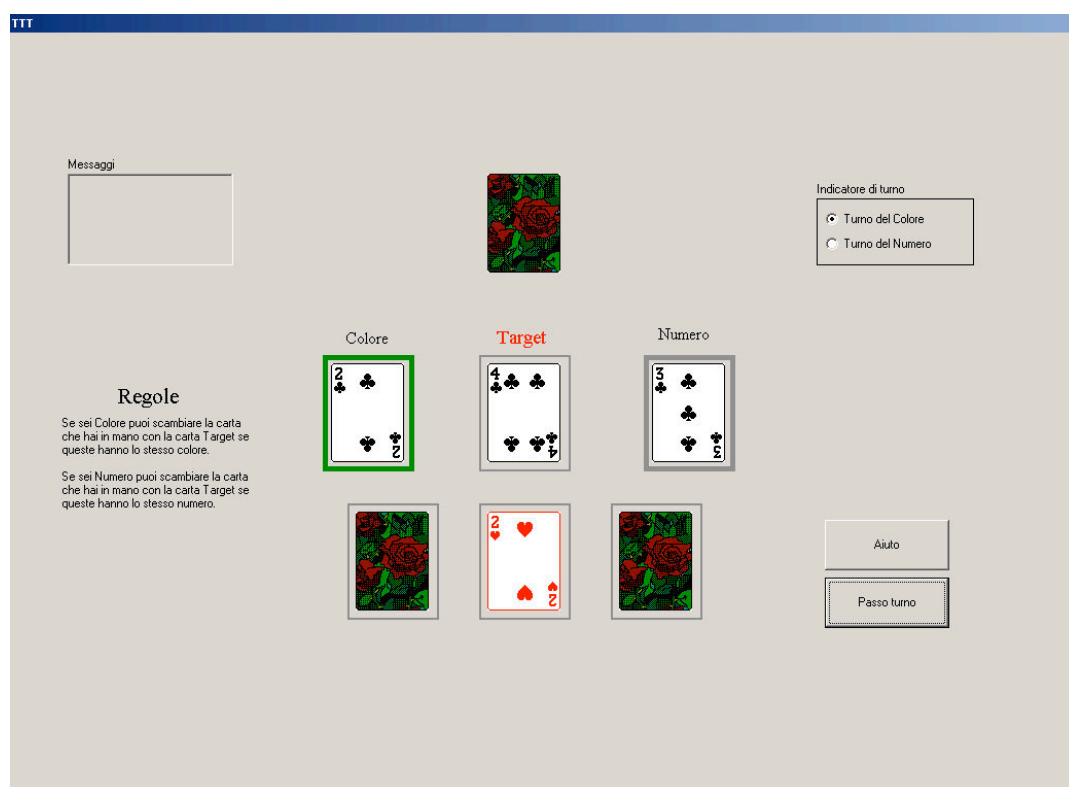


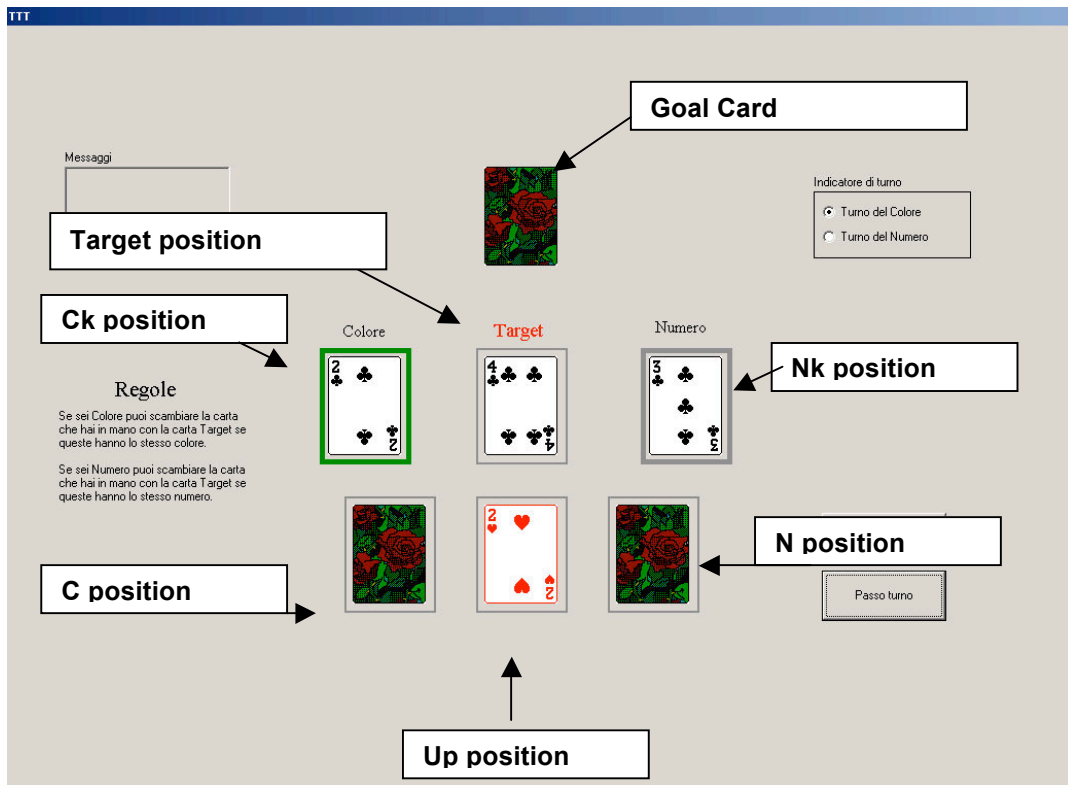
## Introduction to *Target the Two Solo* (TTT\_solo)

TTTSolo is played with a deck of 6 cards: 2♥, 3♥, 4♥ e 2♣, 3♣, 4♣ which are arranged by threes in two horizontal rows.



