

# Project 2

## Blackjack

Cesar Diaz

CSC5 – 41202

## Introduction

*Title: Blackjack*

Blackjack is a game of chance played against a dealer. The objective of the game is very simple, obtain a total card value of 21, achieving that, however, is the tricky part. Although, getting 21 is an automatic win, there are other ways of winning. If your hand value is closest to the number 21 than the dealers hand value and also you have not gone over 21, that is considered a win. The player starts with two initial cards dealt by the dealer and must continue to receive cards until they either hit 21 or get the closest to receiving 21. These card are dealt at the will of the player. If the player feels as if the next received card will make their total card value equal over 21, they may choose to not take a card or "stick." This process is repeated over and over until the player runs out of money or chooses to no longer play.

## Project Description and Checklist:

Size: 700+ lines

### Concepts Utilized:

- Character data types
- Integer data types
- Boolean data types
- Independent if statements
- Dependent if statements
- Do while loops
- Do loops
- For loops
- Switch/case
- File
- Random Number
- Swaps
- Returning primitive data types
- Functions
- Arrays

Variables Used:

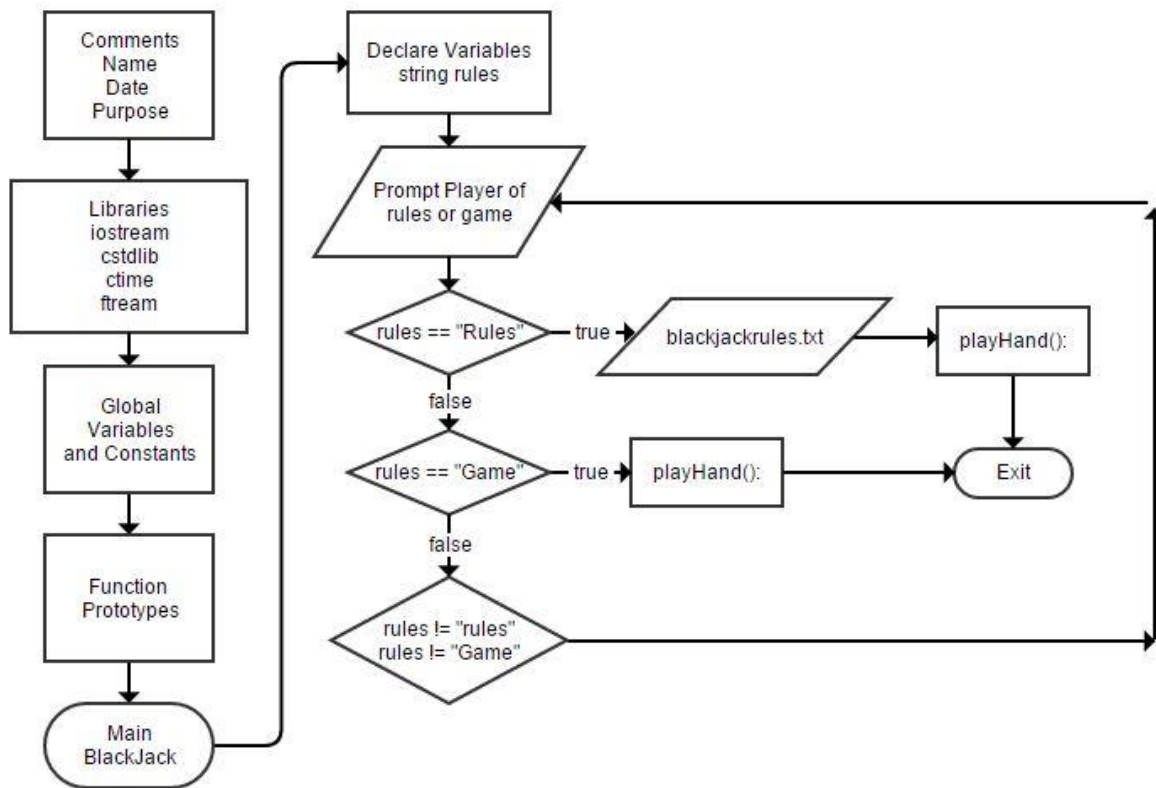
Type	Variable Name	Description
Int	cardTop	Sets value to top card of deck
Int	win	Amount of wins
String	rules	Choice for either rules or game
String	line	Displays .txt file where rules are located
Char	play	Choice to keep playing
Char	draw	Choice to hit or stick
Int	deck[52]	All cards in deck
Int	pHand[10]	Total cards in players hand
Int	dHand[10]	Total cards in dealers hand
Int	rank	Sets rank to each card
Bool	rndSeed	Decides whether to set random seed or not
Int	randNum	Value of random number is stored
Int	pScore	Value of players hand
Int	dScore	Value of dealers hand
Int	addVals	Adds total values of hands
Int	cardVal	Sets value to A, J, Q, K
Int	isAce	Checks if card is an ace
Int	sftHrd	Sets value of either 1 or 11 to ace (player chosen)

Function Prototypes:

