Assignment 6: Phase 1

Assignment6P1

+ main(String[] args) : void

CardGameView

- computerLabels: JLabel[]
- humanLabels: JLabel[]
- playedCardLabels: JLabel[]
- humanButtons: JButton[]
- + initializeCardGameTable(CardTable cardTable, Hand humanHand, ActionListener restartGameListener, ActionListener playCardListener, int numCardsPerHand, int numPlayers): boolean
- + hideHumanCard(int playerHandIndex) : boolean
- + hideNextComputerCard(): boolean
- + updateStatusMessage(String message) : boolean
- + showHumanPlayedCard(Card cardPlayed): boolean
- + showComputerPlayedCard(Card cardPlayed) : boolean
- + resetBoard(Hand humanHand, int numCardsPerHand): void

CardGameModel

~ NUM_CARDS_PER_HAND: int

~ NUM_PLAYERS: int - winnings: Card[] - losings: Card[]

- wonCards: int

- computerWonCards: int

- highCardGame: CardGameFramework

- cardGameView: CardGameView

+ CardGameModel(CardGameView cardGameView)

+ initializeCardGame(ActionListener restartGameListener, ActionListener playCardListener): boolean

+ playRound(int playerHandIndex) : boolean

+ resetGame(): void - dealCards(): boolean

- humanCardIsHigher(Card computerCard, Card

humanCard): boolean

CardGameController

- cardGameModel: CardGameModel

+ CardGameController(CardGameModel cardGameModel)

+ play() : boolean

KEY

- + public access
- private access
- # protected
- ~ package private underlined text is **static**

GUICard

- cardSuit: String[]
- iconCards: Icon[][]
- iconBack: Icon
- + GUICard()
- ~ loadCardIcons(): void

~ iconsLoaded: boolean

- getFileNames(): String[][]
- ~ turnIntIntoCardValue(int k): String
- ~ turnIntIntoCardSuit(int j) : String
- valueAsInt(Card card) : int
- suitAsInt(Card card) : int
- + getIcon(Card card) : Icon
- + getBackCardIcon(): Icon

Card

- value: char
- errorFlag: boolean
- suit: Suit
- + cardValues: char[]
- + valueRanks: char[]
- + Card()
- + Card(char value, Suit suit)
- + getSuit(): Suit + getValue(): char
- getvalue(). Glai
- + getErrorFlag() : boolean
- + toString(): String
- + set(char value, Suit suit) : boolean
- ~ arraySort(Card[] cards, int arraySize) : void
- findValueRankIndex(char cardValue): int
- + equals(Card card) : boolean
- isValid(char value, Suit suit) : boolean

Hand

- + MAX_CARDS: int
- myCards: Card[]
- numCards: int
- + Hand()
- + resetHand(): void
- + getNumCards(): int
- + takeCard(Card card): boolean
- + playCard(): Card
- + playCard(int cardIndex): Card
- + inspectCard(int k) : Card
- + toString(): String
- + sort(): void

<<enumeration>> Suit

CLUBS DIAMONDS HEARTS SPADES

Deck

- + MAX CARDS: int
- masterPack: Card[]
- cards: Card[]
- topCard: int
- numPacks: int
- + Deck()
- + Deck(int numPacks)
- + getTopCard(): int
- + init(int numPacks): void
- + shuffle(): void
- + dealCard(): Card
- + inspectCard(int k) : Card
- allocateMasterPack(): void
- + addCard(Card card): boolean
- + removeCard(Card card) : boolean
- + sort(): void
- + getNumCards(): int

JFrame



CardTable

- ~ MAX CARDS PER HAND: int
- ~ MAX PLAYERS: int
- numCardsPerHand: int
- numPlayers: int
- + pnlComputerHand: JPanel
- + pnlHumanHand: JPanel
- + pnlPlayArea: JPanel
- + CardTable(String title, int numCardsPerHand, int numPlayers)
- + getNumCardsPerHand(): int
- + getNumPlayers(): int

