#₁ $₂ K₃ **Contents for Carom Help**

Carom is a great Windows program that lets you play the carom billiard-game against your friend.

To learn how to use Help, press F1.

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1# contents
2$ Contents
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#4 $5 K6 **What Is Carom?**

When playing Carom, you are presented with a pocket-less billiard table with its three balls. The game is played by two parties; *You* and *Your Opponent*. Each of these players has his own cue-ball. When it's your turn, your objective is to hit your cue-ball so that it canons into both your opponent's cue-ball and the red ball. There are other restrictions according to the current game type.
If you manage to do this, you get one point and optional extra points, and you will take the next shot as well. On the other hand, if your cue-ball doesn't hit the two other balls or the special restrictions are not met, you don't get any points and your opponent will take the next shot.
The game is over when a player reaches the previously determined number of points in fewer visits than the other player. This number, called the winning score, can vary between 5 and 999 points and is determined at the beginning of the game. The player that reaches that many points wins and the other player loses the game. The game is a draw if the two players reach the winning score in the same number of visits to the table.

4# what_is_carom
5$ Carom, The Biliard Game
6K carom, biliard game

General Rules

How Does The Carom-table Look?
The carom table is a pocket-less, rectangular billiard-table. The standard table is 2845 mm long (9 foot 4 inch) and 1422.5 mm wide (4 foot 8 inch). These distances are measured between the inner edges of the rubber cushions. These edges are 37 mm above the table surface. The diameter of the balls is 61 mm and their weight is about 210 g.
There are five spots on the carom table:
*   *top spot:* it is located in the center of the top half of the table
*   *center spot:* it is located in the center of the table
*   *bottom center spot:* it is located in the center of the bottom half of the table
*   *bottom left spot:* is is located as high as, but left to the bottom center spot
*   *bottom right spot:* it is located on the other side of the bottom center spot

Who Will Start The Game?
In the reality, the two players must take a *tempo shot* along the table. The ball goes up to the top cushion and then it comes back to the bottom cushion. The player whose ball is located nearer to the bottom cushion after the tempo shot decides whether he starts or lets the other player start.
In this program, the tempo shot is not implemented. At the beginning of a game, either you can set which of the two players will begin, or you can choose random start. In the latter case, the computer tosses a coin to determine who starts.

How To Start The Game?
At the beginning of each game, the balls are laid out on the table as follows:
*   the red ball is placed on the top spot;
*   the cue-ball of the opponent is placed on the bottom center spot;
*   the cue-ball of the starting player is placed on one of the two other bottom spots as he wishes. In this program, the player cannot choose; the cue-ball is always placed on the bottom right spot.
The first <u>carom</u> must be made from the red ball - either directly or using cushions.
At the beginning of a game the two players agree on the game type and the number of points to be reached in the game. This is called the *winning score*.

What Is The Goal of The Game?
The players' aim is to score as many points as possible. You can only score if you make a <u>carom</u>.
A carom occurs if the player's cue-ball touches the two other balls.
The winning score can vary between 5 and 999 in this program. In the reality, free games and one-cushion games usually have a larger winning score and a three-cushion game has a winning score of about 15 points.
Each <u>carom</u> is worth 1 point. In this program, however, you can choose a scoring mode where every cushion-hits above the required number are worth 1 point as well. Indeed, this mode is also a standard on some parts of the world in the *free* game type.

What To Do With Touching Balls?
If the cue-ball touches one other ball or both or it touches a cushion after a shot, the player can either play onto a non-touching ball or play on using a cushion, or he can request to replace the touching balls and then continue playing from that position.
In this program, balls are *never* considered touching, so that you don't have to worry about choosing an option in the case of touching balls.

When Is a Game Over?

7[#] general_rules
8[$] General rules
9^K rules

Each game must be played until the last point.

If the player who didn't start the game reaches the winning score, he *wins the game*.

