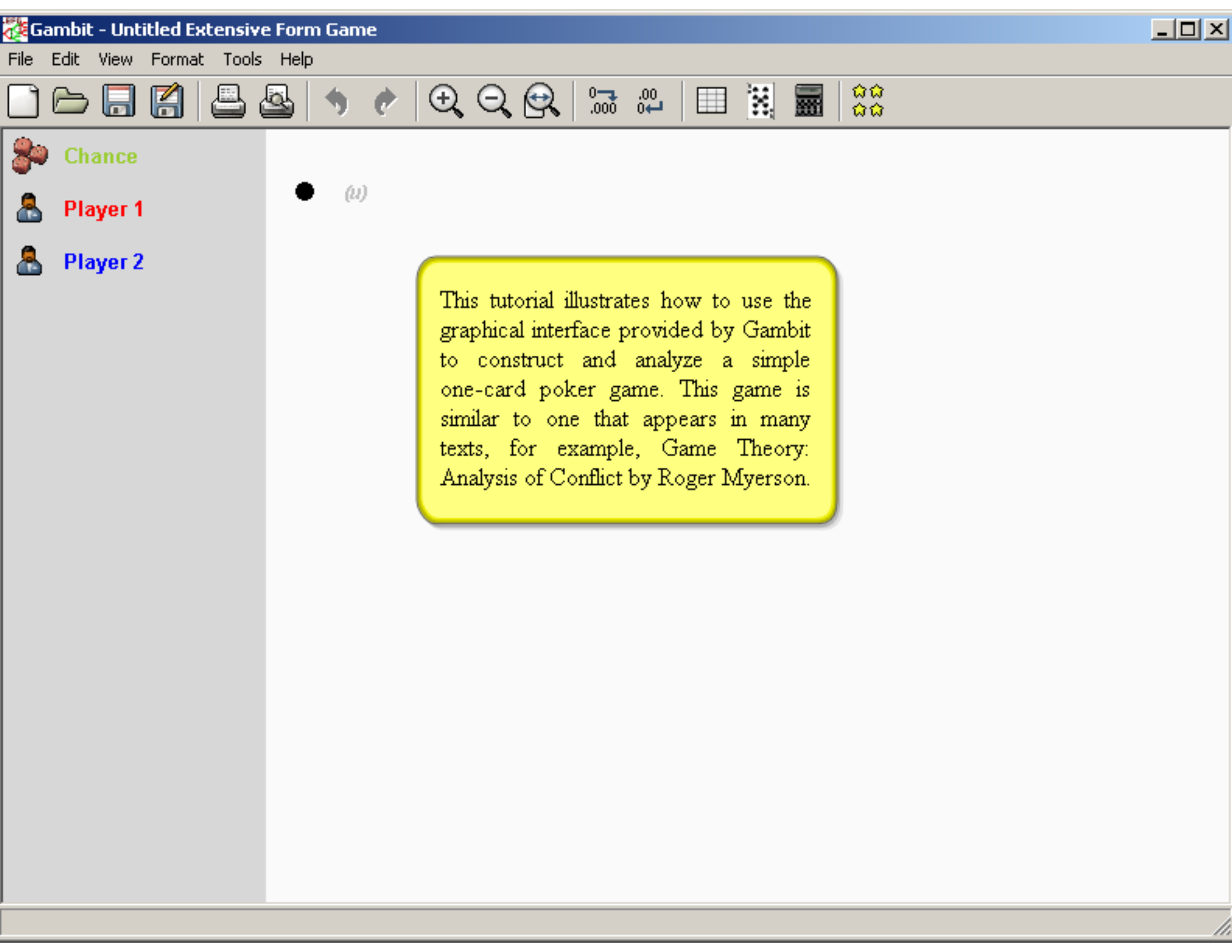
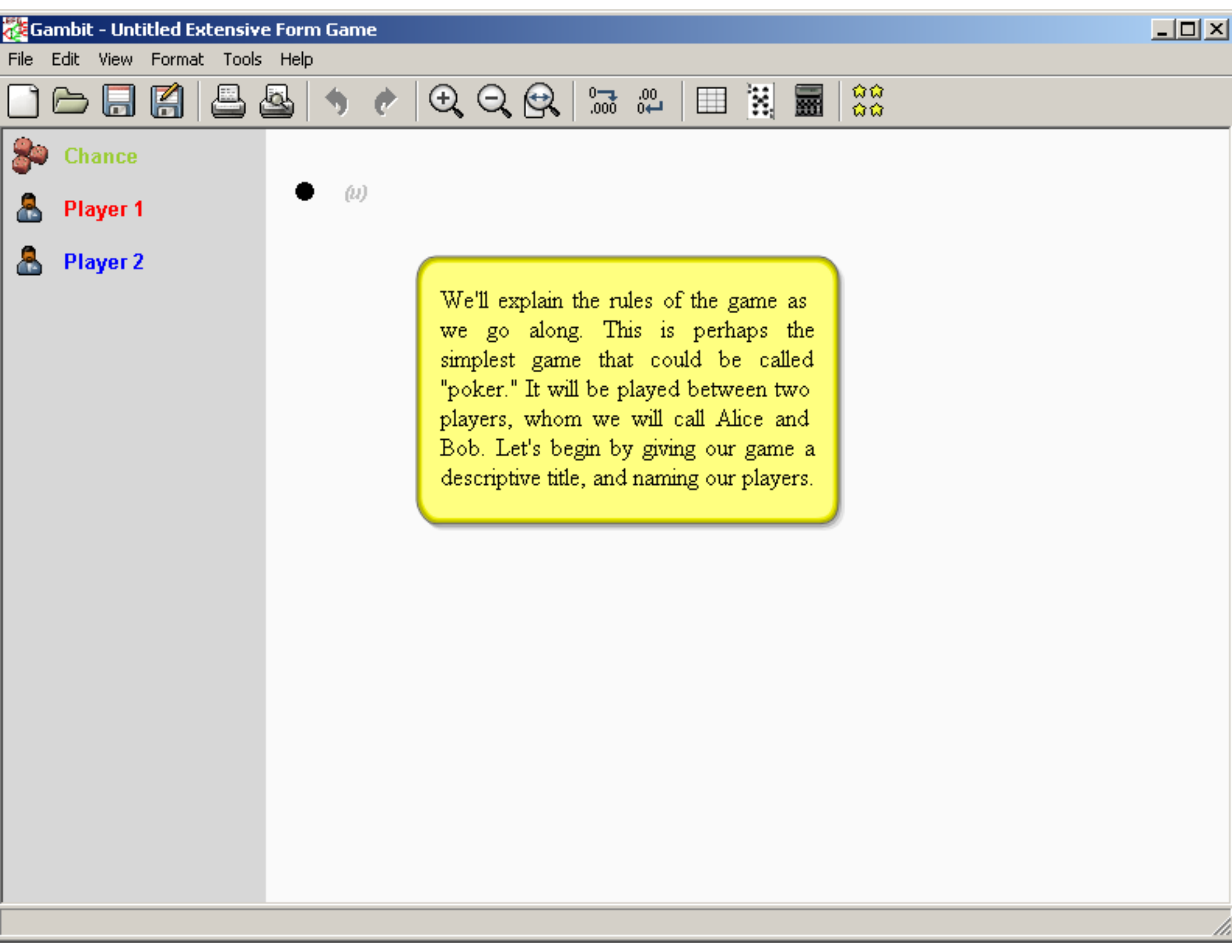
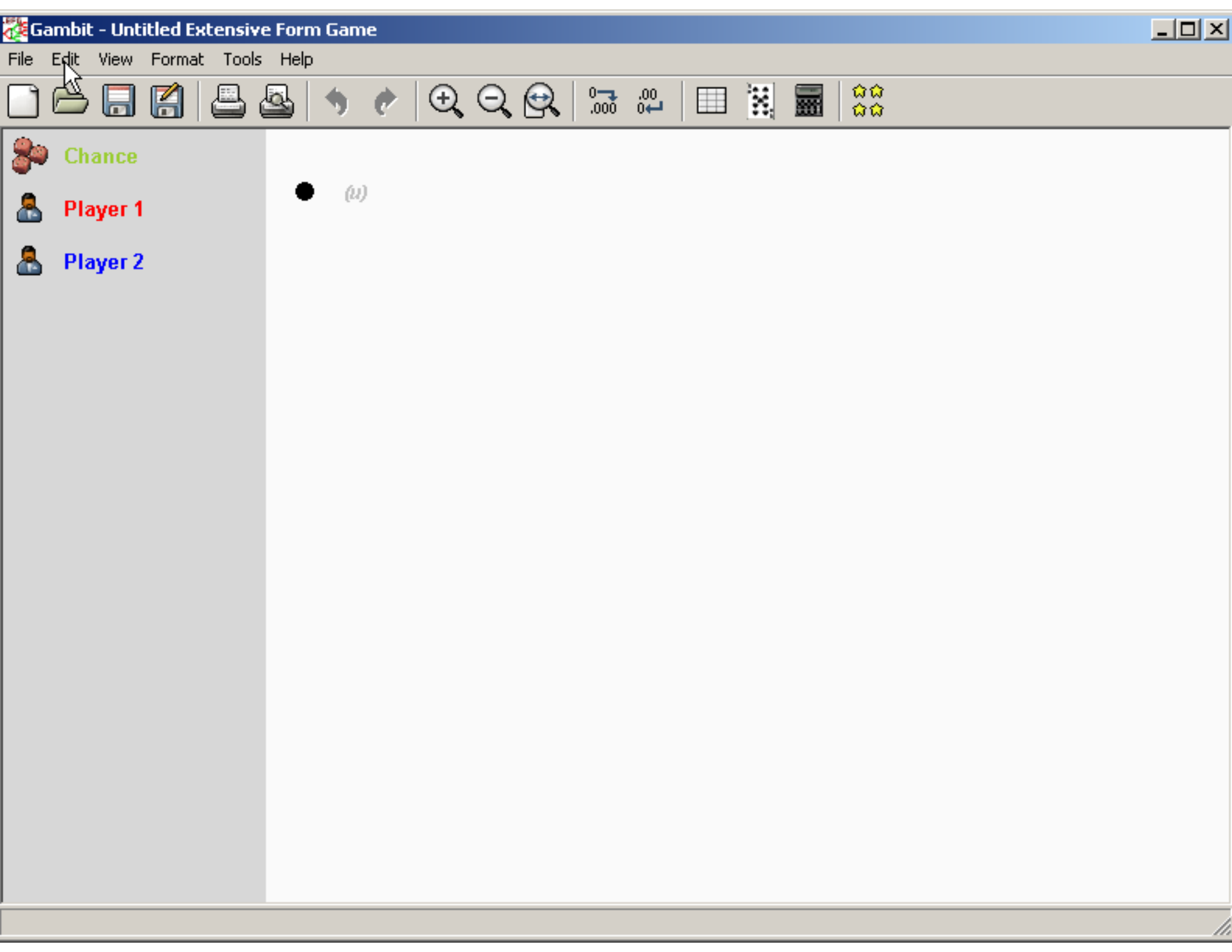
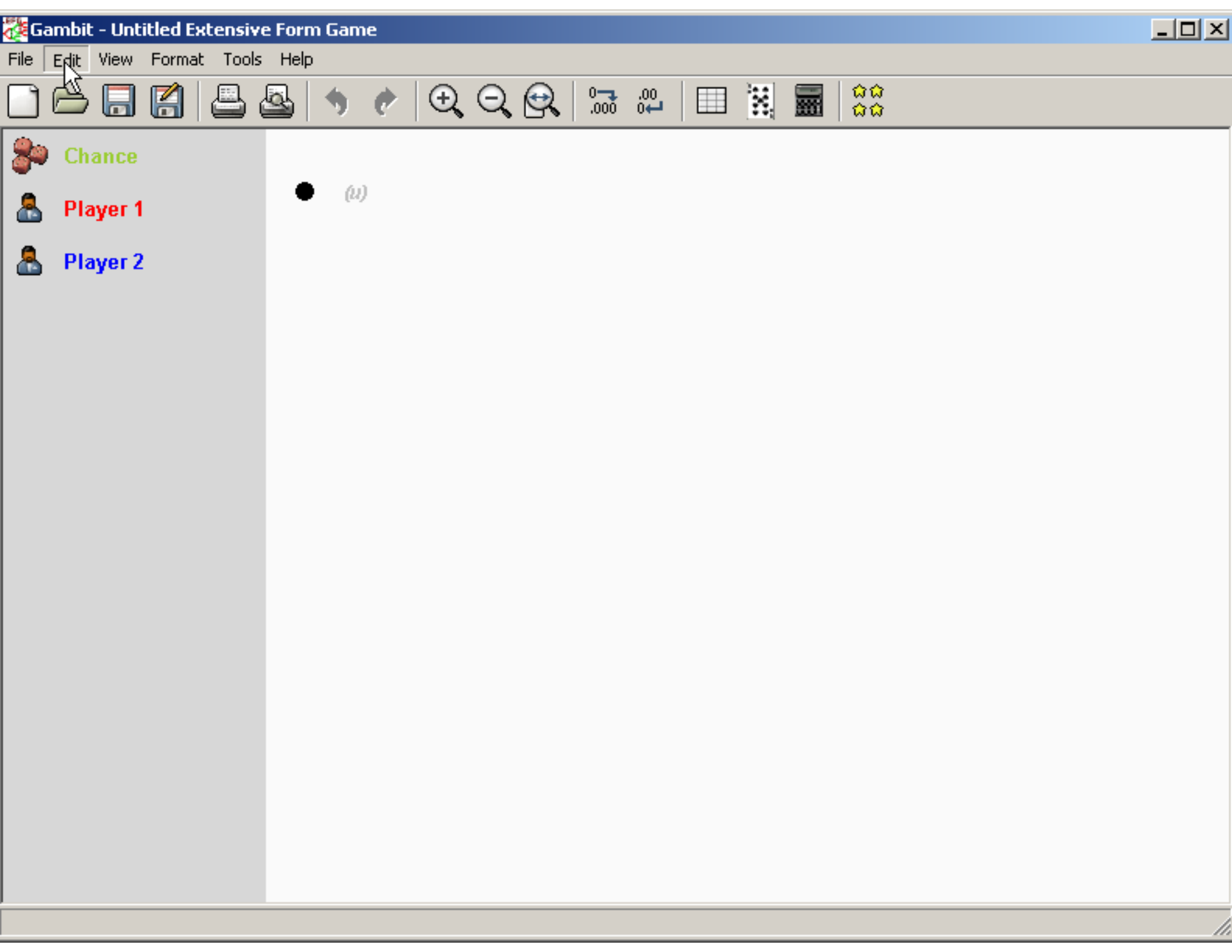

Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
This tutorial illustrates how to use the graphical interface provided by Gambit to construct and analyze a simple one-card poker game. This game is similar to one that appears in many texts, for example, Game Theory: Analysis of Conflict by Roger Myerson.


Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
We'll explain the rules of the game as we go along. This is perhaps the simplest game that could be called "poker." It will be played between two players, whom we will call Alice and Bob. Let's begin by giving our game a descriptive title, and naming our players.


Gambit - Untitled Extensive Form Game
File
Edit
View
Format
Tools
Help
Chance
Player 1
Player 2
(u)


Gambit - Untitled Extensive Form Game
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View
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Tools
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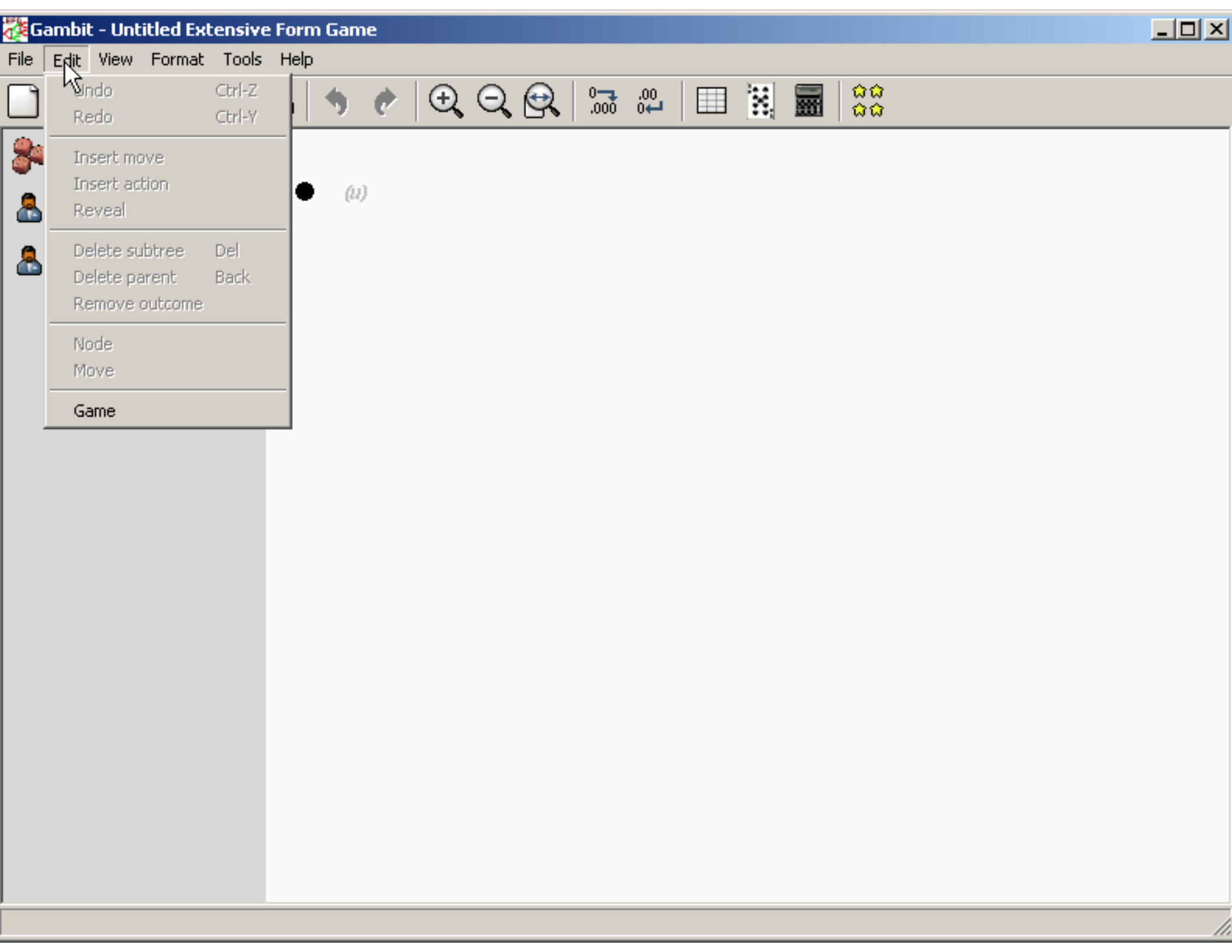
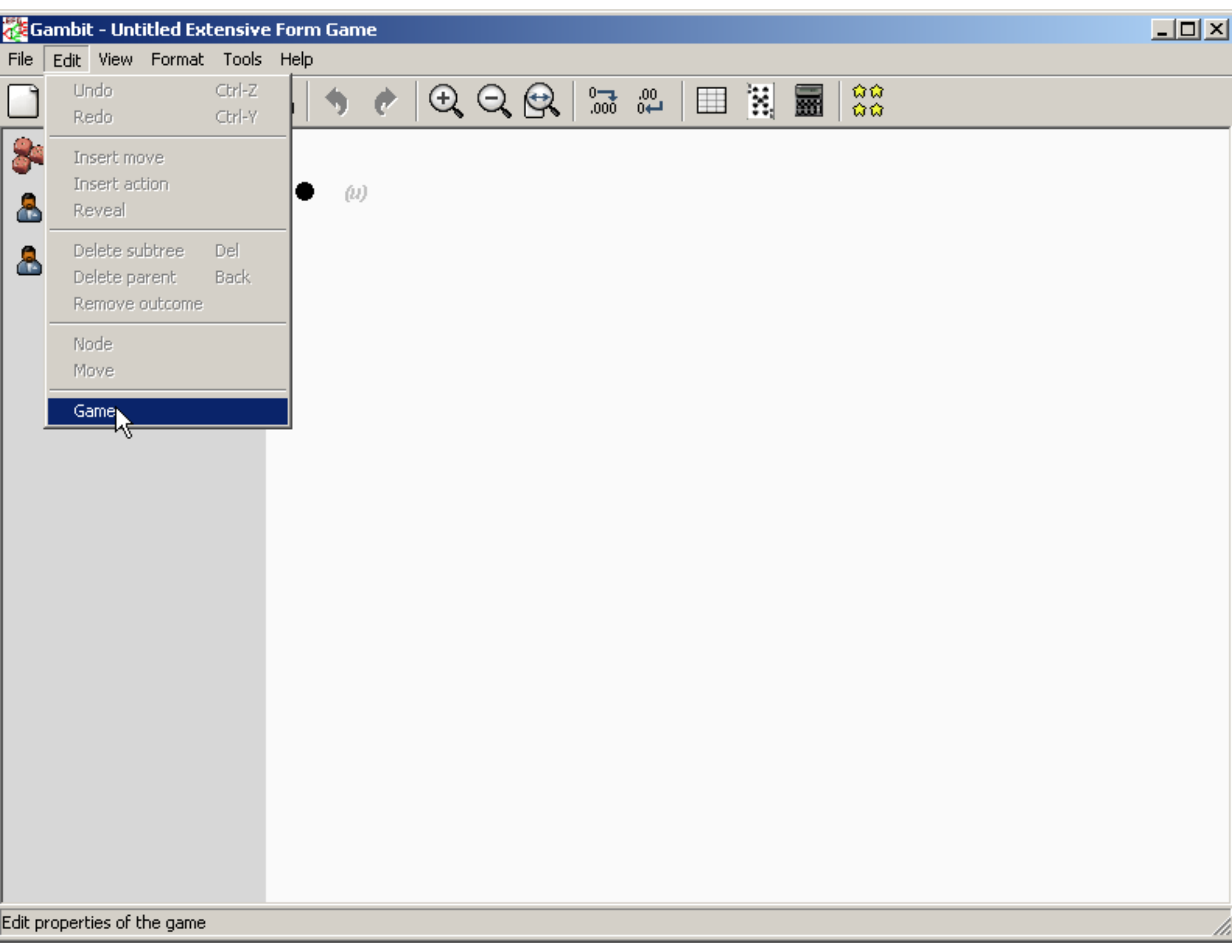
Chance
Player 1
Player 2
(u)


Gambit - Untitled Extensive Form Game
File
Edit
View
Format
Tools
Help
Undo Ctrl-Z
Redo Ctrl-Y
Insert move
Insert action
Reveal
Delete subtree Del
Delete parent Back
Remove outcome
Node
Move
Game
(1)


Gambit - Untitled Extensive Form Game
File
Edit
View
Format
Tools
Help
Undo Ctrl-Z
Redo Ctrl-Y
Insert move
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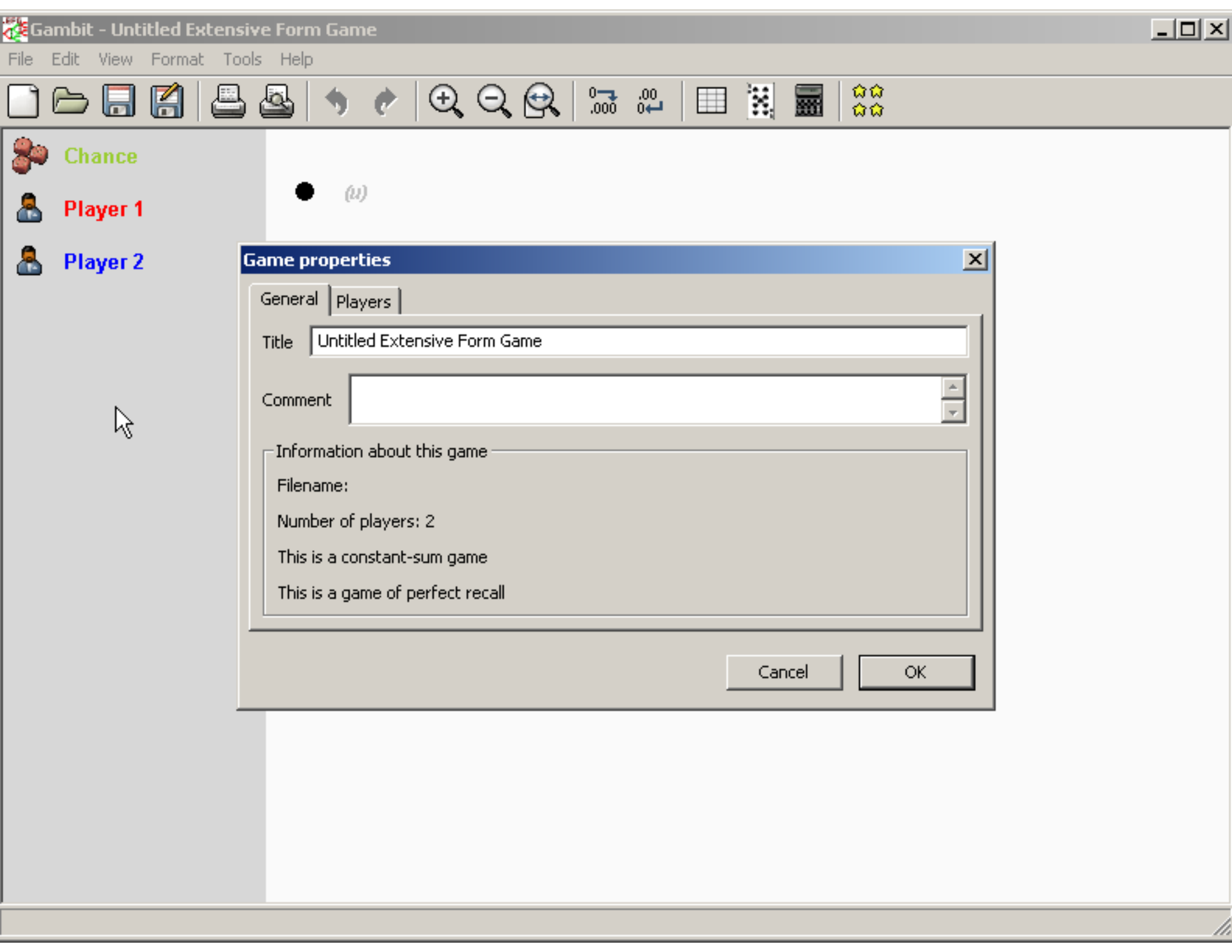
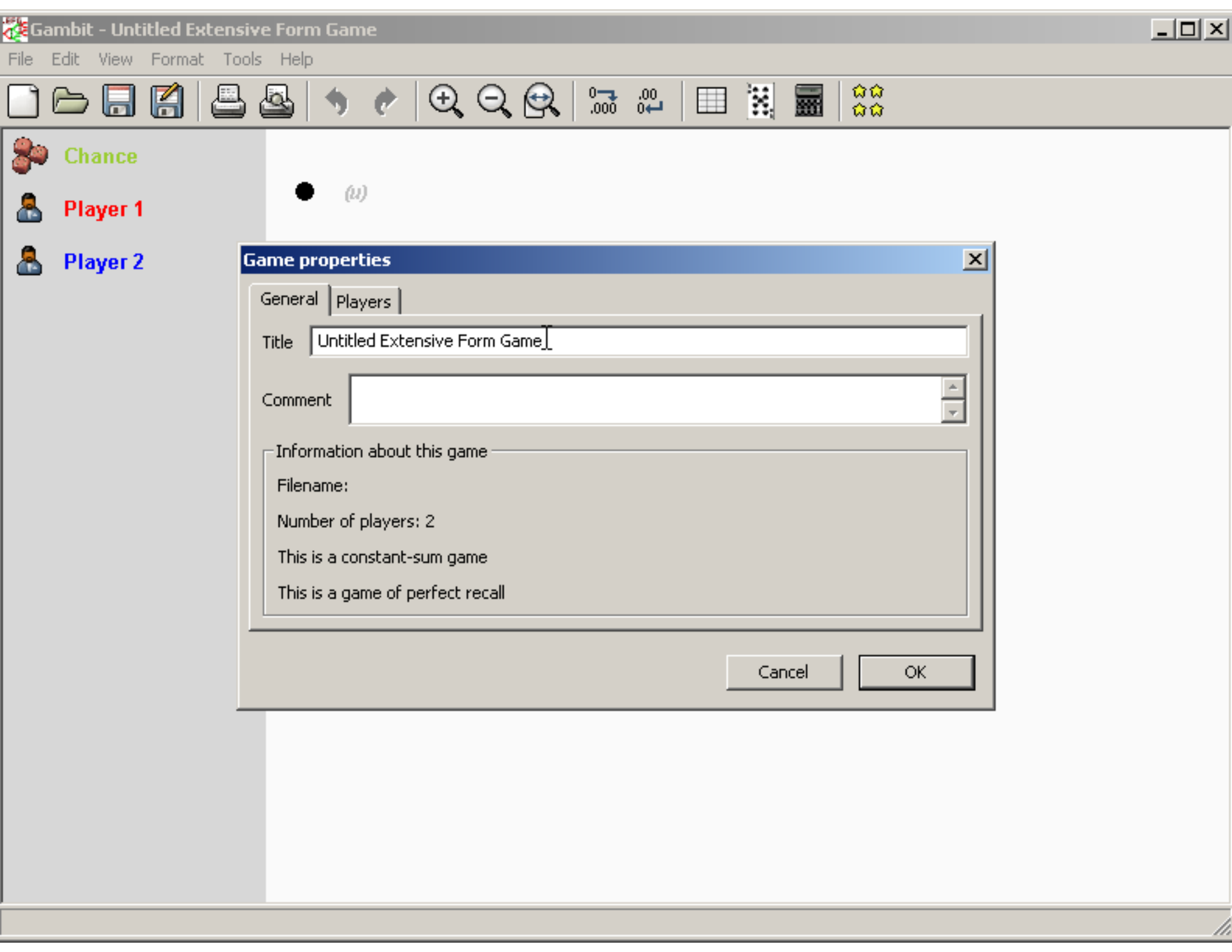
Reveal
Delete subtree Del
Delete parent Back
Remove outcome
Node
Move
Game
(1)
Edit properties of the game


Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General Players
Title Untitled Extensive Form Game
Comment
Information about this game
Filename:
Number of players: 2
This is a constant-sum game
This is a game of perfect recall
Cancel OK


Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
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Player 1
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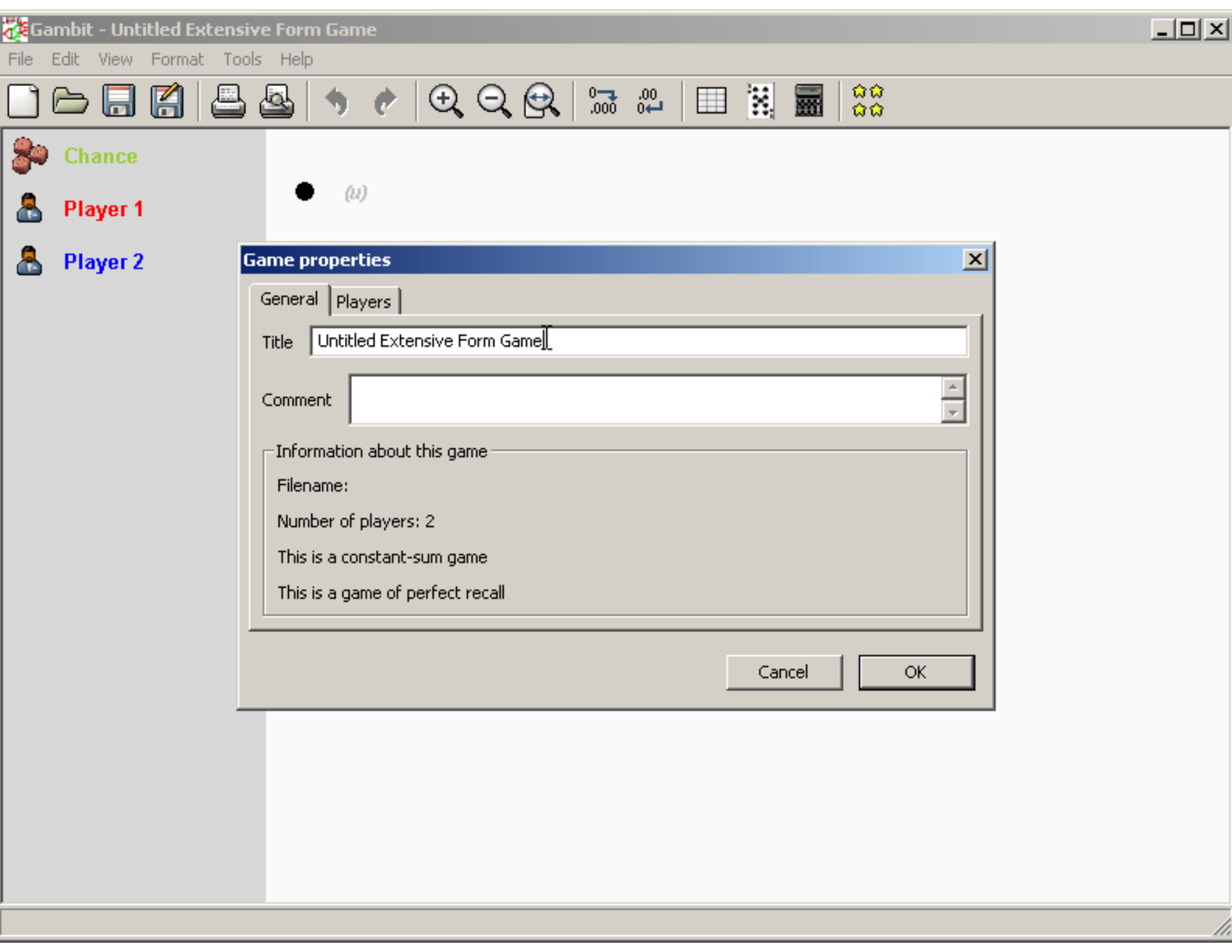
Gambit - Untitled Extensive Form Game
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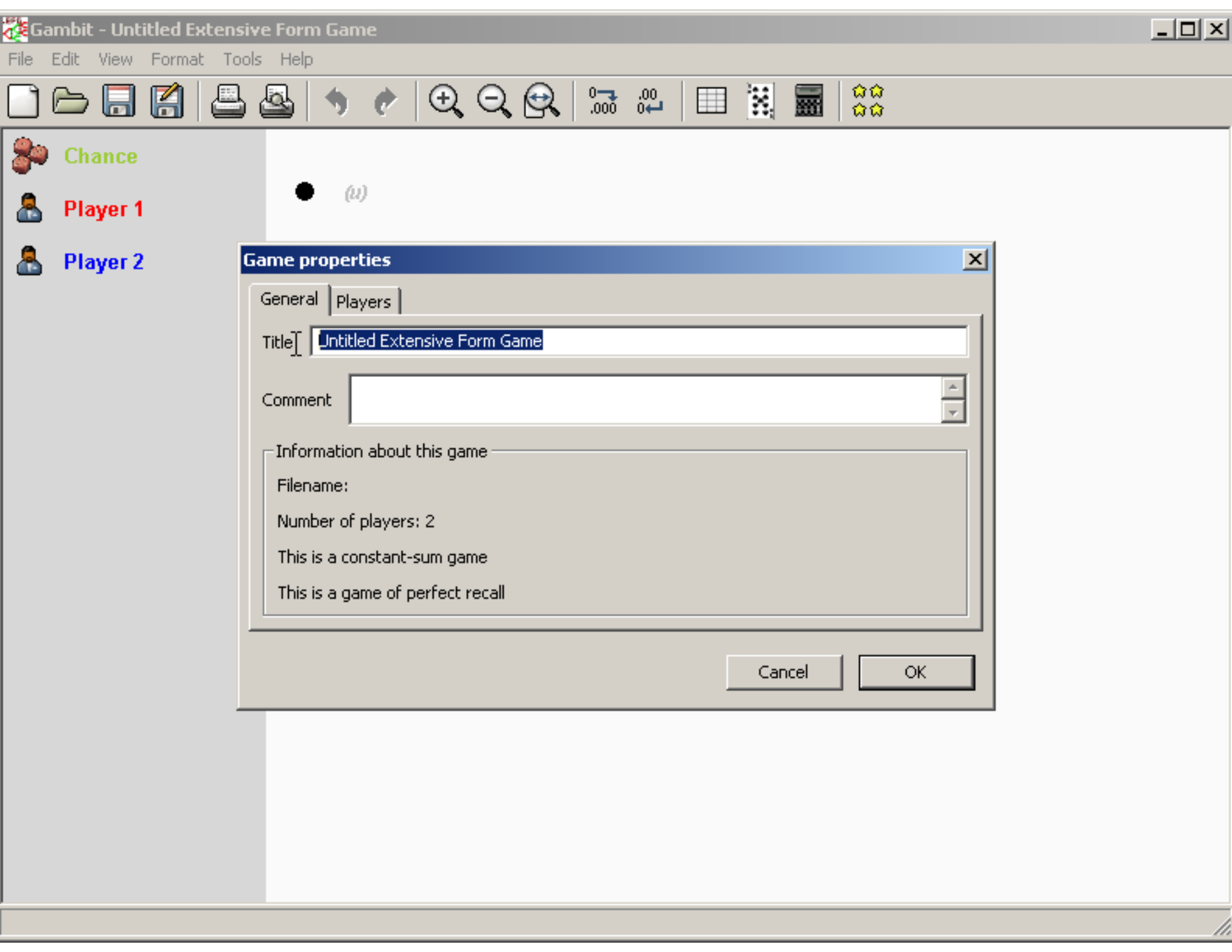
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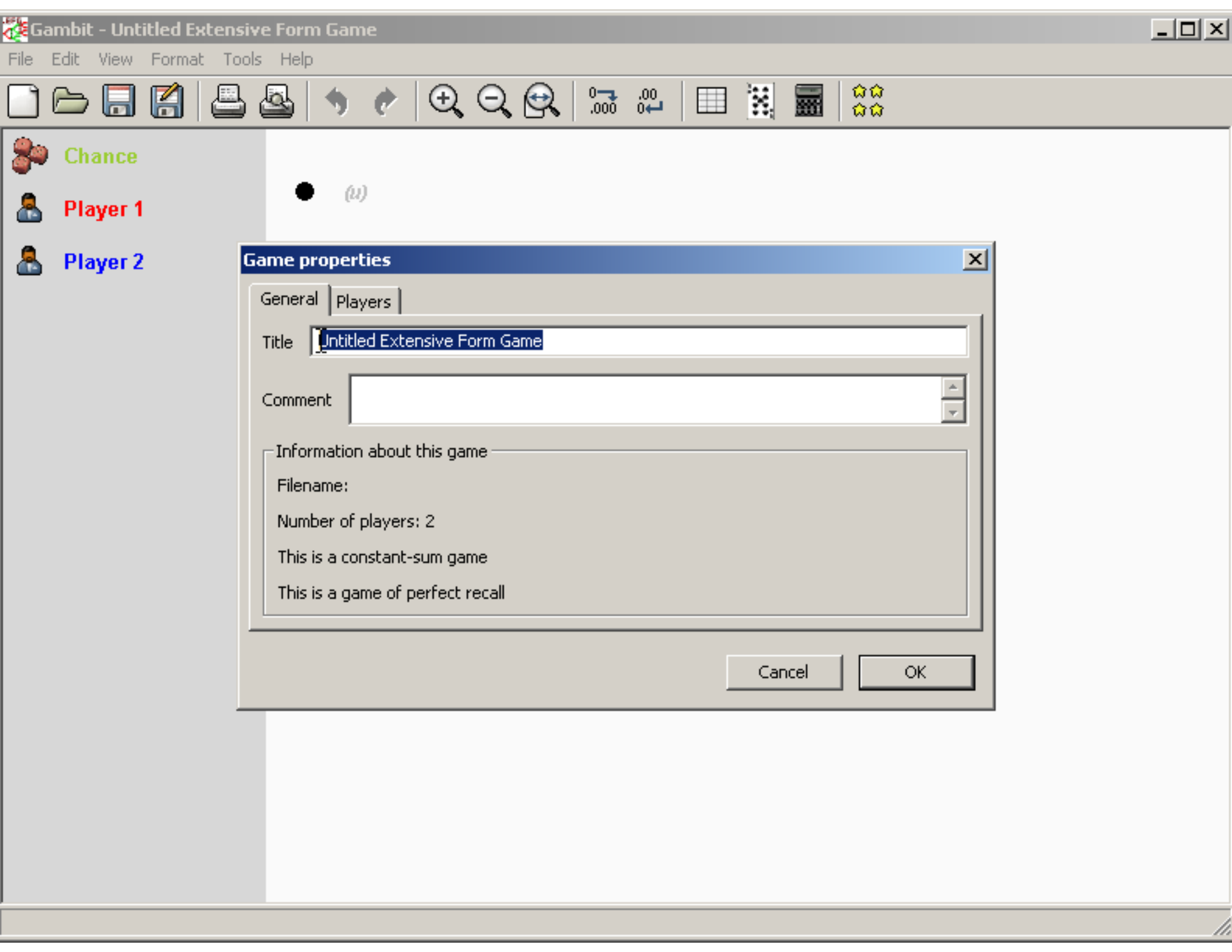
Gambit - Untitled Extensive Form Game
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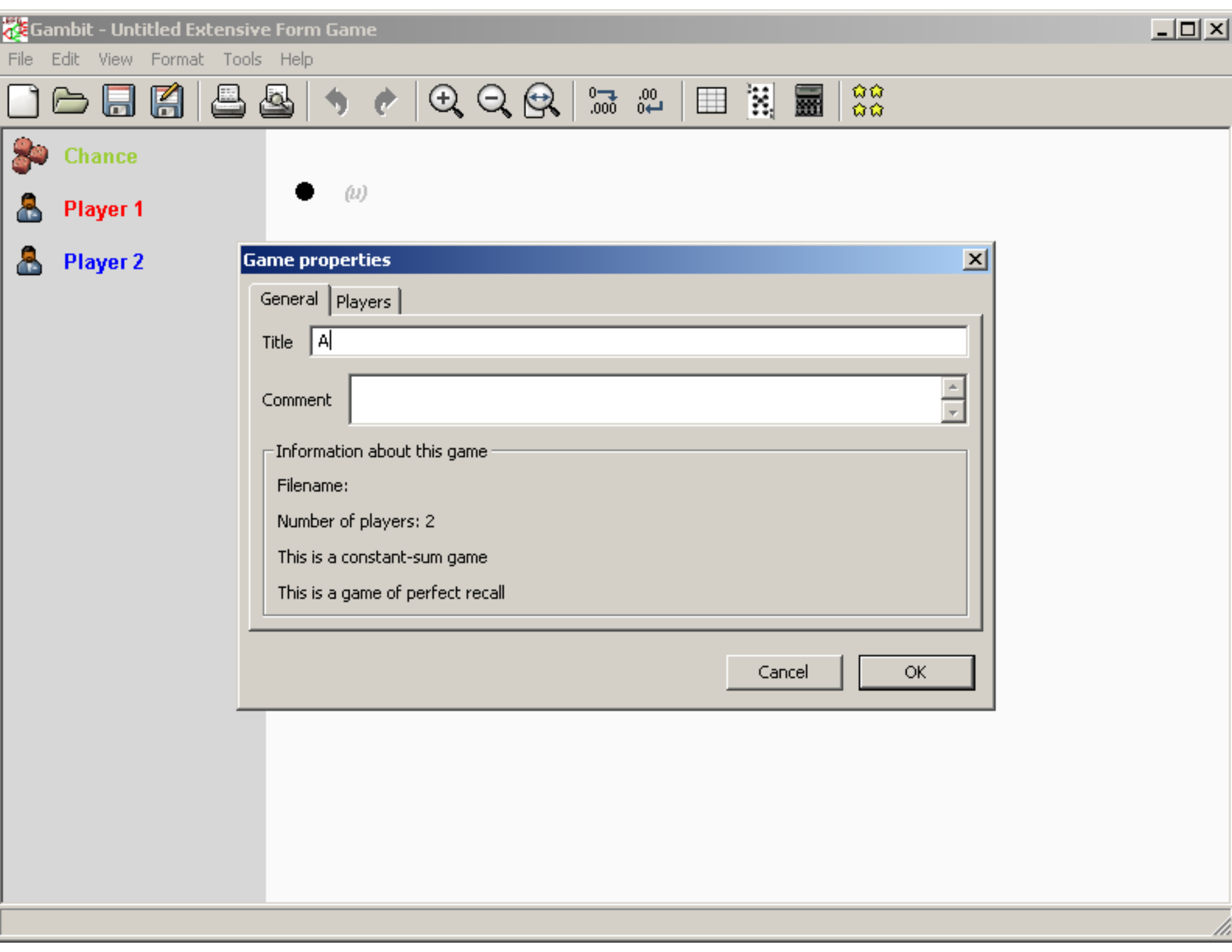
Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
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Game properties
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Number of players: 2
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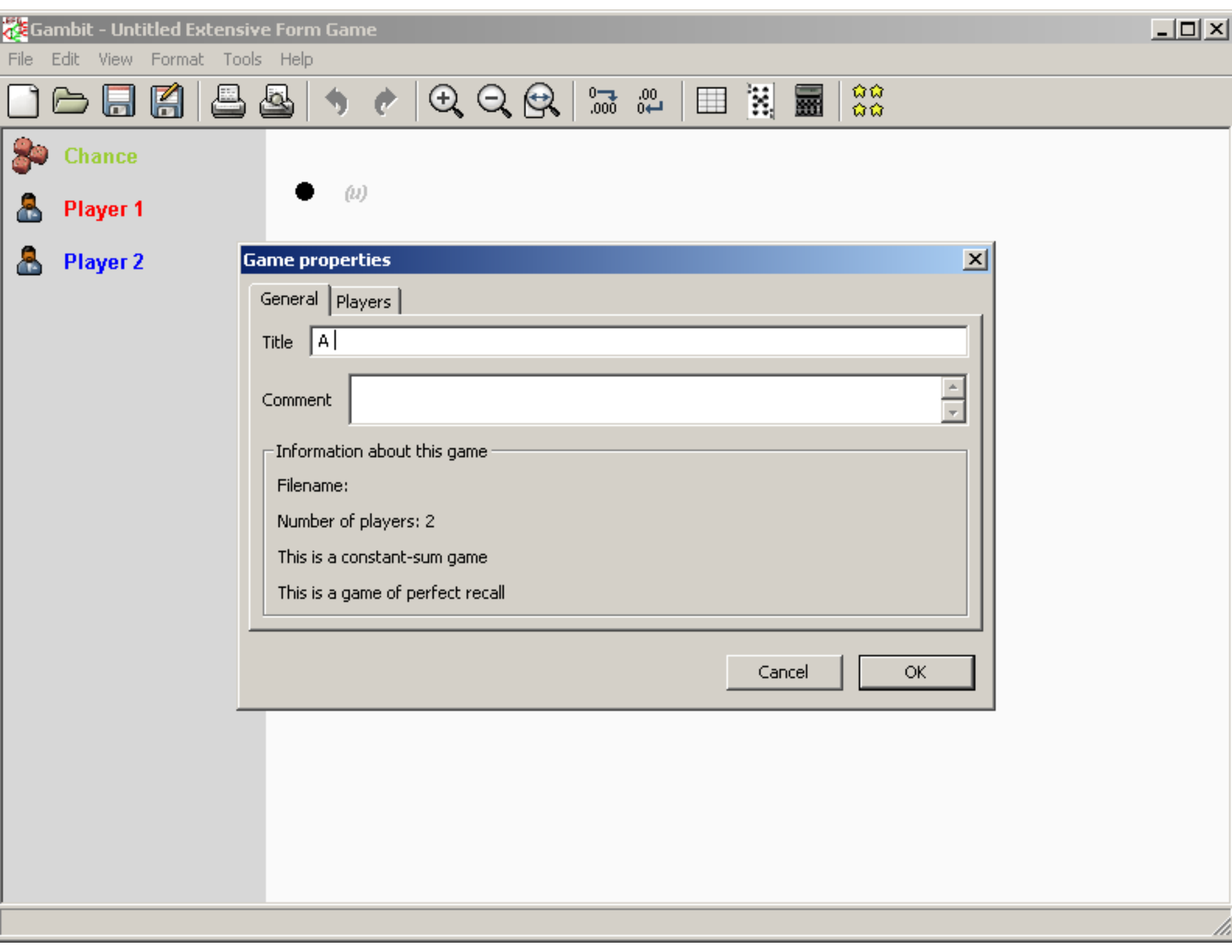
Gambit - Untitled Extensive Form Game
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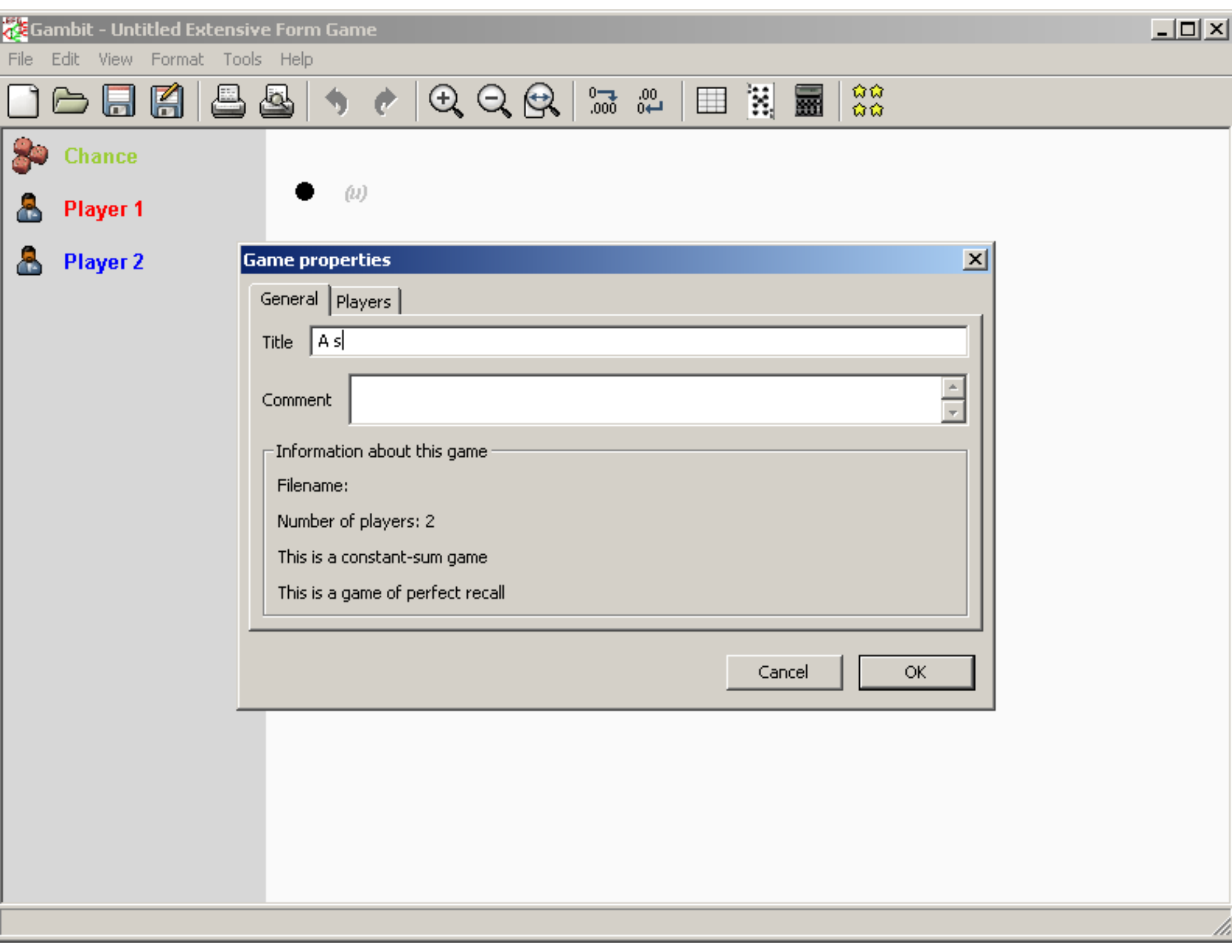
Gambit - Untitled Extensive Form Game
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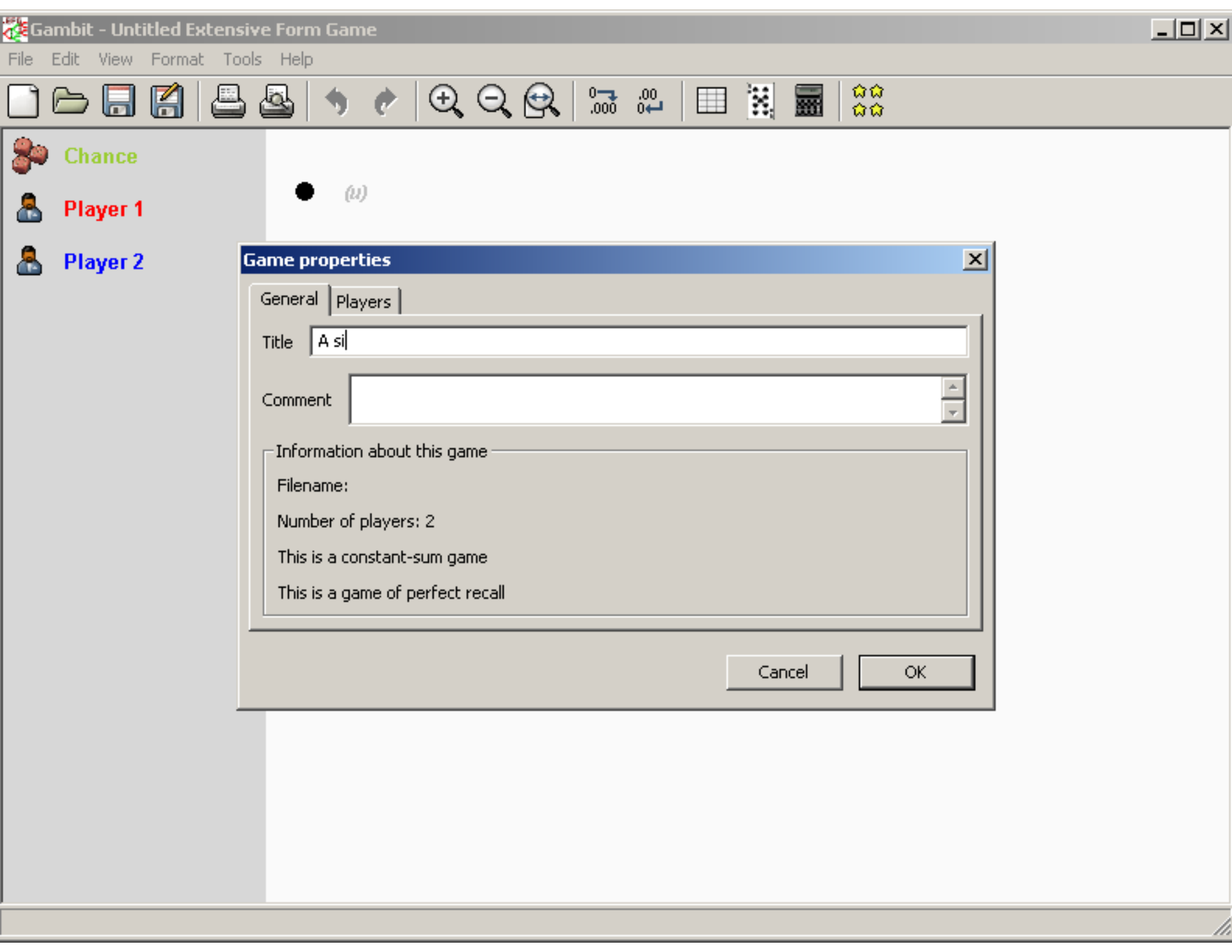
Gambit - Untitled Extensive Form Game
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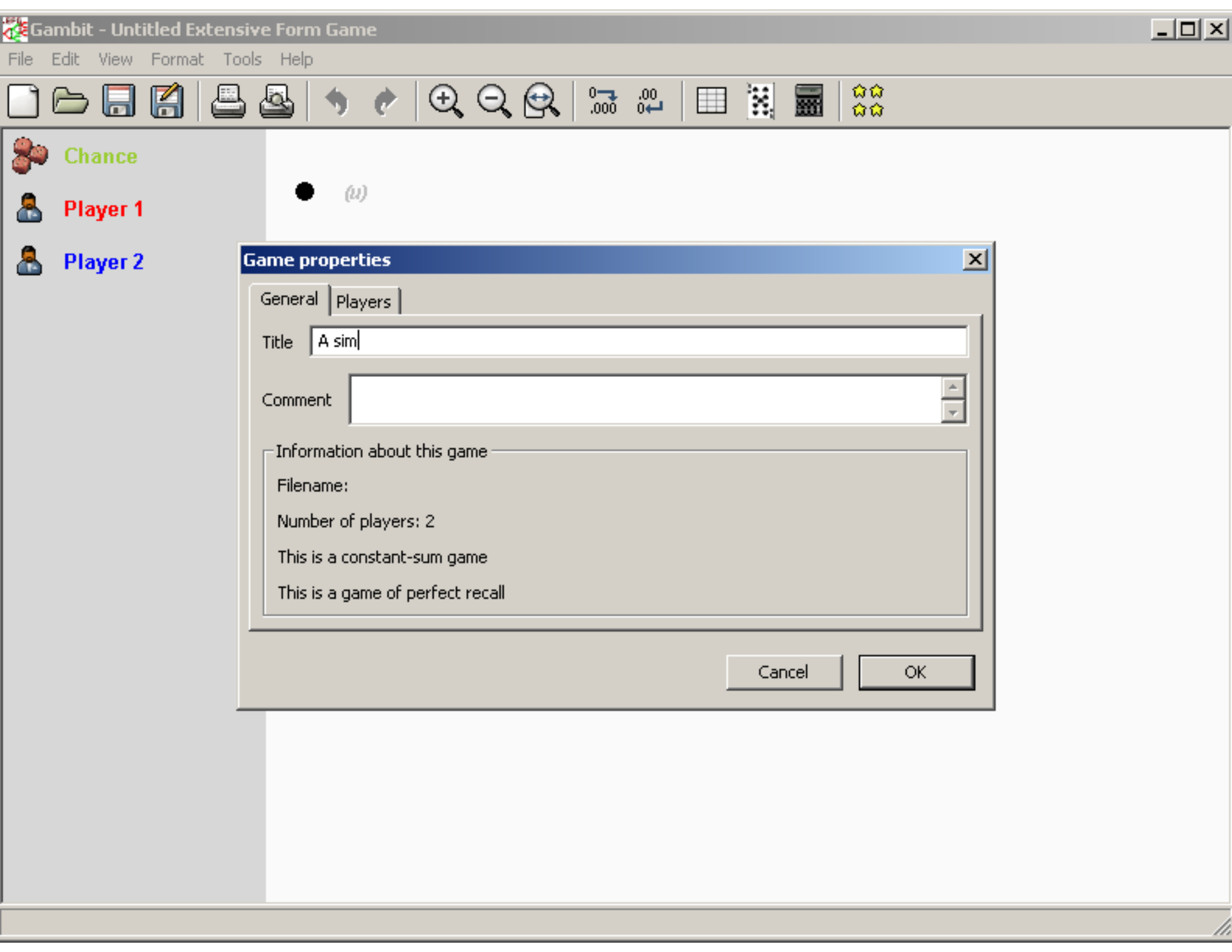
Gambit - Untitled Extensive Form Game