The three positions in the first row are labeled respectively “*Colorkeeper*” (in brief “*Ck*”), “*Target*” (in brief “*T*”) and “*Numberkeeper*” (in brief “*Nk*”). The card in the *Target* position is always face-up; the other two cards can be either face-up or face-down, depending on the difficulty level you wish to play. If they are face-down, the Player can click on them to display their face.

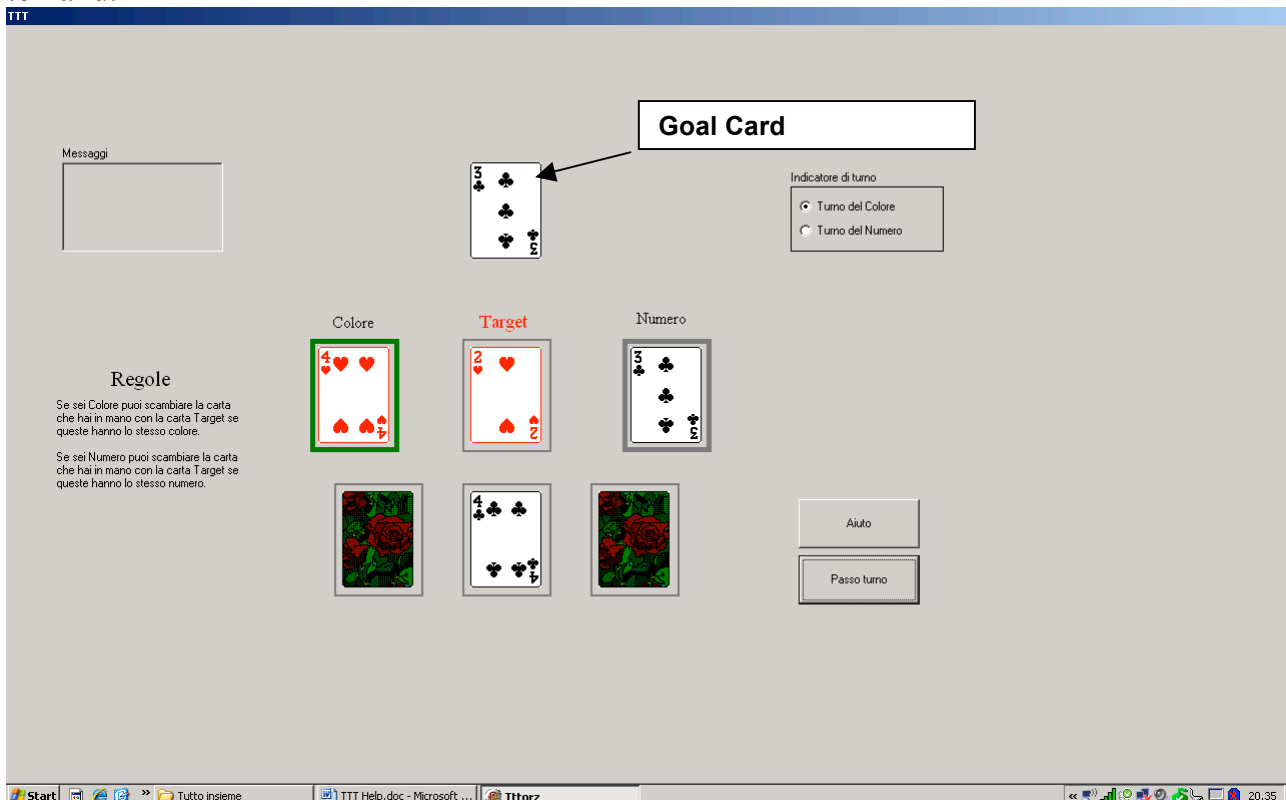
The cards in two out of the three positions in the second row are face down, while the one in the middle is face up: these positions are labeled, respectively, “*C*”, “*UP*” and “*N*”.



The objective of the game consists in moving the Goal card into the Target, following the rules and restrictions of the game. The Goal Card is displayed in a position on the top of the board.

In the static version of the game, the Goal Card is always the same through the hands, and traditionally is 2♥.

In the dynamic version, the goal Card to be moved into Target, can be different from hand to hand.



Moves consist in exchanging cards, in turn, from either *Colorkeeper* or *Numberkeeper* positions. The position (*Colorkeeper* or *Numberkeeper*) from which you move is marked by a green edge bordering the card.

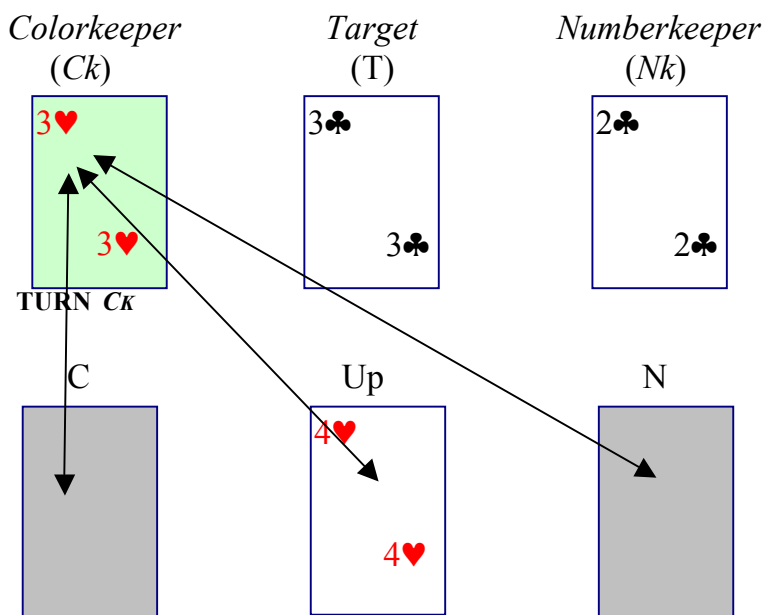
To make an exchange, drag one card from its initial position and drop it into the desired position.

