(app,
@StartButtonPushed, true);
            app.StartButton.Position = [465 52 100 22];
            app.StartButton.Text = 'Start';

            % Create Hit1Button
            app.Hit1Button = uibutton(app.UIFigure, 'push');
            app.Hit1Button.ButtonPushedFcn = createCallbackFcn(app,
@Hit1ButtonPushed, true);
            app.Hit1Button.Position = [79 269 100 22];
            app.Hit1Button.Text = 'Hit1';

            % Create StandButton
            app.StandButton = uibutton(app.UIFigure, 'push');
            app.StandButton.ButtonPushedFcn = createCallbackFcn(app,
@StandButtonPushed, true);
            app.StandButton.Position = [67 52 100 22];
            app.StandButton.Text = 'Stand';

            % Create DealerHandImage1
```

```matlab
            app.DealerHandImage1 = uiimage(app.UIFigure);
            app.DealerHandImage1.Position = [432 152 57 61];

            % Create DealerHandImage2
            app.DealerHandImage2 = uiimage(app.UIFigure);
            app.DealerHandImage2.Position = [497 146 59 76];

            % Create DealerHandImage3
            app.DealerHandImage3 = uiimage(app.UIFigure);
            app.DealerHandImage3.Position = [564 157 59 56];

            % Create DealerHandImage4
            app.DealerHandImage4 = uiimage(app.UIFigure);
            app.DealerHandImage4.Position = [455 84 63 68];

            % Create DealerHandImage5
            app.DealerHandImage5 = uiimage(app.UIFigure);
            app.DealerHandImage5.Position = [525 86 62 63];

            % Create HandDisplayLabel
            app.HandDisplayLabel = uilabel(app.UIFigure);
            app.HandDisplayLabel.Position = [70 221 120 22];
            app.HandDisplayLabel.Text = 'HandDisplay';

            % Create DealerHandDisplayLabel
            app.DealerHandDisplayLabel = uilabel(app.UIFigure);
            app.DealerHandDisplayLabel.Position = [454 221 145 22];
            app.DealerHandDisplayLabel.Text = 'DealerHandDisplay';

            % Create BalanceLabel
            app.BalanceLabel = uilabel(app.UIFigure);
            app.BalanceLabel.Position = [246 52 125 22];
            app.BalanceLabel.Text = 'Balance';

            % Create cardDeck2Image
            app.cardDeck2Image = uiimage(app.UIFigure);
            app.cardDeck2Image.Position = [271 303 100 100];

            % Create cardDeck3Image
            app.cardDeck3Image = uiimage(app.UIFigure);
            app.cardDeck3Image.Position = [465 303 100 100];

            % Create Hit2Button
            app.Hit2Button = uibutton(app.UIFigure, 'push');
            app.Hit2Button.ButtonPushedFcn = createCallbackFcn(app,
@Hit2ButtonPushed, true);
            app.Hit2Button.Position = [271 269 100 22];
            app.Hit2Button.Text = 'Hit 2';

            % Create Hit3Button
            app.Hit3Button = uibutton(app.UIFigure, 'push');
            app.Hit3Button.ButtonPushedFcn = createCallbackFcn(app,
@Hit3ButtonPushed, true);
            app.Hit3Button.Position = [465 269 100 22];
```

```matlab
            app.Hit3Button.Text = 'Hit 3';

            % Create CompHandImage1
            app.CompHandImage1 = uiimage(app.UIFigure);
            app.CompHandImage1.Position = [226 156 59 58];

            % Create CompHandImage2
            app.CompHandImage2 = uiimage(app.UIFigure);
            app.CompHandImage2.Position = [291 155 59 58];

            % Create CompHandImage3
            app.CompHandImage3 = uiimage(app.UIFigure);
            app.CompHandImage3.Position = [359 155 59 58];

            % Create CompHandImage4
            app.CompHandImage4 = uiimage(app.UIFigure);
            app.CompHandImage4.Position = [260 89 59 58];

            % Create CompHandImage5
            app.CompHandImage5 = uiimage(app.UIFigure);
            app.CompHandImage5.Position = [328 90 59 58];

            % Create CompHandDisplayLabel
            app.CompHandDisplayLabel = uilabel(app.UIFigure);
            app.CompHandDisplayLabel.Position = [248 221 171 22];
            app.CompHandDisplayLabel.Text = 'CompHandDisplay';

            % Create BetEditFieldLabel
            app.BetEditFieldLabel = uilabel(app.UIFigure);
            app.BetEditFieldLabel.HorizontalAlignment = 'right';
            app.BetEditFieldLabel.Position = [260 22 25 22];
            app.BetEditFieldLabel.Text = 'Bet';

            % Create BetEditField
            app.BetEditField = uieditfield(app.UIFigure, 'numeric');
            app.BetEditField.Position = [300 22 68 22];

            % Show the figure after all components are created
            app.UIFigure.Visible = 'on';
        end
    end

    % App creation and deletion
    methods (Access = public)

        % Construct app
        function app = ThreePlayerGamemode_exported

            % Create UIFigure and components
            createComponents(app)

            % Register the app with App Designer
            registerApp(app, app.UIFigure)
```

```matlab
            % Execute the startup function
            runStartupFcn(app, @startupFcn)

            if nargout == 0
                clear app
            end
        end

        % Code that executes before app deletion
        function delete(app)

            % Delete UIFigure when app is deleted
            delete(app.UIFigure)
        end
    end
end
```

cardDeck1 =

    [ ]

cardDeck2 =

    [ ]

cardDeck3 =

    [ ]

AIDifficulty =

    0

deckDraw =

    3

AIcontrol =

  AIeasy with no properties.

SWITCH expression must be a scalar or a character vector.

Error in ThreePlayerGamemode_exported/startupFcn (line 115)
        switch cardDecks

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