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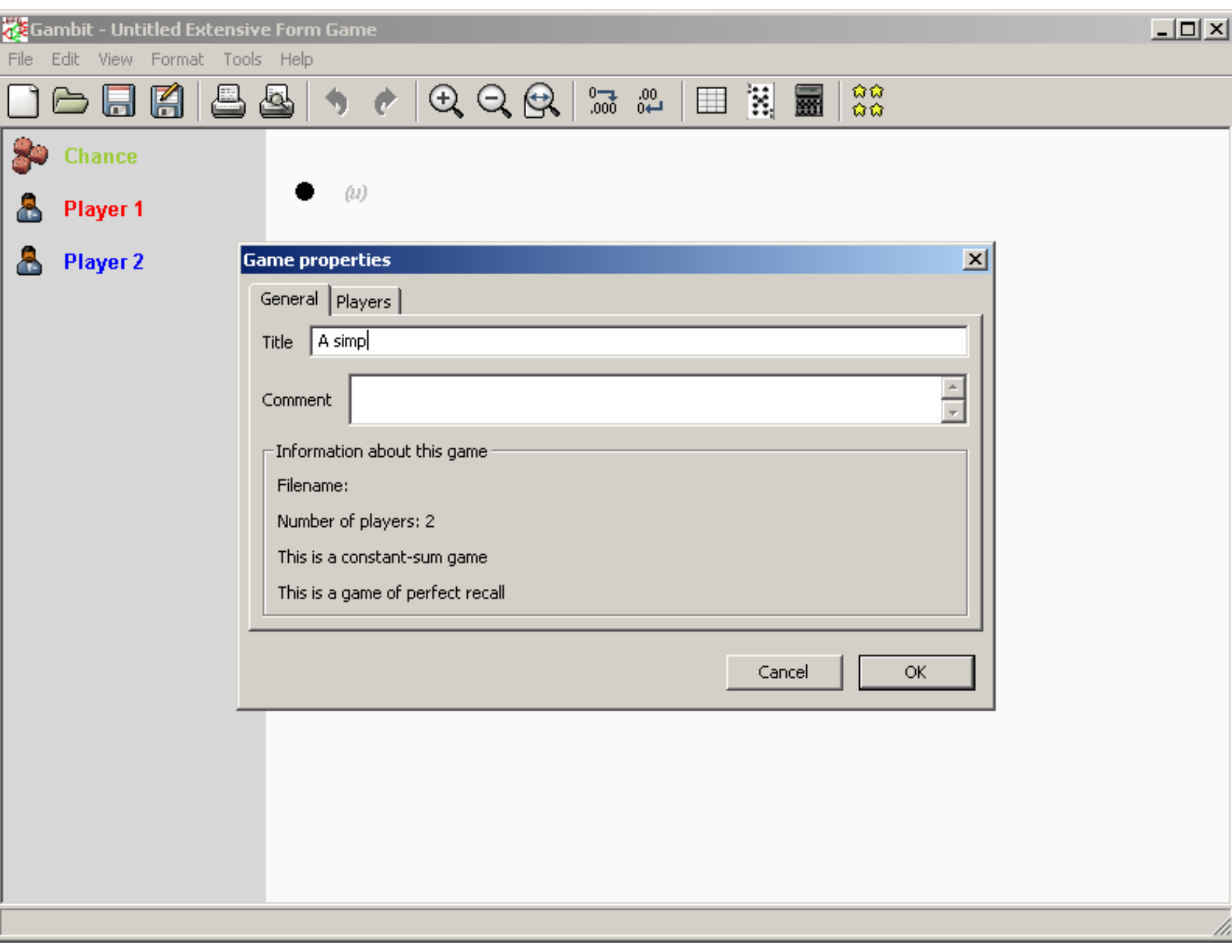
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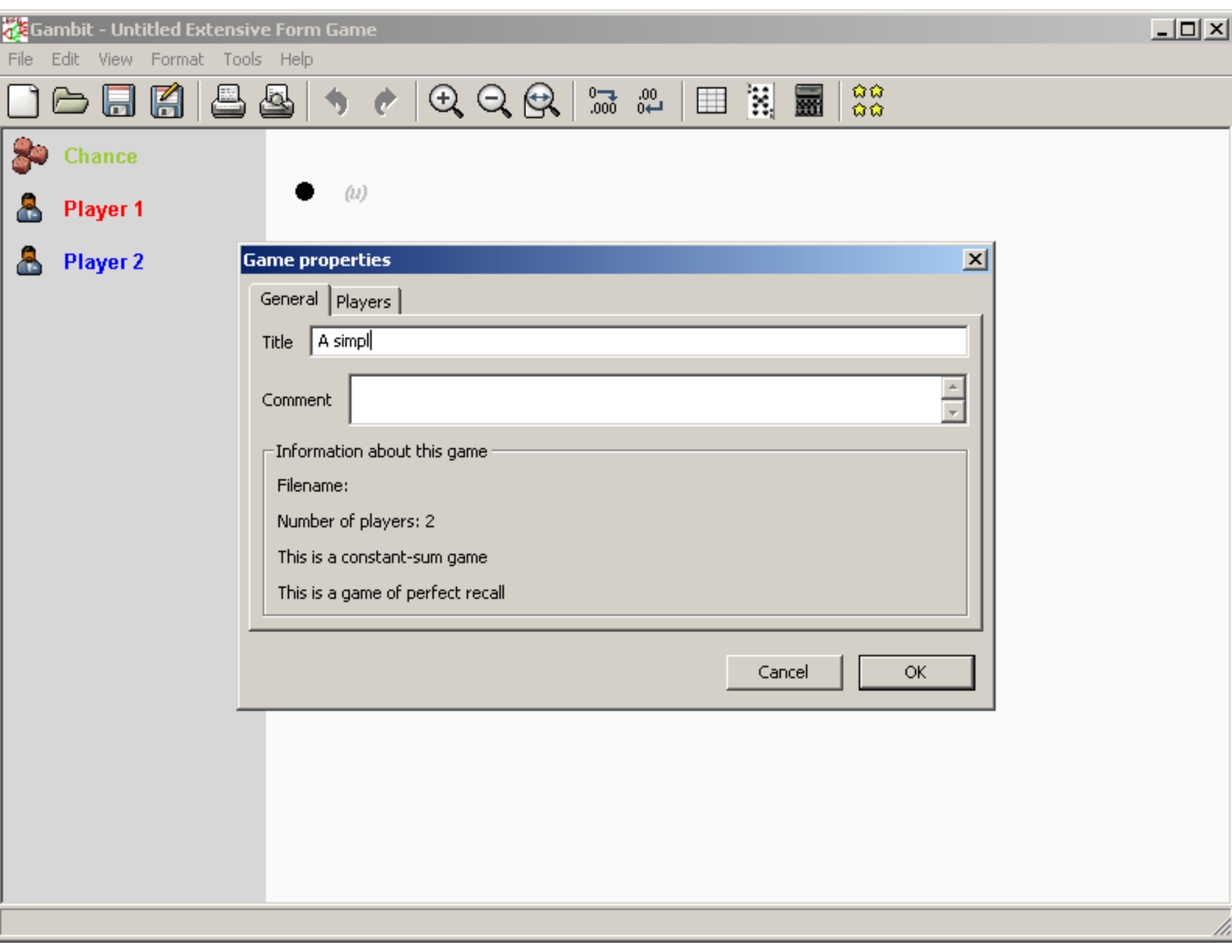
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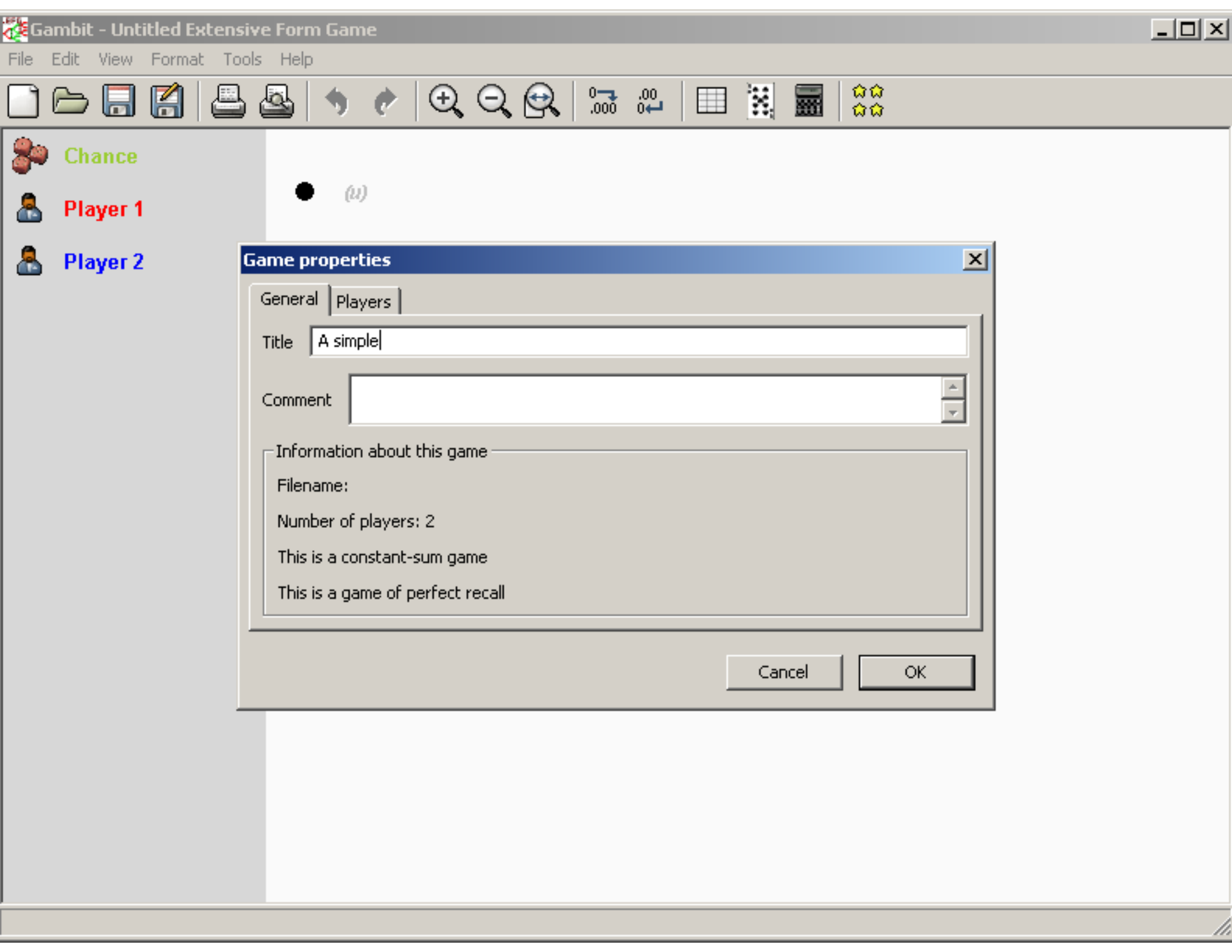
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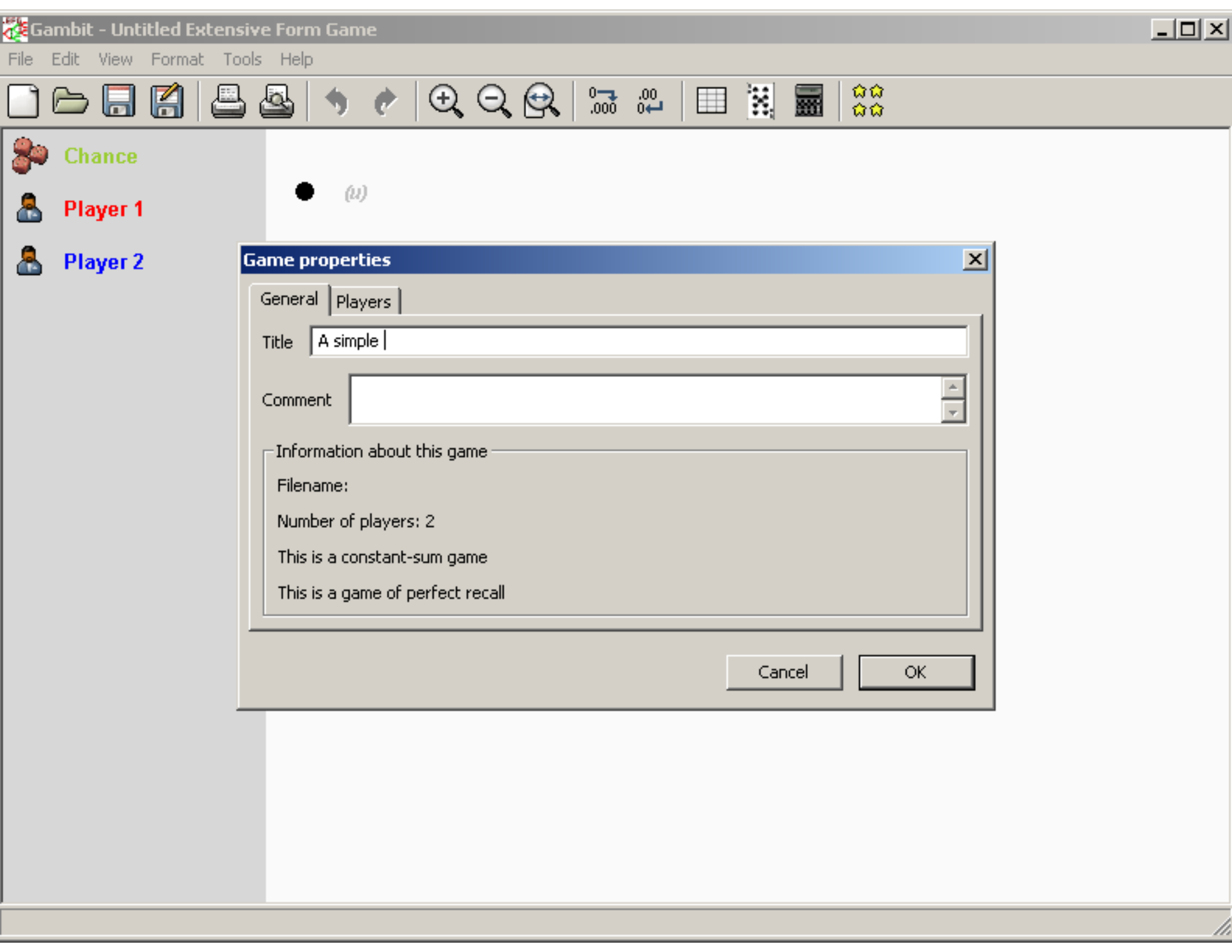
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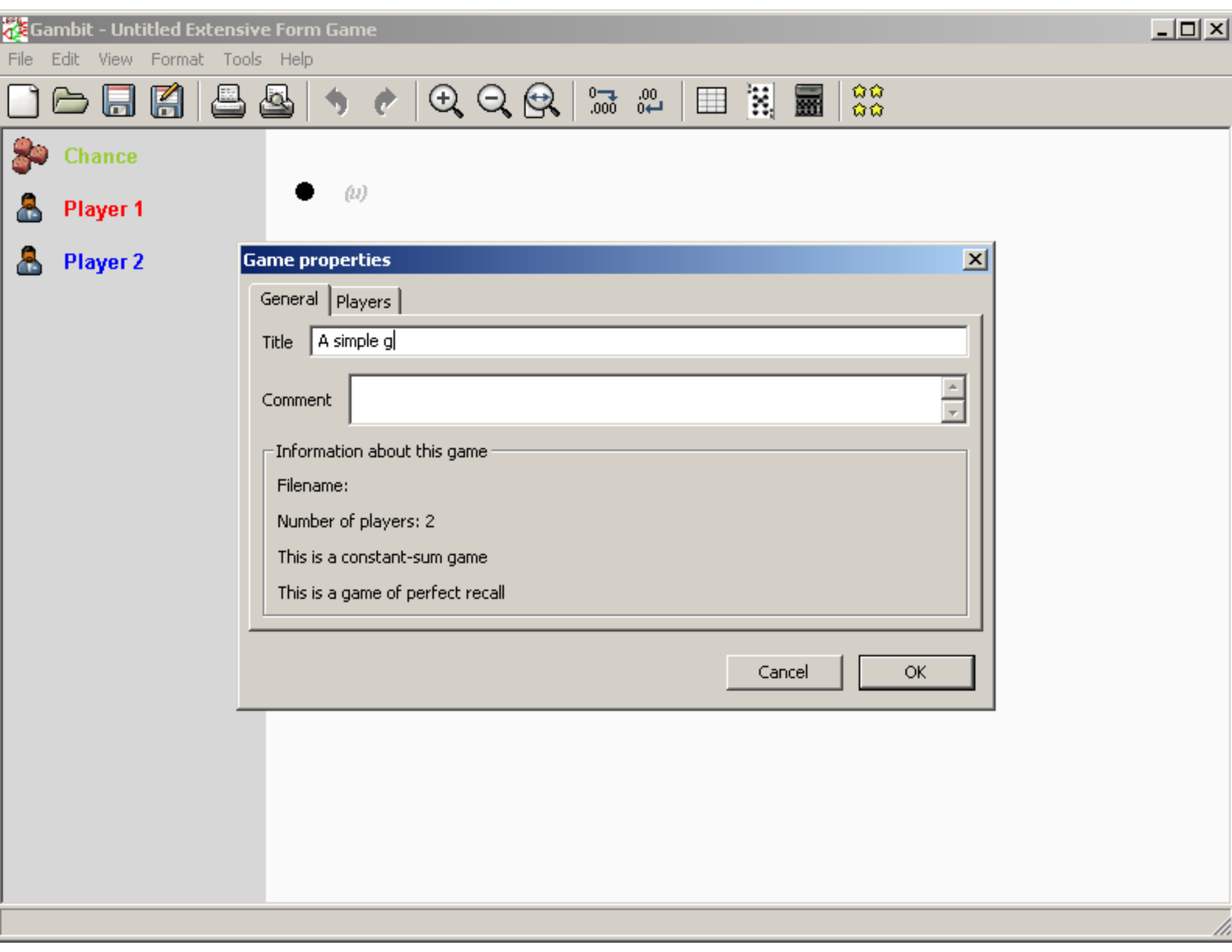
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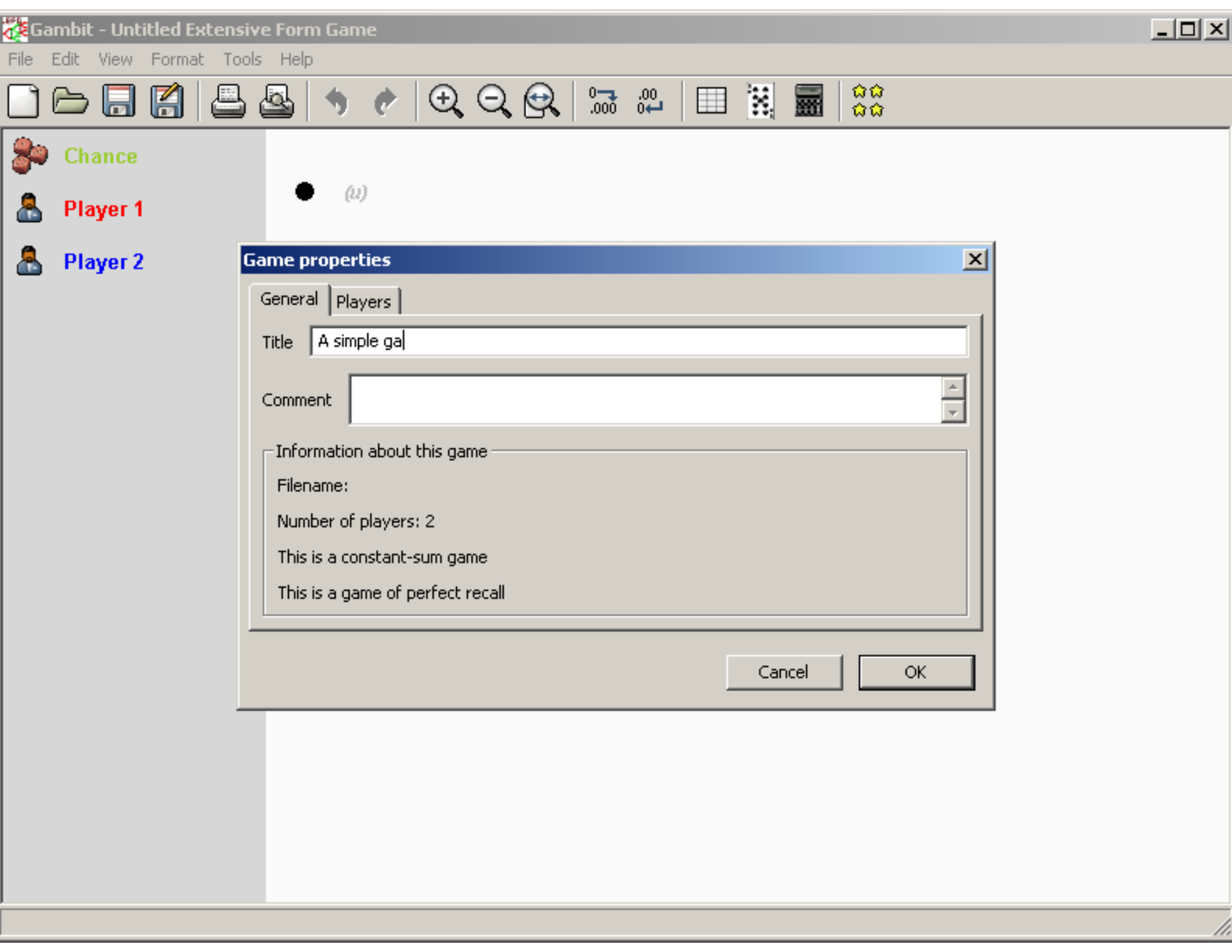
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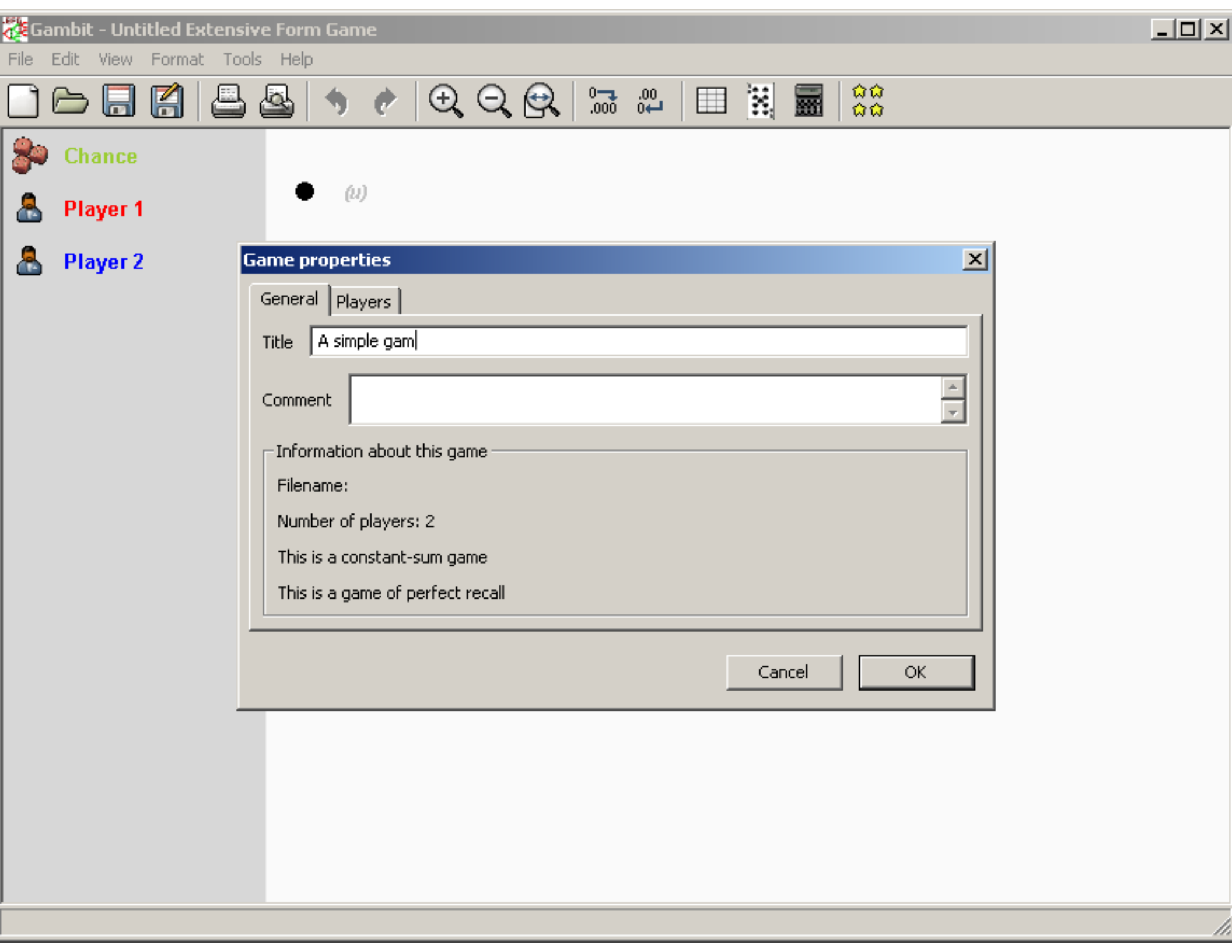
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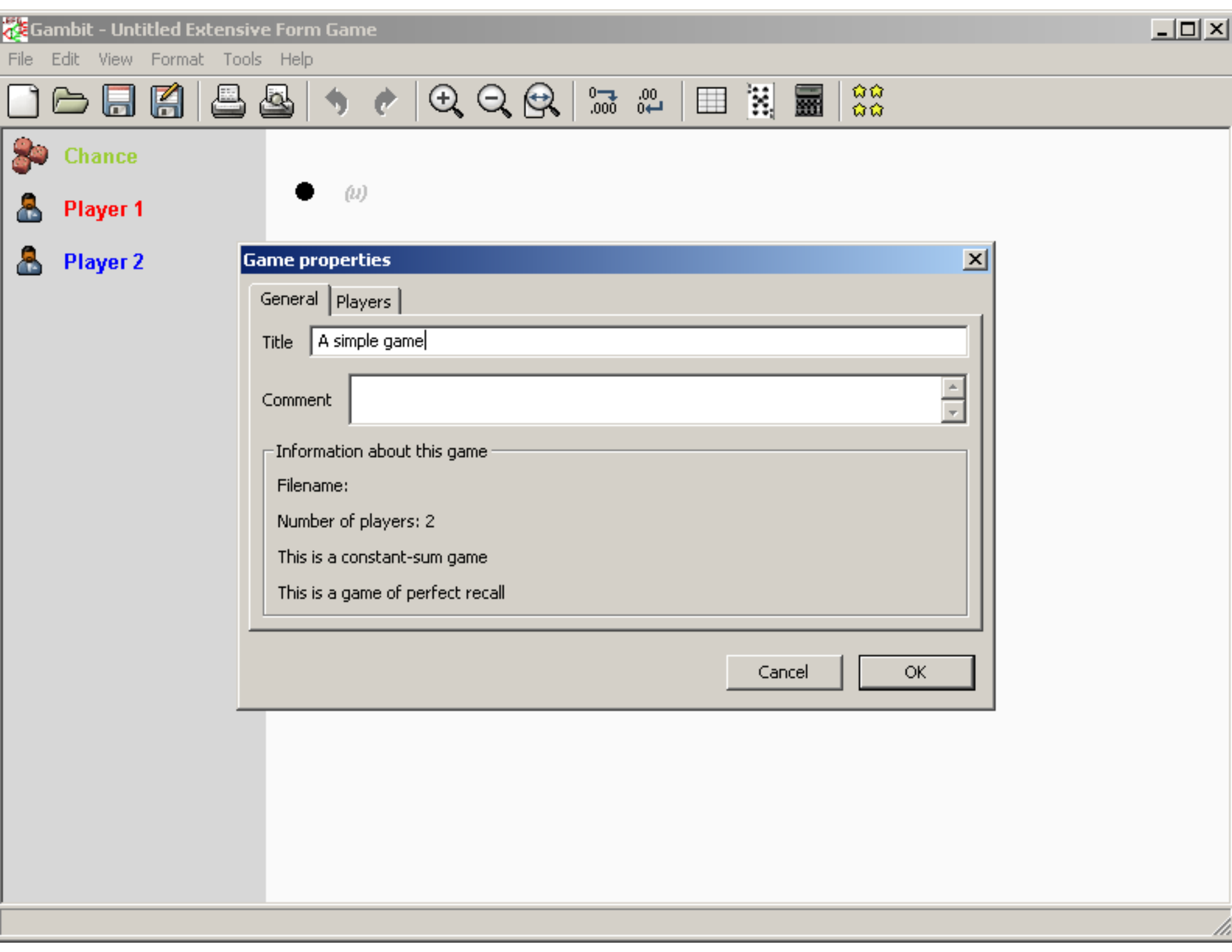
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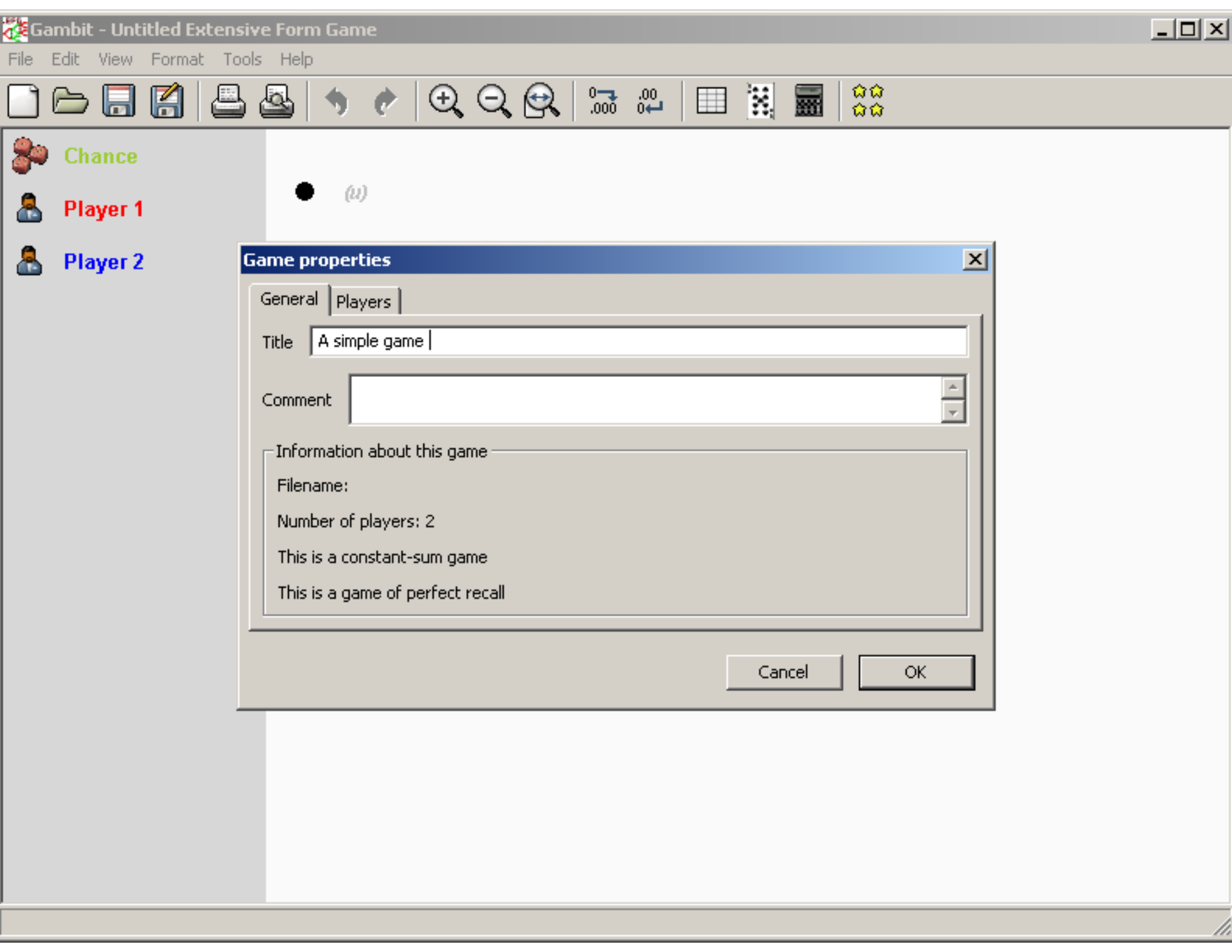
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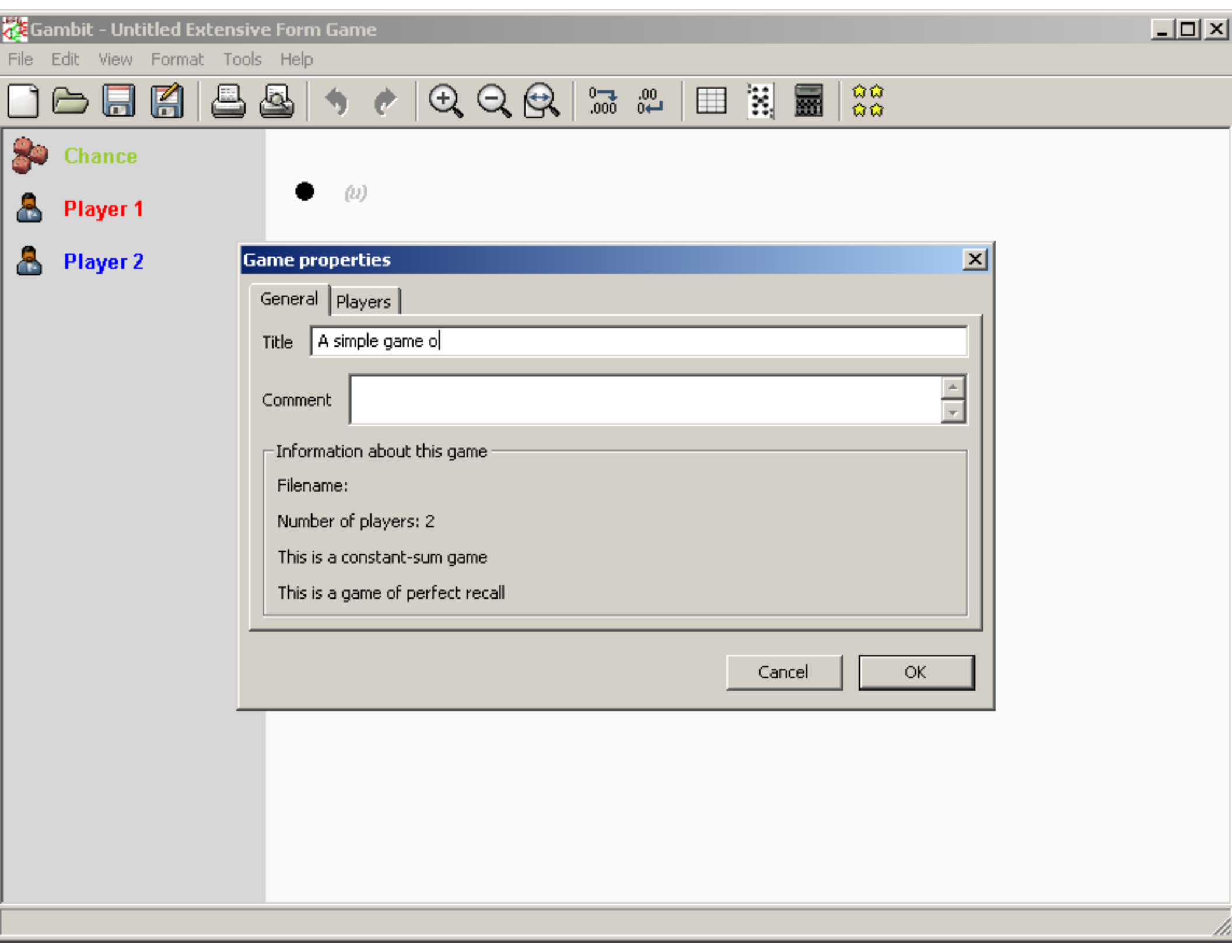
Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
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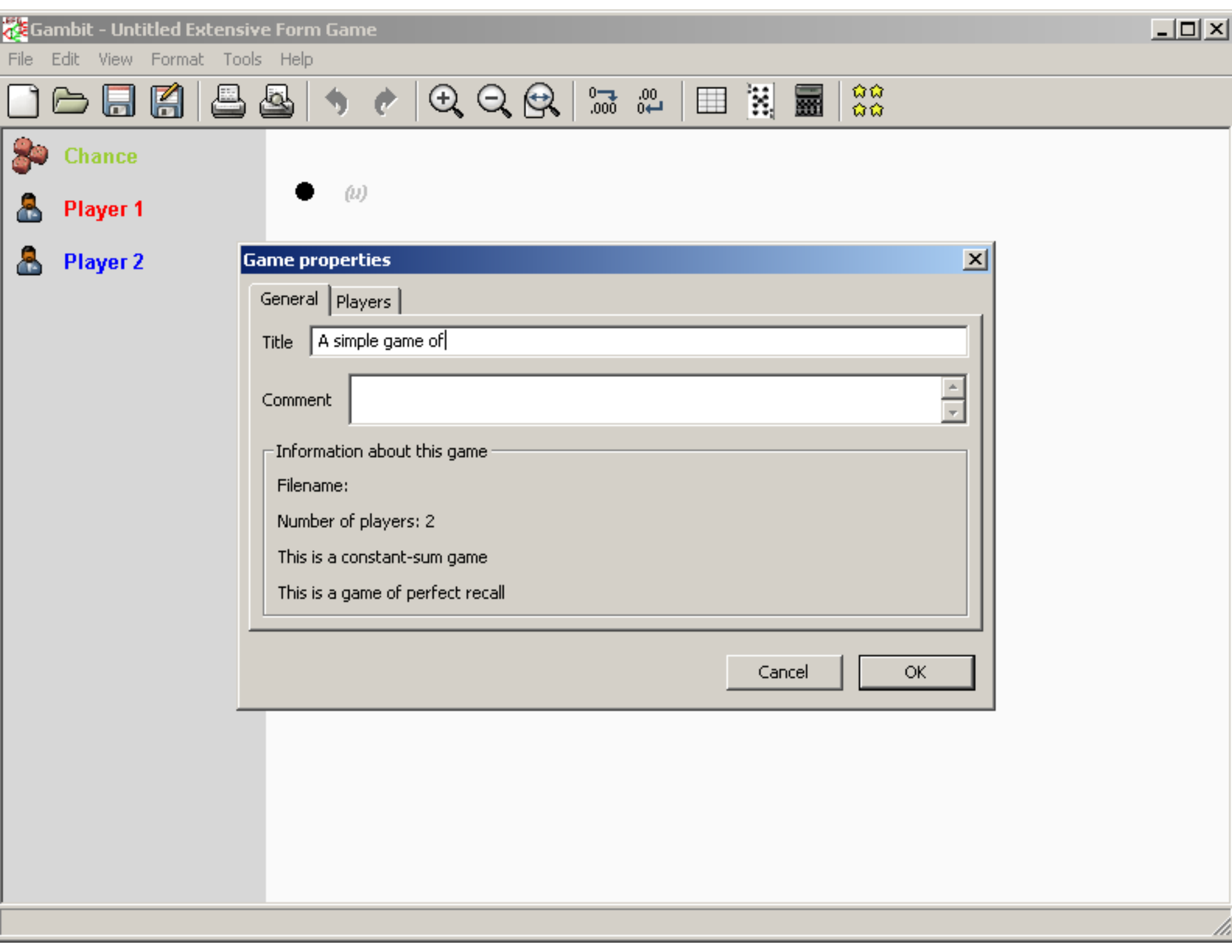
Gambit - Untitled Extensive Form Game
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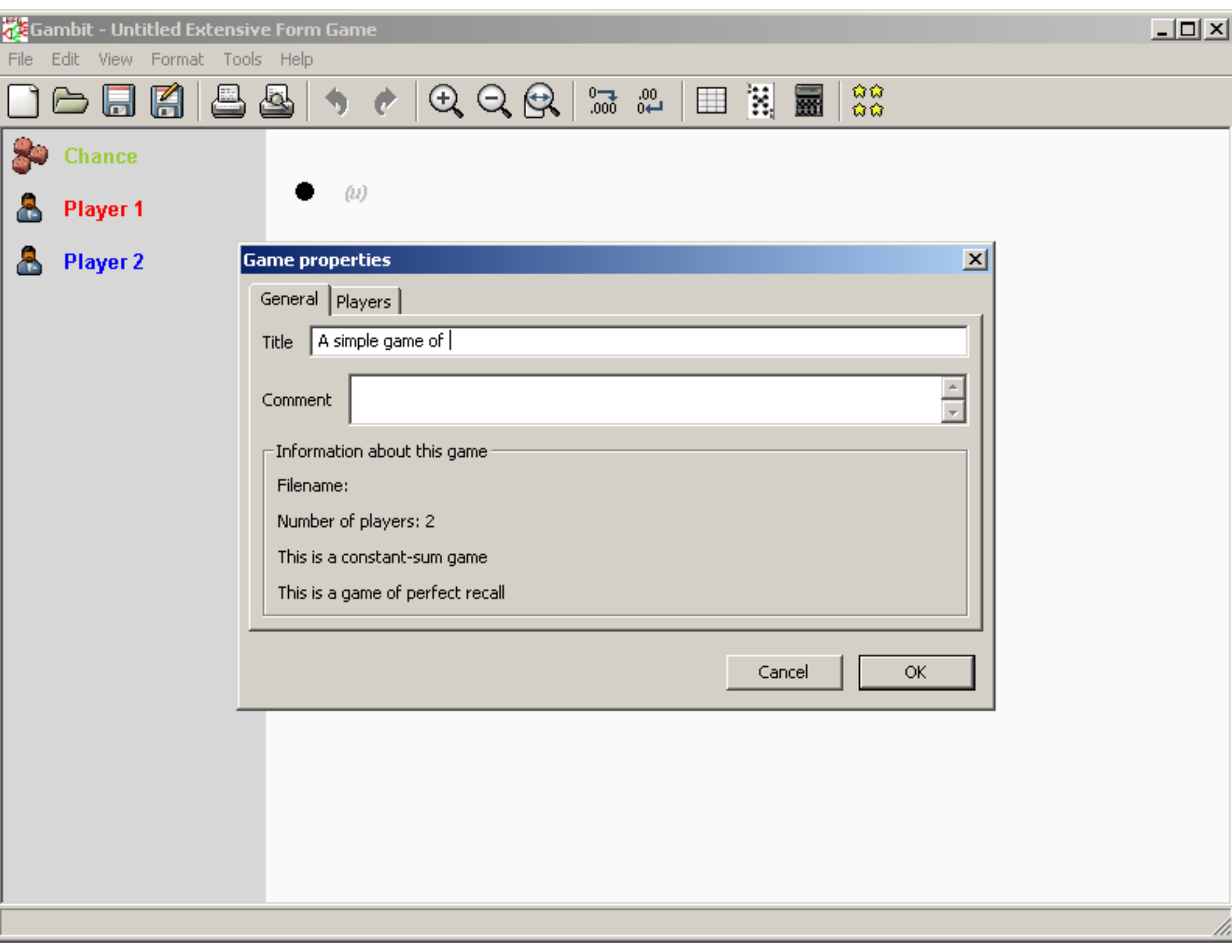
Gambit - Untitled Extensive Form Game
