My Project

Generated by Doxygen 1.8.13

Contents

Chapter 1

Project Name Source Code

The folders and files for this project are as follows:

...

Chapter 2

Hierarchical Index

2.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Chapter 3

Class Index

3.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 4

Class Documentation

4.1 Card Class Reference

A class to present Card data type.

Public Member Functions

- Card (Suit s, int r)
- Suit getSuit ()
- int getRank ()
- int points ()
- String toString ()
- String toSymbol ()
- String rankString ()
- String suitSymbol ()

4.1.1 Detailed Description

A class to present Card data type.

Author

Smita Singh

4.1.2 Constructor & Destructor Documentation

4.1.2.1 Card()

```
Card.Card (
             Suit s,
             int r )   [inline]
```

Card constructor

Parameters

s	- Suit type
r	- rank of card (1 to 13)

4.1.3 Member Function Documentation

4.1.3.1 getRank()

```
int Card.getRank ( )  [inline]
```

Accessor for rank

Returns

This returns the card rank

4.1.3.2 getSuit()

```
Suit Card.getSuit ( )  [inline]
```

Accessor for suit

Returns

This returns the card suit

4.1.3.3 points()

```
int Card.points ( )  [inline]
```

This method checks if the card is lower than 10 if it is lower than 10 it returns the card rank. if it is not lower than 10, it returns the value of 10

Returns

Returns card points

4.1.3.4 rankString()

```
String Card.rankString ( )  [inline]
```

This method will create the string representation of the card rank

Returns

Returns a string representation of the card rank

4.1.3.5 suitSymbol()

```
String Card.suitSymbol ( )  [inline]
```

This method will create the string representation of the card suit symbol

Returns

Returns a string representation of the card suit symbol

4.1.3.6 toString()

```
String Card.toString ( )  [inline]
```

This method turns a card into a string value by calling two private methods that turn the rank and suit into string seperately. Then it combines the two string

Returns

Returns a string representation of the card

4.1.3.7 toSymbol()

```
String Card.toSymbol ( )  [inline]
```

This method turns a card into a string value with the suit symbol by calling two private methods that turn the rank and suit into string seperately. Then it combines the two string

Returns

Returns a string representation of the card with suit symbol

The documentation for this class was generated from the following file:

- Card.java

4.2 Computer Class Reference

The computer opponent class to make the computer's move.

Static Public Member Functions

- static boolean makeMove (Player player, StockPile stockPile, DiscardPile discardPile)

4.2.1 Detailed Description

The computer opponent class to make the computer's move.

Author

Joy Xiao

4.2.2 Member Function Documentation

4.2.2.1 makeMove()

```
static boolean Computer.makeMove (
            Player player,
            StockPile stockPile,
            DiscardPile discardPile )  [inline], [static]
```

Computer opponent makes move

Parameters

player	the computer player
stockPile	the stock pile
discardPile	the discard pile

Returns

true when computer knocks, false when computer draws card

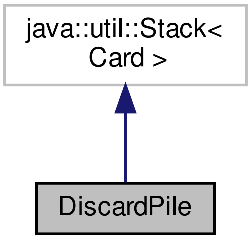
The documentation for this class was generated from the following file:

- Computer.java

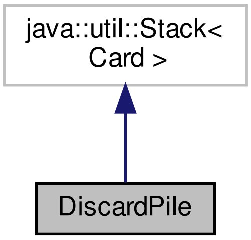
4.3 DiscardPile Class Reference

The discard pile class.

Inheritance diagram for DiscardPile:



Collaboration diagram for DiscardPile:



Public Member Functions

- void displayTopCard ()

4.3.1 Detailed Description

The discard pile class.

Author

Joy Xiao

4.3.2 Member Function Documentation

4.3.2.1 displayTopCard()

```
void DiscardPile.displayTopCard ( )  [inline]
```

Display the top card of the discard pile

The documentation for this class was generated from the following file:

- DiscardPile.java

4.4 GameOps Class Reference

Class of operations for a game of Gin Rummy.

Static Public Member Functions

- static void calculateScores (Player p1, Player cpu)
- static StockPile createStockPile ()
- static DiscardPile createDiscardPile ()
- static void distributeCards (Player p1, Player cpu, StockPile stockPile, DiscardPile discardPile)
- static void endGame ()
- static char playAgain ()
- static boolean processDecision (Player p1, StockPile sp, DiscardPile dp)
- static void resetEverything (Player p)
- static String username ()

4.4.1 Detailed Description

Class of operations for a game of Gin Rummy.

