import random

def place(num,x):

# Returns all the moves made

for i in range(len(x)):

if x[i] == num:

pos = x.index(num)

return x[(pos + 1)]

return str(num)

def print\_grid(move,player,x):

pos\_list.extend([move,player])

# Grid on which the player and computer play on

grid = ["","-------------\n",

"|",place(1,pos\_list),"|",place(2,pos\_list),"|",place(3,pos\_list),"|\n",

"|---+---+---|\n",

"|",place(4,pos\_list),"|",place(5,pos\_list),"|",place(6,pos\_list),"|\n",

"|---+---+---|\n",

"|",place(7,pos\_list),"|",place(8,pos\_list),"|",place(9,pos\_list),"|\n",

"-------------\n"]

if x == 2:

# Only prints one the player has made a move

print '\n', ' '.join(grid)

def winner(x,player,xx):

# Checks if there is a winner (Really messy, could do with code simplifying)

if ((1 in x and 4 in x and 7 in x)or(1 in x and 2 in x and 3 in x)or(2 in x and 5 in x and 8 in x)or(3 in x and 6 in x and 9 in x)or

(4 in x and 5 in x and 6 in x)or(7 in x and 8 in x and 9 in x)or(1 in x and 5 in x and 9 in x)or(3 in x and 5 in x and 7 in x)):

# If prevents the A.I part from printing the statemnt

if xx <> 1:

print '\n'\*5,"\'%s\'" %player, "HAS WON!"

return 1 == 1

def computer\_AI\_part(listx):

global computer\_move

# Checks all possible values which the player can and enter to win and blocks it

for x in range(1,10):

if x not in pos\_list:

listx.append(x)

if (winner(listx,'Computer',1)) == True:

del listx[-1]

computer\_move = x

return 1

del listx[-1]

def computer\_and\_player():

global computer\_move,pos\_list,player\_list,computer\_list

replay,draw = 0,0

while True:

# Replay's the game

if replay == 1:

restart = raw\_input("Would you like to replay?: ")

if restart == "yes":

pass

else:

return

else:

print "\nTic Tac Toe - Computer vs You", '\n'\*2,"Computer goes first\n"

replay,computer\_move,players\_move,loop\_count,pos\_list,player\_list,computer\_list = 0,0,0,0,[],[],[]

for each in "XXXXX":

loop\_count += 1

# Computer's Move

if computer\_AI\_part(computer\_list) or computer\_AI\_part(player\_list) == 1:

pass

else:

while True:

computer\_move = random.randint(1,9)

if computer\_move in pos\_list:

continue

break

computer\_list.append(computer\_move)

# Prints Grid

print\_grid(computer\_move,'O',2)

if loop\_count == 5:

if winner(player\_list,'player',2) == True or winner(computer\_list,'Computer',2) == True:

pass

else:

print "Match Was a draw!"

replay = 1

break

# Checks winner

if winner(computer\_list,'Computer',2) == True:

replay = 1

break

# Player's Move

while True:

try:

players\_move = int(raw\_input("\n\'%s\' Enter a value from the grid to plot your move: " %each))

if players\_move in pos\_list or players\_move < 1 or players\_move > 9:

print "Enter an available number that's between 1-9"

continue

break

except:

print "Enter a number"

player\_list.append(players\_move)

# Sets player's move for printing

print\_grid(players\_move,each,1)

# Checks winner again

if winner(player\_list,'player',1) == True:

print\_grid(players\_move,each,2)

winner(player\_list,'player',2)

replay = 1

break

if \_\_name\_\_ == "\_\_main\_\_":

computer\_and\_player()