If you wish not to make an exchange from the current position, but rather perform a change of turn and move from “*Numberkeeper*” to “*Colorkeeper*” or viceversa, click on the Pass button.

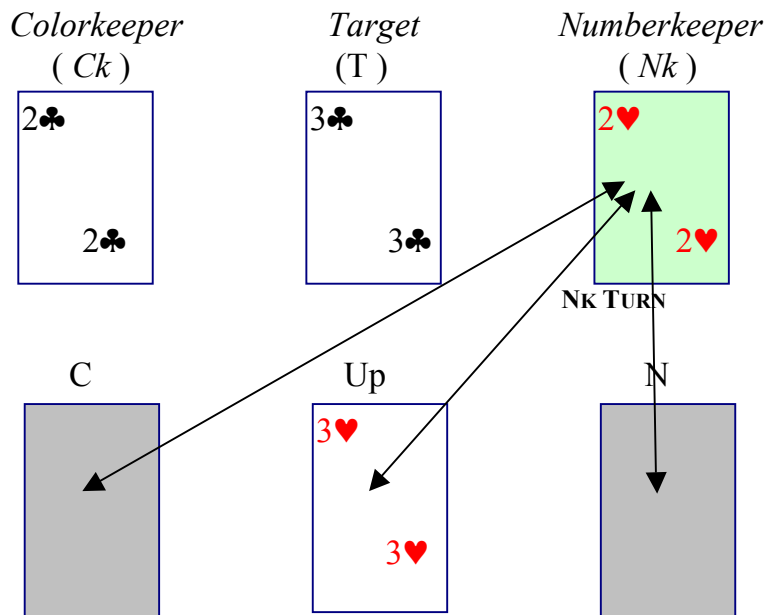
Direct exchange between two cards from *Colorkeeper* to *Numberkeeper* position is not allowed. All the other exchanges are allowed, except the restrictions explained hereinafter.

Sample exchange modelling, moving from *Ck* position;

The arrows indicate the possible exchanges



Sample exchange modelling, moving from  $Nk$  position;  
 The arrows indicate the possible exchanges

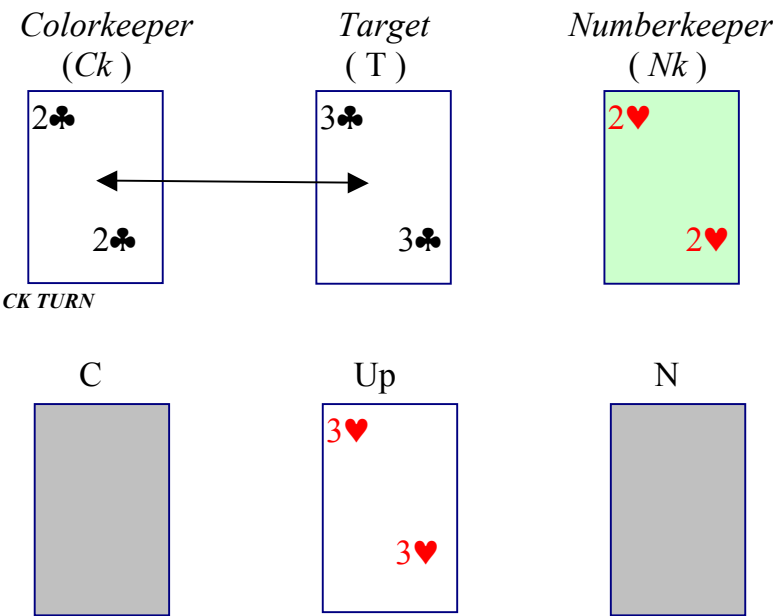


Restrictions:

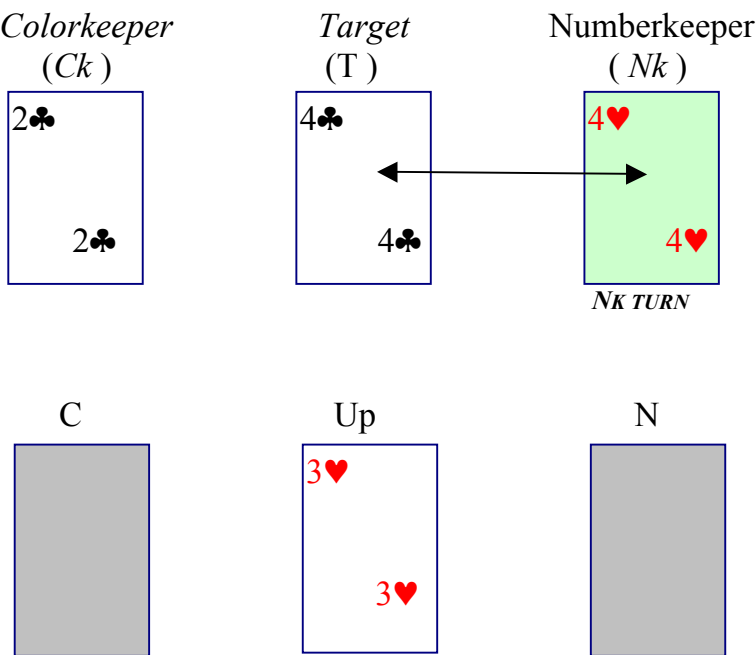
*Exchanging the card in the Colorkeeper position with the card in the Target position is only allowed when the two cards are of the same color*