Author

Benson Hall

4.4.2 Member Function Documentation

4.4.2.1 calculateScores()

```
static void GameOps.calculateScores (
            Player p1,
            Player cpu )  [inline], [static]
```

Calculate score: The absolute value of the difference of the deadwood scores is calculated, and the points are awarded to the player with the lowest deadwood score. If any of the players have 0 deadwood points and knocks, they get an additional 20 points.

Parameters

p1	- user player
cpu	- computer player

4.4.2.2 createDiscardPile()

```
static DiscardPile GameOps.createDiscardPile ( )  [inline], [static]
```

Create discard pile

Returns

new discard pile

4.4.2.3 createStockPile()

```
static StockPile GameOps.createStockPile ( )  [inline], [static]
```

Create initial stock pile and add cards to it

Returns

new stock pile

4.4.2.4 distributeCards()

```
static void GameOps.distributeCards (
            Player p1,
            Player cpu,
            StockPile stockPile,
            DiscardPile discardPile )  [inline], [static]
```

Distribute cards. 10 cards per player, next card on the discard pile

Parameters

p1	- user player
cpu	- computer player
stockPile	- stock pile
discardPile	- discard pile

4.4.2.5 endGame()

```
static void GameOps.endGame ( )  [inline], [static]
```

End the game, close scanners

4.4.2.6 playAgain()

```
static char GameOps.playAgain ( )  [inline], [static]
```

Play again? Ask the user.

Returns

user's input

4.4.2.7 processDecision()

```
static boolean GameOps.processDecision (
             Player p1,
             StockPile sp,
             DiscardPile dp )  [inline], [static]
```

Given the user's choice, process its choice and return true if the user knocks, false otherwise.

Parameters

p1	- user player
sp	- stock pile
dp	- discard pile

Returns

true if user knocks, false otherwise

4.4.2.8 resetEverything()

```
static void GameOps.resetEverything (
             Player p )  [inline], [static]
```

Reset all elements of the former deal

Parameters

p	- player being reset

4.4.2.9 username()

```
static String GameOps.username ( )  [inline], [static]
```

Call user operations to ask for a username

Returns

username from user operations

The documentation for this class was generated from the following file:

- GameOps.java

4.5 GinRummy Class Reference

Main operating class of the program.

Static Public Member Functions

- static void playGame (Player p1, Player cpu)
- static void main (String[ ] args)

4.5.1 Detailed Description

Main operating class of the program.

Author

Benson

4.5.2 Member Function Documentation

4.5.2.1 main()

```
static void GinRummy.main (
             String [] args )  [inline], [static]
```

Main method

4.5.2.2 playGame()

```
static void GinRummy.playGame (
             Player p1,
             Player cpu )  [inline], [static]
```

Play a game of Gin Rummy

Parameters

p1	- user player
cpu	- computer player

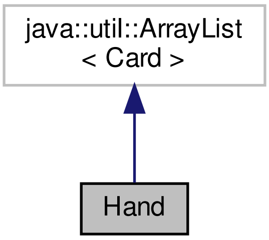
The documentation for this class was generated from the following file:

- GinRummy.java

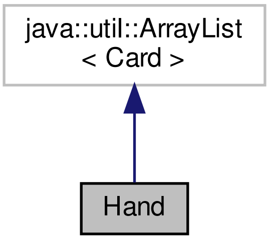
4.6 Hand Class Reference

Hand of cards class.

Inheritance diagram for Hand:



Collaboration diagram for Hand:



Public Member Functions

- Hand ()
- void displayHand ()
- boolean contains (String playerInput)
- Card remove (String playerInput)

4.6.1 Detailed Description

Hand of cards class.

Author

Joy Xiao

4.6.2 Constructor & Destructor Documentation

4.6.2.1 Hand()

```
Hand.Hand ( )  [inline]
```

Hand constructor

4.6.3 Member Function Documentation

4.6.3.1 contains()

```
boolean Hand.contains (
            String playerInput )  [inline]
```

Checks if hand contains the card

Parameters

playerInput	String input of the card to check

Returns

true when the card is in the hand or else return false

4.6.3.2 displayHand()

```
void Hand.displayHand ( )  [inline]
```

Displays the player's hand to the console

4.6.3.3 remove()

```
Card Hand.remove (
             String playerInput )  [inline]
```

Discards the specific card from the player's hand

Parameters

playerInput	String input of card to discard

Returns

the card that has been removed

The documentation for this class was generated from the following file:

- Hand.java

4.7 Meld Class Reference

Static Public Member Functions

- static ArrayList< ArrayList< Card > > checkMelds (Hand H)

4.7.1 Member Function Documentation

4.7.1.1 checkMelds()

```
static ArrayList<ArrayList<Card> > Meld.checkMelds (
             Hand H )  [inline], [static]
```

Finds the sequence and group melds of a given hand of cards

Parameters

Hand	H hand of cards of the player

Returns

2d arraylist of the the list of melds

The documentation for this class was generated from the following file:

- Meld.java

4.8 Player Class Reference

Data type to represent a generic player in a Gin-Rummy game.