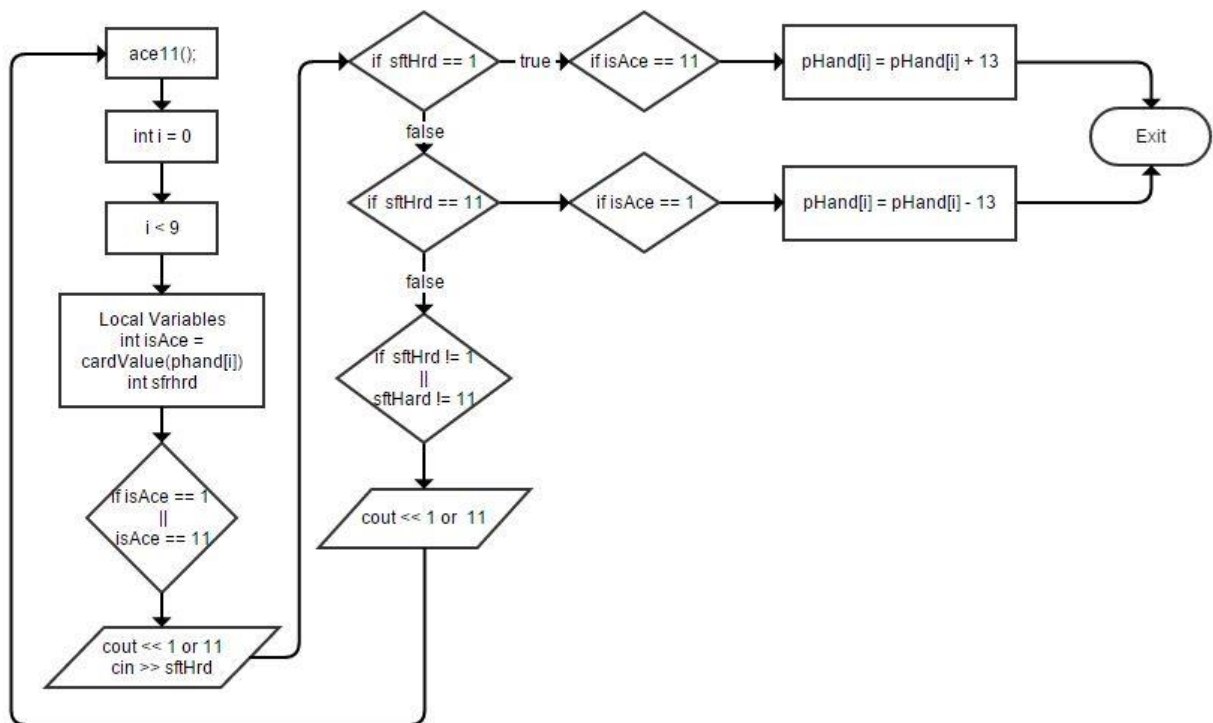
Type	Variable Name	Description
Void	dDraw	Sets card value to next draw
Void	whoWon	Decides the winner
Void	bustChk	Checks if either the player or the dealer bust
Bool	pDraw	Used to decide if player wants another hit
Void	ace11	Checks if the received card is an ace
Void	blackJk	Checks who has blackjack
Void	showCard	Sets letter to cards whose value is A, J, Q, K
Void	showCrd	Hides dealers first card
Void	scoreBrd	Displays value of player and dealers hands
Bool	playAgn	Asks player if they would like to play again
Int	cardValue	Returns numerical value for cards A, J, Q, K
Int	handVal	Returns added value of total cards in hand
Void	natWin	Decides if player got 21 on initial deal
Void	addHand	Sets value of next drawn card
Int	topCard	Looks for next slot with value equal to 0
Int	genRand	Generates random seed for shuffling
Void	shuffle	Loops cards and chooses 2 for initial hand
Void	startDeck	Sets rank to each card in deck
Void	playHand	Contains all other functions to run game

Flow Charts:

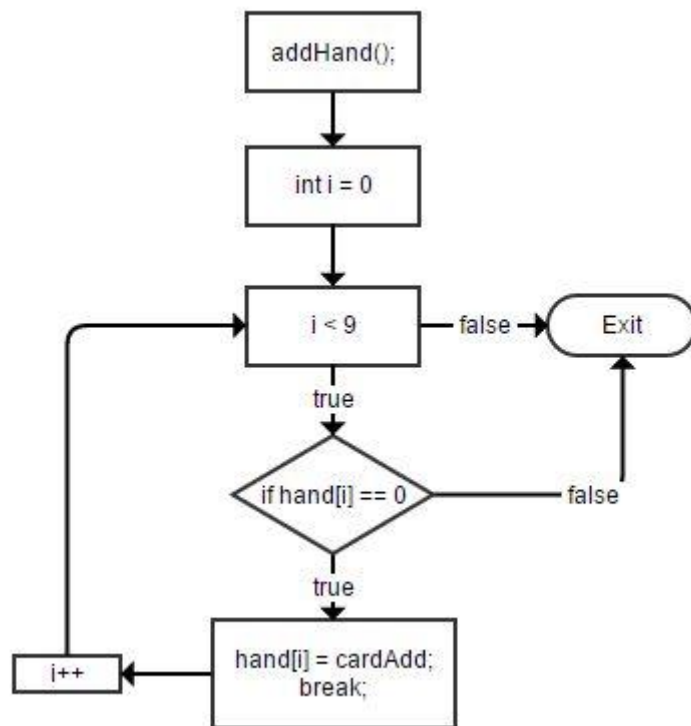
### Main Program



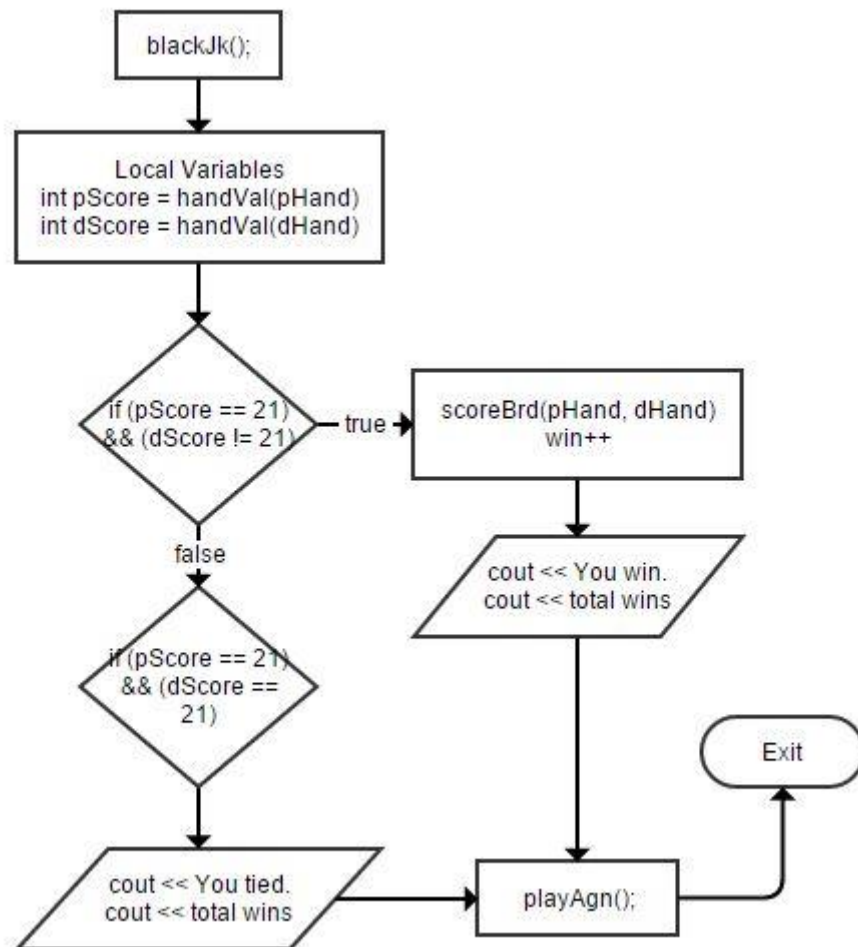
### ace11



### addHand

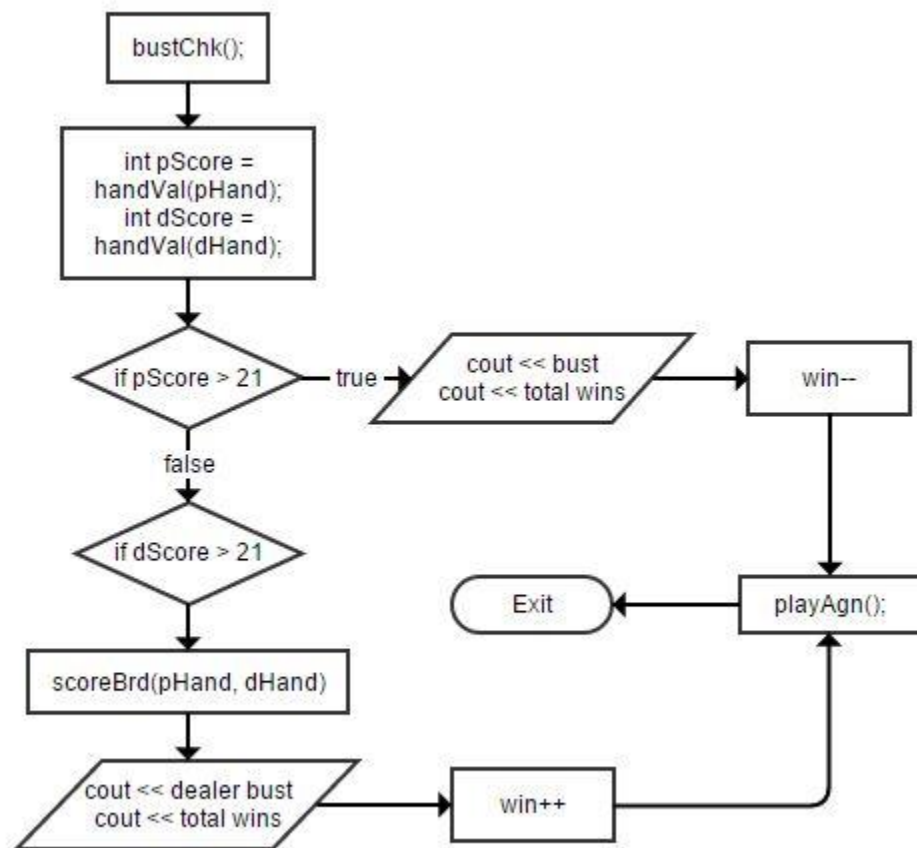