*Exchange of the card in the Numberkeeper position with the card in the Target position is only allowed when the two cards are of the same number.*

E.g.: *Ck turn* – Exchange is allowed as the two cards are of the same *color*



E.g.: *Nk turn* – Exchange is allowed as the two cards are of the same *number*



It is also the custom to name the moves according to the following scheme:

U move = Exchange of the card on turn ( $Ck$  or  $Nk$ ) with the card in the  $Up$  position

C move = Exchange of the card on turn ( $Ck$  or  $Nk$ ) with the card in the  $C$  position

N move = Exchange of the card on turn with the card in the  $N$  position

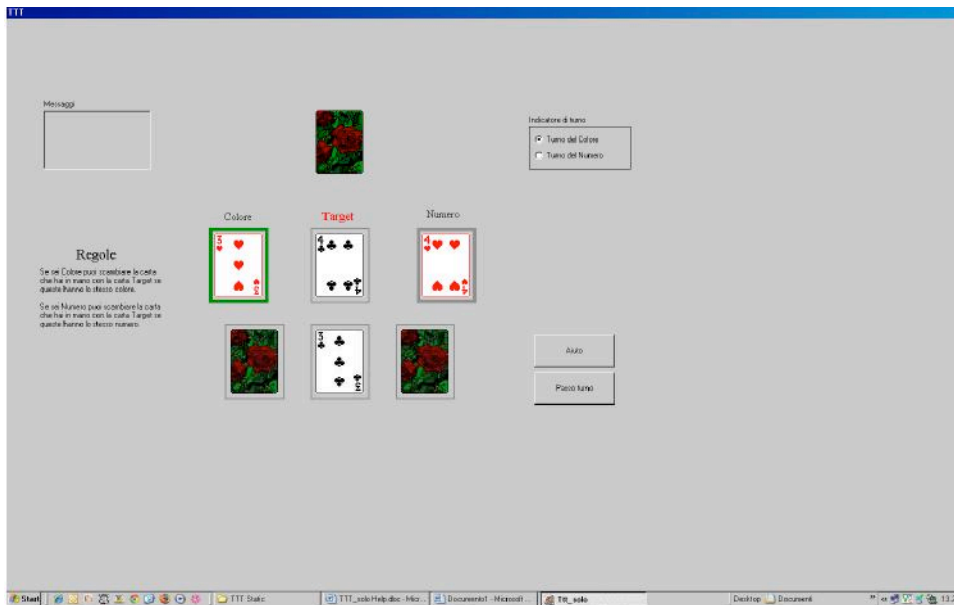
T move = Exchange of the card on turn with the card in the *Target* position

P = Pass

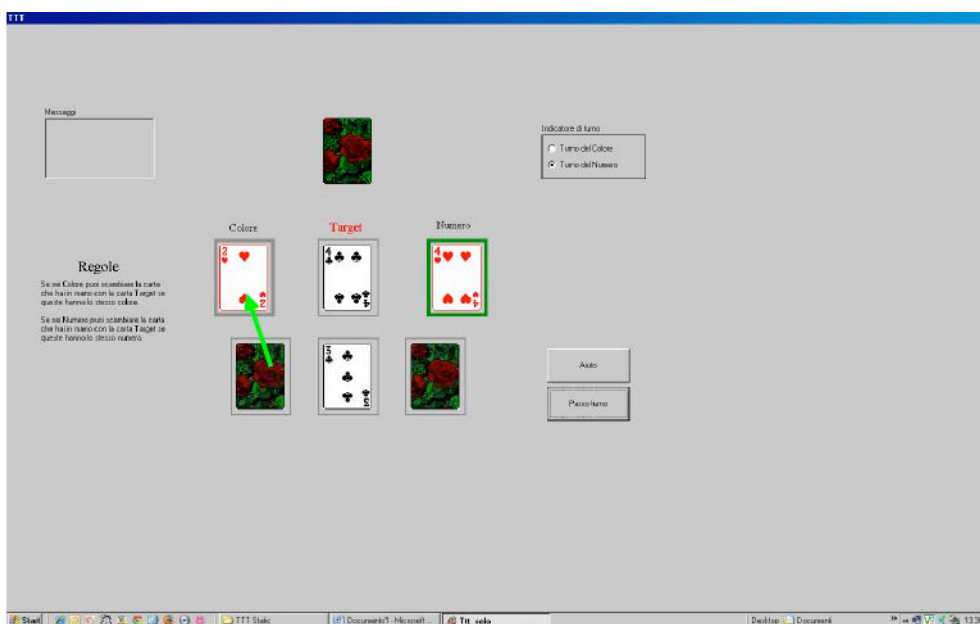
## Sample game

To make an example, I choose the easiest configuration of the game, in which all three cards in the first row are face up.

