A.Class structures

POOCasino.java : General interface, you can enter your name and choose which game you want to play in this interface.

Player.java : User in POOCasino interface, store Player's name.

Computer.java : Handle all things a game machine do, including deal cards, drop cards and all things a computer player do.

User.java : Player in a game, do a real player do, such as which card to draw or which number to choose

Card.java : Including all method of card, such as costume compare function, display function, equal.

Shuffler.java : Shuffle card and deal card.

OldMaid.java : Handle the flow of the game.

VariantOne.java : Extended from OldMaid, handle the flow of the game.

VariantTwo.java : Extended from OldMaid, handle the flow of the game.

I design class structures by defining each class in the above way. The Computer class handle all things a machine do and displaying the computer player. The User class handle all things a real player do so the player can interact with program. The OldMaid, VariantOne and VariantTwo only handle the flow of the game, so some difference such as the way of deal cards are controlled by the Computer class.

B.Play method

Step1. Enter name

Step2. Choose which game you want to play.

Step3. VariantOne. There are only one ghost card, all rules are the same as OldMaid game. In your turn, you can choose which card you want to draw.

Step4. VariantTwo: In every player's turn, the computer will random one card. You can guess if the card you draw from other player's hand cards is bigger or smaller than the random number. If you guess right, you can draw, and keep drawing until you guess wrong. Of course you can choose not to continue ,but you have to guess at least one time. However, if you draw the ghost card, you are definitely get the card no matter you guess right or wrong. If the card you draw is the same as the random card, the machine will judge that you guess wrong, so you can't draw it.

C.Test

I use an array to check if all of the dropped cards are a deck. If all of the dropped cards less than a deck, then the program will be something wrong. You will be asked if you want to start debug mode, if you choose 'y' the program will run test function, and you will see the result at the end.

D.Sample output

(a)VariantOne
Which game do you want to play? (a)Original (b)Variant1 (c)Variant2 (e)Exit
b
Deal cards

Player0: HQ DJ CJ C10 H9 D9 H8 S7 C7 S6 H4 D4 D3 C2
Player1: DA CA DK CK CQ HJ D8 D7 C6 C5 H3 S2 H2
Player2: B0 SA HK SQ D10 S8 C8 H7 D6 S5 H5 C4 D2
You: HA SK DQ SJ S10 H10 S9 C9 H6 D5 S4 S3 C3
Drop cards
Player0: HQ C10 H8 S6 D3 C2
Player1: CQ HJ D8 D7 C6 C5 H3
Player2: B0 SA HK SQ D10 H7 D6 C4 D2
You: HA SK DQ SJ H6 D5 S4
Game start
Player0 draws a card from Player1 D7
Player0: HQ C10 H8 D7 S6 D3 C2
Player1: CQ HJ D8 C6 C5 H3
Player1 draws a card from Player2 HK
Player1: HK CQ HJ D8 C6 C5 H3
Player2: B0 SA SQ D10 H7 D6 C4 D2
Player2 draws a card from You D5
Player2: B0 SA SQ D10 H7 D6 D5 C4 D2
You: HA SK DQ SJ H6 S4
Which card do you want to draw?(1-7)
1
You draws a card from Player0 HQ
You: HA SK SJ H6 S4
Player0: C10 H8 D7 S6 D3 C2
Player0 draws a card from Player1 CQ
Player0: CQ C10 H8 D7 S6 D3 C2
Player1: HK HJ D8 C6 C5 H3
Player1 draws a card from Player2 D5
Player1: HK HJ D8 C6 H3
Player2: B0 SA SQ D10 H7 D6 C4 D2
Player2 draws a card from You SK
Player2: B0 SA SK SQ D10 H7 D6 C4 D2
You: HA SJ H6 S4
Which card do you want to draw?(1-7)
5
You draws a card from Player0 S6
You: HA SJ S4
Player0: CQ C10 H8 D7 D3 C2
Player0 draws a card from Player1 H3
Player0: CQ C10 H8 D7 C2
Player1: HK HJ D8 C6
Player1 draws a card from Player2 SA
Player1: SA HK HJ D8 C6
Player2: B0 SK SQ D10 H7 D6 C4 D2
Player2 draws a card from You S4
Player2: B0 SK SQ D10 H7 D6 D2
You: HA SJ
Which card do you want to draw?(1-5)
1
You draws a card from Player0 CQ
You: HA CQ SJ
…….(Too long to show)

(b)VariantTwo
Which game do you want to play? (a)Original (b)Variant1 (c)Variant2 (e)Exit
c
Deal cards
Player0: R0 HQ DJ S10 H10 H8 C7 D5 H4 C4 D3 C3 S2 C2
Player1: CA CK DQ CQ SJ HJ CJ C10 S9 S8 C6 H5 C5 D2
Player2: B0 SA SK DK C9 S7 D7 H6 S5 S4 D4 S3 H3
You: HA DA HK SQ D10 H9 D9 D8 C8 H7 S6 D6 H2
Drop cards
Player0: R0 HQ DJ H8 C7 D5
Player1: CA CK SJ C10 S9 S8 C6 D2
Player2: B0 SA C9 H6 S5
You: HK SQ D10 H7 H2
Game start
The Card is HK.
Player0 guess Smaller!
Player0: R0 HQ DJ H8 C7 D5
Player1: CA CK SJ C10 S9 S8 C6 D2
The Card is CJ.
Player1 guess Smaller!
Player1 draws a card from Player2 SA
Player1: CK SJ C10 S9 S8 C6 D2
Player2: B0 C9 H6 S5
The Card is C7.
Player2 guess Smaller!
Player2: B0 C9 H6 S5
You: HK SQ D10 H7 H2
The Card is C10. Bigger or Smaller?(0 for Bigger, 1 for Smaller): 0
Which card do you want to draw?(1-6)2
You draws a card from Player0 HQ
Do you want to continue?(y/n) n
You: HK D10 H7 H2
Player0: R0 DJ H8 C7 D5
The Card is SQ.
Player0 guess Smaller!
Player0 draws a card from Player1 C6
Player0: R0 DJ H8 C7 C6 D5
Player1: CK SJ C10 S9 S8 D2
The Card is C7.
Player0 guess Bigger!
Player0: R0 DJ H8 C7 C6 D5
Player1: CK SJ C10 S9 S8 D2
The Card is H10.
Player1 guess Smaller!
Player1: CK SJ C10 S9 S8 D2
Player2: B0 C9 H6 S5
The Card is HJ.
………..(Too long to show)