If the player who started the game reaches the winning score, his opponent is given a last chance to reach the winning score too. Thus, the two players will have the same number of visits to the table. The balls are replaced into the starting layout before this last visit.

If this player also succeeds to reach the winning score in that visit, *the game is a draw*. If he remains under the winning score, the player who started the game *wins the game*.

#10 $11 K12 **Restrictions In Free Game**

In the free game, the player can make any number of *carom*s in the same visit on the whole table except the *prohibited fields.* There are four prohibited fields; they are triangle-shaped and located in the corners of the table. The length of their orthogonal edges is one fourth of the length or width of the table.
Within a visit, a player can only make two successive caroms in the same prohibited field. That is, in the second shot, at least one of the two other balls must go outside of that field. The ball that went out can come back immediately to the same field, in which case, the player can make his *first* <u>carom</u> in that field again.
In this program, - at least in this version of this program - *no prohibited fields are defined*. Thus, the player can make any number of caroms in the same visit on the whole table.

10# free_rules
11$ Free Game Restrictions
12K free game rules

#[13] $[14] K[15] **Restrictions In One-cushion Game**

In a one-cushion game, the cue-ball must touch at least one of the cushions before the <u>carom</u> occurs.

13[#] one_rules
14[$] One-cushion Game Restrictions
15[K] one-cushion game rules

Restrictions In Three-cushion Game

In a three-cushion game, the cue-ball must touch the cushion at least three times before the <u>carom</u> occurs. These three cushions can be three different cushions, but the cue-ball also can touch the same cushion twice or more times.

16[#] three_rules
17[$] Three-cushion Game Restrictions
18[K] three-cushion game rules

#[19] $[20] K[21] Game Types

There are three game types:
Free Game
One-cushion Game
Three-cushion Game

You select the game type at the beginning of a new game.

19[#] game_types
20[$] Game Types
21[K] game_types

#[22] $[23] K[24] The three balls are
  the cue-ball of one player (white),
  the cue-ball of the other player (yellow) and
  the red ball.

22[#] three_balls
23[$] Three Balls
24[K] balls

[#]25 [$]26 [K]27 When the player takes his next shot, he hits his *cue-ball*, and this ball must canon into the two other balls in order to score. The cue-ball of the first player is the white ball and the cue-ball of the second player is the yellow. Instead of the yellow, a white ball with a spot on it is often used in the reality as the second cue-ball.

25[#] cue_ball
26[$] Cue-ball
27[K] balls

#[28] $[29] K[30] A carom occurs if the player's cue-ball touches the two other balls.

28# carom
29$ Carom
30K carom

#₃₁ $₃₂ K₃₃ **Beginning a New Game**

When the program starts, you are presented with a dialog box after the initialization. Later on, you can always select the "New..." menu point from the "Game" menu, and you will get this same dialog box.
There are several things you can set in this dialog box:

Names
During the game, the players are identified by their name, therefore it is highly recommended that you name the two players correctly, with their real names. You can also use nicknames, of course. The only name you cannot give a player is the empty name. The program warns you to type in a reasonable name if you try the empty one.

Game Type
You must select one of the three game types.

Winning Score
You must input a number in the range 5 to 999 to tell the program the number of points required to win the game.

Extra Point For Cushions
In this program, you have the possibility to select a scoring mode where not only making a carom, but also the touching of the cushions with the cue-ball more times than required in the current game style is worth points. To select this mode, check the box next to the "Extra points.." text.

Determining Who Starts
In the dialog box you can set either the first or the second player to start, or you have the choice to make the program toss a coin to come to a decision (random start).

Enable Undo
If you check the box of the "Enable undo..." text in the dialog box, you will be able to undo your last shot and try again after you have taken the shot. This is very helpful if you are practising, but should not be used during matches.

Enable Collision Detection
The other helpful option is enabled if you check the box of the "Enable collision detection" text. In this case, the first collision of the cue-ball is indicated by breaking the straight line that shows the direction in which the cue-ball will start after taking the shot. The broken line will show you the way the cue-ball will start in after the collision. Note that the spin on the cue-ball makes it swerwe away from this broken line! Again, you should use this option for practice only!

