Macao - User Guide AI Lab Skills Final Project

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1 Introduction

The program represents a shell-based implementation of the card game Macao where players can go against each other or opt to play against a number of computer-generated players. Macao (also known as Macau) is a popular Eastern-European card game, whose rules are similar to UNO. Its rules slightly vary from region to region. This application is most representative of the way the game is played in Romania. A fairly comprehensive overview of the Romanian version of Macao can be found here. Since the game is not widely known outside Eastern Europe, there are scarcely any pre-existing applications of it, which is partly why I chose this game specifically for my final project. A similar, android-based graphical version of the game can be downloaded from the Google Play Store.

2 Guide

The program allows the user to play through several games of Macao, until they wish to quit. The version of Python I have used is Python 3.10.10. The only imported module is "random", which is built-in. Therefore, there are no specific requirements to be able to run this application.

As the program is shell-based with no graphic interface, cards are represented in the format ['rank'' of 'suit'], for example [A of Clubs], [5 of Diamonds]. There are no Joker cards in the deck.

The main rule of Macao is to put down cards which match the one on the table in either suit or rank.

The game can be played by anywhere between 2 and 5 players. The user can also opt to add computer-players to the game, which will perform random moves. The game may also be played exclusively among computer players. Each of the participants is at first dealt 5 cards randomly, which represent their initial 'hand'

After initialising the players, a random card is "put on the table" and the game starts. If it is the turn of a human player, they will be shown their hand and asked which move they wish to perform. This input is case sensitive, and the program will warn the user if they do not enter their choice properly or try to perform a move which is not allowed. The players may also opt to not put down a card by inputting "pass", in which case they will draw a random card. In the case of a computer player, the random move chosen will be displayed.

If the player has no cards which match the one on the table in either suit or rank, their turn is skipped and one card is automatically added to their hand.

In the game there exist several "special" cards, namely the 2's, 3's, 4's and A's. Each of these perform a particular action, the specifics of which are explained in Table 1.

Once a player has only one card in their hand, they must say "Macao", otherwise they are forced to draw 5 cards from the deck.

The winner of the game is the first player to get rid of all the cards in their hand.

During gameplay, a player may opt to quit the game at any time by inputting the "q" or "quit" command when they are prompted to make a move.

After a game of Macao ends, the user is asked whether they would like to play another. If they answer "yes" or "y", a new round of Macao starts. Otherwise, if their answer is "no" or "n", the program terminates.

In Table 2 you can find an overview of the inputs expected from users.

Special card	Power	Explanation
2's and 3's (any	Force draw 2 or 3	When played, the next player is forced
suit)	cards	to draw the respective amount of cards
		cards from the deck.
		They are cumulative. For example, if a
		2 was played, the next player may avoid
		drawing 2 by playing a 3, in which case
		the next participant will have to draw 5
		unless they have another 2 or 3 to play,
		and so on.
4's (any suit)	Skip a turn	When played, the next player is forced
		to skip their turn.
A's (any suit)	Change the suit or	When played, the current player is al-
	rank	lowed to change either the suit or the
		rank of the card on the table to their
		own preference.

Table 1: Special Cards Descriptions

- How many players will par-	A number between 2-5 is expected.
ticipate in the game?	
- For a human player, input	If writing 'H', the program will create a human
'H'. To play against a com-	player and ask for their name. For C, a com-
puter, input 'C'.	puter player will be generated. This is not case-
- What is your name?	sensitive.
- What card would you like	A human player can make their move by writing
to play? Please write it as	the card they wish to play in the appropriate for-
'/rank/ of /suit/'	mat, which is also case-sensitive. The program
	will warn the user if the card they are trying to
	play is not a legal move.
	If the input is "pass", the player skips their turn
	and opts to draw a card.
	If they input "q" or "quit" here, the current ses-
	sion of Macao ends.
- Would you like to change	When an A is played, the player is first asked
the suit or rank?	whether they wish to change the rank or suit.
- What would you like to	Following that, they asked the specific value they
change it to?	want to change their choice to.
- Would you like to play an-	Once a game of Macao ends or is quit by a player,
other game? [yes/no]	they are asked whether they would like to play
	another, to which they may answer "yes"/"y" or
	"no"/"n".

Table 2: User Input Guide

3 Example

In the following section you can find several examples of typical use-cases of the program.

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Figure 1: Initialise a game with 2 human players and a computer

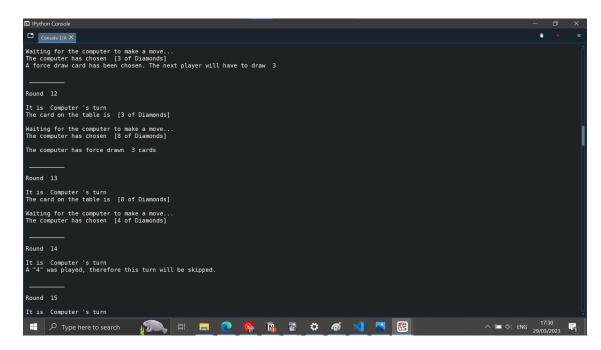


Figure 2: A force draw and a "4" being played between computers

Figure 3: Changing the suit using "A"

Figure 4: Example of a force draw

Figure 5: Quitting an ongoing game and starting a new one

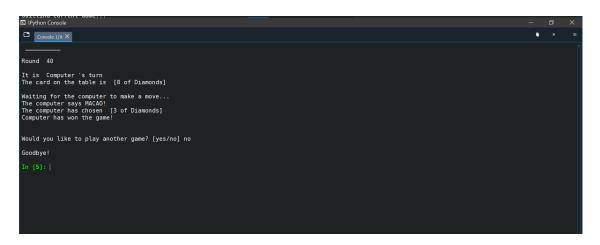


Figure 6: Exiting the program after a game is won by the computer

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Round 32

It is Player 2 's turn
The card on the table is [10 of Spades]

This is your current hand: [Q of Spades] |

What card would you like to play? Please write it as '/rank/ of /suit/' Q of Spades
Uh oh! You have only one card, why didn't you say MACAO? :(
You're gonna have to draw 5 now...

This is your current hand: [Q of Spades] | [Q of Hearts] | [K of Spades] | [Q of Diamonds] | [8 of Diamonds] | [J of Clubs] |

What card would you like to play? Please write it as '/rank/ of /suit/' Q of Spades
This is your current hand: [Q of Hearts] | [K of Spades] | [Q of Diamonds] | [J of Clubs] |
```

Figure 7: A player forgetting to say "Macao"