## blackJk

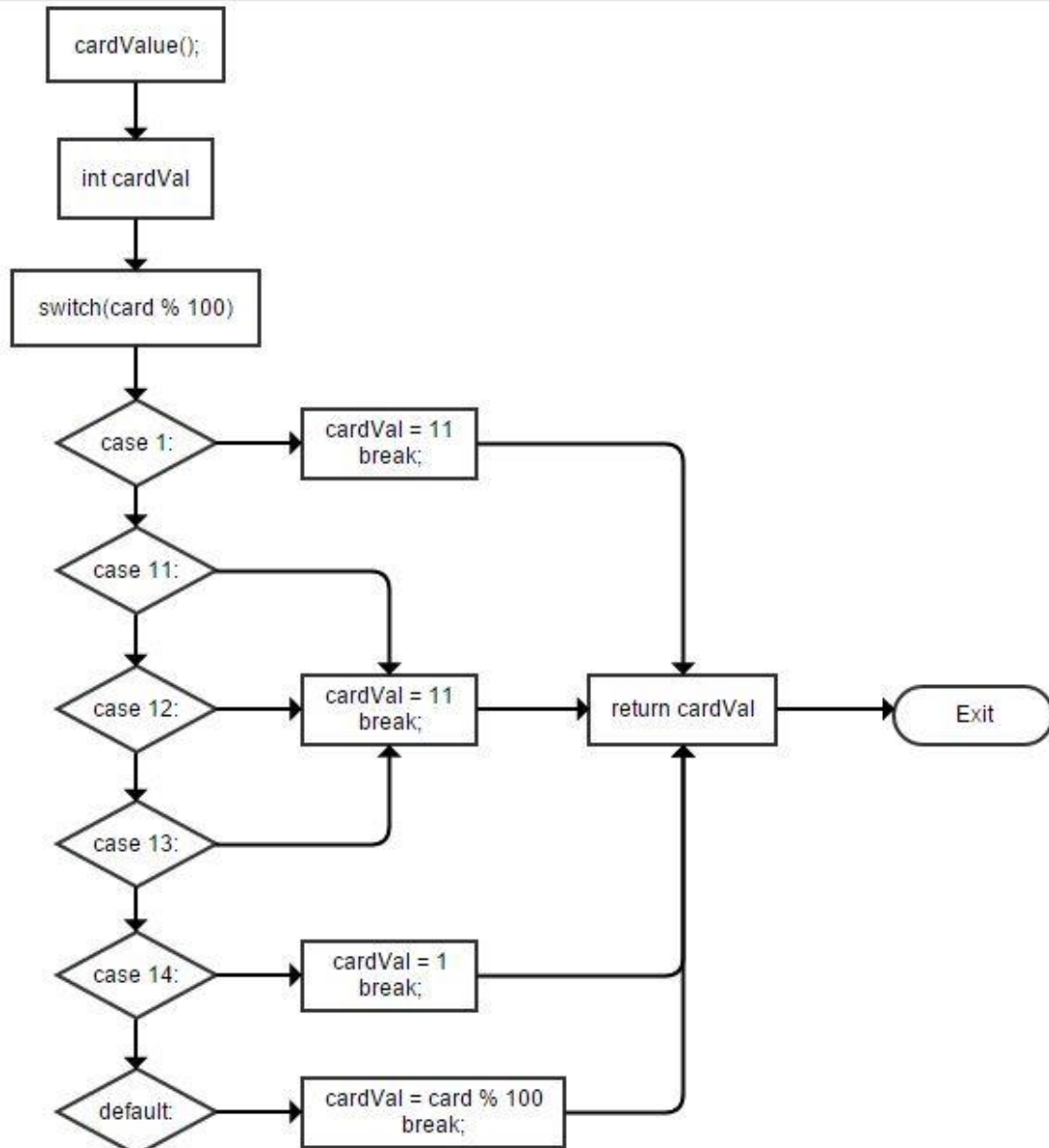




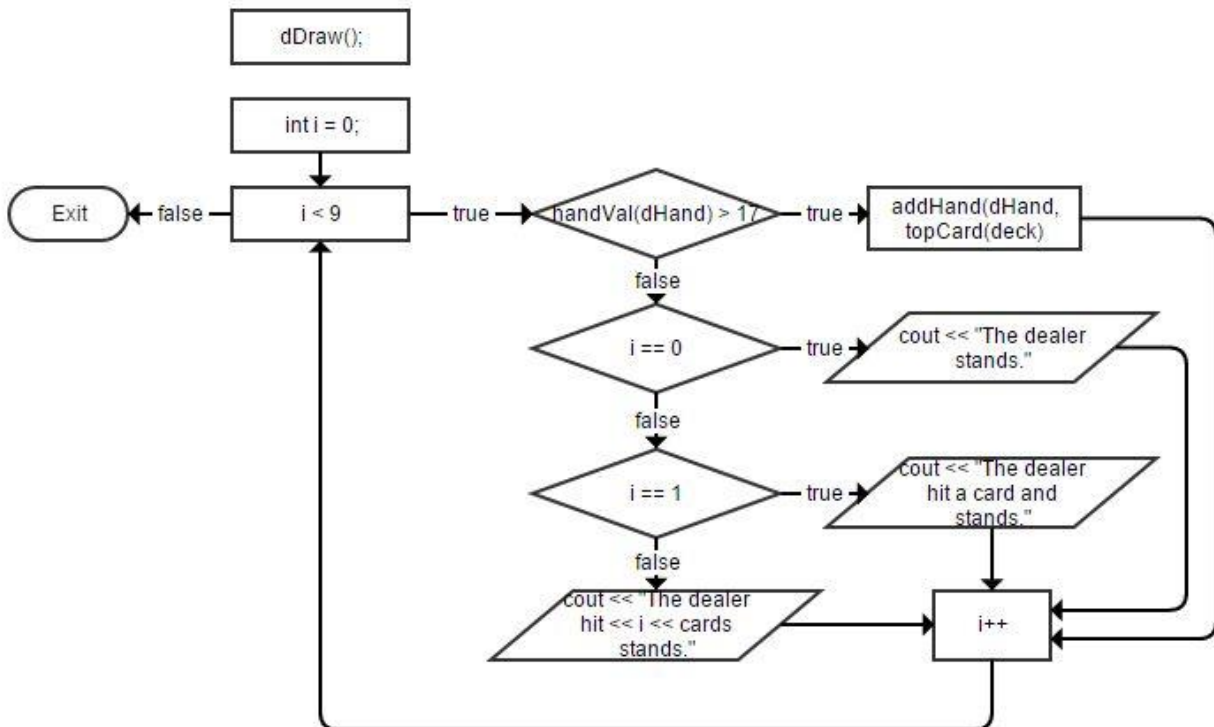
## bustChk



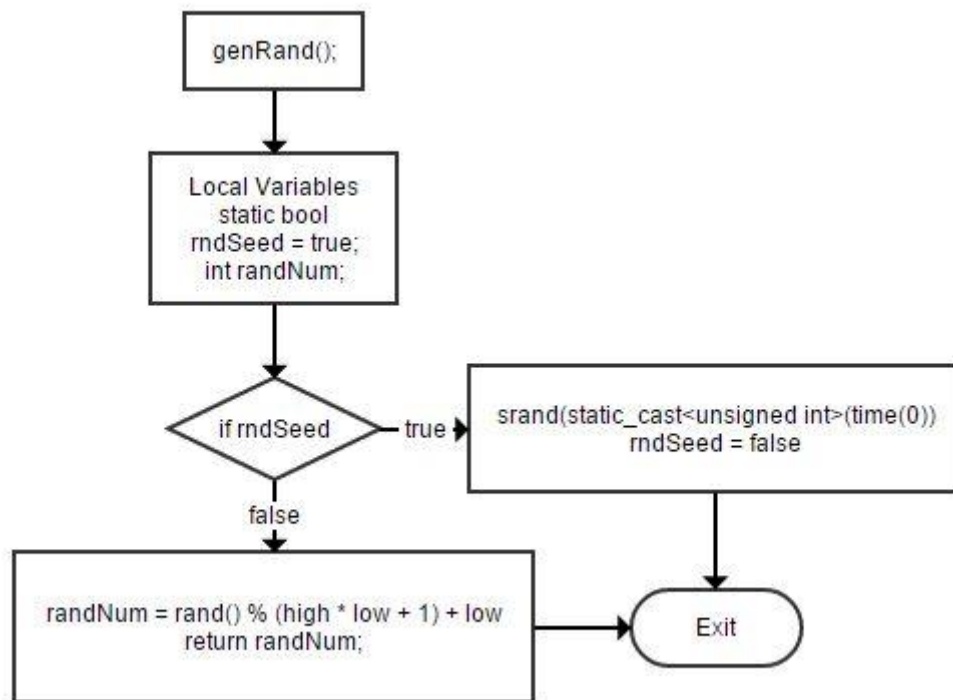