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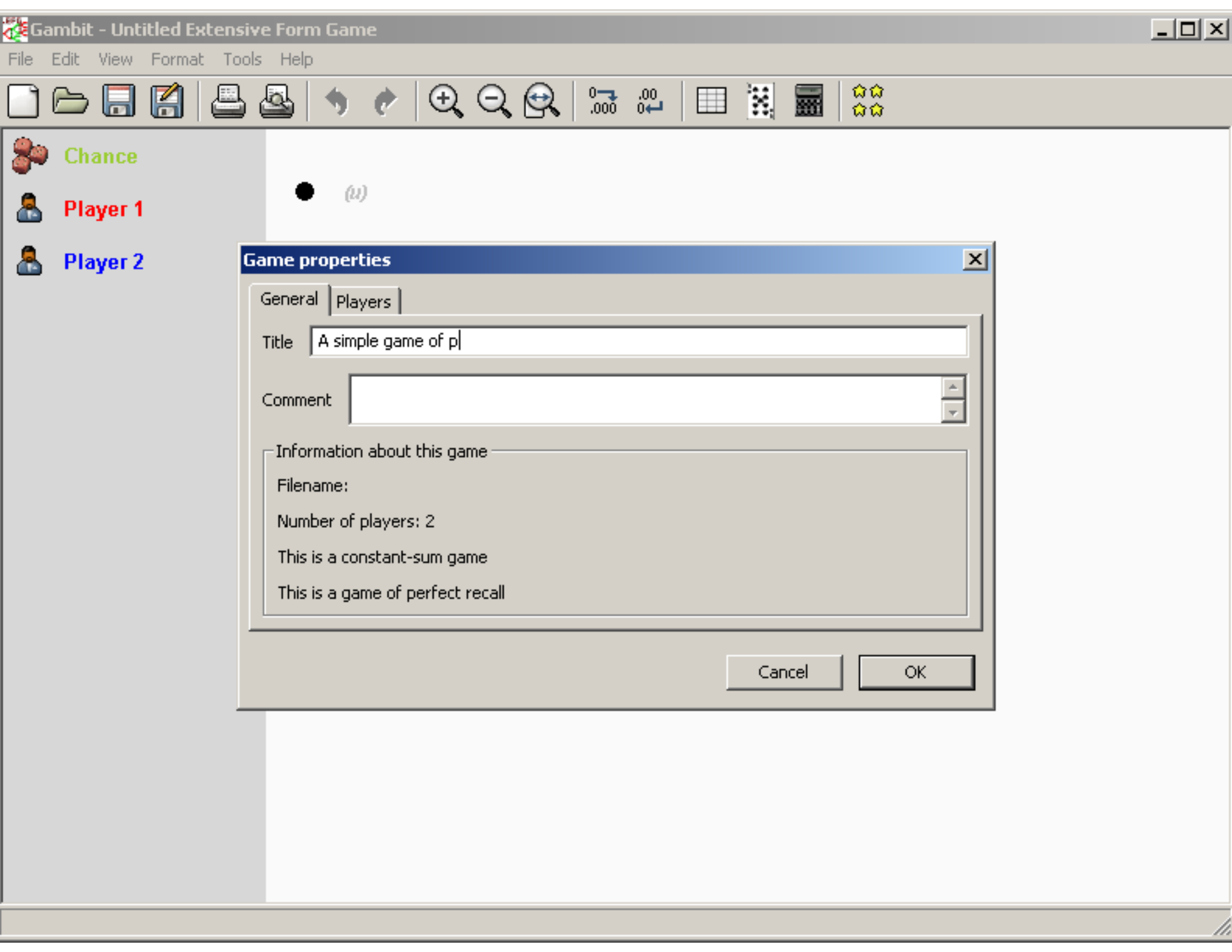
Gambit - Untitled Extensive Form Game
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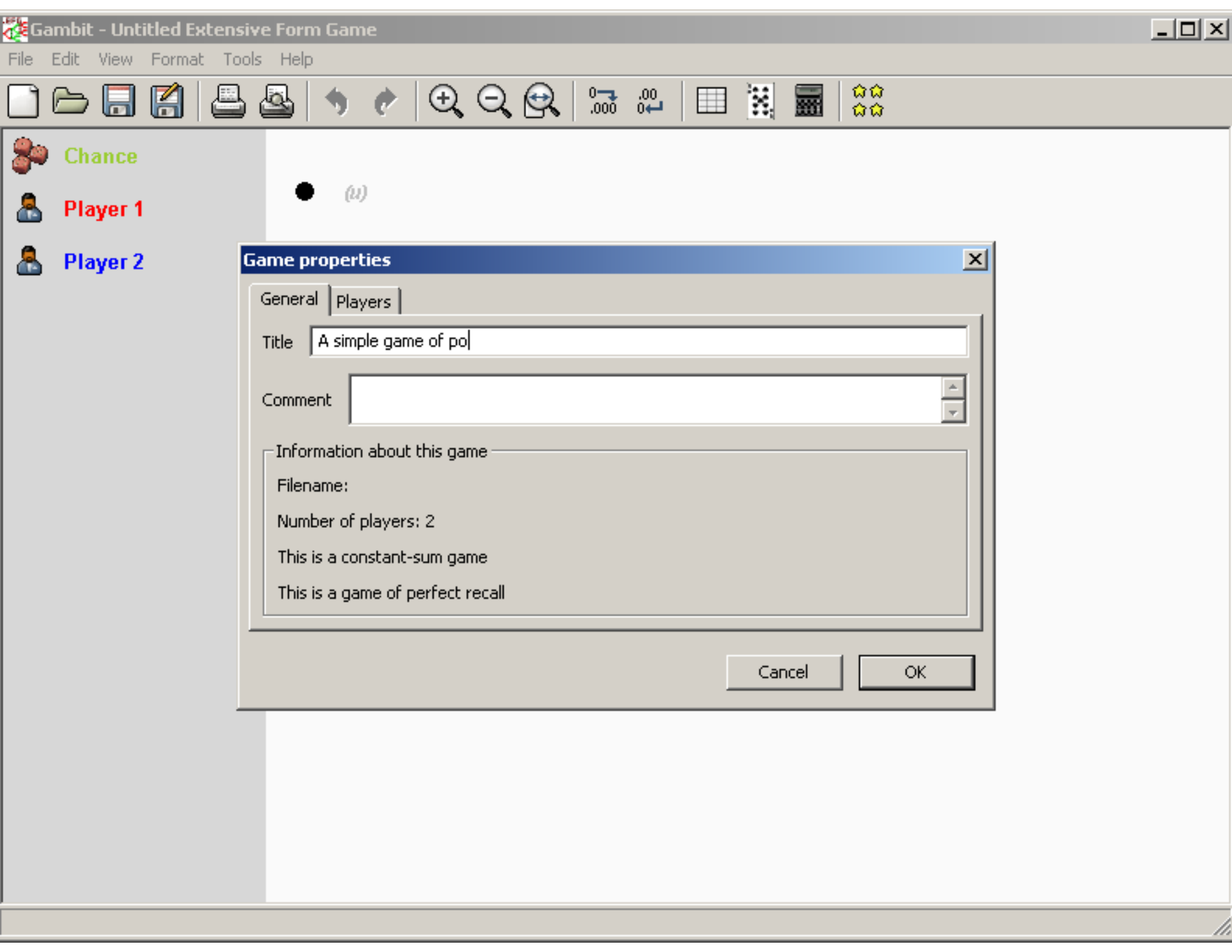
Gambit - Untitled Extensive Form Game
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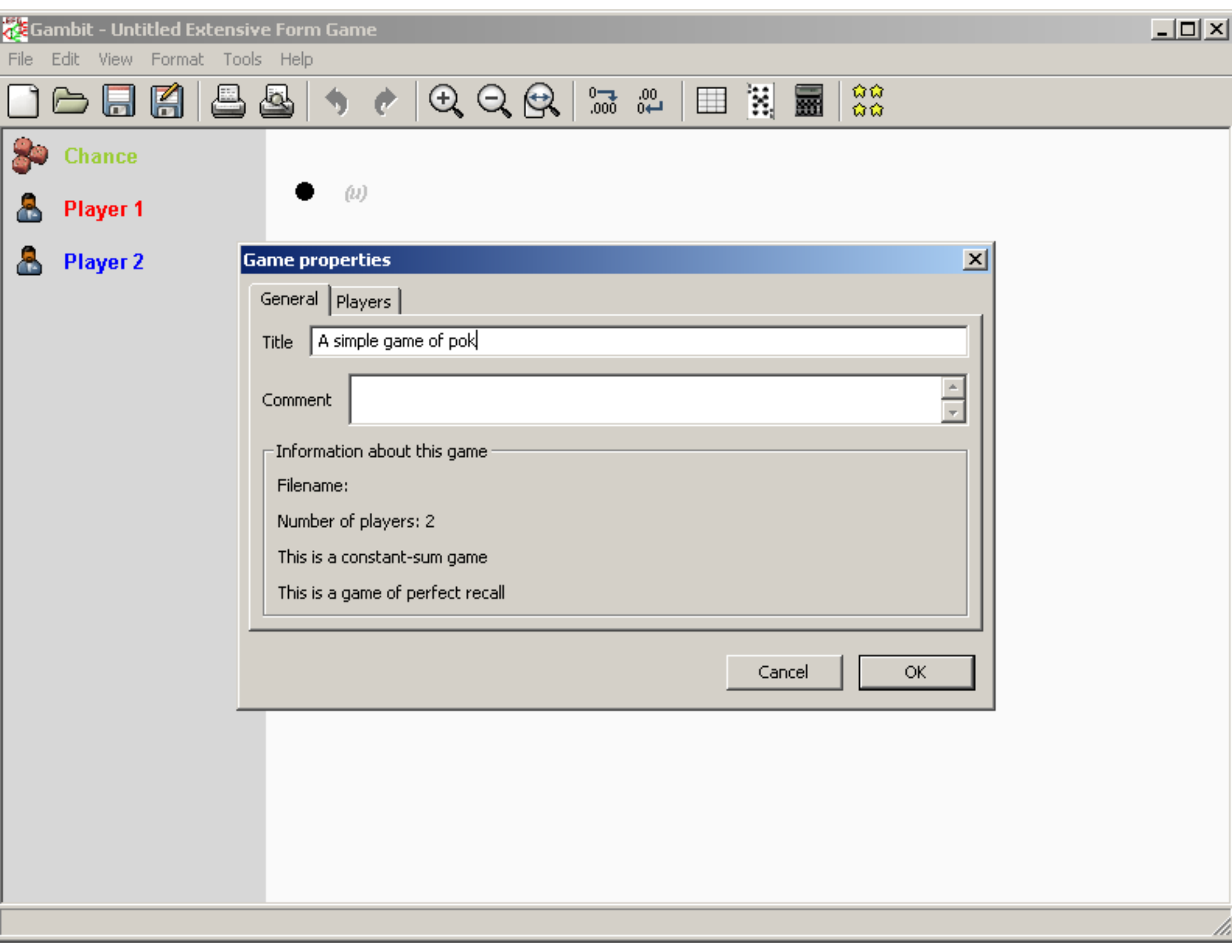
Gambit - Untitled Extensive Form Game
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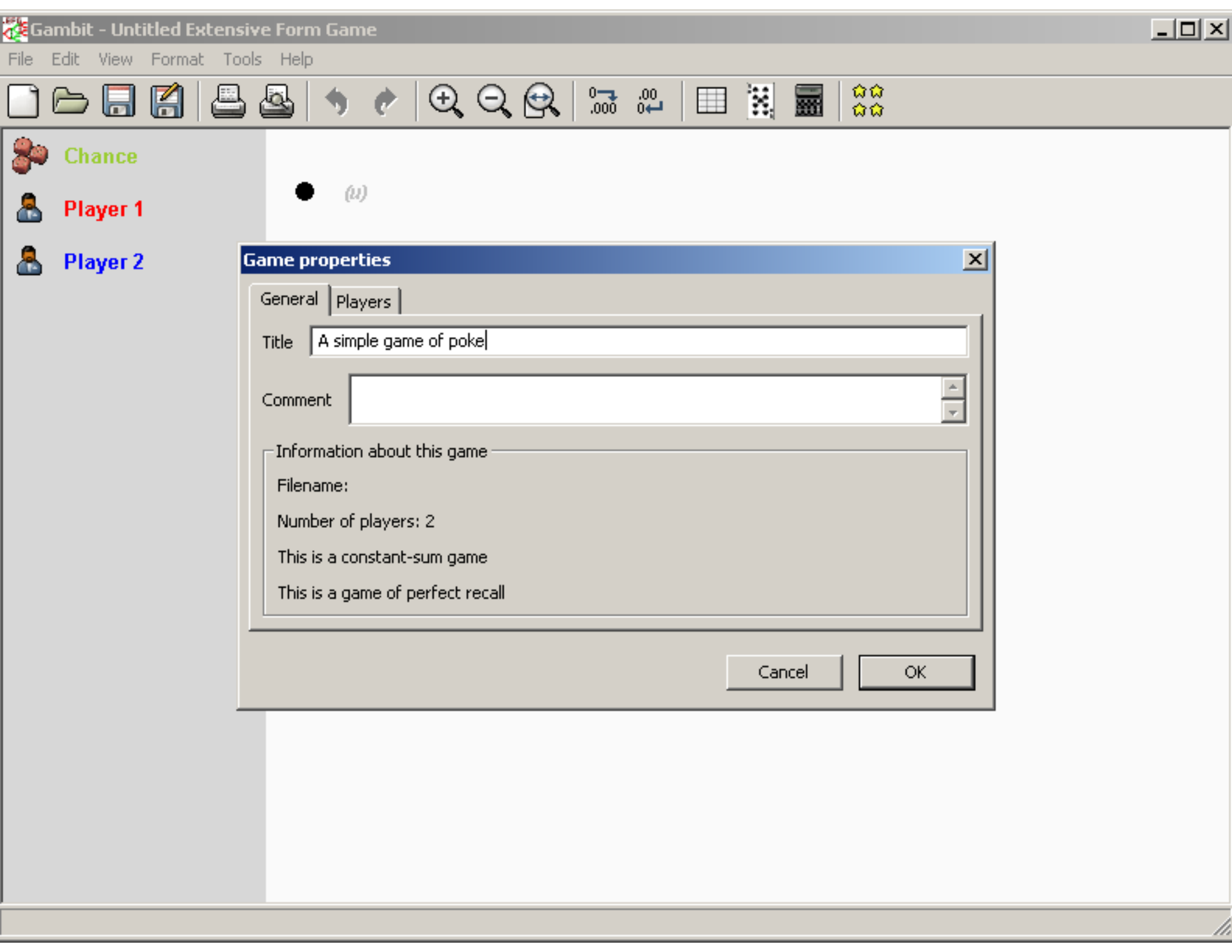
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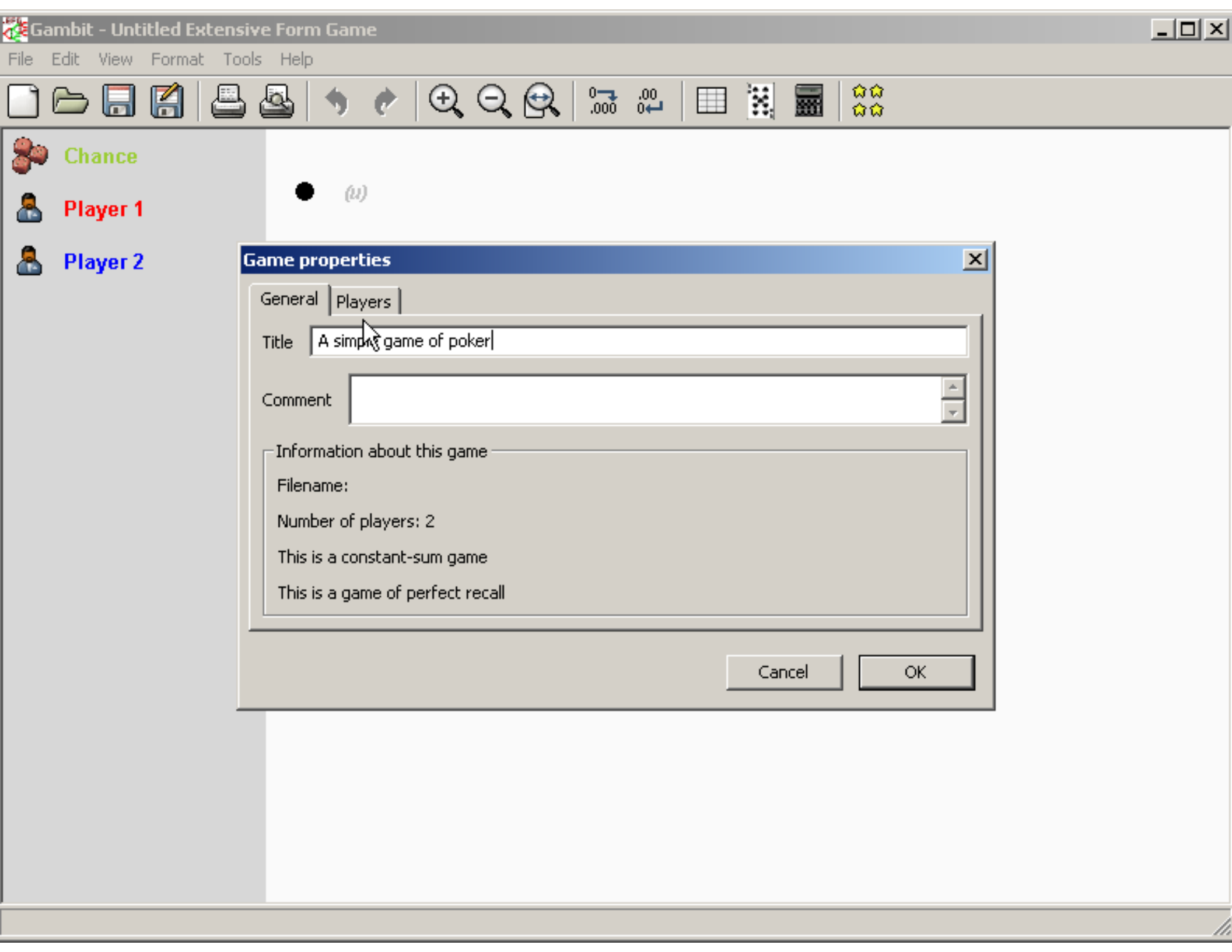
Gambit - Untitled Extensive Form Game
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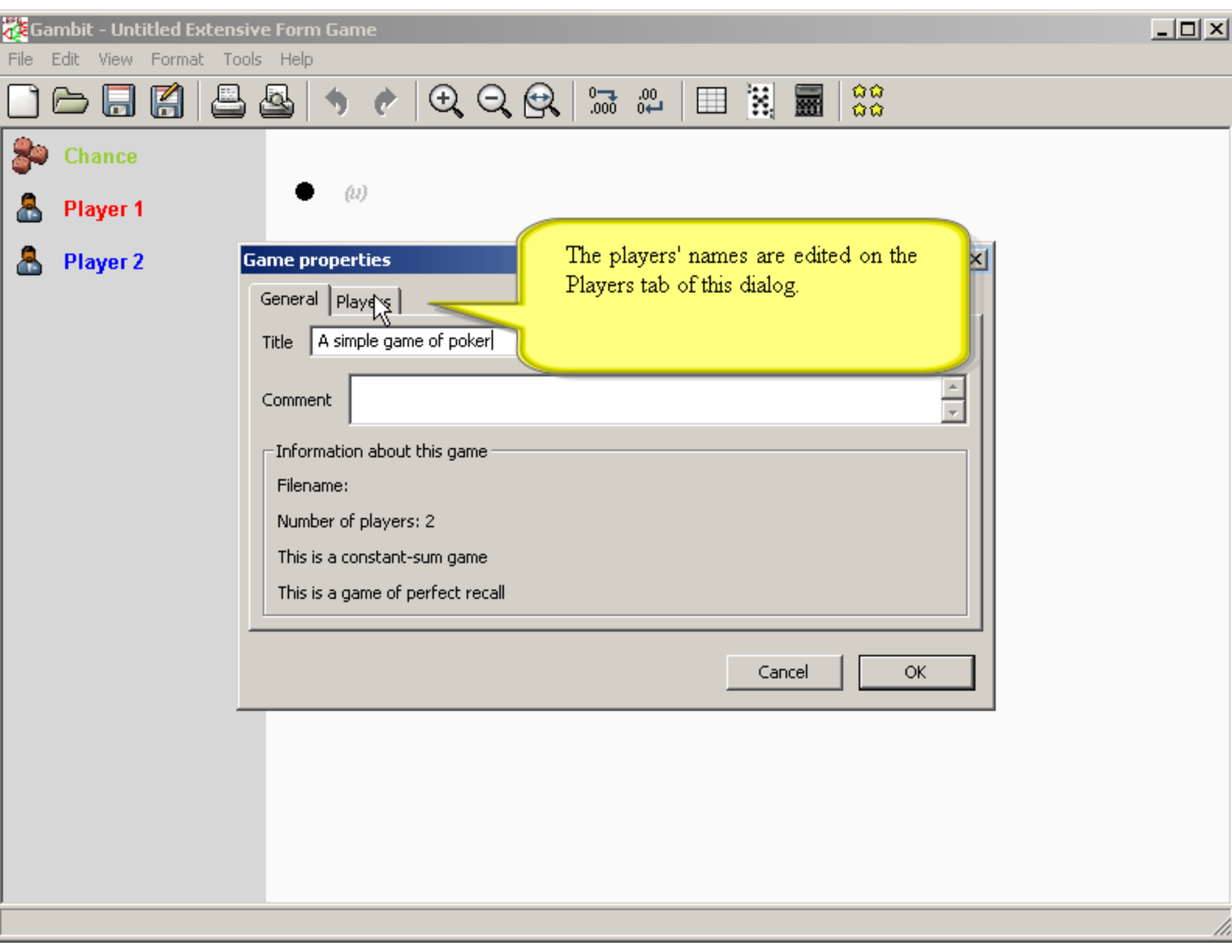
Gambit - Untitled Extensive Form Game
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Information about this game
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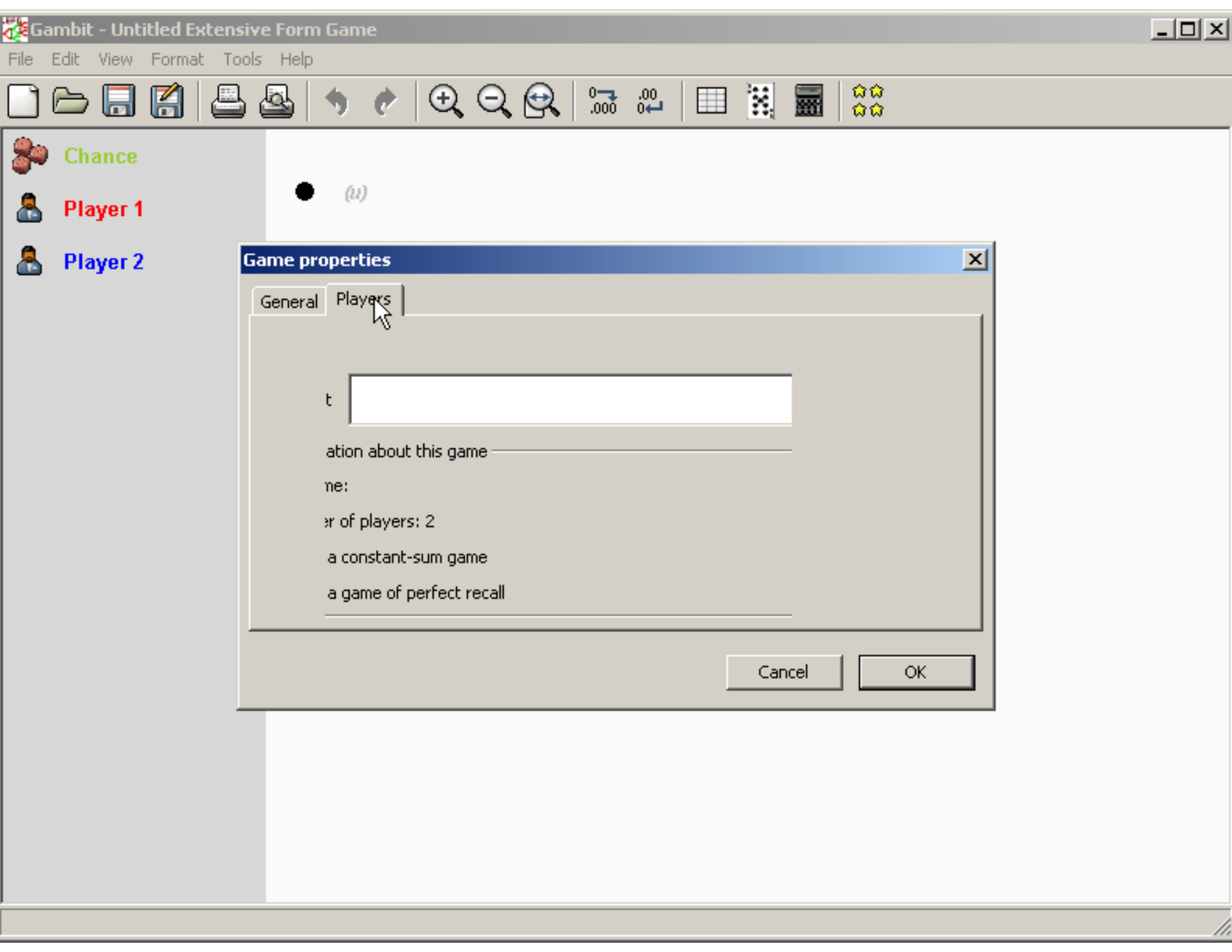
Number of players: 2
This is a constant-sum game
This is a game of perfect recall
Cancel OK
The players' names are edited on the Players tab of this dialog.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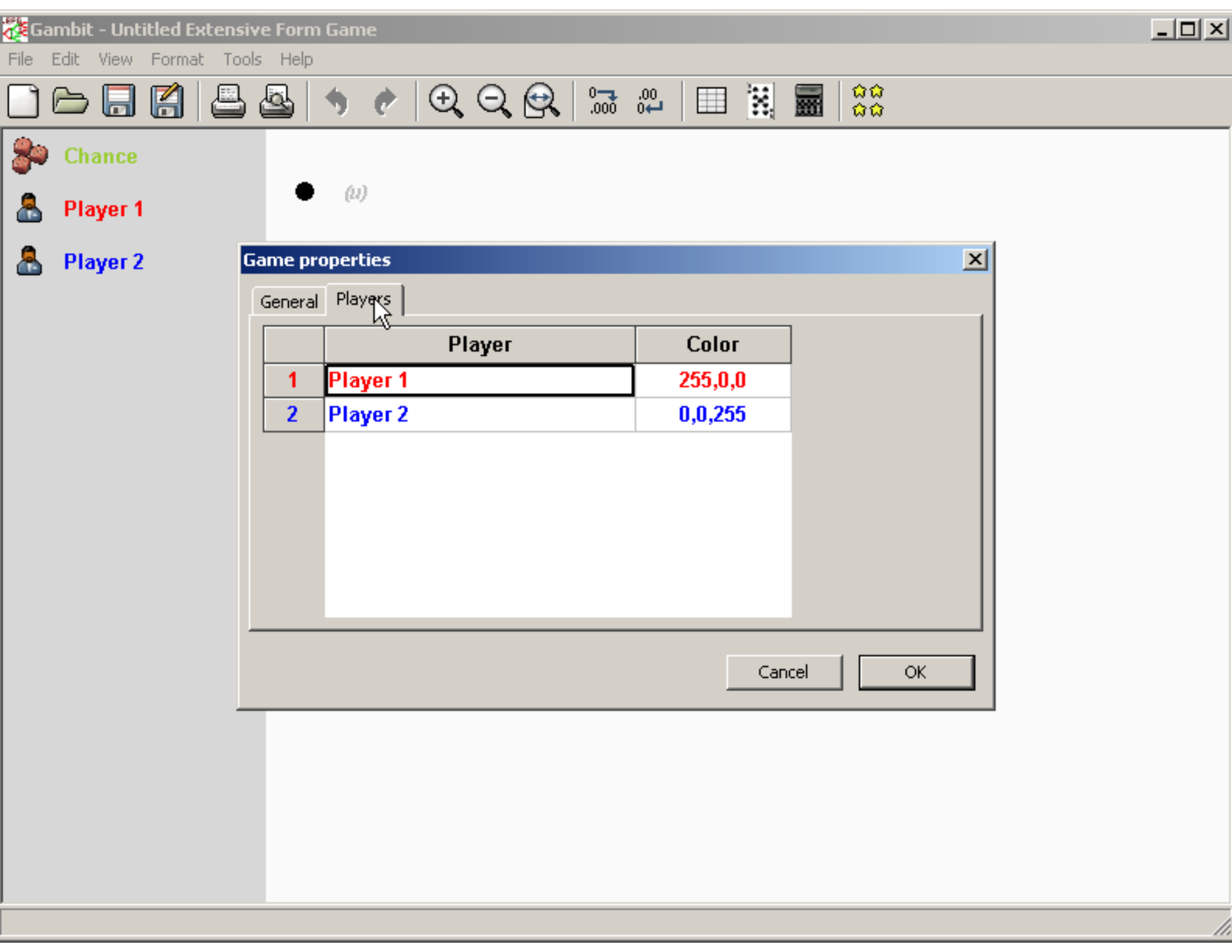
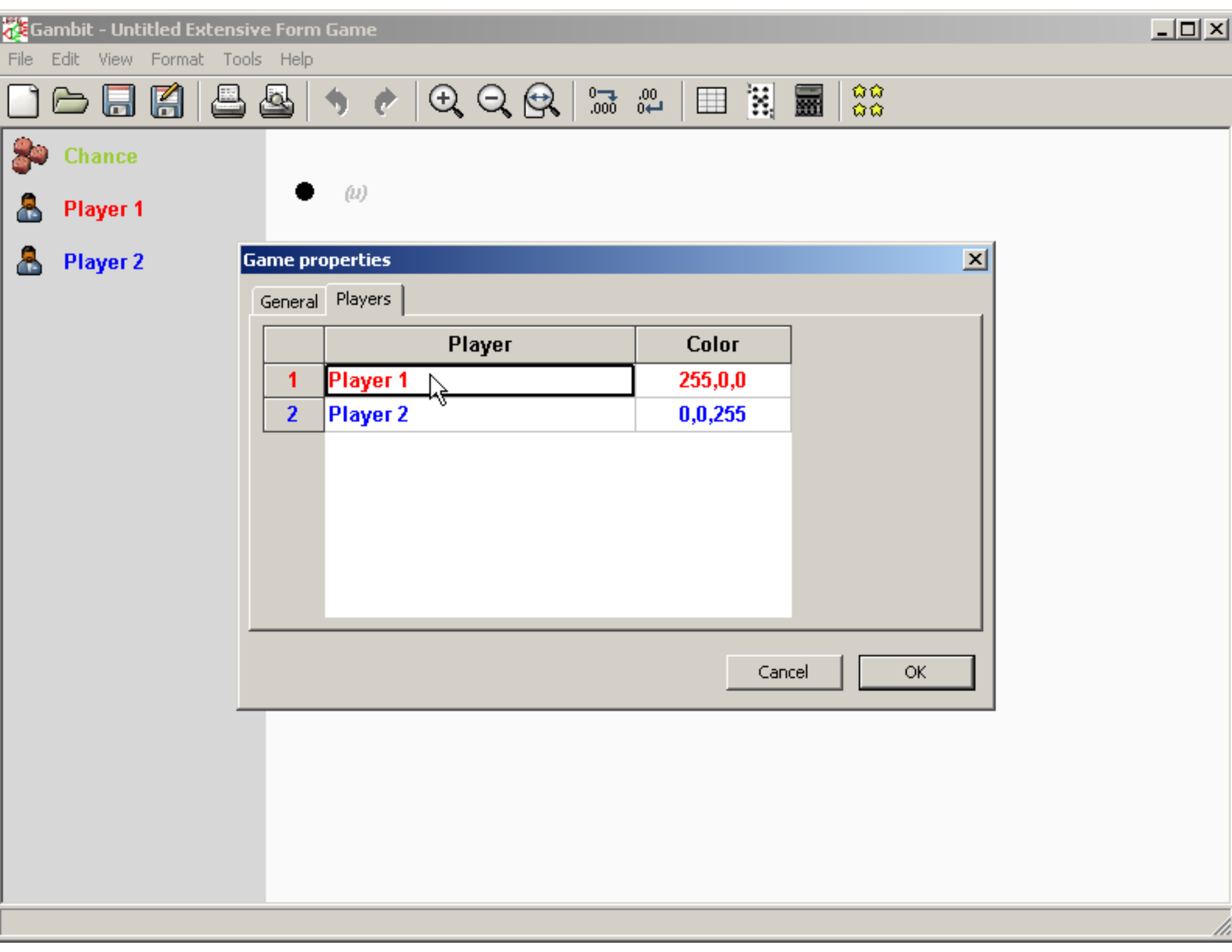
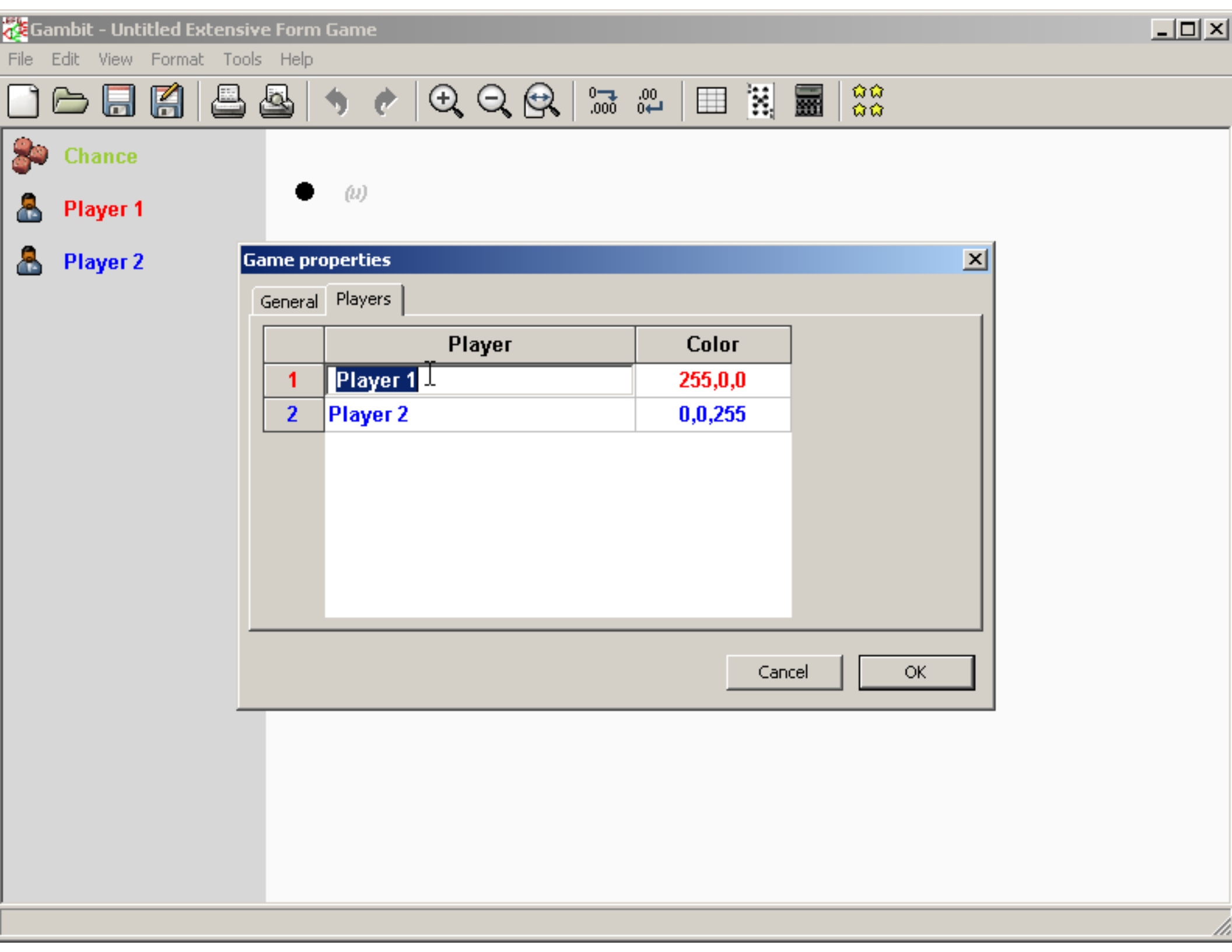
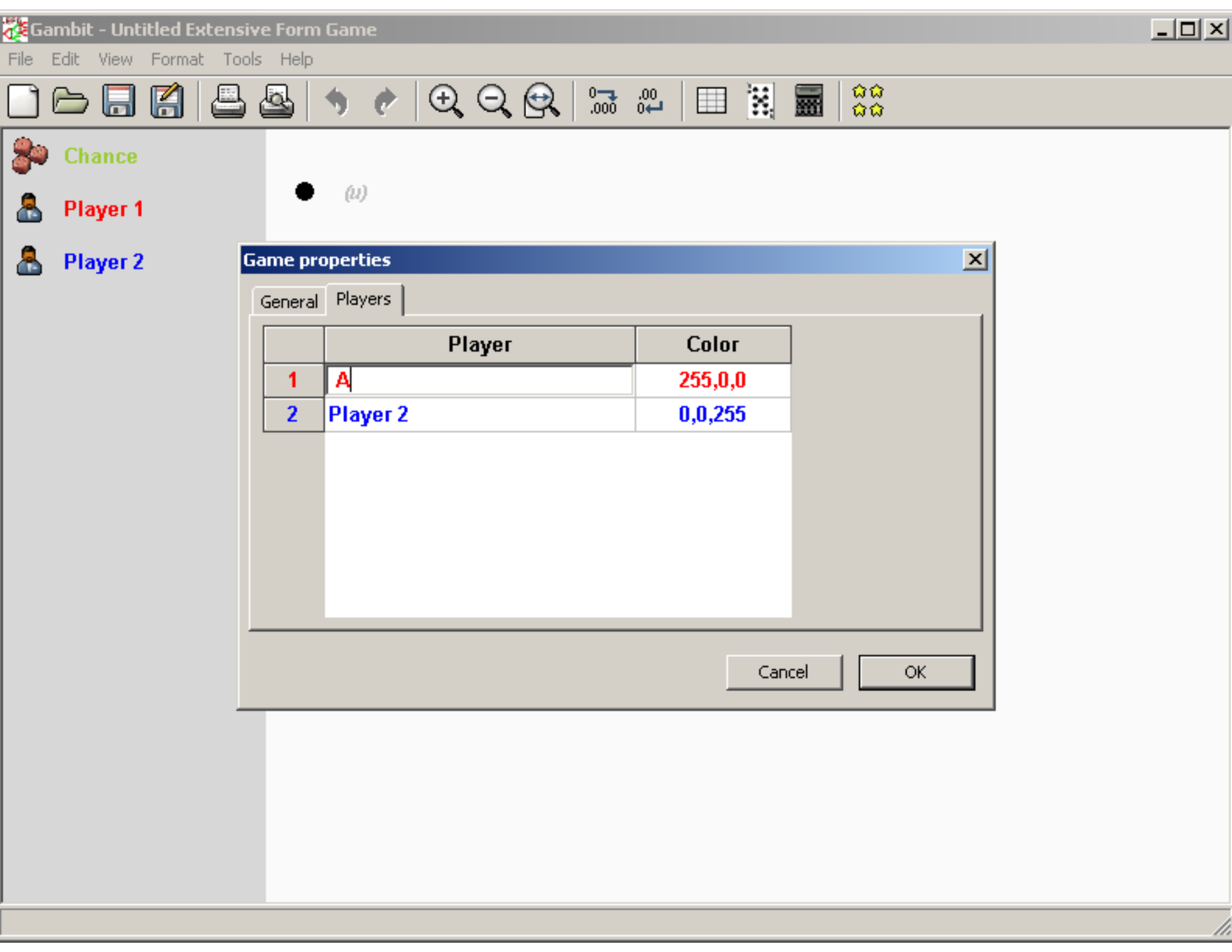
Cancel
OK


Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Player 1
255,0,0
2
Player 2
0,0,255
Cancel
OK


Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Player 1
255,0,0
2
Player 2
0,0,255
Cancel
OK


Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Player 1
255,0,0
2
Player 2
0,0,255
Cancel
OK


Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
A
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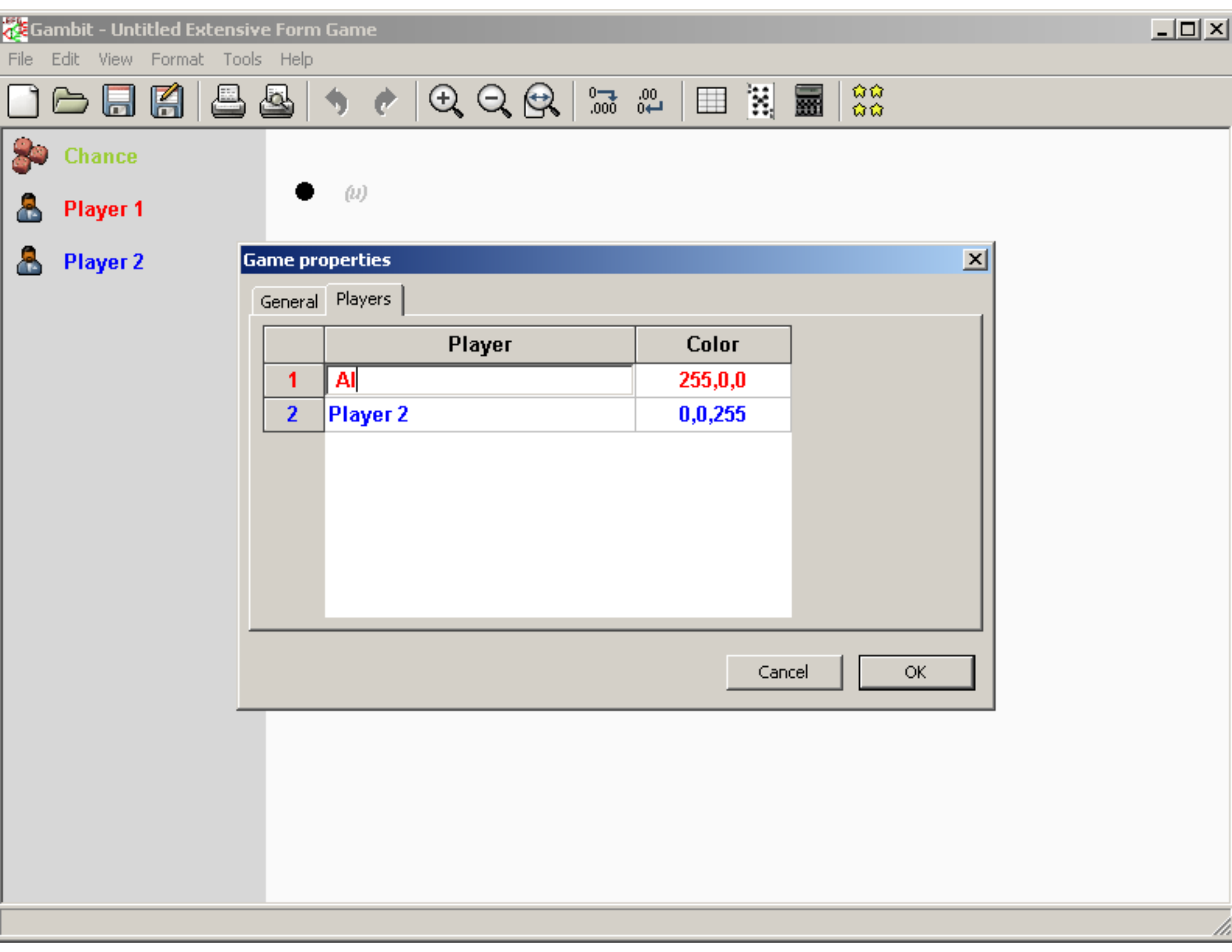
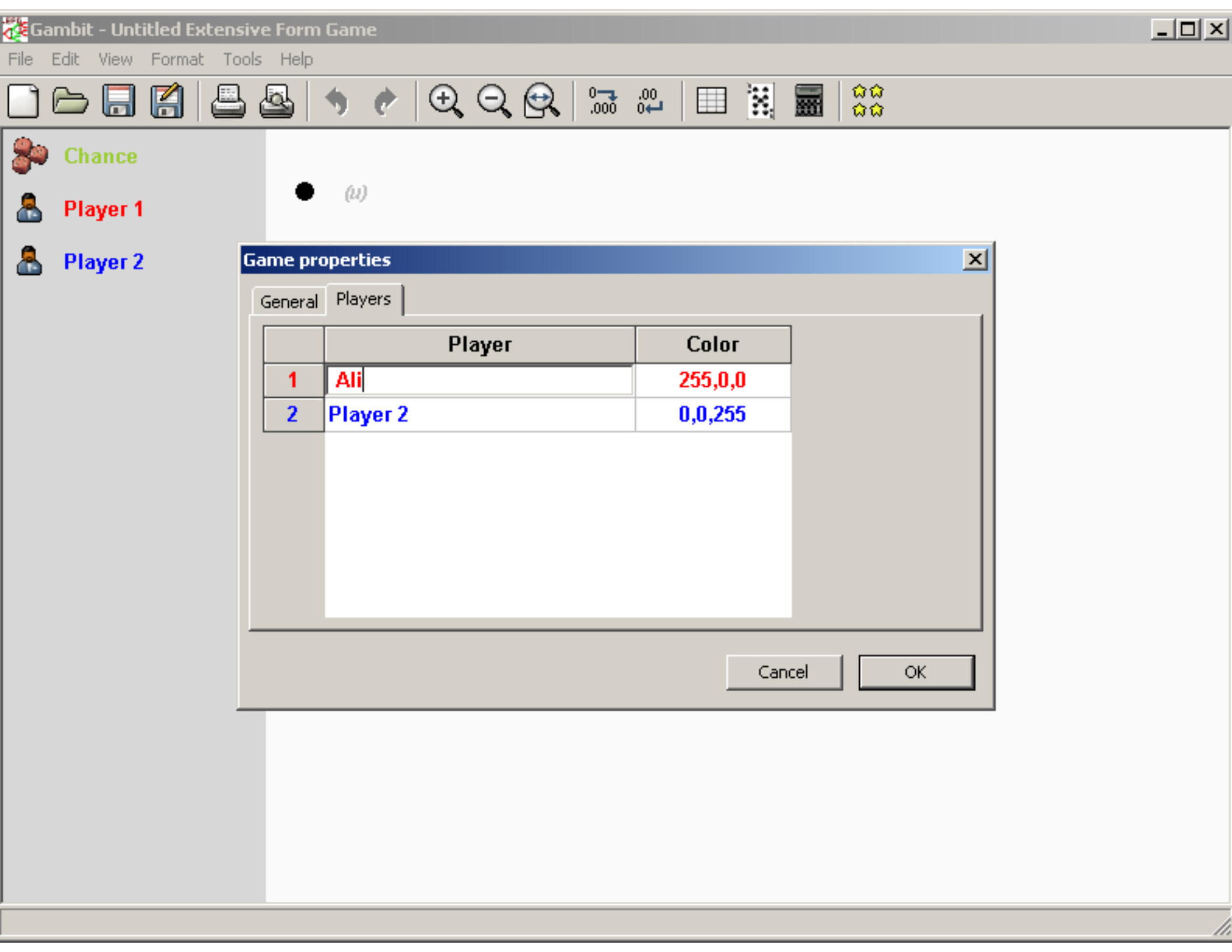
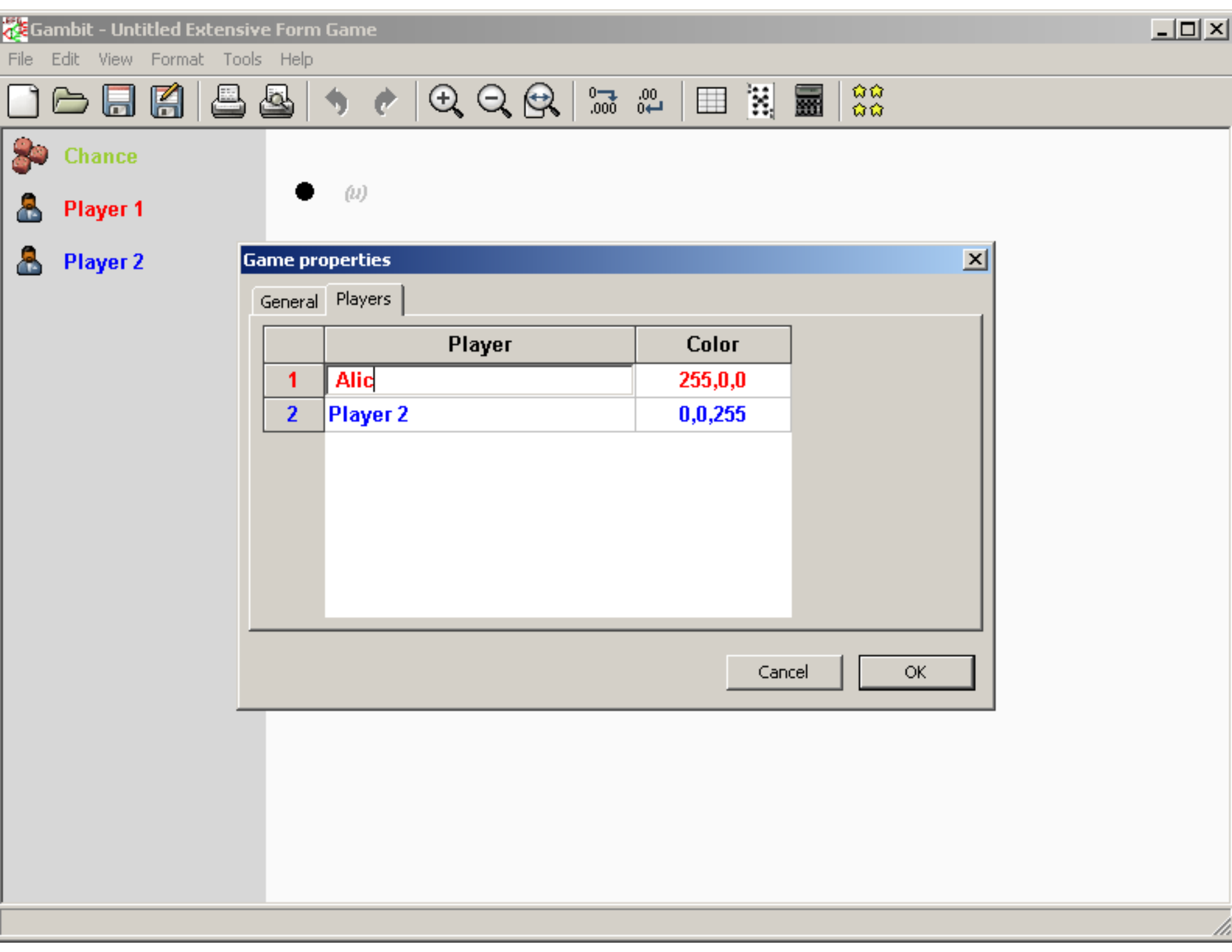
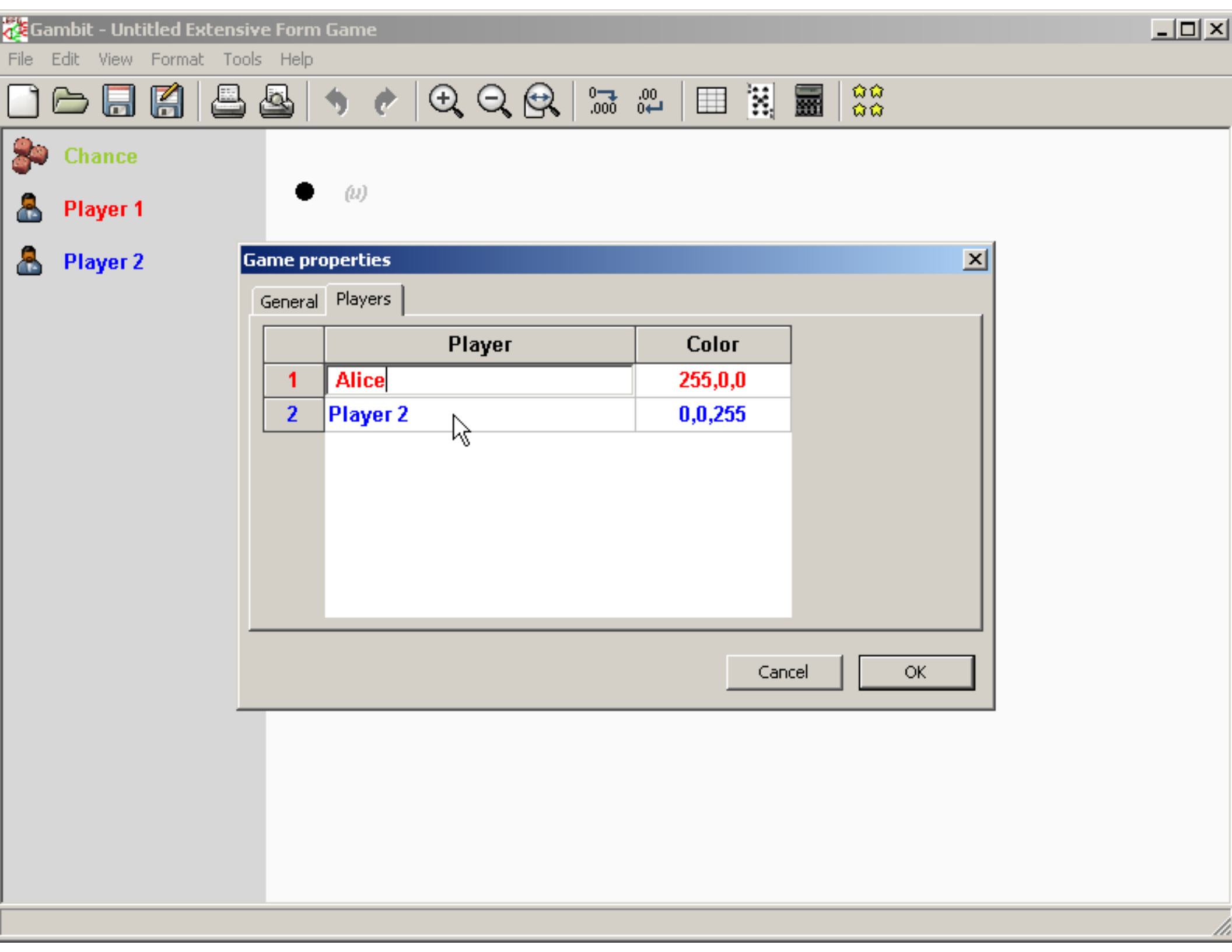
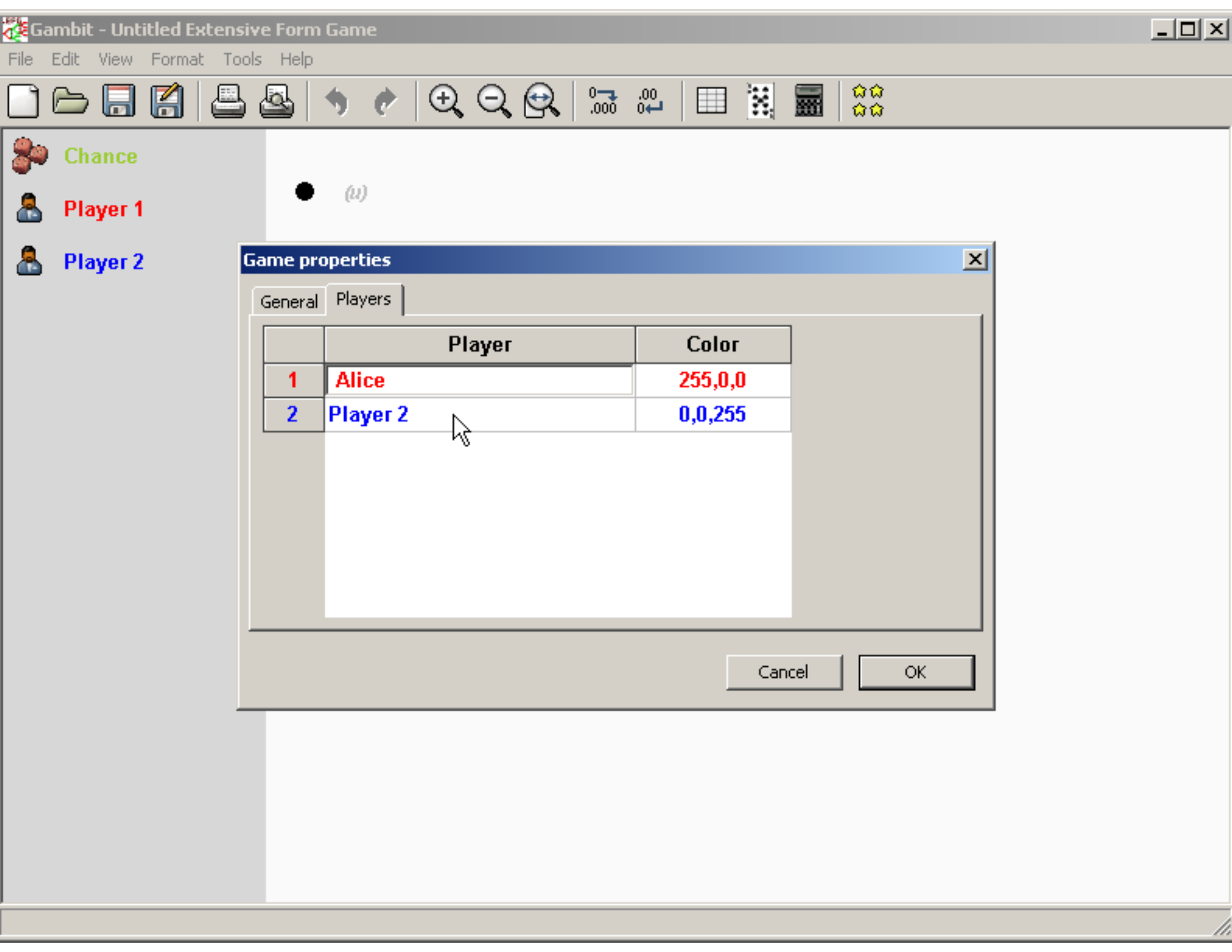
2
Player 2
0,0,255
Cancel
OK