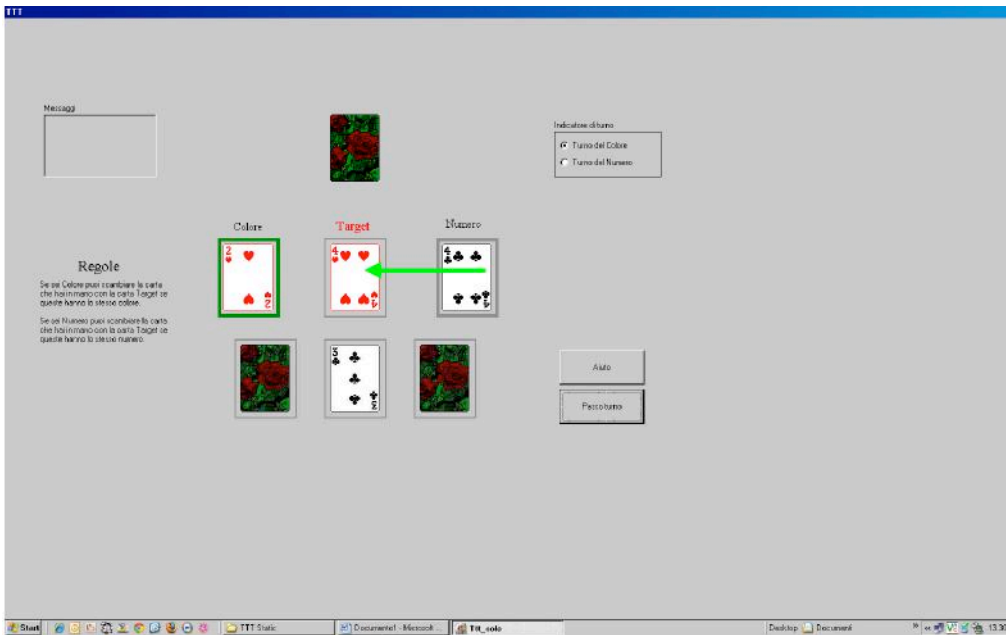
The initial layout of the cards is the following:



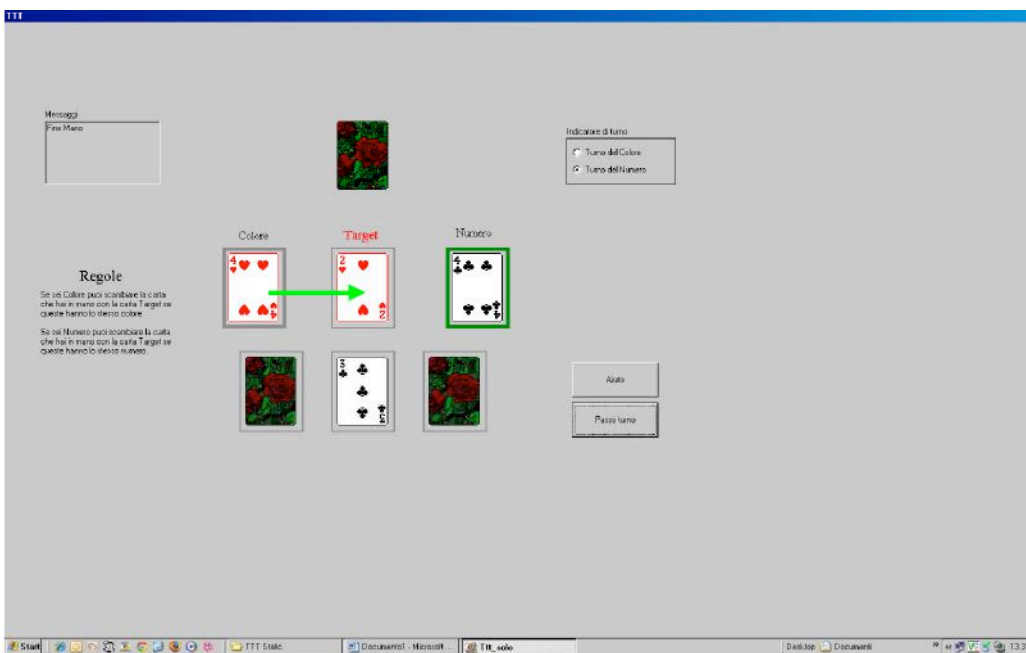
The objective is finding 2♥ and moving it into the Target position. Given the cards' distribution on the board, 2♥ may be either in position C or in the position N. Guessing it is under *Ck*, in the C position, I exchange the *Ck* card with the card below (C move). Indeed, 2♥ is there. It is now the turn of the move from *Numberkeeper* position (*Nk*).



It is allowed to “move into Target”, that is, to exchange 4♥ with 4♣ (*T* move), since the cards are of the same number. I do it.



It is now the turn of the card in the *Colorkeeper* position.  
I move 2♥ into Target (T move).



Game over. The move sequence is CTT.

*STATIC game:*

The *Goal* remains the same in all the hands (in our samples, the *Goal* card is 2♥); furthermore, the game always starts from the *Colorkeeper* position.

*DINAMIC game:*

The *Goal* card can change at every round, and can be any of the 6 cards hereinbefore (this must be indicated in the upper part of the screen). The exchange starting point can also change hand by hand, being either *Nk* or *Ck*.

The game can start with any cards layout whatsoever, except in some obvious circumstances, such as when the *Goal* card is already in the *Target* position.

Players have only partial information about cards layout, therefore, they must device a strategy under uncertainty.

## Playing TTT\_Solo

The **TTT\_Solo.exe** software can be downloaded, along with some other service files, from <http://docenti.luiss.it/egidi/didattica/behavioral-economics/curiosities/> or from <http://docenti.luiss.it/egidi/didattica/materiali-di-discussione/>

The service files are the following:

- **TTT\_Solo.ini**: it is the configuration file, to configure the game's initial settings.

The following settings can be modified:

- the *Goal* card to be put into *Target*,
- the cards to be left face-down,
- the name of the file to be read, containing the games to play,
- the card backs,
- other minor settings specified within the file.

- **xyz.txt** is a reading text file, allowing TTT\_Solo SW to read cards layouts at the beginning of each new hand (xyz.txt is a file name whatsoever, which should be specified in the TTT\_Solo.ini file for the software to work it out).

The download page contains three sample input files *xyz.txt*, which beginner players can use to do some practice: their names are *game442.txt*, *game422.txt*, and *DynamicExample*:

- **game442.txt** and **game422.txt** contain static sequences (static, as *Goal* card does not change, remaining 2♥)
- **DynamicExample** is a dynamic sequence (the *Goal* changes from time to time). Other games may be created by players.
- Card layouts are indicated at the beginning of each game, according to the following rules:
  - C stands for “Club”, while H stands for “Heart”; therefore, 2H=2♥, 3H=3♥, 4H=4♥ e 2C=2♣, 3C=3♣, 4C=4♣

Each sequence is read by the default programme in the following “linear order”:

• C Ck UP T N Nk G FirstMove

*G* standing for the *Goal* card, while *FirstMove* stands for the position (*Ck* or *Nk*) first move should be made from.