## cardValue



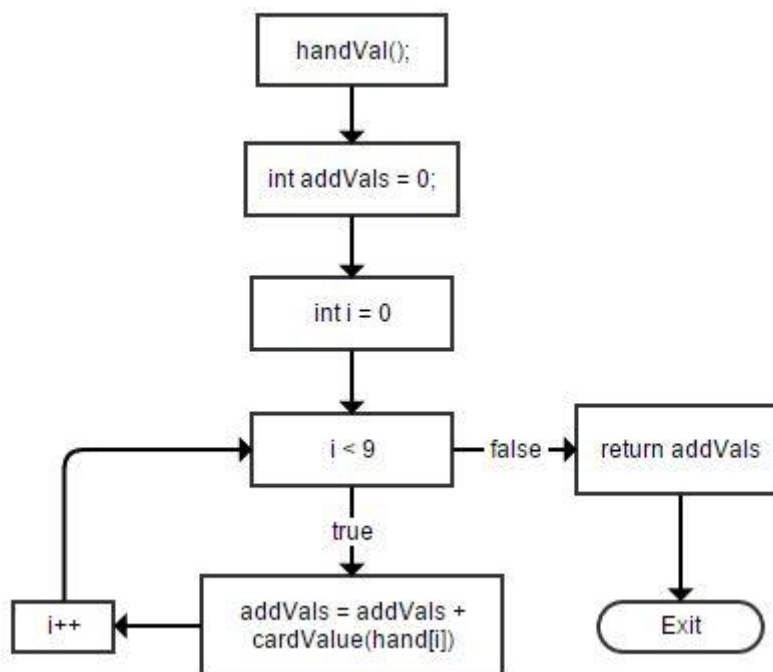
## dDraw



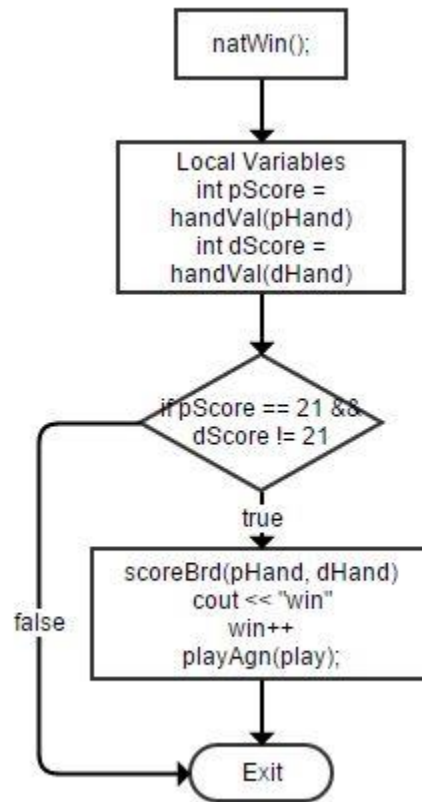
## genRand



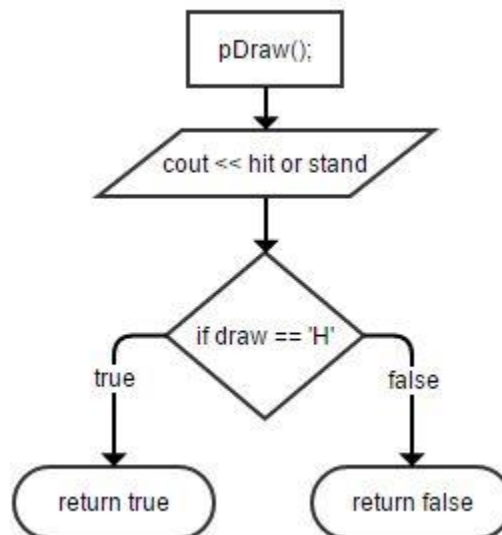