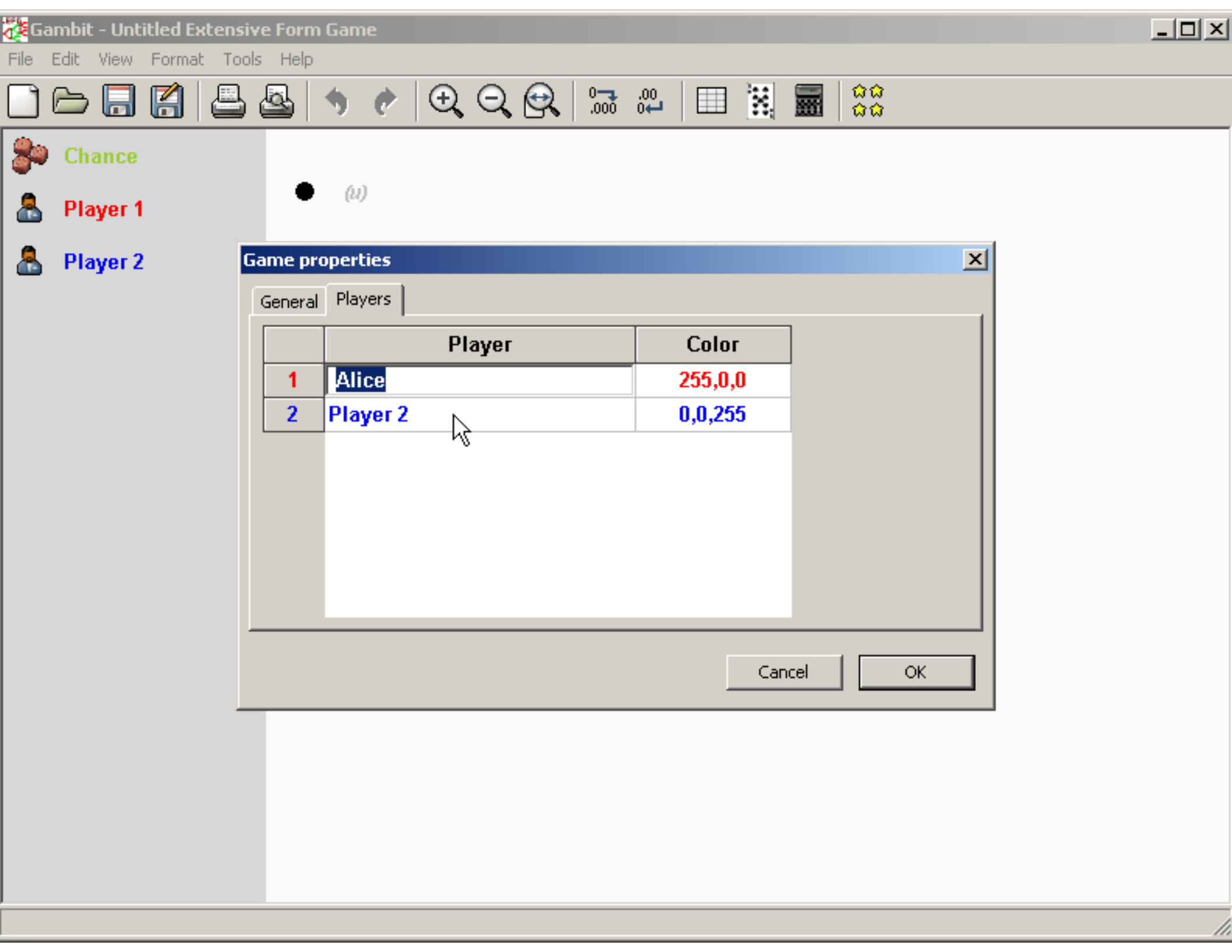

Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Al
255,0,0
2
Player 2
0,0,255
Cancel
OK

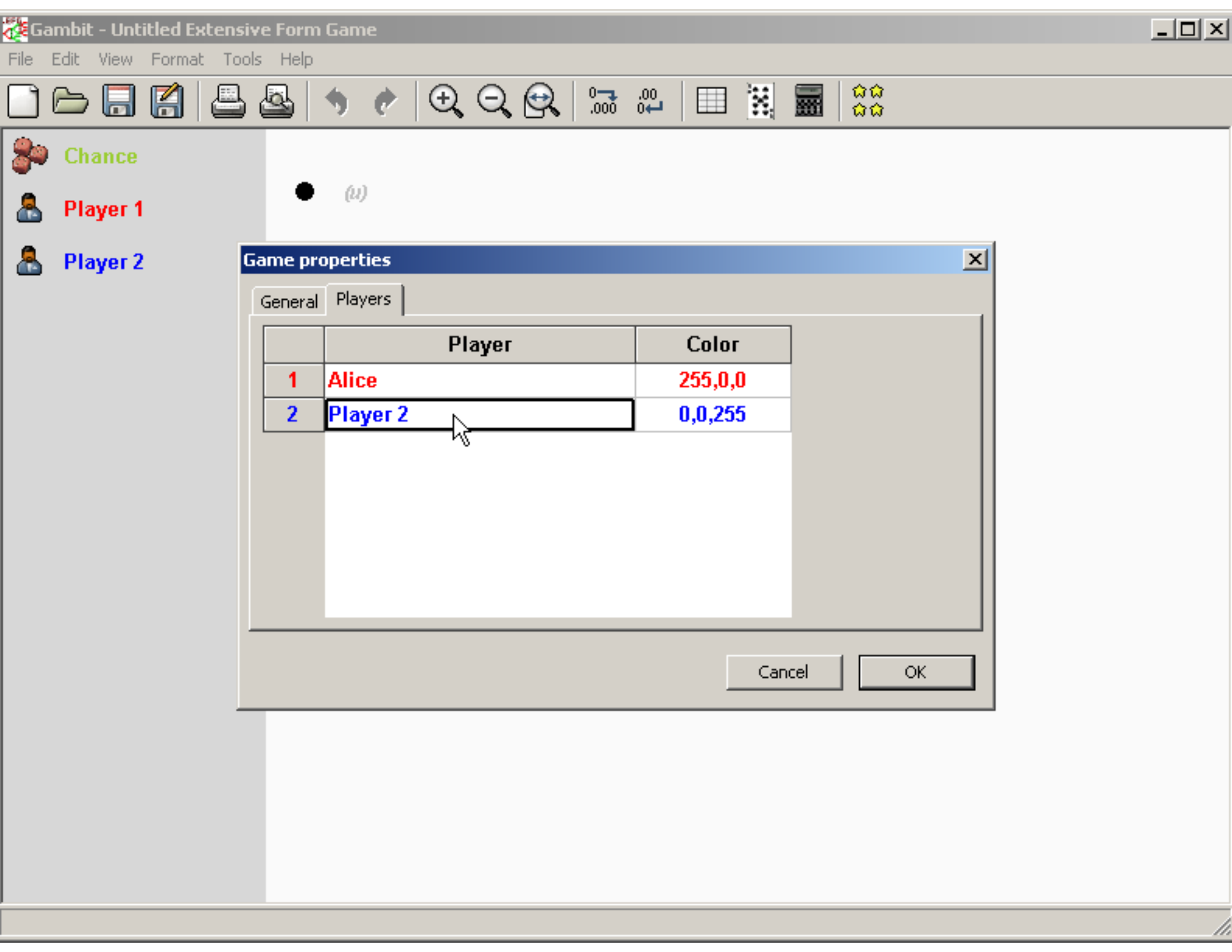

Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Ali
255,0,0
2
Player 2
0,0,255
Cancel
OK

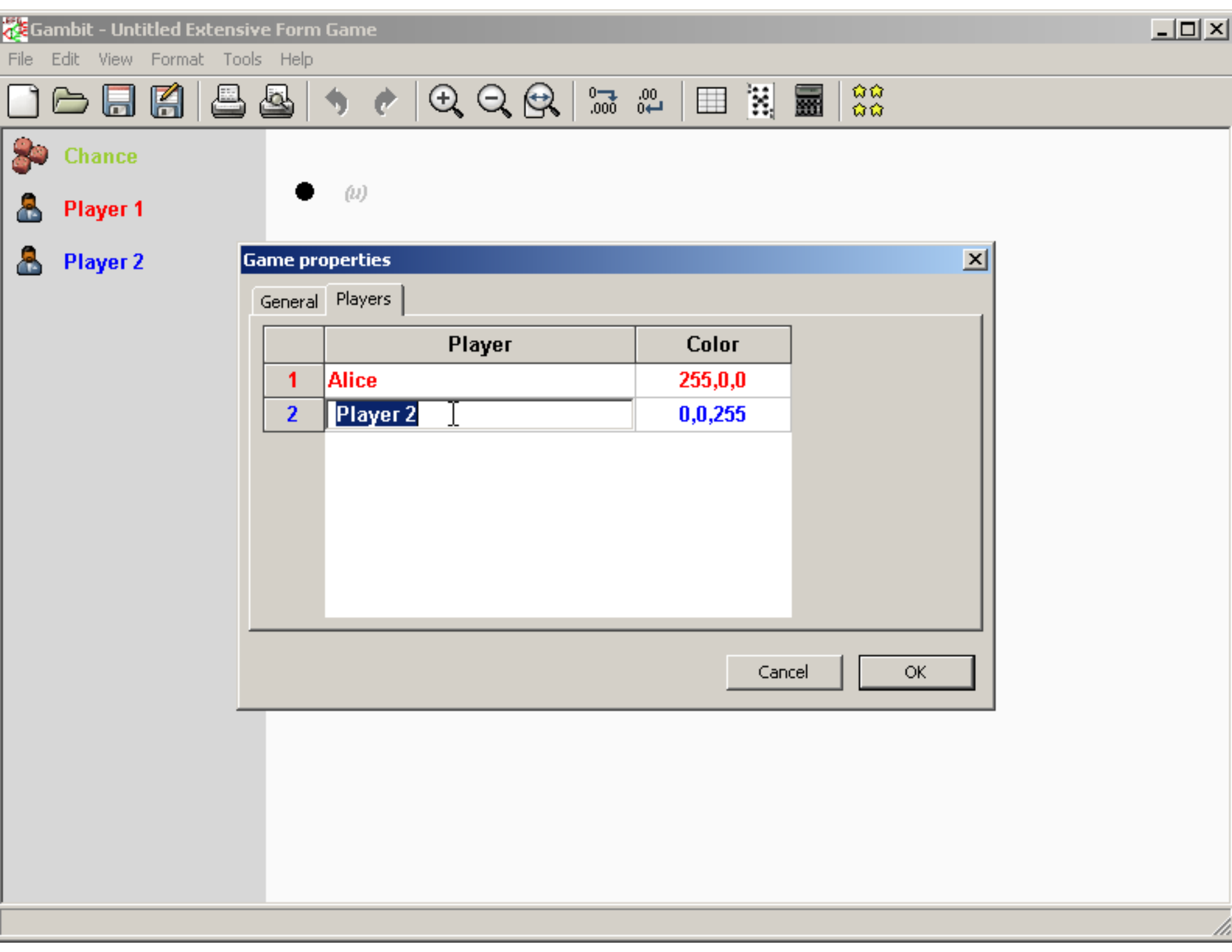

Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Alic
255,0,0
2
Player 2
0,0,255
Cancel
OK

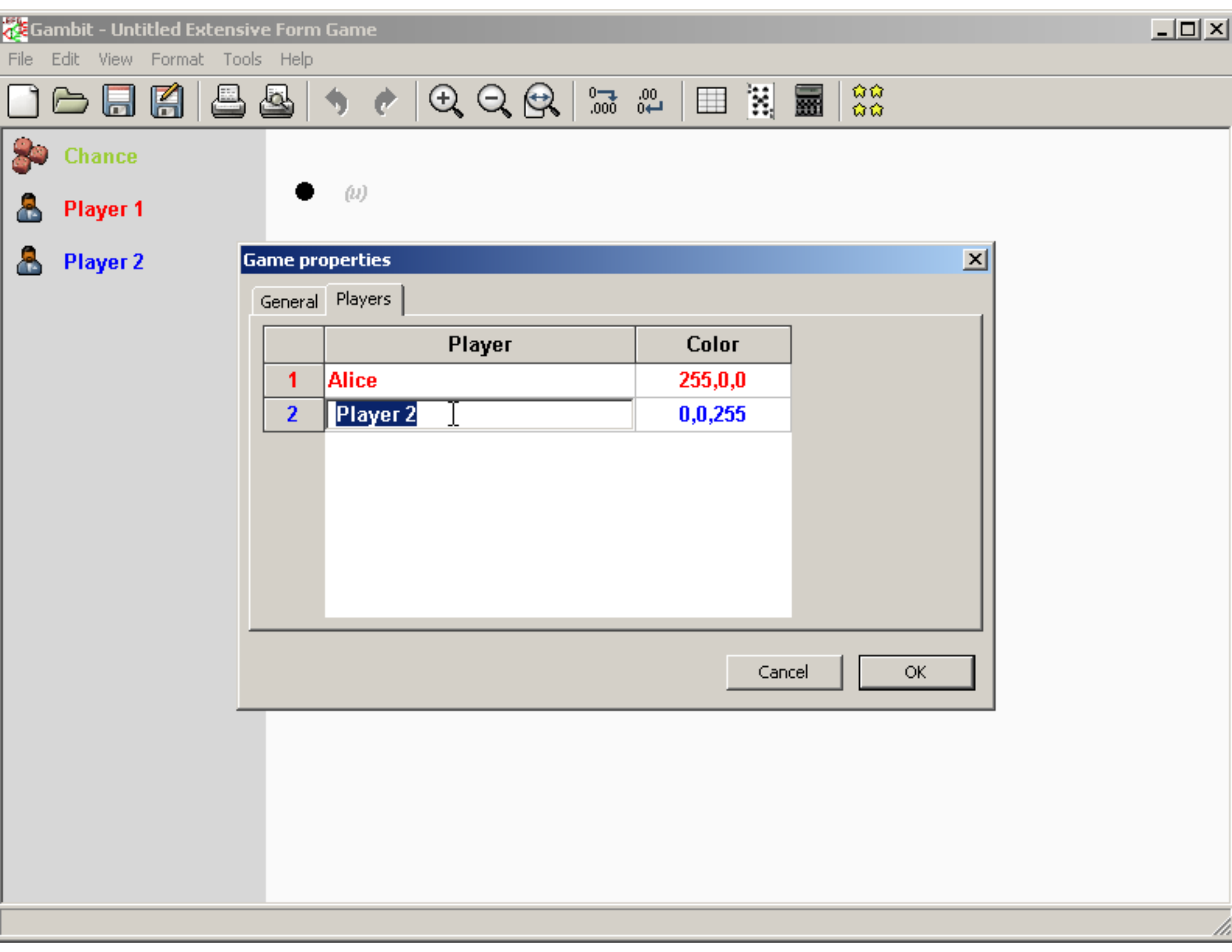

Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Alice
255,0,0
2
Player 2
0,0,255
Cancel
OK

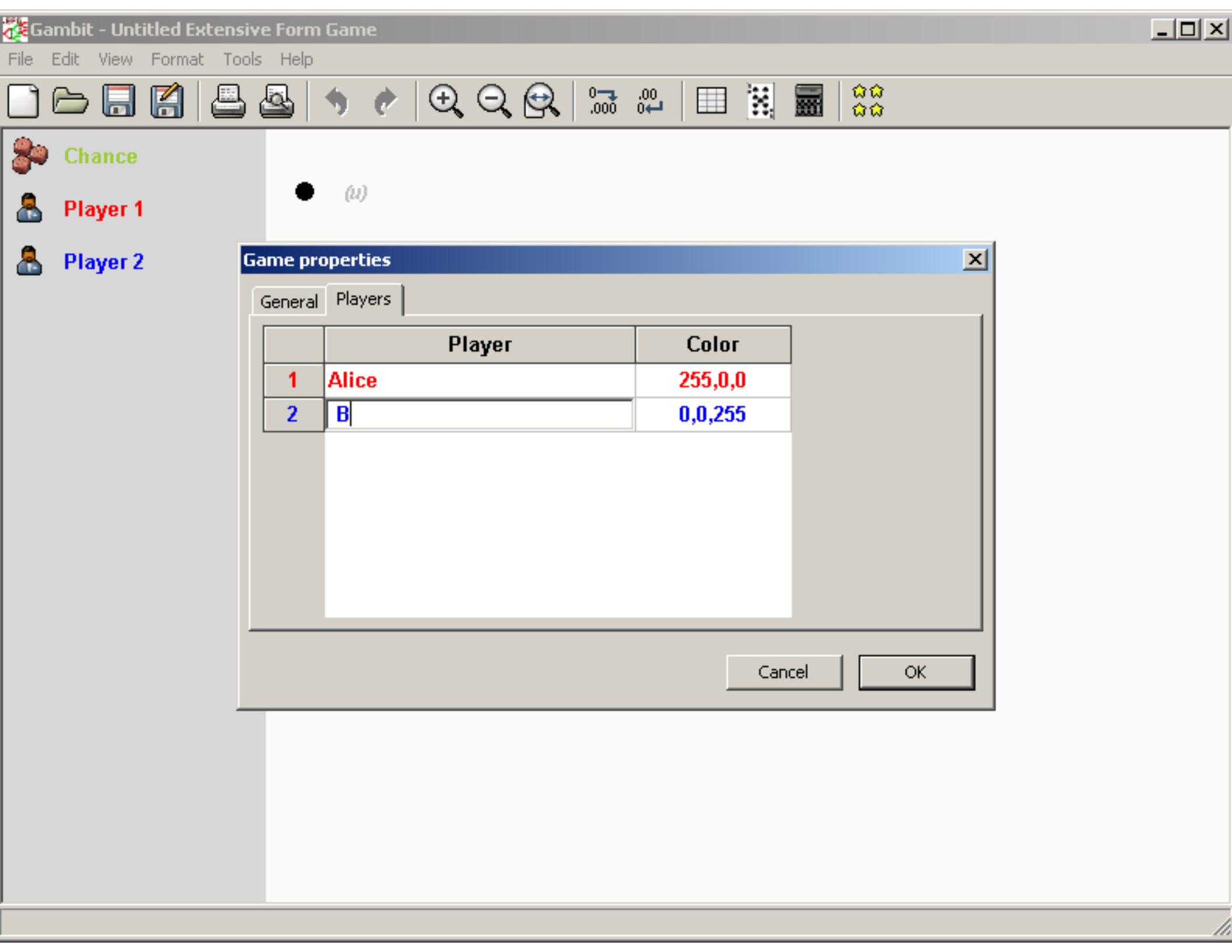

Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Alice
255,0,0
2
Player 2
0,0,255
Cancel
OK

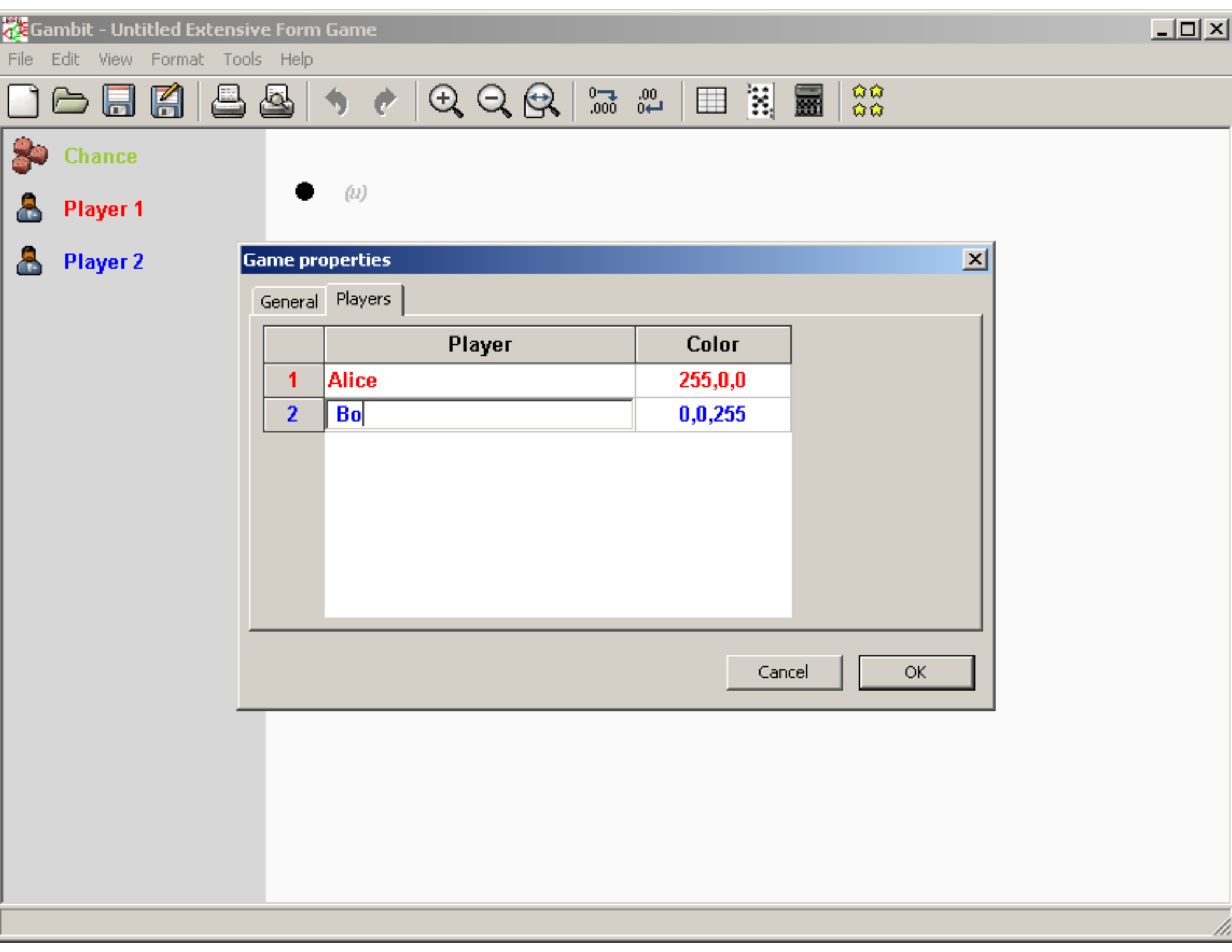

Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Alice
255,0,0
2
Player 2
0,0,255
Cancel
OK

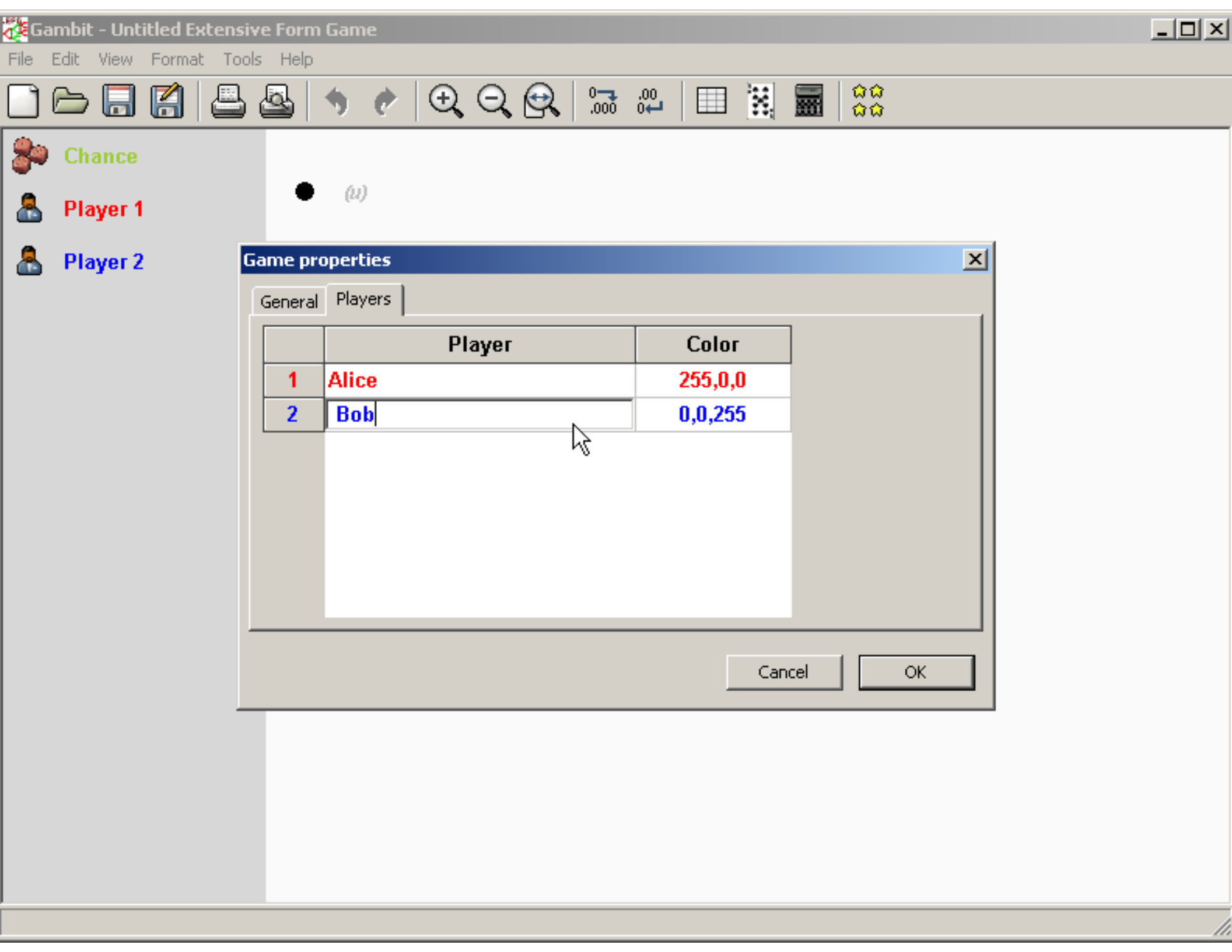

Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Alice
255,0,0
2
Player 2
0,0,255
Cancel
OK

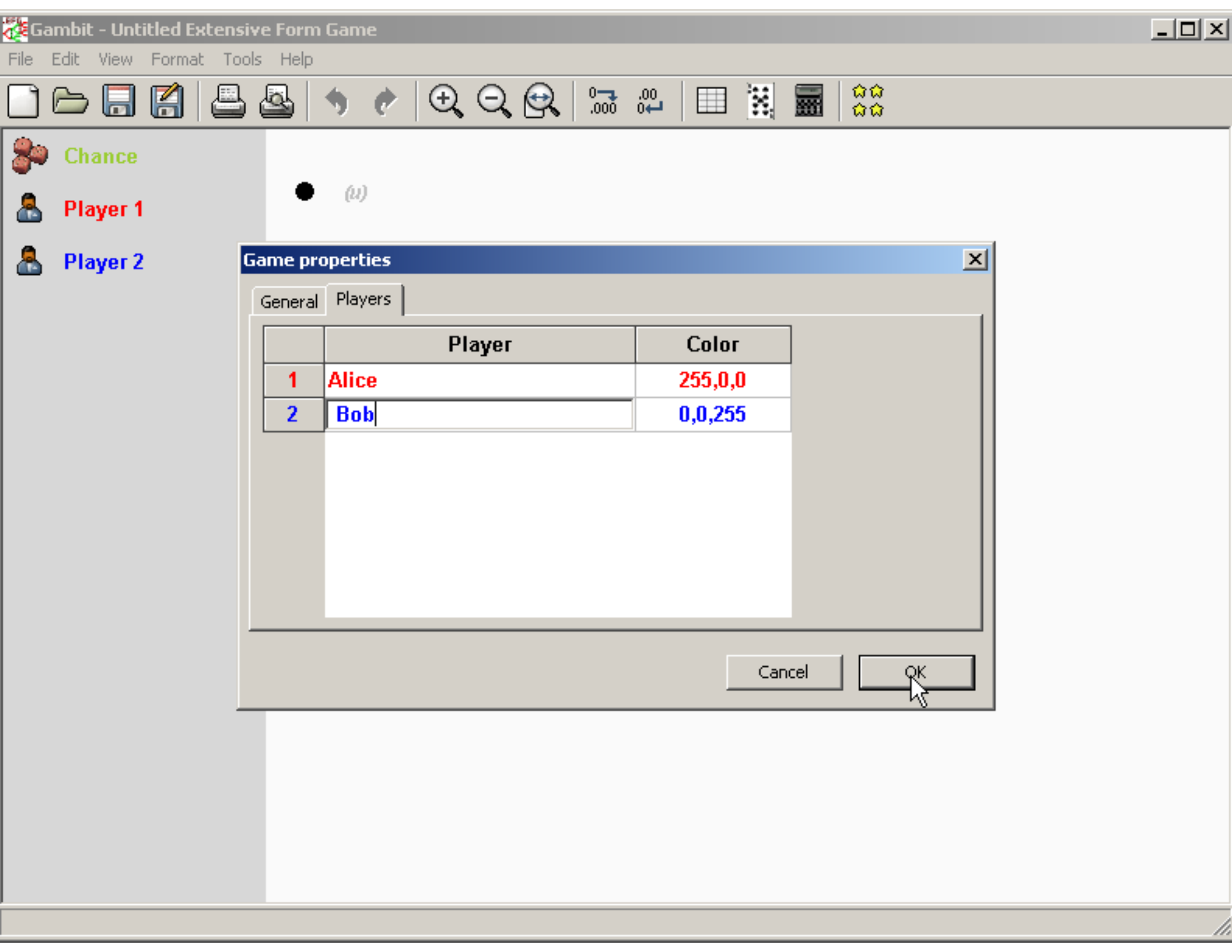

Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Alice
255,0,0
2
Player 2
0,0,255
Cancel
OK

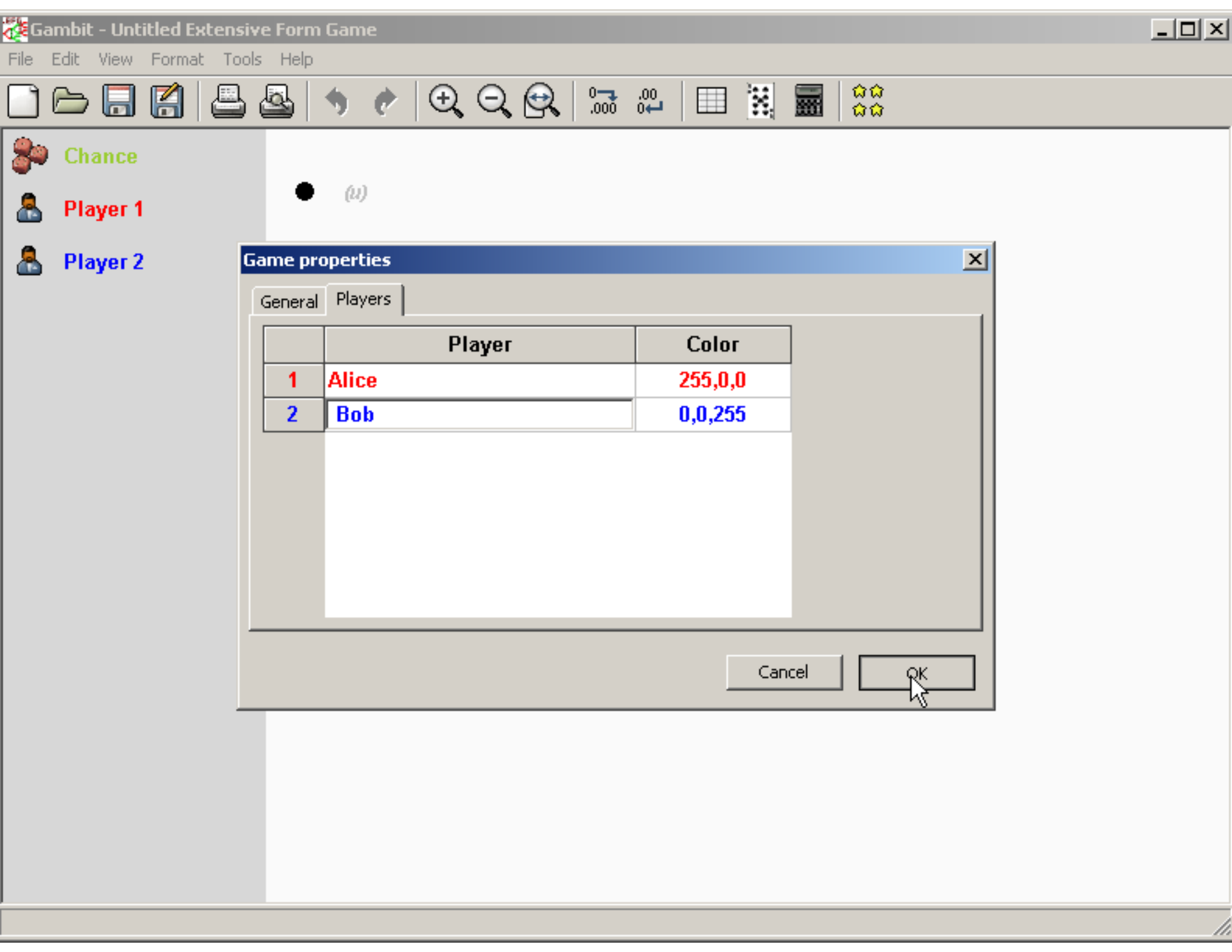

Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Alice
255,0,0
2
Player 2
0,0,255
Cancel
OK