Therefore, in case of static sequence, the tableau has the following patterns:

NK	N	UP	C	CK	T	G	FirstMove
3H	2C	2H	4C	4H	3C	2H	ck
3C	2C	4H	4C	2H	3H	2H	ck
3H	3C	2H	2C	4C	4H	2H	ck
3H	2H	2C	4C	4H	3C	2H	ck
2H	4C	4H	2C	3H	3C	2H	ck
4C	2H	4H	2C	3H	3C	2H	ck
2C	4H	4C	3C	3H	2H	2H	ck
3H	2H	2C	4C	4H	3C	2H	ck

.....

Of course, games may be conceived in which *Goal* is any other card whatsoever which may change dynamically, or in which the *FirstMove* position changes from game to game such as in the following ***DynamicExample:***

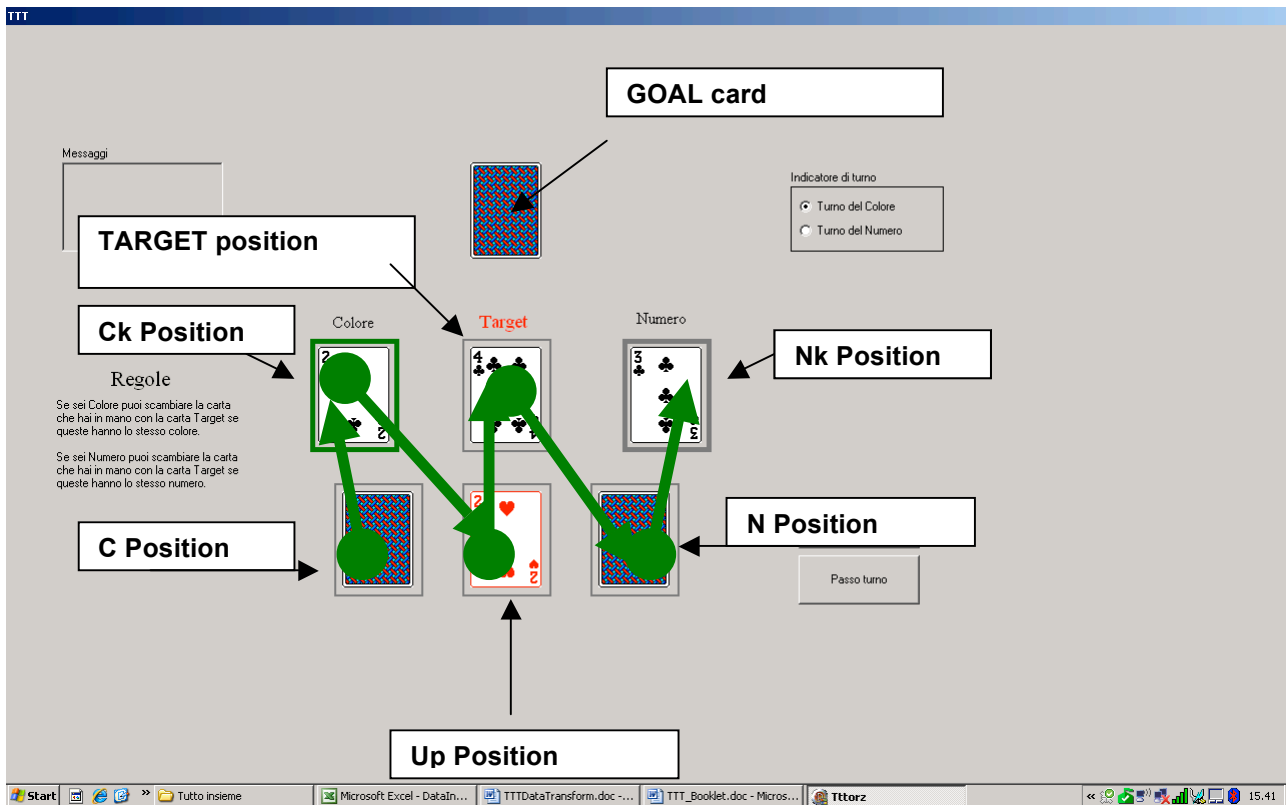
NK	N	UP	C	CK	T	G	FirstMove
3C	4H	2H	3H	2C	4C	2H	ck
3H	2H	4H	3C	2C	4C	2H	nk
4H	4C	2H	3H	3C	2C	2H	ck
3C	2H	2C	3H	4H	4C	4H	nk
3C	3H	2H	4H	4C	2C	4H	ck
3C	3H	4H	4C	2H	2C	4H	nk
3C	3H	4C	2C	4H	2H	3C	ck
4H	3C	2C	3H	2H	4C	3C	nk
4H	4C	2C	3C	3H	2H	3C	nk
2H	4H	2C	3C	3H	4C	2H	nk

If, like in this case, the Goal changes from time to time, the *Goal* card should be clearly visible on the screen, which is possible by specifying it in the ***TTT\_Solo.ini*** file.