CardGameFramework

- MAX PLAYERS: int
- numPlayers: int
- numPacks: int
- numJokersPerPack: int
- numUnusedCardsPerPack: int
- numCardsPerHand: int
- deck: Deck
- hand: Hand[]
- unusedCardsPerPack: Card[]
- + CardGameFramework()
- + CardGameFramework(int numPacks, int numJokersPerPack, int numUnusedCardsPerPack, Card[] unusedCardsPerPack, int numPlayers, int numCardsPerHand)
- + getHand(int k): Hand
- + getCardFromDeck() : Card
- + getNumCardsRemainingInDeck(): int
- + newGame(): void
- + deal(): boolean
- + sortHands(): boolean
- ~ playCard(int playerIndex, int cardIndex) : Card
- + takeCard(int playerIndex) : boolean

Assignment 6: Phase 2

Assignment6P2

+ main(String[] args) : void

CardGameView

- computerLabels: JLabel[]
- humanLabels: JLabel[]
- playedCardLabels: JLabel[]
- humanButtons: JButton[]
- + initializeCardGameTable(CardTable cardTable, Hand humanHand, ActionListener restartGameListener, ActionListener playCardListener, int numCardsPerHand, int numPlayers): boolean
- + hideHumanCard(int playerHandIndex) : boolean
- + hideNextComputerCard(): boolean
- + updateStatusMessage(String message): boolean
- + showHumanPlayedCard(Card cardPlayed) : boolean
- + showComputerPlayedCard(Card cardPlayed) : boolean
- + resetBoard(Hand humanHand, int numCardsPerHand): void

CardGameModel

~ NUM_CARDS_PER_HAND: int

~ NUM_PLAYERS: int - winnings: Card[] - losings: Card[] - wonCards: int

- computerWonCards: int

- highCardGame: CardGameFramework

- cardGameView: CardGameView

+ CardGameModel(CardGameView cardGameView)

+ initializeCardGame(ActionListener restartGameListener, ActionListener playCardListener): boolean

+ playRound(int playerHandIndex) : boolean

+ resetGame(): void - dealCards(): boolean

- humanCardIsHigher(Card computerCard, Card

humanCard): boolean

CardGameController

- cardGameModel: CardGameModel

- timer: Timer

+ CardGameController(CardGameModel cardGameModel, Timer timer)

+ beginTimer(): boolean

+ play(): boolean

JFrame

TimerView

- timerLabel: JLabel- startStopButton: JButton

+ TimerView()

+ updateTimer(int hundredthsSecondsPassed):boolean

+ setStartStopButtonListener(ActionListener listener)

: boolean

Timer

- INTERVAL: int

- view: TimerView- hundredthsSecandsPassed: int

- isThreadRunning: boolean

- isRunning: boolean

+ Timer(TimerView timerView)

+ startThread(): void

+ run(): void

+ setTimerStartStopListener(ActionListener

startTimerListener) : boolean + startOrStop() : boolean + isThreadRunning() : boolean

- doNothing(int milliseconds) : boolean

GUICard

- cardSuit: String[]
- iconCards: Icon[][]
- iconBack: Icon
- ~ iconsLoaded: boolean
- + GUICard()
- ~ loadCardIcons(): void
- getFileNames(): String[][]
- ~ turnIntIntoCardValue(int k): String
- ~ turnIntIntoCardSuit(int j) : String
- valueAsInt(Card card): int
- suitAsInt(Card card) : int
- + getIcon(Card card) : Icon
- + getBackCardIcon(): Icon

Card

- value: char
- errorFlag: boolean
- suit: Suit
- + cardValues: char[]
- + valueRanks: char[]
- + Card()
- + Card(char value, Suit suit)
- + getSuit(): Suit
- + getValue(): char
- + getErrorFlag(): boolean
- + toString(): String
- + set(char value, Suit suit): boolean
- ~ arraySort(Card[] cards, int arraySize) : void
- findValueRankIndex(char cardValue) : int
- + equals(Card card) : boolean
- isValid(char value, Suit suit): boolean