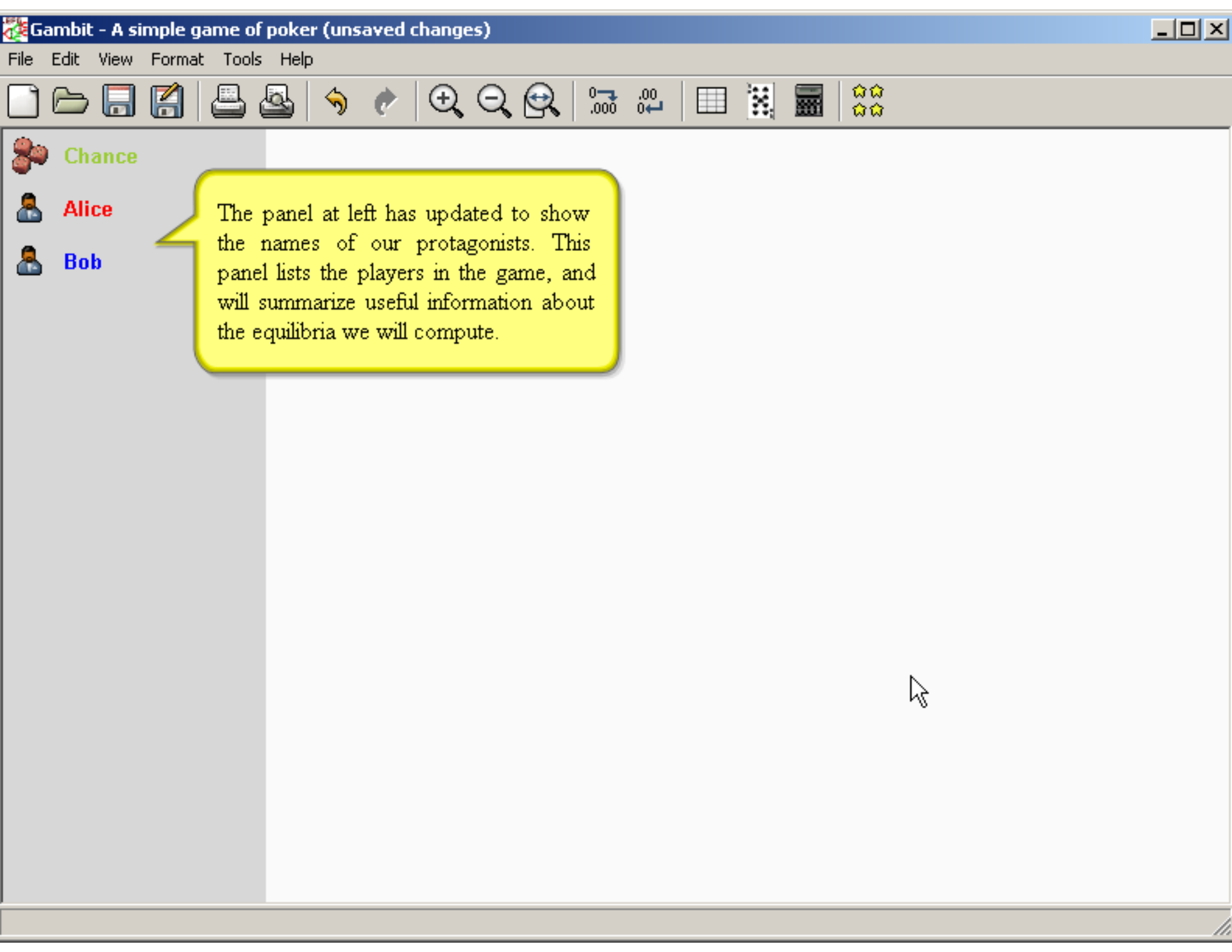

Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Alice
255,0,0
2
B
0,0,255
Cancel
OK

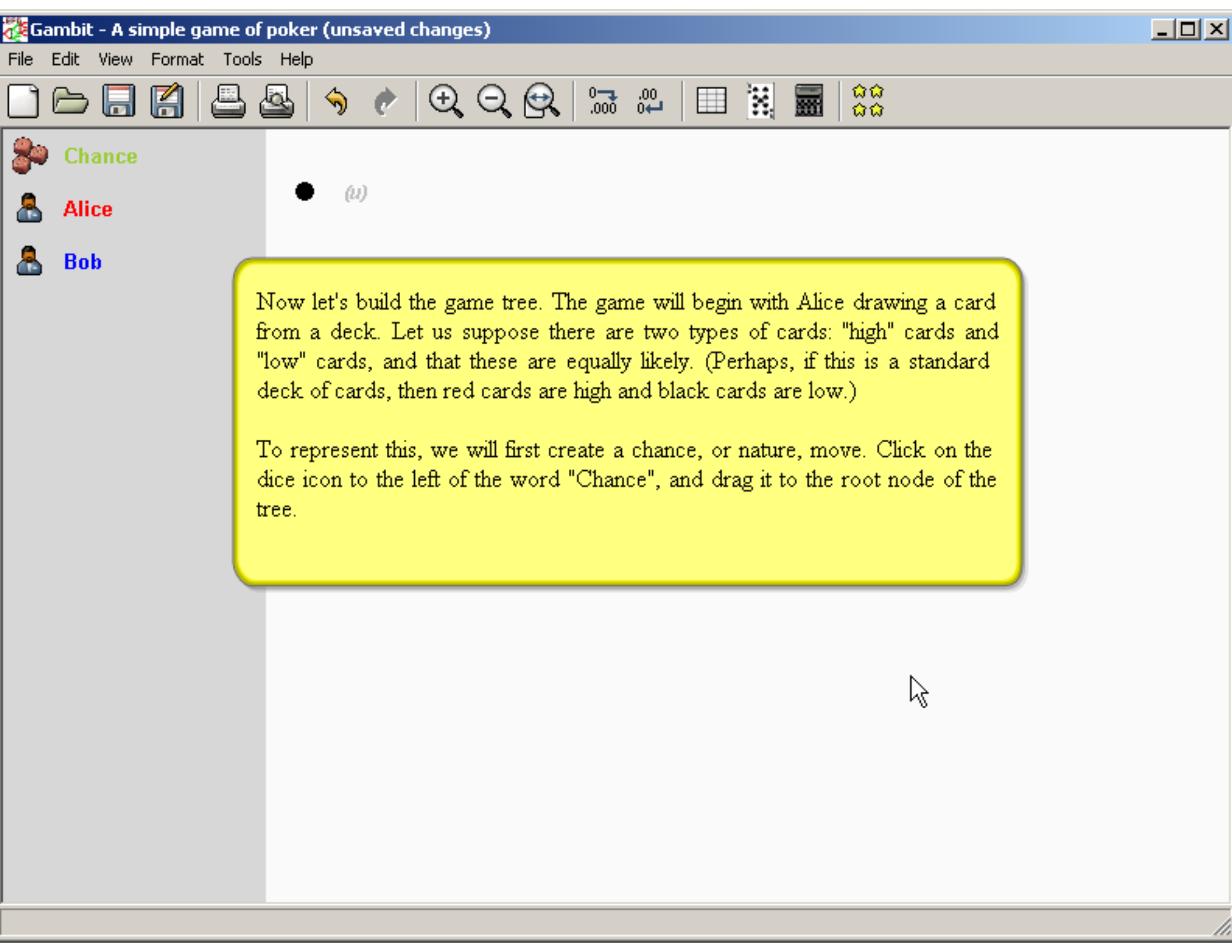

Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Alice
255,0,0
2
Bo
0,0,255
Cancel
OK

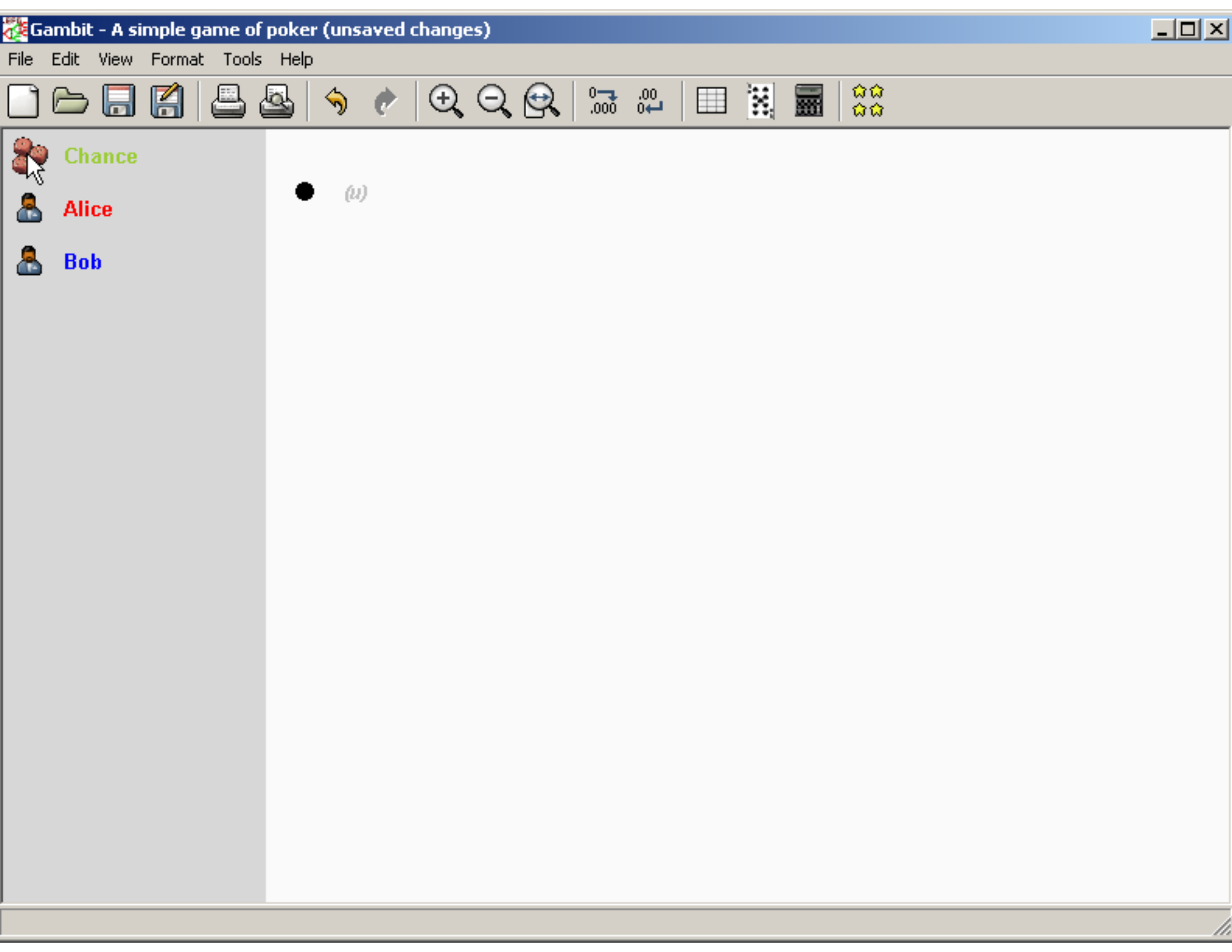

Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Alice
255,0,0
2
Bob
0,0,255
Cancel
OK

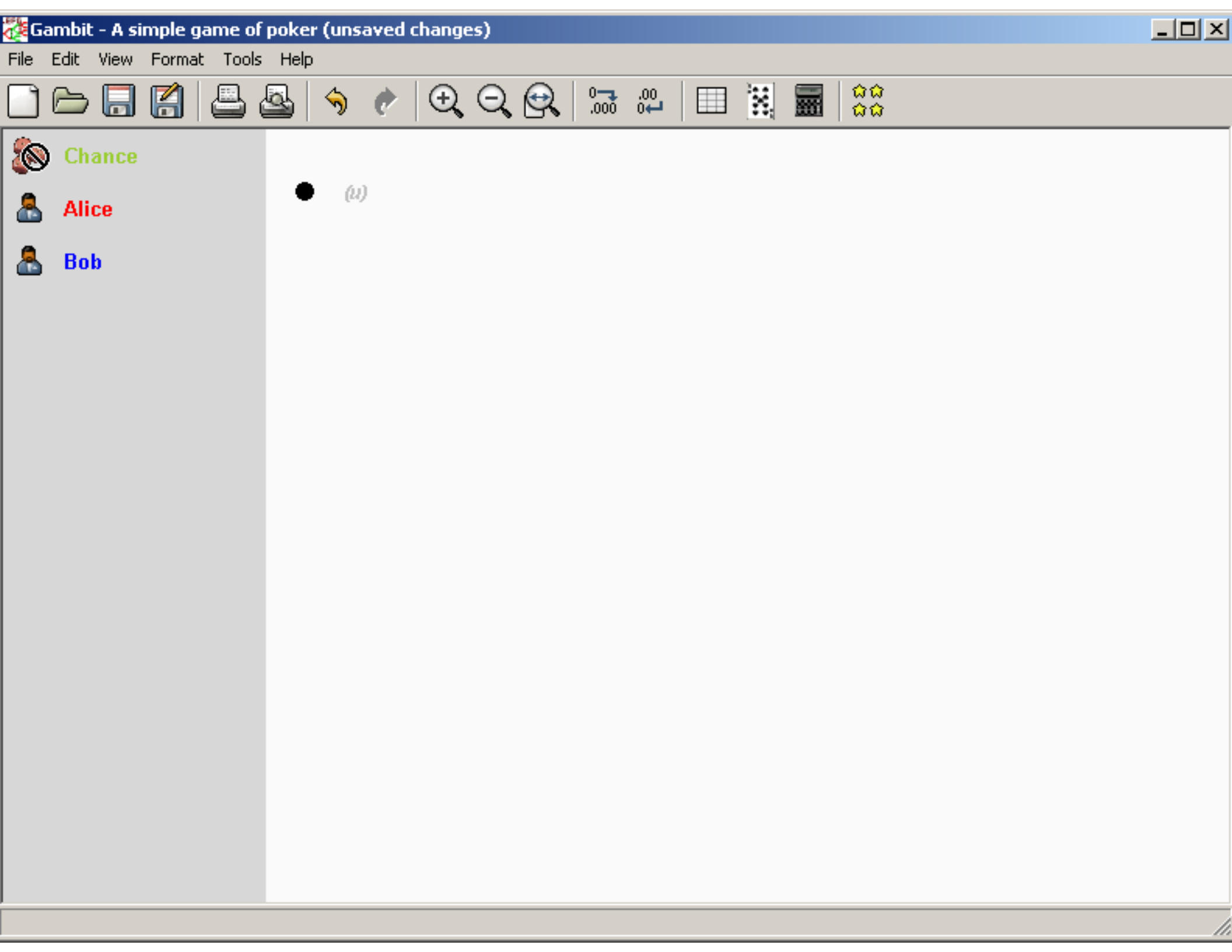

Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Alice
255,0,0
2
Bob
0,0,255
Cancel
OK

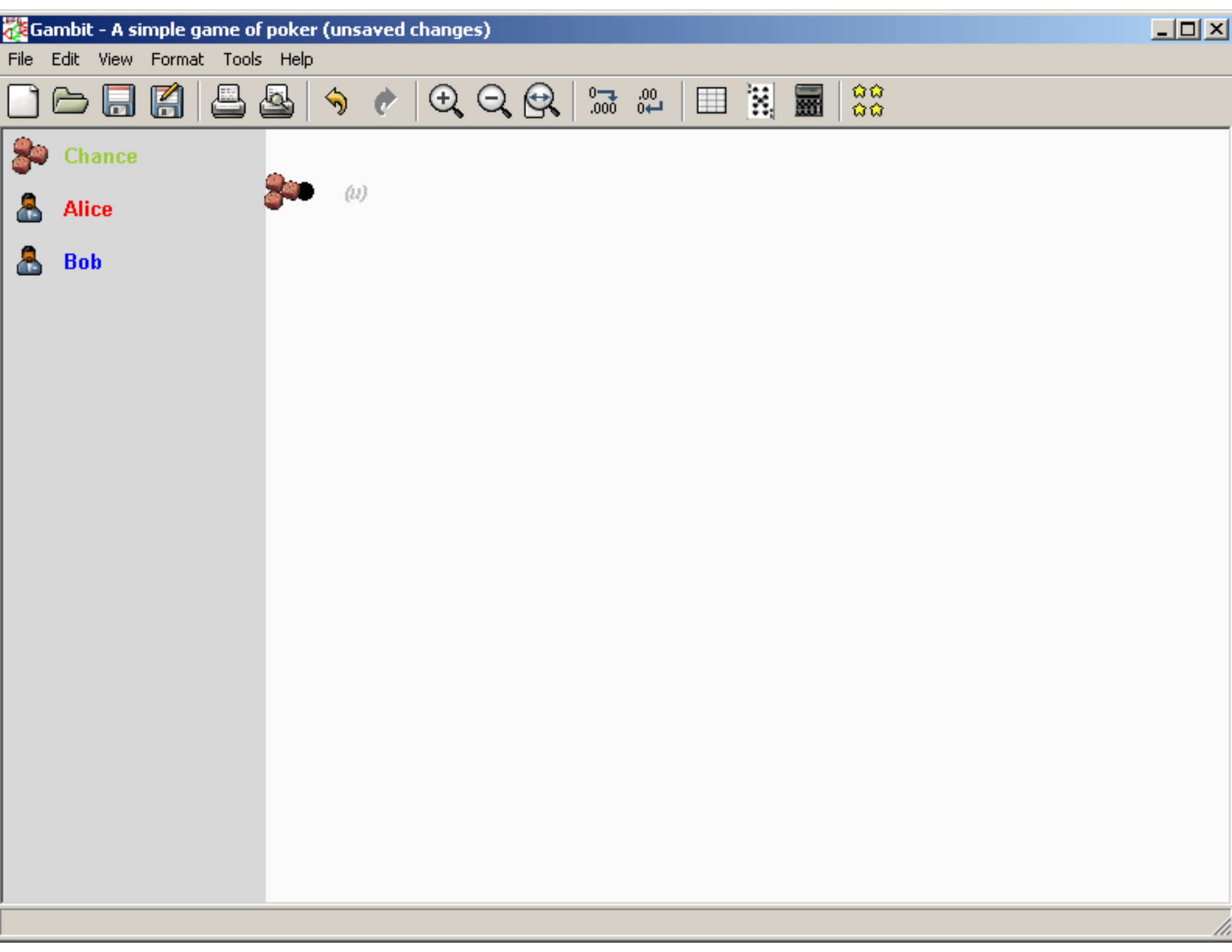

Gambit - Untitled Extensive Form Game
File Edit View Format Tools Help
Chance
Player 1
Player 2
(u)
Game properties
General
Players
Player
Color
1
Alice
255,0,0
2
Bob
0,0,255
Cancel
OK

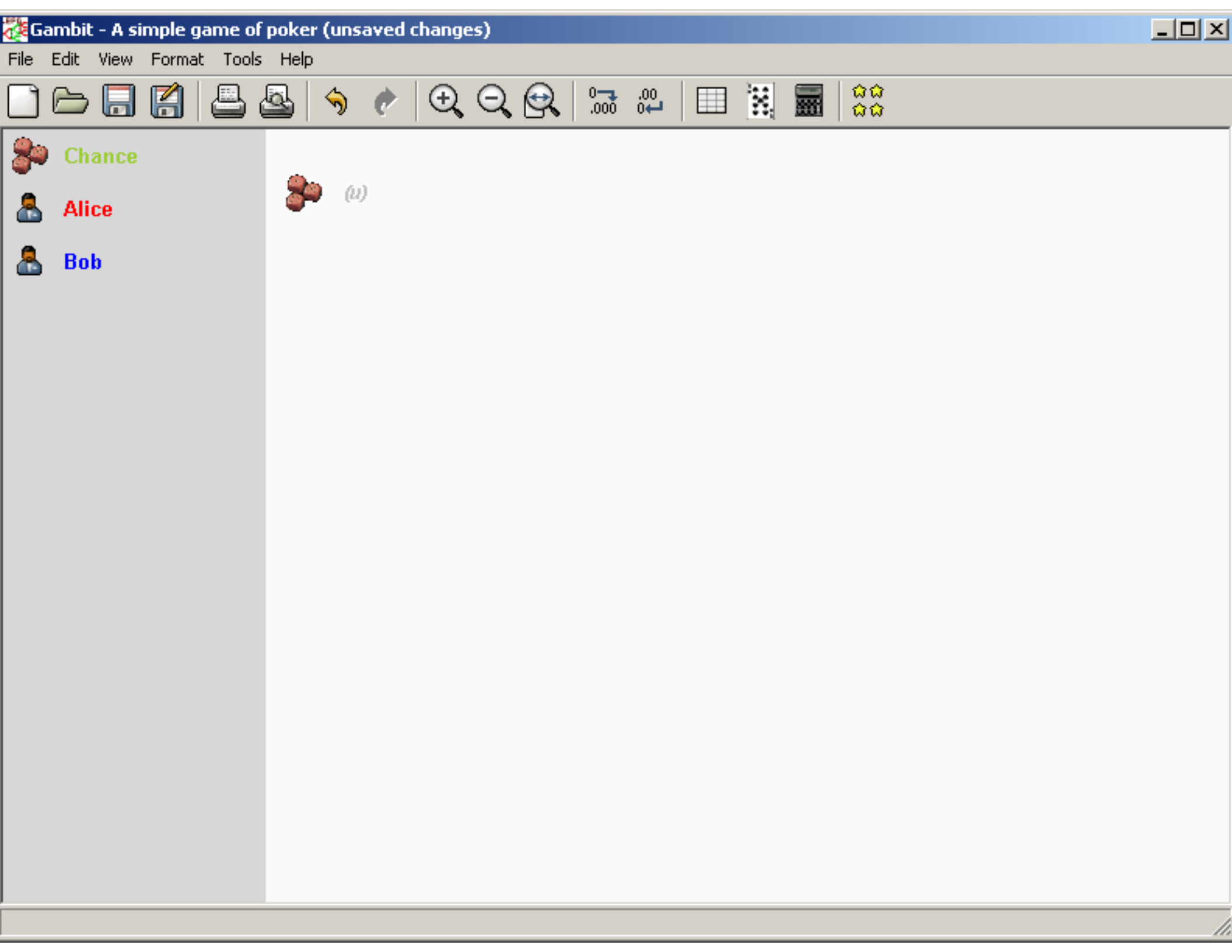

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
The panel at left has updated to show the names of our protagonists. This panel lists the players in the game, and will summarize useful information about the equilibria we will compute.


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
(u)
Now let's build the game tree. The game will begin with Alice drawing a card from a deck. Let us suppose there are two types of cards: "high" cards and "low" cards, and that these are equally likely. (Perhaps, if this is a standard deck of cards, then red cards are high and black cards are low.)
To represent this, we will first create a chance, or nature, move. Click on the dice icon to the left of the word "Chance", and drag it to the root node of the tree.


Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
(u)


Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
(u)


Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
(u)


Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
(u)

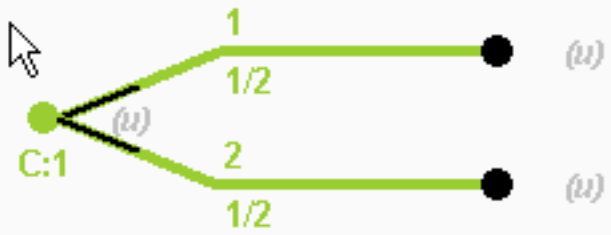
Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help

Chance

Alice

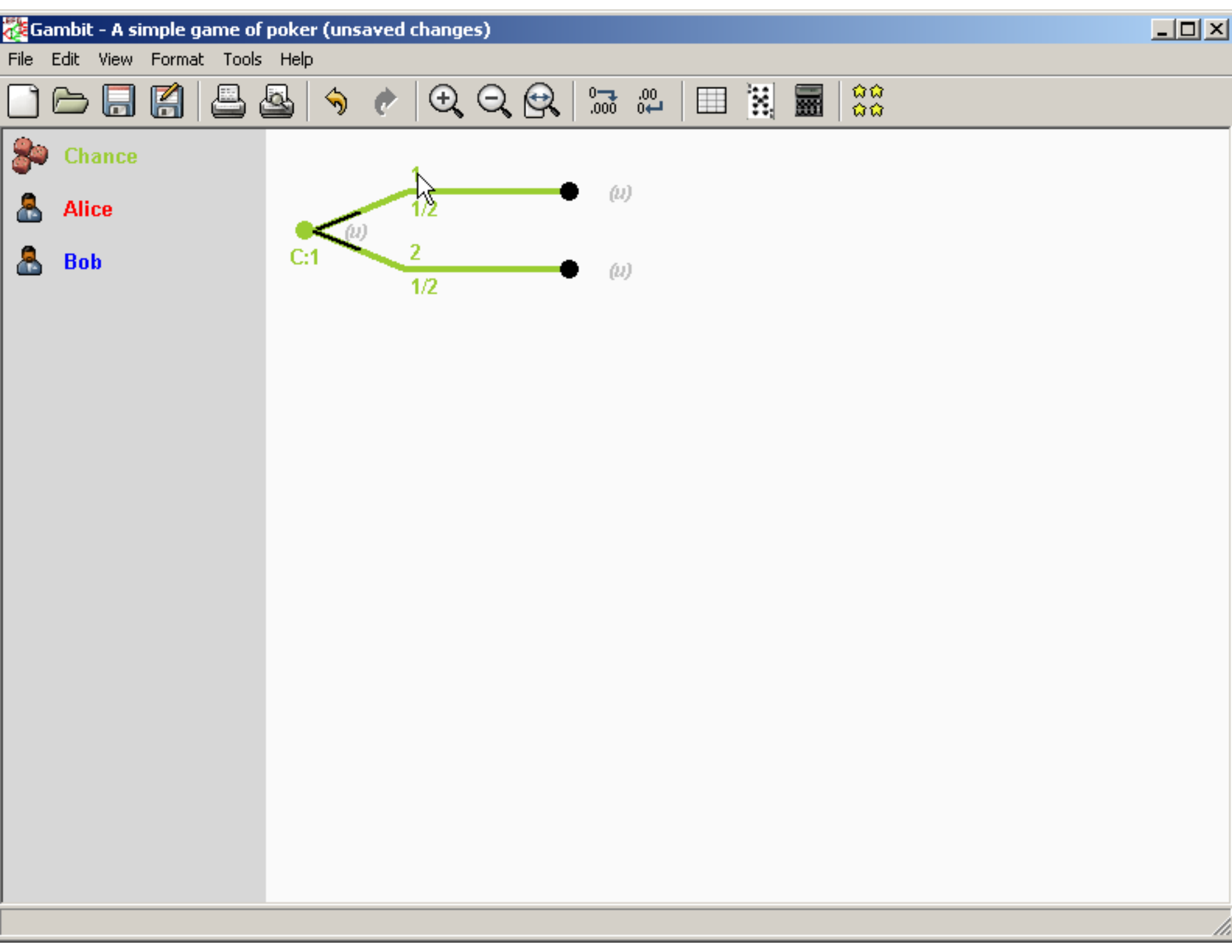
Bob

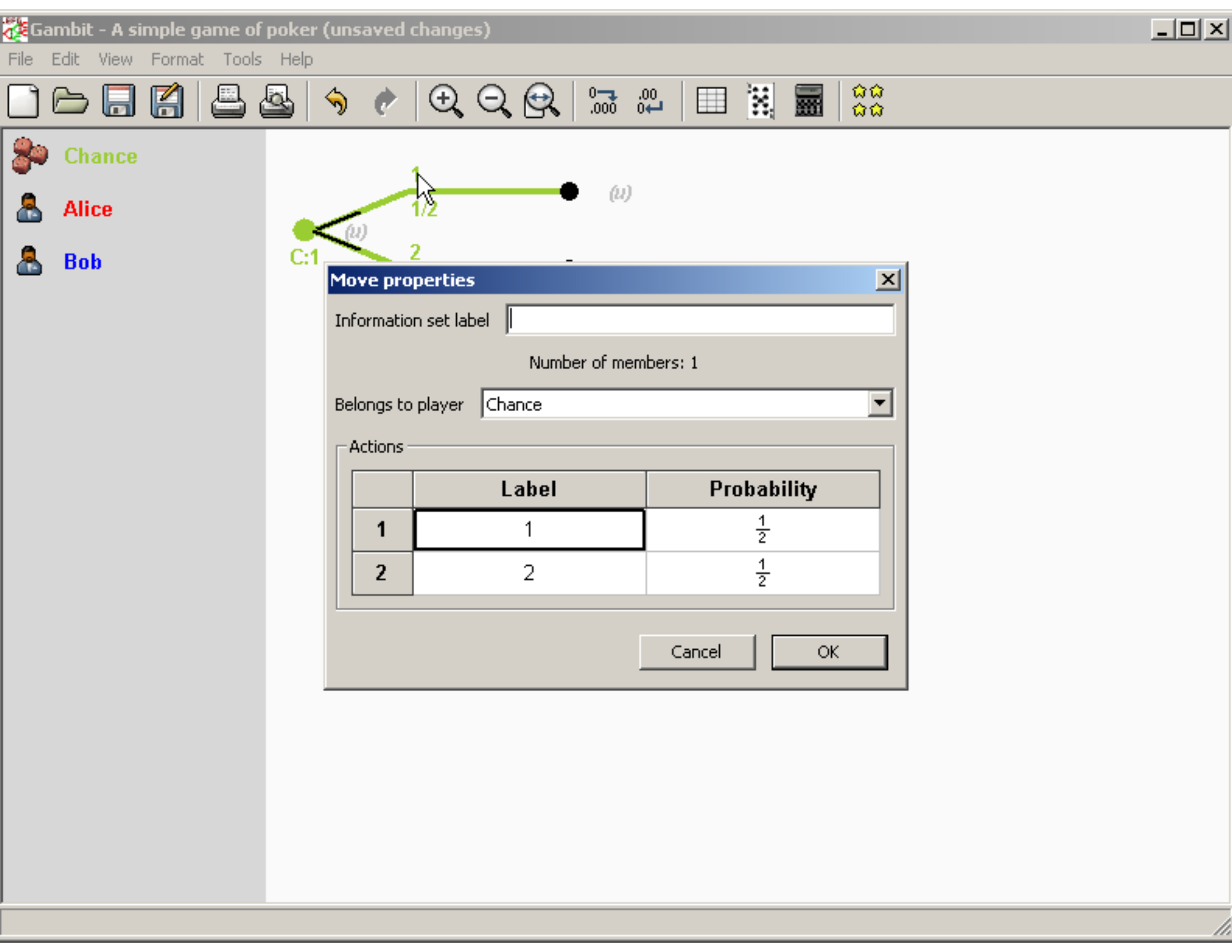


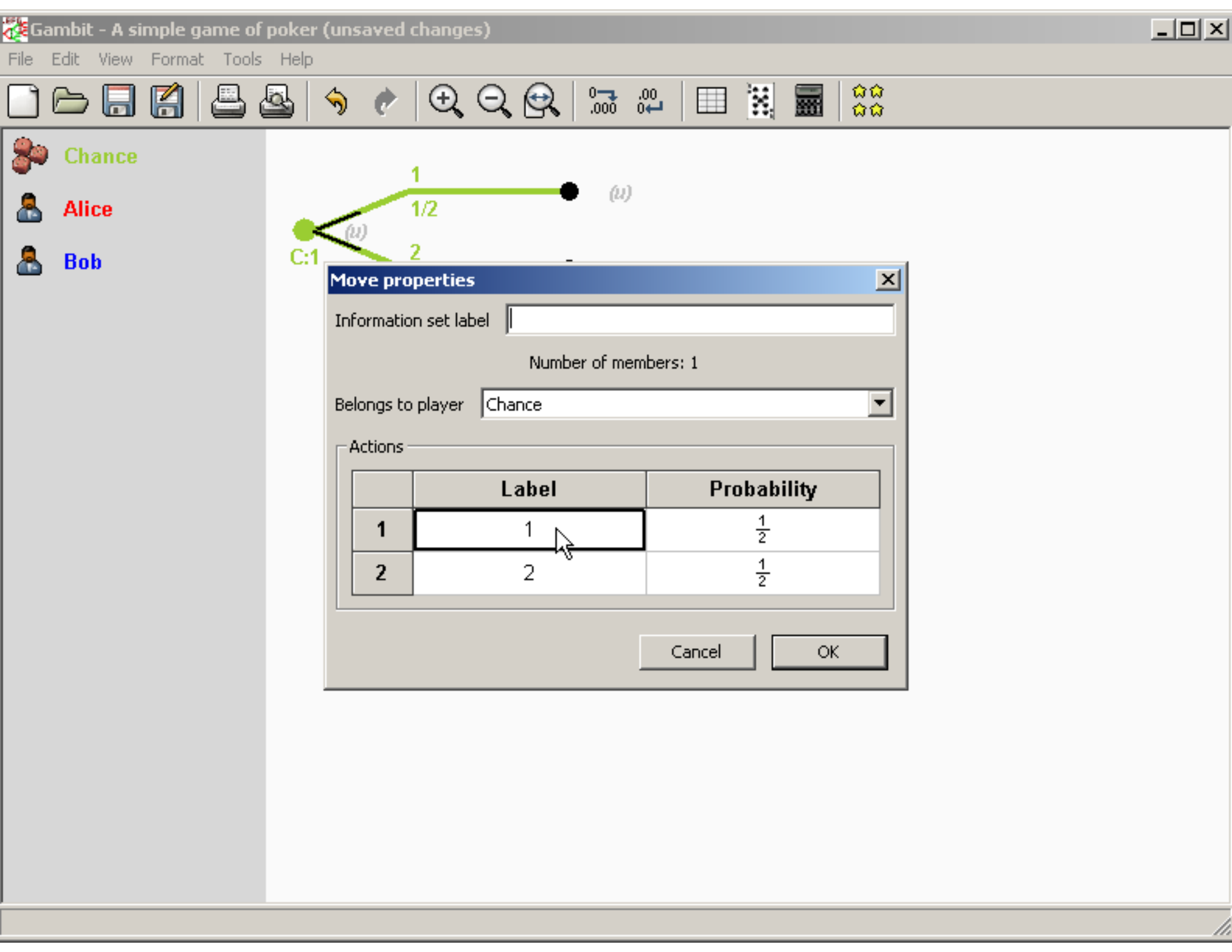
We have created a chance move with two actions. The notation C:1 under the root node indicates that this is a chance move, and that it is move number 1 for the chance player.