## handVal



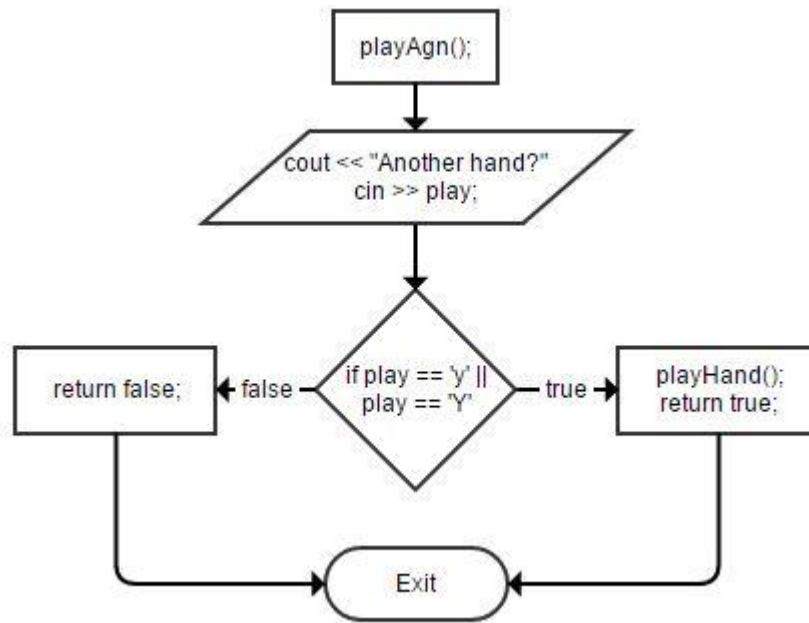
### natWin



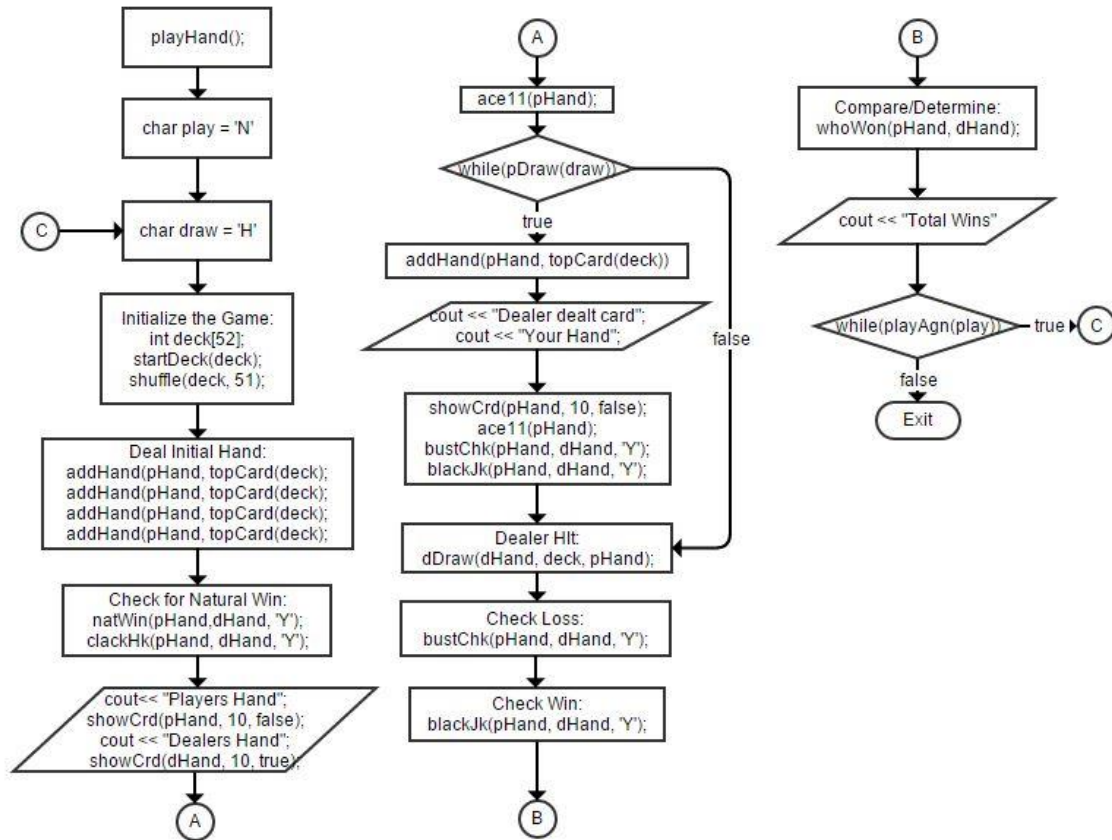
### pDraw



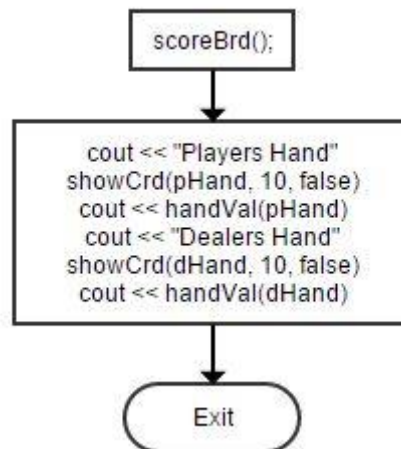