Hand

- + MAX CARDS: int
- myCards: Card[] - numCards: int
- + Hand()
- + resetHand(): void
- + getNumCards(): int
- + takeCard(Card card): boolean
- + playCard(): Card
- + playCard(int cardIndex): Card
- + inspectCard(int k) : Card
- + toString(): String
- + sort(): void

<<enumeration>> Suit

CLUBS **DIAMONDS HEARTS SPADES**

Deck

- + MAX CARDS: int
- masterPack: Card[]
- cards: Card[]
- topCard: int
- numPacks: int
- + Deck()
- + Deck(int numPacks)
- + getTopCard(): int
- + init(int numPacks) : void
- + shuffle(): void
- + dealCard(): Card
- + inspectCard(int k) : Card
- allocateMasterPack(): void
- + addCard(Card card) : boolean
- + removeCard(Card card) : boolean
- + sort(): void
- + getNumCards(): int

JFrame



CardTable

- ~ MAX CARDS PER HAND: int
- ~ MAX PLAYERS: int
- numCardsPerHand: int
- numPlayers: int
- + pnlComputerHand: JPanel
- + pnlHumanHand: JPanel
- + pnlPlayArea: JPanel
- + CardTable(String title, int numCardsPerHand, int
- numPlavers)
- + getNumCardsPerHand(): int
- + getNumPlayers(): int

CardGameFramework

- MAX PLAYERS: int
- numPlavers: int
- numPacks: int
- numJokersPerPack: int
- numUnusedCardsPerPack: int
- numCardsPerHand: int
- deck: Deck
- hand: Hand[]
- unusedCardsPerPack: Card[1
- + CardGameFramework()
- + CardGameFramework(int numPacks, int numJokersPerPack, int numUnusedCardsPerPack, Card[] unusedCardsPerPack, int numPlayers, int numCardsPerHand)
- + getHand(int k): Hand
- + getCardFromDeck(): Card
- + getNumCardsRemainingInDeck(): int
- + newGame(): void + deal(): boolean
- + sortHands(): boolean
- ~ playCard(int playerIndex, int cardIndex): Card
- + takeCard(int playerIndex): boolean

Assignment 6: Phase 3

Assignment6P3

+ main(String[] args) : void

CardGameView

- computerLabels : JLabel[]

- humanLabels : JLabel[]

playedCardLabels : JLabel[]

- humanButtons : JButton[]

- scoreLabesl : JLabel[]

- passButton : JButton

restartButton : JButton

+ initializeCardGameTable(CardTable cardTable,

Hand humanHand,
ActionListener restartGameListener,

ActionListener playCardListener, int numCardsPerHand, int numPlayers.

Card[] discardPile, ActionListener

passButtonListener) : boolean

+ hideHumanCard(int playerHandIndex) : boolean

+ hideNextComputerCard() : boolean

+ updateStatusMessage(String message) : boolean

+ updateDiscards(Card[] discards) : boolean

+ updateScoreboard(int computerScore. int

humanScore) : boolean

+ updatePlayedCard(Card cardPlayed, int

discardIndex) : boolean

+ updateHumanHand(Hand humanHand, int

numCardsPerHand) : boolean

+ showComputerPlayedCard(Card cardPlayed) :

ooolean

+ resetBoard(Hand humanHand, int

numCardsPerHand, Card[] discardPile) : void

CardGameModel

- NUM CARDS PER HAND : int

NUM_PLAYERS : int

- humanPasses : int

<u>- computerPasses : int</u>

- consecutivePass : boolean

gameOver : boolean

discardPile : Card[]

- buildCardGame : CardGameFramework

- cardGameView : CardGameView

+ CardGameModel(CardGameView cardGameView)

