COSC 5312 – Problem Solving II

Lab 1 Part3 Answers

# Name: Erman Gurses

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function main: This function calls menu and game functions.

function showInstructions: This function displays explanations about game.

function roll: This function generates random number between 1-6 inclusive.

function playGame: It gets each players name and keeping the game going until one of players reaches a score of 100 or above

function winner: This function shows both sides’ score and at the end of game determines winner.

function currentPlayer: This function gets player's name and its old score from playGame function then it applies this current players "roll"

function main

Call srand function with time(0) function to set the seed to be used by random number generator

Call showInstructions function

Call playGame function

end main

function showInstructions

Print “The game of Pig is two players race to reach 100 points.”

Print” Each turn, a player repeatedly rolls a die until either a 1 is rolled or the player holds and scores”

Print” At any time during a player's turn, the player is faced with two decisions”

Print” First one is: roll If the player rolls a”

Print “1: The player scores no additional points for his/her turn and it becomes the opponent's turn."

Print” Any points the player had going into the turn are still valid.”

Print” 2 - 6: The number is added to the player's turn total and the player's turn continues”

Print” Second one is: Hold the turn total is added to the player's score and it becomes the opponent's turn."

end showInstructions

function winner(player1, player2, scoreP1, scoreP2)

if( scoreP1>scoreP2)

print ”The Game is finised”

print "The winner is ", player1

print player1, "'s score is ", scoreP1

print player2, "'s score is ", scoreP2

else

print ”The Game is finised”

print "The winner is ", player2

print player2, "'s score is ", scoreP2

print player1, "'s score is ", scoreP1

end if

end function winner

function roll

Declare int rolledDice

rolledDice = call random number generator between inclusive 1-6

return rolledDice

end function roll

function playGame

Declare string player1 keeps name of player 1

Declare string player2 keeps name of player 2

Declare char decisionPlayAgain

Declare int scoreP1=0 keeps total score of player 1

Declare int scoreP2=0 keeps total score of player 2

Print ”Player 1 Enter Your Name:”

Get Player1

Print ”Player 2 Enter Your Name:”

Get Player2

Do

Do

scoreP1= scoreP1+ call function currentPlayer(player1, scoreP1)

if(scoreP1<100)

scoreP2= scoreP2+ call function currentPlayer(player2, scoreP2)

endif

while(scoreP1 less than 100 and scoreP2 less than 100)

call function winner(player1,player2,scoreP1,scoreP2)

Print ” Do you want to play again? Y/N:”

Get decisionPlayAgain

scoreP1=0

scoreP2=0

while(decisionPlayAgain is equal 'Y' or decisionPlayAgain is equal 'y' )

end playGame

function currentPlayer ( playerName, score)

Declare int turnScore= 0 It keeps current turn’s score

Declare int rolledScore=0 it keeps number which current player rolled

Print playerName "'s score is "score

Print "Do you want to Roll or Hold? "playerName

Print "For Roll press R, for Hold press H:"

Get decisionRollAgain

while( decisionRollAgain is equal 'R' or decisionRollAgain is equal 'r' )

rolledScore = call function roll

if (rolledScore equals 1)

Print playerName " rolled " rolledScore

Print playerName " 's score is " score

turnScore = 0

return turnScore;

else

Print "Before this turn," playerName ” 's score was " score

Print playerName " rolled " rolledScore

turnScore= turnScore + rolledScore;

Print playerName<<"'s score is " score+turnScore

if( (score+turnScore) >=100 )

return turnScore

end if

Print "Do you want to Roll or Hold? " playerName

Print "For Roll press R, for Hold press H:”  
 Get decisionRollAgain

If ( decisionRollAgain not equal 'R' and decisionRollAgain not equal 'r' )

return turnScore;

end if

end if

end while

return turnScore

end currentPlayer