## playAgn



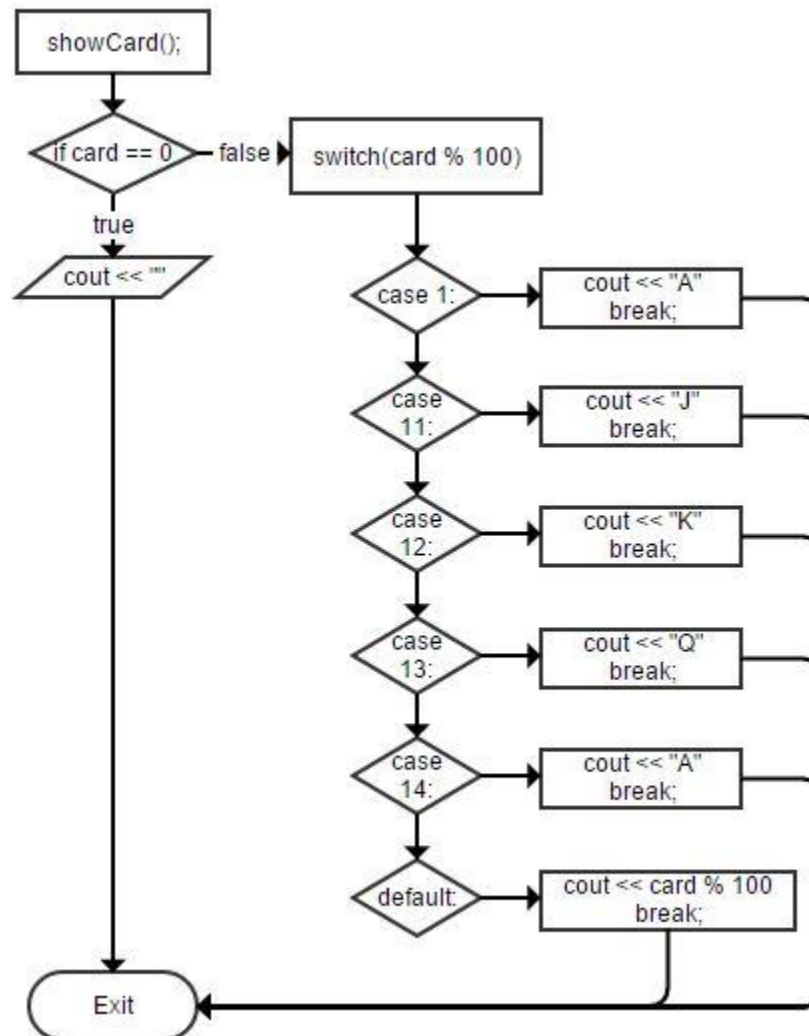
## playHand



## scoreBrd

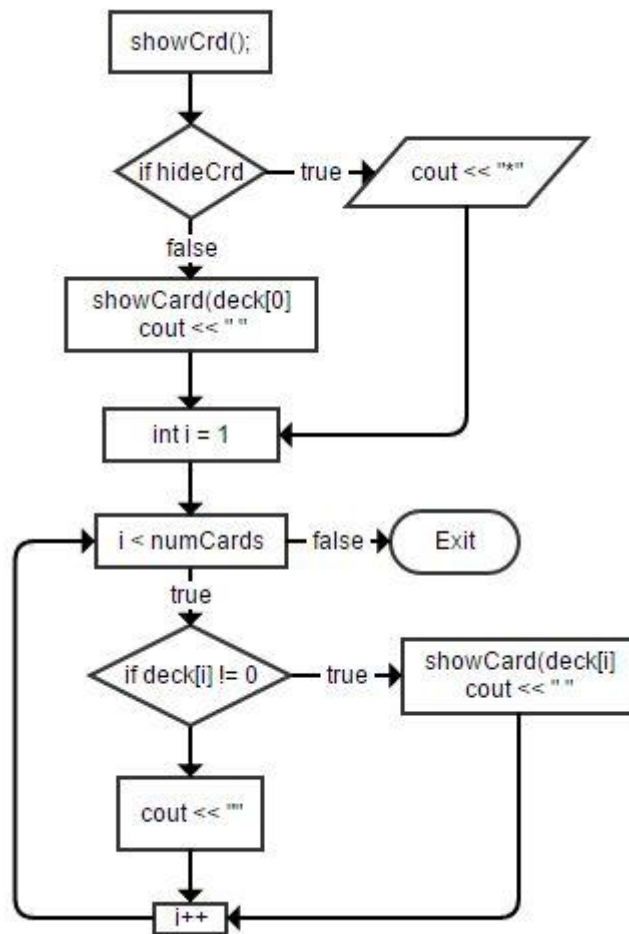


## showCard

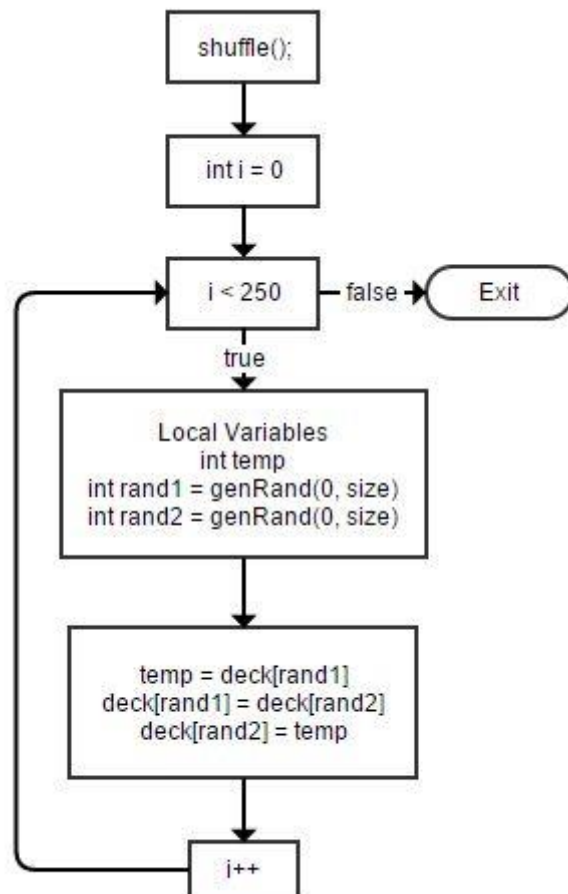