+ initializeCardGame(ActionListener

restartGameListener,

ActionListener playCardListener,

ActionListener passButtonListener) : boolean

+ playHumanTurn(int playerHandIndex, int

discardIndex) : boolean

+ playComputerTurn() : boolean

+ resetGame() : void

gameOver(): void

+ getGameOver() : boolean

· dealCards(): boolean

+ humanCanPlay(int playerHandIndex) : int

+ plaverPass() : void

computerCanPlay(Hand computerHand) : int

- findDiscardPile(Card playedCard) : int

+ getNewDiscards(): boolean

GameCardController

cardGameModel : CardGameModel

- cardGameView : CardGameView

- timer : Timer

+ CardGameController(CardGameModel cardGameModel, Timer timer, CardGameView cardGameView)

ardGameview)

+ beginTimer() : boolean

+ play() : boolean

+ actionPerformed(ActionEvent e) : void

JFrame

TimerView

timerLabel: JLabel

startStopButton: JButton

+ TimerView()

+ updateTimer(int hundredthsSecondsPassed) :

+ setStartStopButtonListener(ActionListener listener): boolean

Timer

- INTERVAL : int

view : TimerView

hundredthsSecondsPassed: int

- isThreadRunning : boolean

- isRunning : boolean

+ Timer(TimerView timerView)

+ startThread(): void

+ run(): void

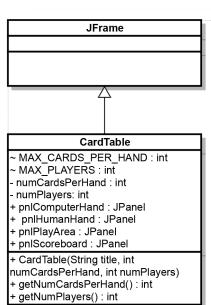
+ setTimerStartStopListener(ActionListener

startTimerListener) : boolean

+ startOrStop() : boolean

+ isThreadRunning() : boolean

- doNothing(int milliseconds) : boolean



+ getNumPlayers(): int GUICard - cardSuit: String[] - conCards: Icon[] - lconBack: Icon ~ iconsLoaded: boolean + GUICard() ~ loadCardIcons(): void - getFileNames(): String[][] ~ turnIntIntoCardValue(int k): String ~ turnIntIntoCardValue(int j): String - valueAsInt(Card card): int - valueAsInt(Card card): int + getIcon(Card card): Icon + getBackCardIcon(): Icon

Card value : char errorFlag : boolean suit : Suit - cardValues : char[] valueRanks : char[] Card(char value, Suit suit) Card() getSuit(): Suit getValue() : char getErrorFlag() : boolean + toString(): String set(char value, Suit suit) : boolean - arraySort(Card[] cards, int arraySize) : void + findValueRankIndex(char cardValue) : int + equals(Card card) : boolean isValid(char value, Suit suit) : boolean Hand

+ MAX_CARDS: int - myCards: Cards[] - numCards: int + Hand() + resetHand(): void + getNumCards: int + takeCard(Card card): boolean + playCard(): Card + playCard(int cardIndex): Card + inspectCard(int k): Card + toString(): String + sort(): void

Deck + MAX_CARDS : int - masterPack : Card[] - cards : Card[] - topCard : int - numPacks : int + Deck(int numPacks) + Deck() + getTopCard() : int + init(int numPacks) : void + shuffle() : void + dealCard() : Card + inspectCard(int k) : Card + allocateMasterPack() : void

+ addCard(Card card) : boolean

sort(): void

getNumCards(): int

+ removeCard(Card card) : boolean

CardGameFramework numPlayers : int numPacks : int numJokersPerPack : int numUnusedCardsPerPack : int - numCardsPerHand : int - deck : Deck - hand : Hand[] - unusedCardsPerPack : Card[] + CardGameFramework(int numPacks, int numJokersPerPack, int numUnusedCardsPerPack, Card[] unusedCardsPerPack, int numPlayers, int numCardsPerHand) + CardGameFramework() + getHand(int k) : Hand + getCardFromDeck() : Card + getNumCardsRemainingInDeck(): int + newGame(): void + deal() : boolean + sortHands(): void

+ playCard(int playerIndex, int cardIndex) : Car

+ takeCard(int playerIndex) : boolean