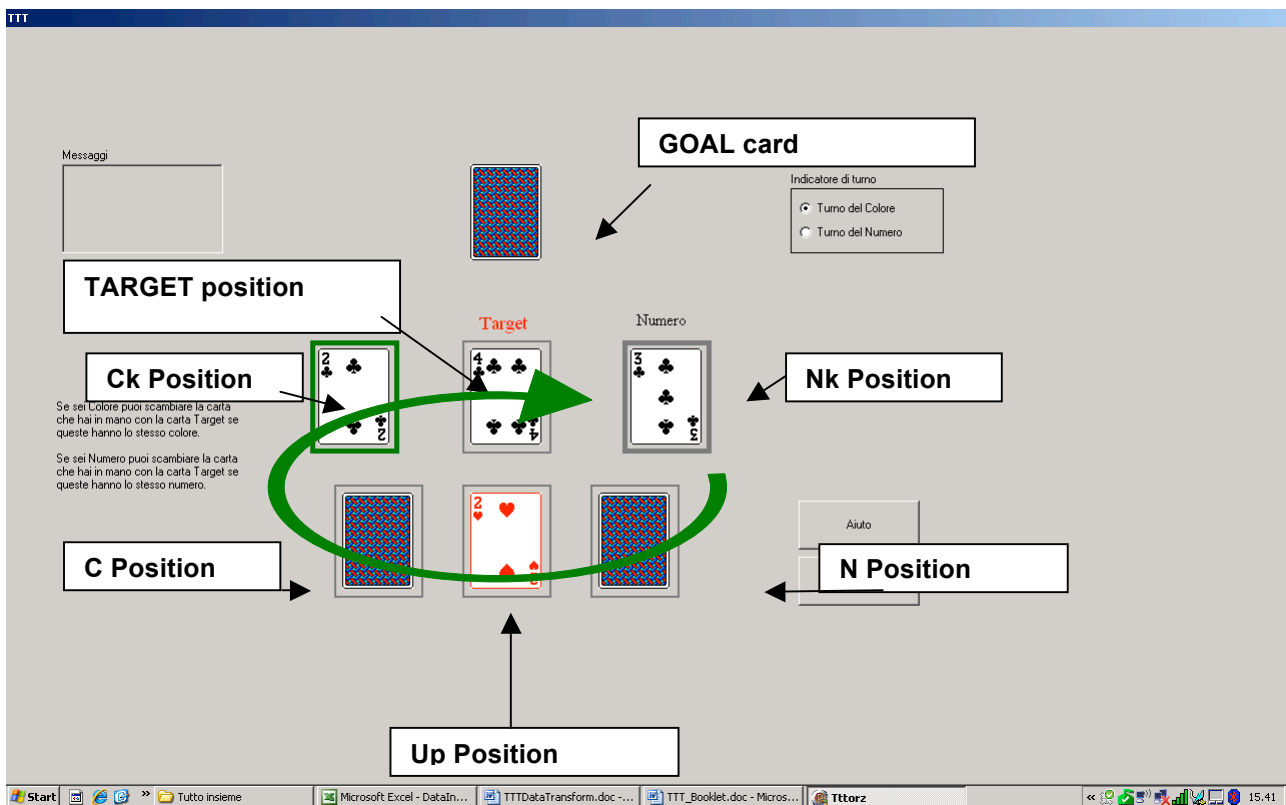
*TTT\_Solo* reads input file data (as defined in the *TTTSolo.ini* file) in the following linear order:

C    Ck    UP   T    N    Nk    G    FirstMove

and, then, transfers them into a tableau, following the green path, as shown herein ←below:

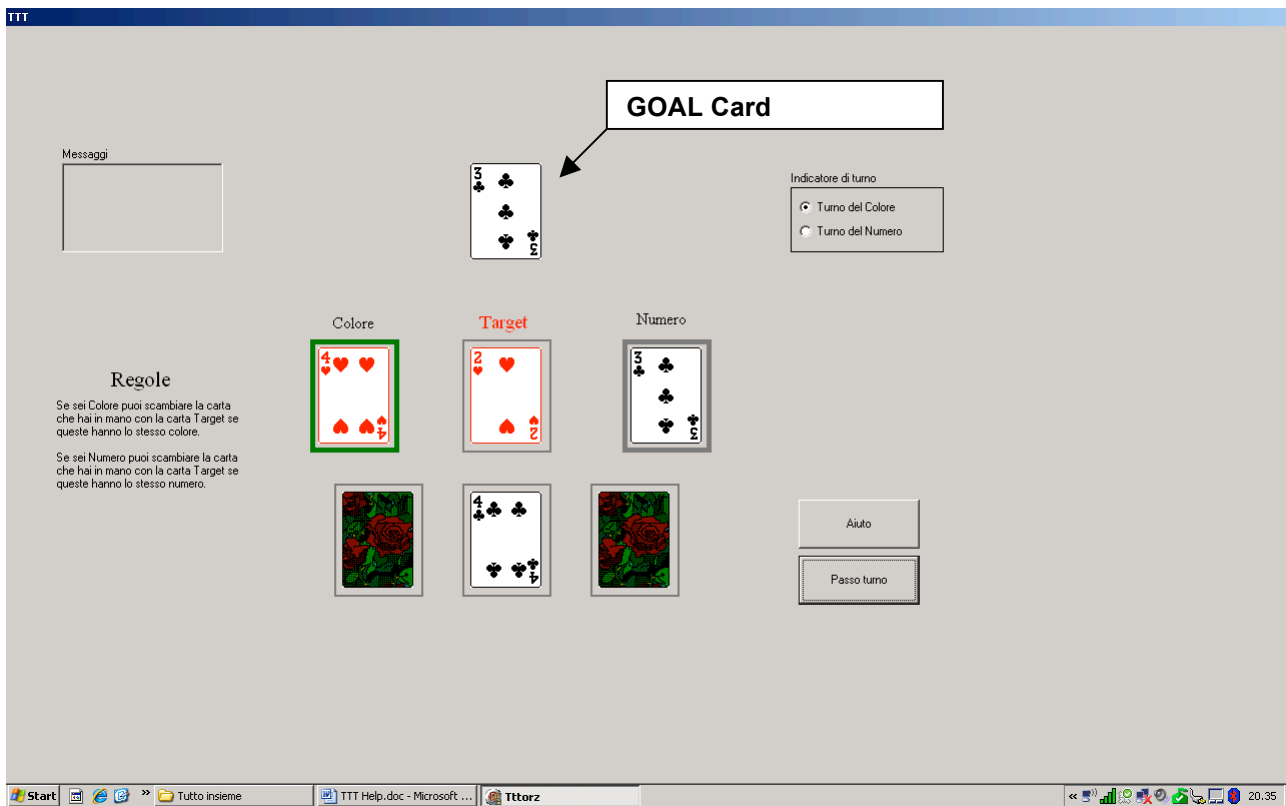


Circular order is also possible (it was applied by default in softwares older than TTT\_Solo). Circular order is the following: NK N UP C CK T *Goal* First Move.



It should be specified in the TTT\_Solo.ini file if linear or circular order is applied.

In sequences of dynamic games, with *Goal* changing, the *G card* to be put into *Target* shall have to show as in the following image (which is possible by just changing the relevant setting in the file *TTT\_Solo.ini* accordingly).



## Games Output

The games data can be examined in two output files, *ckxyyzz\_abcd.txt* and *nkxyyzz\_abcd.txt*, where *xx*=day, *yy*=month, *zz*=year when the game has been played. These two files are alike, but describe the sequences according to *ck* or *nk* respectively. For example, *ckxyyzz\_abcd.txt* describes in full details all the moves made in the games. See for example:

```
11888.421:Game begins
11888.421:userID:userName seeee 1 :gameNum -1:partner 1
11888.421:errorsMade 0:score 0:row 0column 0
11888.421:11888.421:GS:;Game started;;
11891.610:11891.610:GC:3C:numberCardView:Card dealt
11891.611:11891.611:GC:4H;downNumberCardView:Card dealt
11891.612:11891.612:GC:2H;upCardView:Card dealt
11891.613:11891.613:GC:3H;downColorCardView:Card dealt
11891.614:11891.614:GC:2C;colorCardView:Card dealt
11891.615:11891.615:GC:4C;targetCardView:Card dealt
11894.609:11894.609:RM:4C;targetCardView;2C;colorCardView:Remote move card
11896.578:11896.578:pR:3C:numberCardView:NumberKeeperRemoved card
11902.625:11902.625:pR:3C:numberCardView:NumberKeeperRemoved card
11903.359:11903.359:PM:2H;upCardView;3C:numberCardView:Number Keeper moved card
11904.609:11904.609:RP::Remote pass received;;;
11905.453:11905.453:pR:2H:numberCardView:NumberKeeperRemoved card
```

```

11906.109:11906.109:PM:2C;targetCardView;2H;numberCardView:Number Keeper moved
card
11906.110:11906.110:GE:2;800:Hand Ended
11906.110::Hand Ended
11909.297:11909.297:GC:3H;numberCardView:Card dealt
11909.298:11909.298:GC:2H;downNumberCardView:Card dealt
11909.299:11909.299:GC:4H;upCardView:Card dealt

```

.....

The game output file can be translated into a synthetic file; this can be obtained by applying software *Transform.exe* to the game output file (in this case *ckxyyzz\_abcd.txt*).

*Transform.exe* processes the games output (*ckxyyzz\_abcd.txt* or *nkxyyzz\_abcd.txt*) and turns it into a simplified file reporting all cards layouts and game sequences.

E.g.:

```

3H    2C    2H    4C    4H    3C

```

TUPT

```

3C    2C    4H    4C    2H    3H

```

TNPT

```

3H    3C    2H    2C    4C    4H

```

PUPT

```

3H    2H    2C    4C    4H    3C

```

UUTT

```

2H    4C    4H    2C    3H    3C

```

CPUOPT

.....

Where the sequences are as follows:

```

C    Ck    UP    T        N    Nk

```

## Games settings to be configured in *TTTsolo.ini*:

### [LOGFILE]

Path = C:\tmp\logfile.txt

### [PREFERENCES]

// Name of the show file to be loaded by the client.

ShowFileName = DynamicExampleCircular.txt

// Maximum number of moves that may be made before a single hand is over.

// usually 20.

MaxRounds=20

// To see the card in the other position while running one's turn

(possible values are: *mix*, *none*, *all*)

//*all*: allows to see both the cards (click on the right mouse button to show the cards)

//*none*: allows to see one's turn card only

//*mix*: after a move has been made the card can be viewed, then passing on to turn  
*ViewCard=all* is possible

//If cards *Ck* and *Nk* are Draggable (*TRUE,FALSE*)

//if TRUE, it allows also *Ck* and *Nk* to be dragged; (click on right mouse button to show the cards)

DragCkNk=TRUE

//Name of the cards back file (BMP format, 71x96 pixel)

CardsBackFile=dorso3.bmp

//if the *TARGET* card can be seen instead of the deck, as a *target* reminder (this is possible in case of dynamic *Target*) (*TRUE,FALSE*)

ViewTarget=TRUE

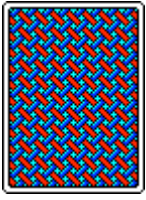
//Cards *Ck* and *Nk* can be face-up, or can be turned upside down using right mouse button (*TRUE,FALSE*)

ViewCkNk=FALSE

//Input file Syntax (or Order): it can be CIRCULAR (*NK N UP C CK T*) or LINEAR (*C Ck UP T N Nk*)

syntaxinput = CIRCULAR

- `dorso1.bmp`, `dorso2.bmp`, `dorso3.bmp` are the images representing as many different card backs, which users can select using *TTTsolo.ini*



dorso1



dorso2



dorso3