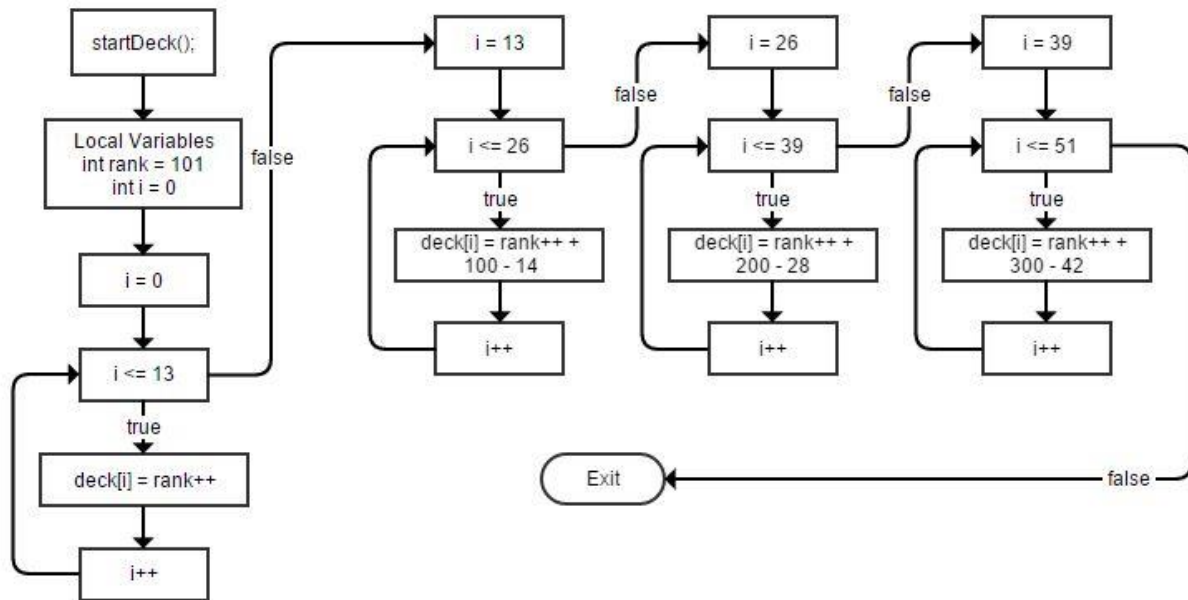
## showCrd



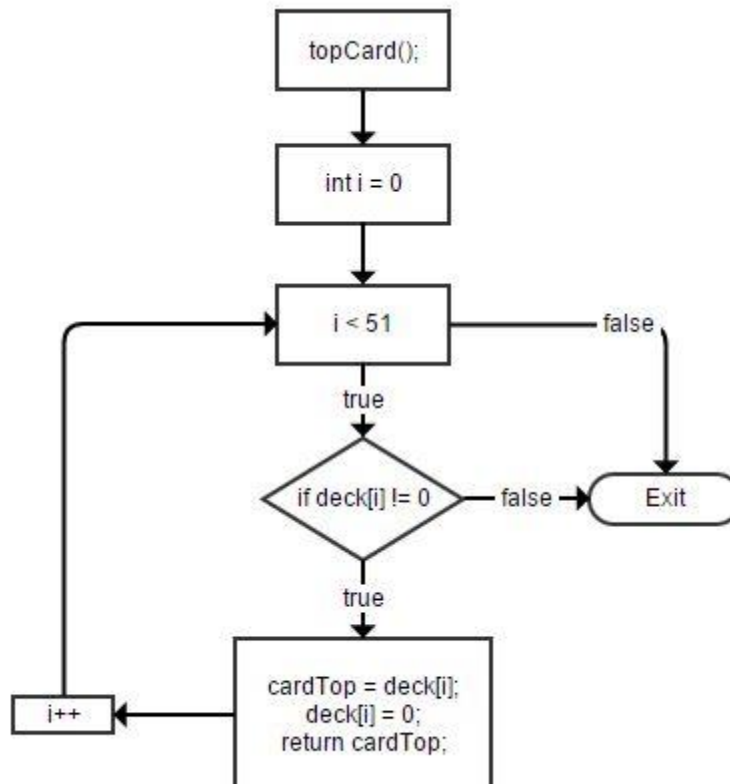
## Shuffle



### startDeck



### topCard



## whoWon