After you have set all the parameters, choose the "OK" button to begin a new game with these parameters, or select the "Cancel" button if you have changed your mind and don't want to begin a new game.

31[#] begin_new_game
32[$] Beginning New Game
33^K beginning new game

#₃₄ $₃₅ K₃₆ Setting Up Shots

You set up your shots in three steps:
*   Setting the direction of the shot
*   Setting the spin on the cue-ball
*   Setting the power of the shot

1. Setting The Direction
You can set the direction in which the cue-ball will start with the mouse. Simply point with the mouse to a location on the table and the cue-ball will be set to start towards that location. Usually, you would be finding a state where the cue-ball hits the left or right side of another ball. While you are practising, you will find the Collision Indication very useful, which you can set in the "Preferences" menu if it has been enabled for the current game.
Zooming in onto the object ball may also prove to be very helpful because that way you can set the direction more accurately. You can zoom in onto an area by clicking with the mouse on the "Zoom In" button and then, using the modified cursor, simply drawing a rectangle with the mouse around the area you want to see on your screen bigger. When you have set the direction, you may want to go back to the previous view. The "Zoom out" button will help you to do that. You may also use the **L**eft of table, **F**ull table and **R**ight of table buttons to select specific views.
Instead of the view-buttons, you can use the menu system as well to activate these features.

2. Setting The Spin On Cue-ball
When taking a shot, you can use two types of spins on the cue-ball: *horizontal* and *vertical*.
You use *horizontal spin* of either right-hand side or left-hand side on the cue-ball to control its direction after collisions with cushions. If you use side on the cue-ball, it will come back from the cushion in a different direction than it would come back without using side-spin. The more side you use, the more the effect on the direction. Use this feature freely to discover the *secrets of the billiard games*!
You can set side-spin on the cue-ball with the horizontal scroll-bar or by pointing to the cue-ball picture directly. You can also type in a number that represents the amount of side-spin to be used. Positive numbers refer to right-hand side while negative numbers refer to left-hand side. A number of zero means that you don't use side-spin on the cue-ball.
The *vertical spin* on the cue-ball does not change the direction of the ball after colliding with a cushion, but it very effectively changes the action of the cue-ball after a collision with another ball. If you use top spin and a direction to hit the object ball fully (in straight line to the center of it), the cue-ball will run after the object ball. On the other hand, if you use back spin, the cue-ball comes back after the collision.
You can set the vertical spin the same way as at the horizontal spin.
The options given by using spins offer many possible ways to take shots. *Please feel free to experiment with them!*
Note that the cue-ball will lose its vertical spin if there is a long-time friction between the ball and the cloth on the table. The duration of this friction should be small enough not to lose the vertical spin if either the cue-ball and the object ball are located near to each other or you hit the cue-ball with much power.

3. Setting The Power
As you have seen in the previous clause, it is very important to choose the right starting speed for the cue-ball. You can do this very simply: just use the long horizontal scroll-bar. Additionally, there are three buttons ("Low", "Medium" and

34# set_shots
35$ Setting Shots
36K setting shots

"High" power), that can help you set the required amount of power even more quickly: Just click on them, and the power will be set to a fixed value. After that, you can alter this value finely with the arrow-buttons of the scroll bar. Last not least, you can type in a number between 1 and 100 to set the power. The value 100 represents a very very hard shot, and the value 1 makes the cue-ball move some millimetres only.

If all these three steps have been processed, you take the shot by clicking with the mouse on the "Take Shot" button. As an alternative, you can also use the menu to start the cue-ball.
After a second or two, the cue-ball will start (if you've got a 66 Mhz 486 machine, this pause does seem short).
You can force the balls to leave their footprints on the table by using the "Preferences" menu.
This, of course, does not alter how the balls are moving. It may be used to analyse your mistakes after a bad shot.