Public Member Functions

- Player (String name)
- String getName ()
- Hand getHand ()
- int getTotalScore ()
- int getDeadwoodScore ()
- ArrayList< ArrayList< Card > > getMelds ()
- void addCardToHand (Card c)
- Card discardFromHand (String input) throws IllegalArgumentException
- void addToTotalScore (int points)
- ArrayList< Card > extractDeadwood ()
- void recalculateDeadwoodScore ()
- void checkMelds ()
- void displayHand ()
- void resetHand ()
- void resetDeadwoodScore ()
- void resetMelds ()
- void resetTotalScore ()

4.8.1 Detailed Description

Data type to represent a generic player in a Gin-Rummy game.

Author

Benson Hall

4.8.2 Constructor & Destructor Documentation

4.8.2.1 Player()

```
Player.Player (
            String name )   [inline]
```

Player constructor

Parameters

name	- name of player

4.8.3 Member Function Documentation

4.8.3.1 addCardToHand()

```
void Player.addCardToHand (
            Card c )  [inline]
```

Add a card to the player's hand

Parameters

c	- card to be added

4.8.3.2 addToTotalScore()

```
void Player.addToTotalScore (
            int points )  [inline]
```

Add points earned in the round to the total score

Parameters

points	- points earned that round

4.8.3.3 checkMelds()

```
void Player.checkMelds ( )  [inline]
```

Check for melds at the beginning of each round

4.8.3.4 discardFromHand()

```
Card Player.discardFromHand (
            String input ) throws IllegalArgumentException  [inline]
```

Given the user's input, discard a card from the player's hand if it is there and return its Card representation.

Parameters

input	- user's input

Returns

card that was discarded

Exceptions

IllegalArgumentException	if the card does not exist in the hand

4.8.3.5 displayHand()

```
void Player.displayHand ( )  [inline]
```

Interfacing method to display the hand

4.8.3.6 extractDeadwood()

```
ArrayList<Card> Player.extractDeadwood ( )  [inline]
```

Extract deadwood cards from the hand, given the melds

4.8.3.7 getDeadwoodScore()

```
int Player.getDeadwoodScore ( )  [inline]
```

Accessor for the player's current deadwood score

Returns

player's current deadwood score

4.8.3.8 getHand()

```
Hand Player.getHand ( )  [inline]
```

Accessor for player's hand

Returns

player's hand

4.8.3.9 getMelds()

```
ArrayList<ArrayList<Card> > Player.getMelds ( )  [inline]
```

Get the melds in the player's hand

Returns

melds in player's hand

4.8.3.10 getName()

```
String Player.getName ( )  [inline]
```

Accessor for player's name.

Returns

name of player

4.8.3.11 getTotalScore()

```
int Player.getTotalScore ( )  [inline]
```

Accessor for the player's total game score

Returns

player's total game score

4.8.3.12 recalculateDeadwoodScore()

```
void Player.recalculateDeadwoodScore ( )  [inline]
```

Recalculate the deadwood score of the hand

4.8.3.13 resetDeadwoodScore()

```
void Player.resetDeadwoodScore ( )  [inline]
```

Reset the deadwood score at the end of a new deal

4.8.3.14 resetHand()

```
void Player.resetHand ( )  [inline]
```

Reset the player's hand at the end of a deal

4.8.3.15 resetMelds()

```
void Player.resetMelds ( )  [inline]
```

Reset melds

4.8.3.16 resetTotalScore()

```
void Player.resetTotalScore ( )  [inline]
```

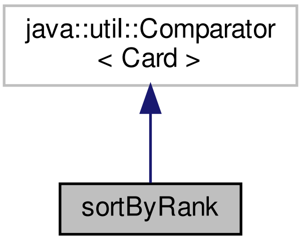
Reset the total score at the start of a new game

The documentation for this class was generated from the following file:

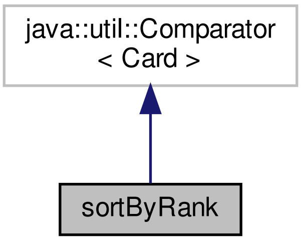
- Player.java

4.9 sortByRank Class Reference

Inheritance diagram for sortByRank:



Collaboration diagram for sortByRank:



Public Member Functions

- int compare (Card c1, Card c2)

4.9.1 Member Function Documentation

4.9.1.1 compare()

```
int sortByRank.compare (
            Card c1,
            Card c2 )  [inline]
```

Public method that returns integer based on which card is greater in rank

Parameters

c1	card one
c2	card two

Returns

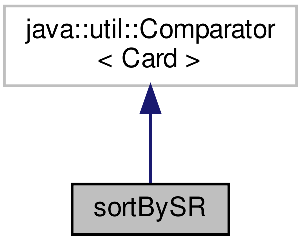
integer number, if c1 is greater it returns a positive int else it returns a negative int

The documentation for this class was generated from the following file:

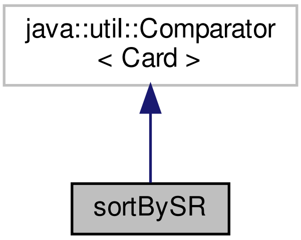
- sortByRank.java

4.10 sortBySR Class Reference

Inheritance diagram for sortBySR:



Collaboration diagram for sortBySR:



Public Member Functions

- int compare (Card c1, Card c2)

4.10.1 Member Function Documentation

4.10.1.1 compare()

```
int sortBySR.compare (
            Card c1,
            Card c2 )  [inline]
```

Public method that returns integer based on which card is greater in suit and rank

Parameters

c1	card one
c2	card two

Returns

integer number, if c1 is greater it returns a positive int else it returns a negative int

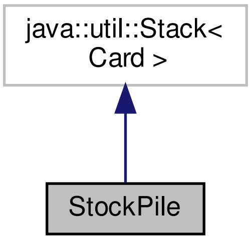
The documentation for this class was generated from the following file:

- sortBySR.java

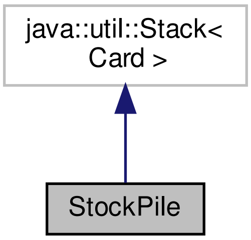
4.11 StockPile Class Reference

The stock pile class.

Inheritance diagram for StockPile:



Collaboration diagram for StockPile:



Public Member Functions

- int search (Object e)

4.11.1 Detailed Description

The stock pile class.

Author

Joy Xiao

4.11.2 Member Function Documentation

4.11.2.1 search()

```
int StockPile.search (
            Object e )  [inline]
```

Overrides search method since information should not be given

Returns

-1 always

The documentation for this class was generated from the following file:

- StockPile.java

4.12 Suit Enum Reference

Suit enum.H = Hearts, S = Spades, C = Clubs, D = Diamonds.

Public Attributes

- **H**
- **S**
- **C**

4.12.1 Detailed Description

Suit enum.H = Hearts, S = Spades, C = Clubs, D = Diamonds.

Author

Smita Singh

The documentation for this enum was generated from the following file:

- Suit.java

4.13 UserInputOps Class Reference

Class designated for user input and operations.

Static Public Member Functions

- static String chooseDiscard ()
- static void closeScanner ()
- static char knock ()
- static char playAgain ()
- static int playerDecision ()
- static String username ()

4.13.1 Detailed Description

Class designated for user input and operations.

Author

Benson Hall

4.13.2 Member Function Documentation

4.13.2.1 chooseDiscard()

```
static String UserInputOps.chooseDiscard ( )  [inline], [static]
```

Discard from hand and put on top of discard pile

4.13.2.2 closeScanner()

```
static void UserInputOps.closeScanner ( )  [inline], [static]
```

Close scanner

4.13.2.3 knock()

```
static char UserInputOps.knock ( )  [inline], [static]
```

Does the user want to knock?

Returns

y if yes, n if no

4.13.2.4 playAgain()

```
static char UserInputOps.playAgain ( )  [inline], [static]
```

Does the user want to play a new game?

Returns

y if yes, n if no

4.13.2.5 playerDecision()

```
static int UserInputOps.playerDecision ( )  [inline], [static]
```

Player makes decisions

Returns

player's decision, integer between 1 and 4

4.13.2.6 username()

```
static String UserInputOps.username ( )  [inline], [static]
```

Get user to print name and return result

Returns

name - user's name

The documentation for this class was generated from the following file:

- UserInputOps.java

Index