The 1/2 beneath each branch indicates that the actions are equally likely. This is what we want. Gambit also gives the actions the default names "1" and "2".

Let's change those names to something more descriptive. Double-click one of the action labels to edit the labels for the move.


Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
1
1/2
(u)
C:1
(u)
2
1/2
(u)


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
1/2
(u)
(u)
C:1
2
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
1
1/2
2
2
1/2
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
1/2
2
(u)
(u)
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
1
1/2
2
2
1/2
Cancel
OK

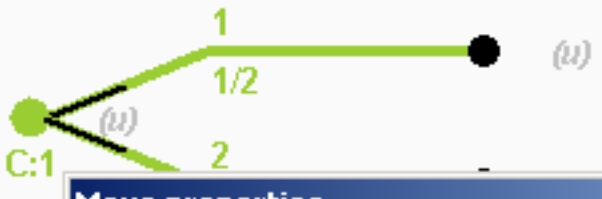
Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help

Chance

Alice

Bob



Move properties

Information set label

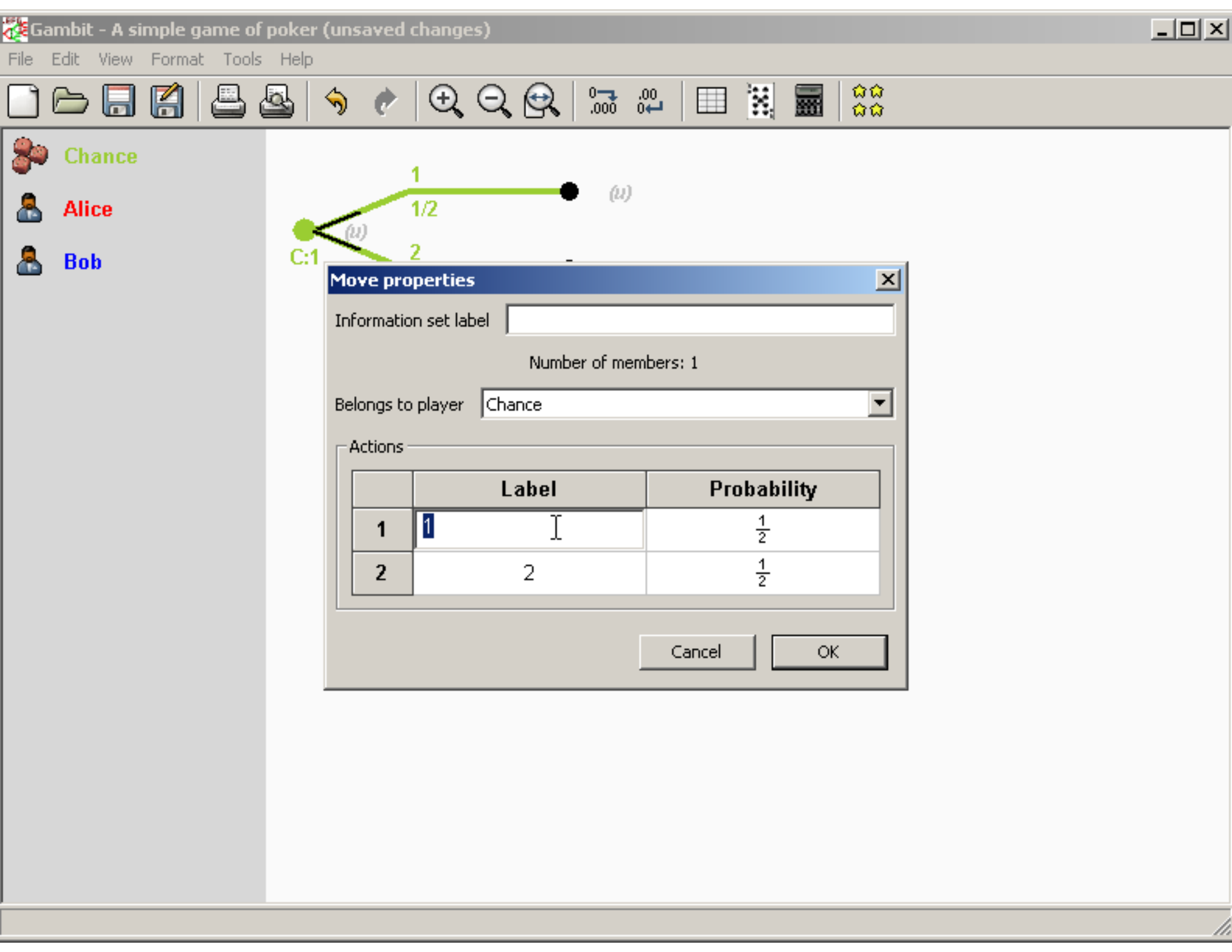
Number of members: 1

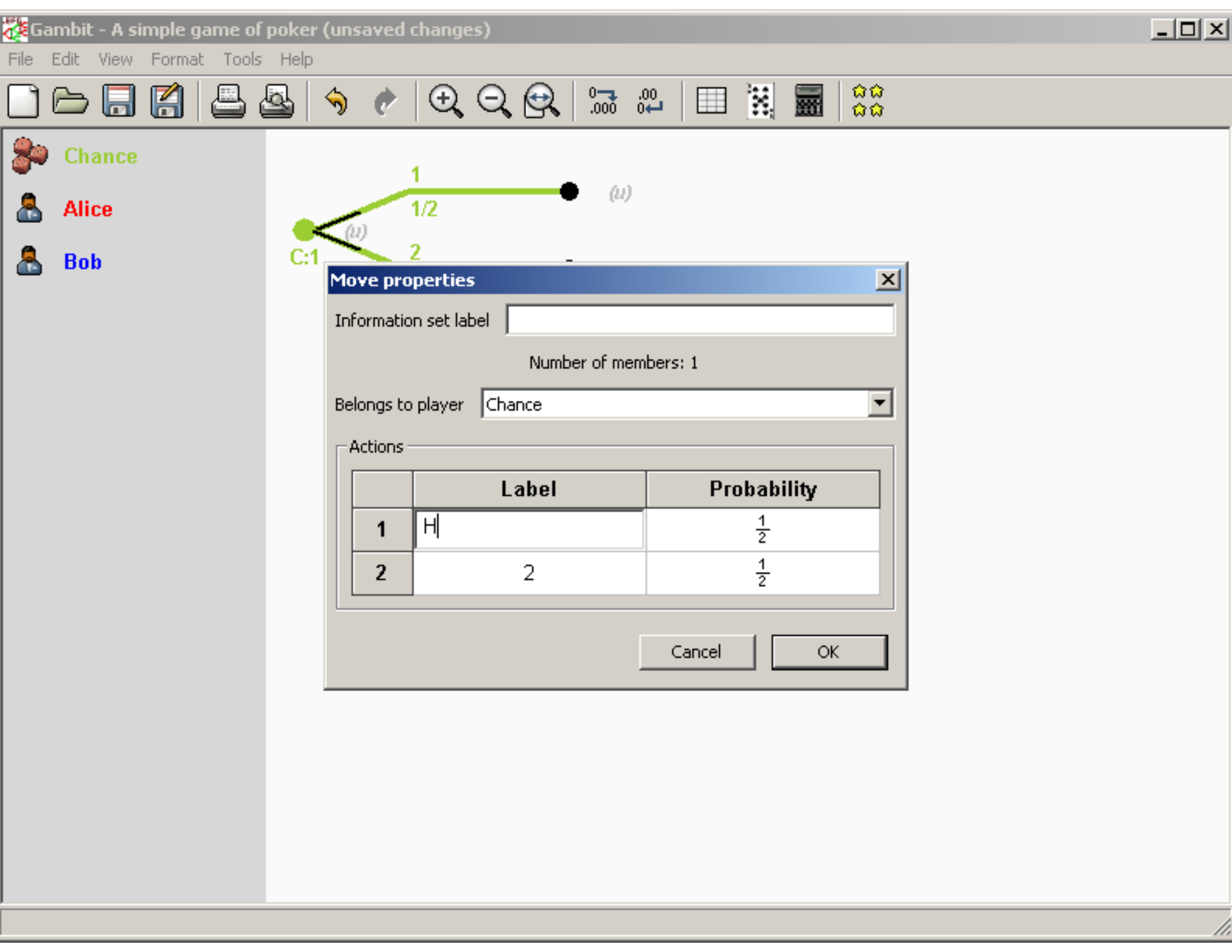
Belongs to player: Chance

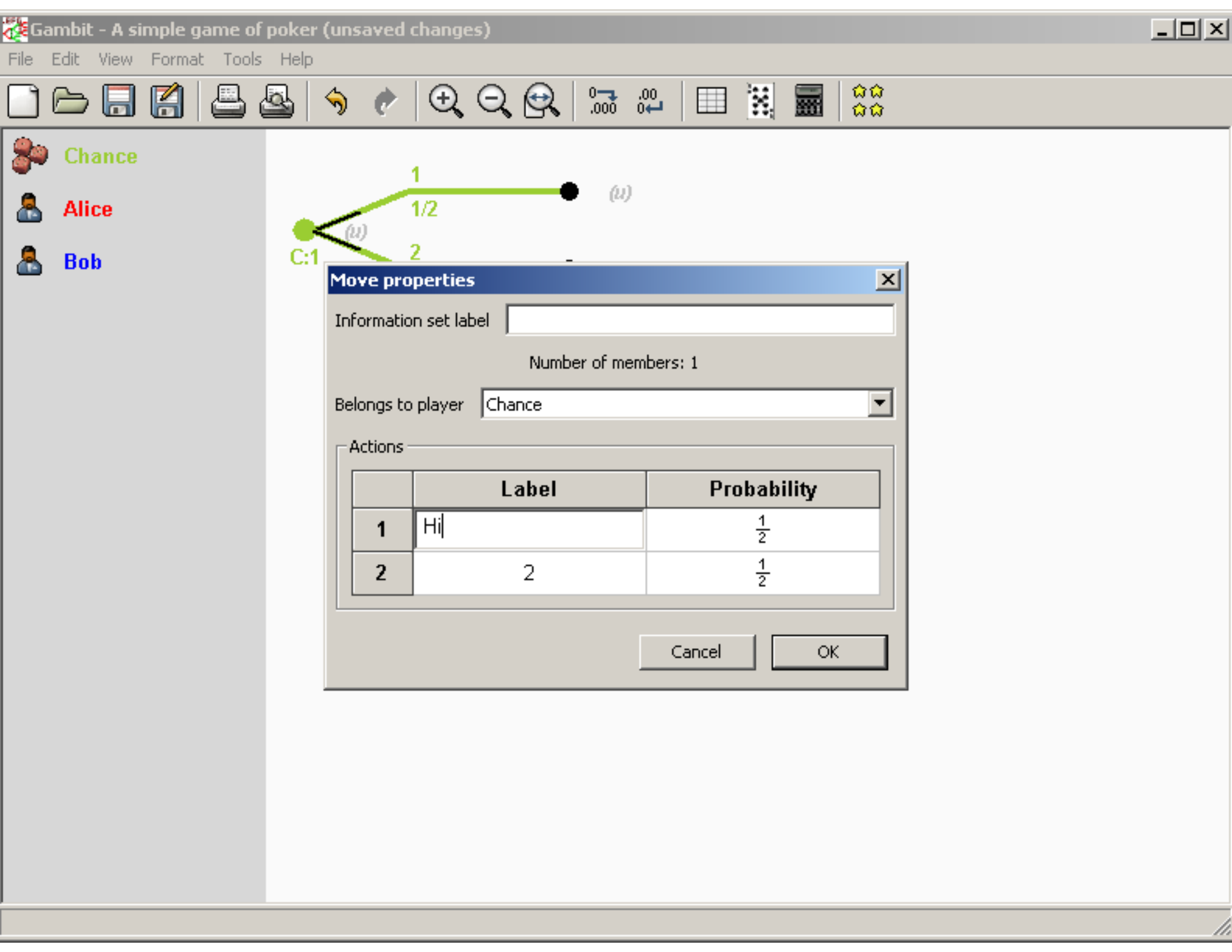
Actions

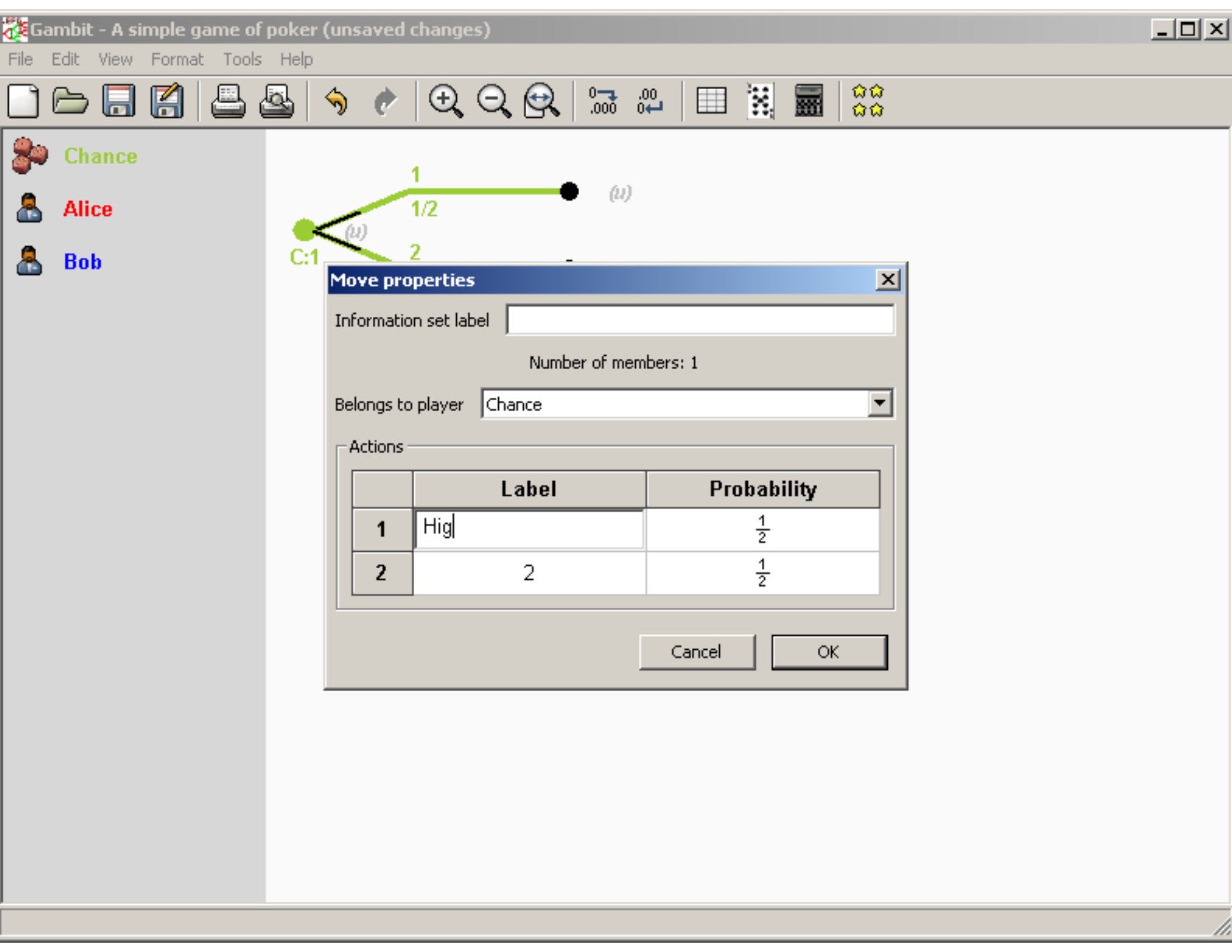
	Label	Probability
1	1	$\frac{1}{2}$
2	2	$\frac{1}{2}$

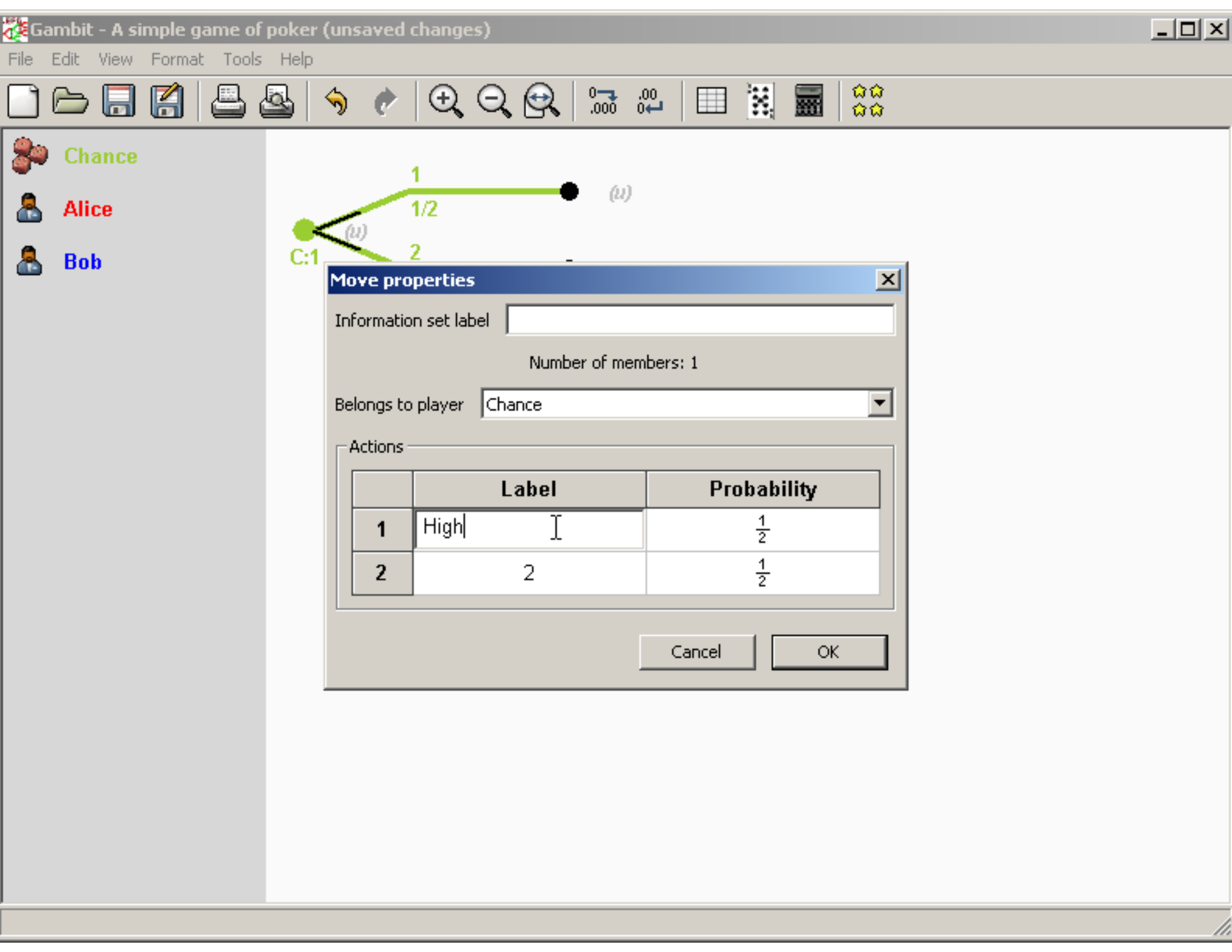
Cancel OK

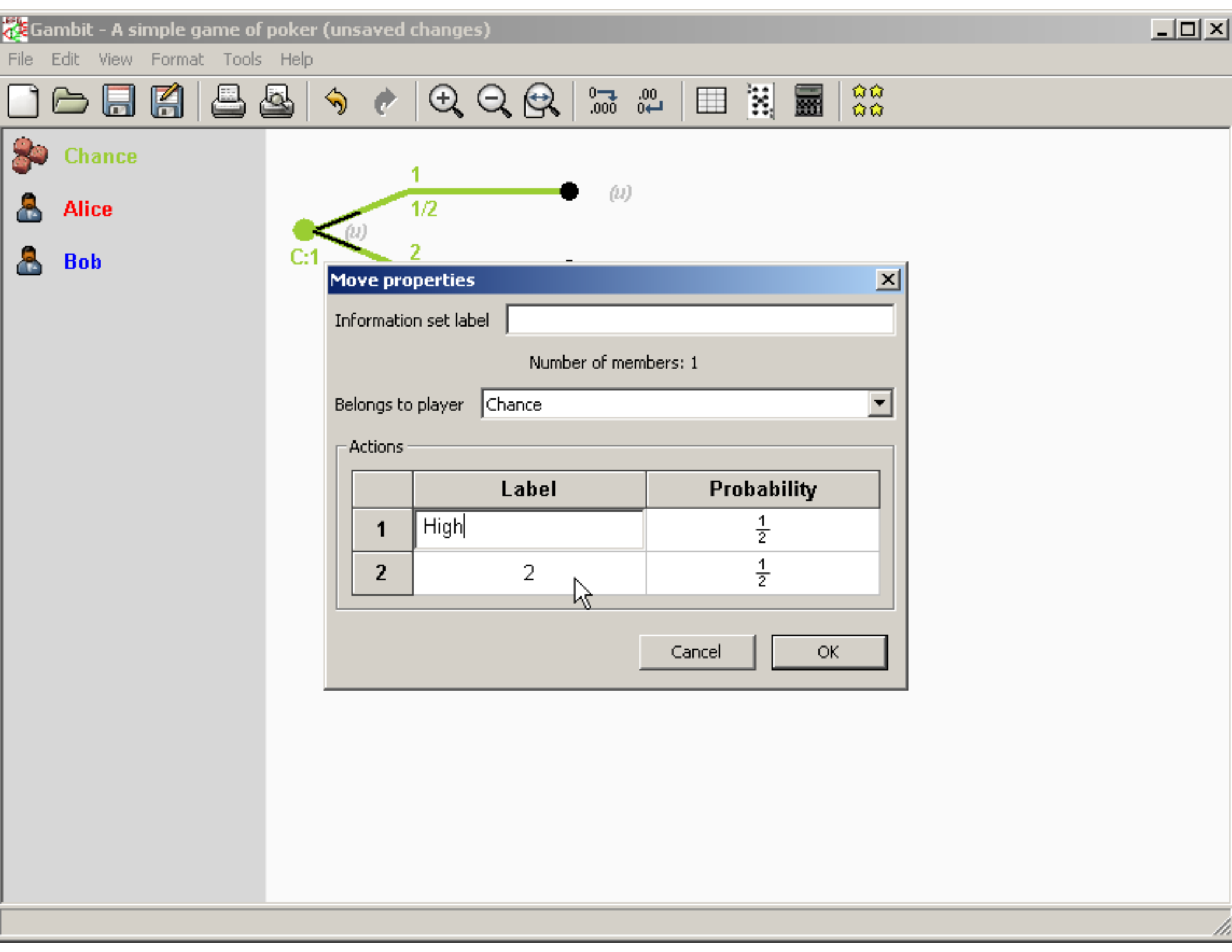

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
1/2
2
(u)
(u)
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
1
1/2
2
2
1/2
Cancel
OK

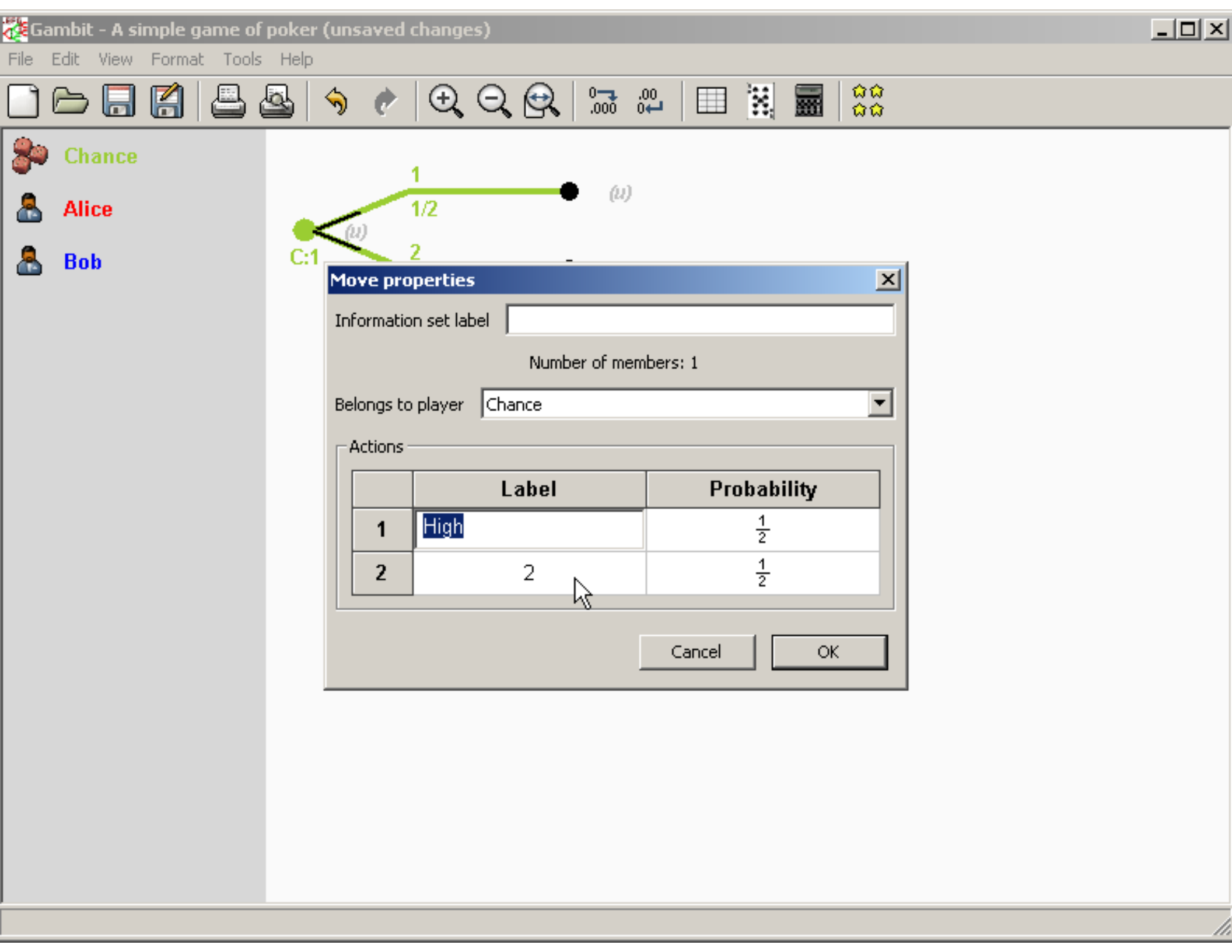

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
1/2
(u)
(u)
C:1
2
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
H
1/2
2
2
1/2
Cancel
OK

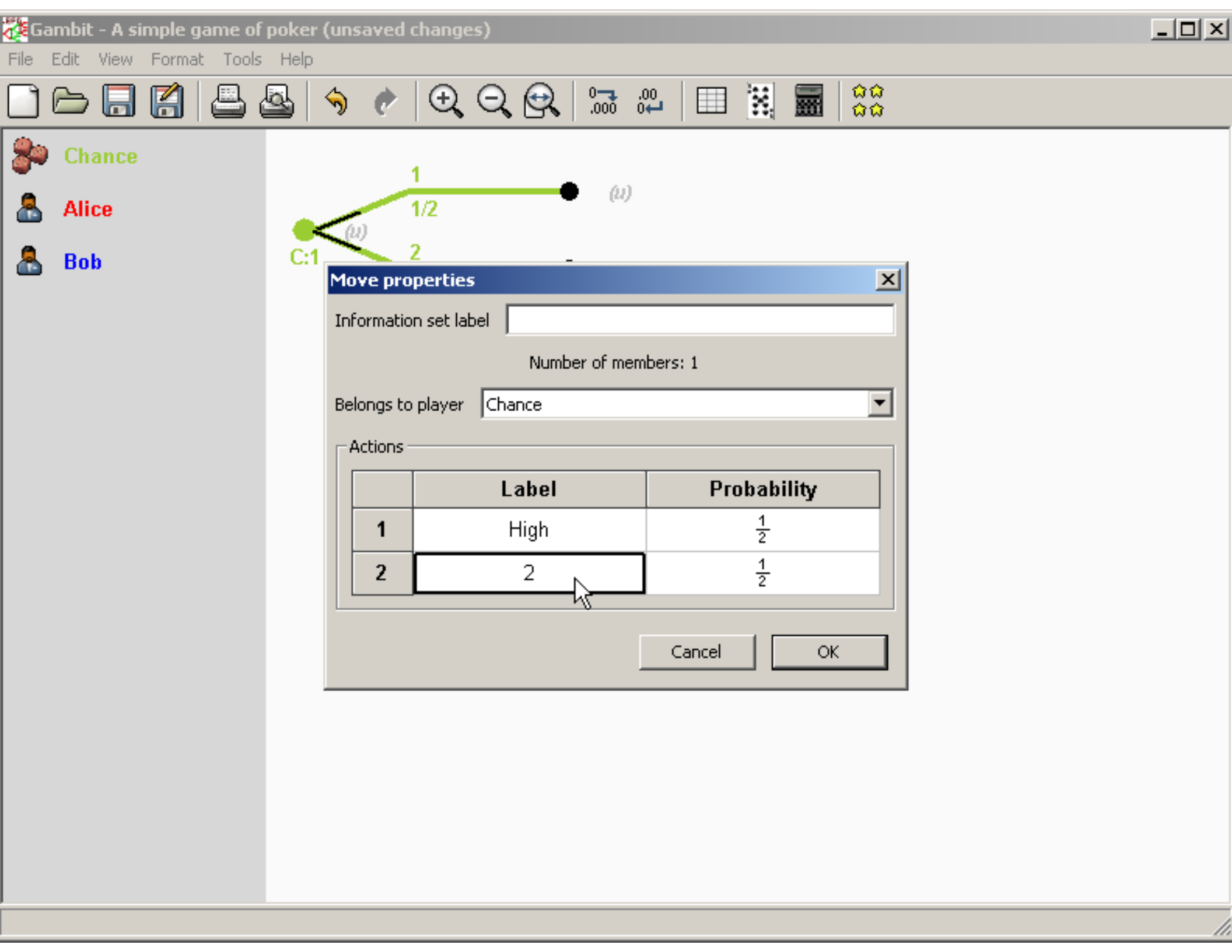

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
1/2
2
(u)
(u)
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
Hi
1/2
2
2
1/2
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
1/2
(u)
(u)
C:1
2
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
Hig
1/2
2
2
1/2
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
1/2
2
(u)
(u)
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
High
1/2
2
2
1/2
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
1/2
2
(u)
(u)
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
High
1/2
2
2
1/2
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
1/2
(u)
(u)
C:1
2
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
High
1/2
2
2
1/2
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
1/2
2
(u)
(u)
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
High
1/2
2
2
1/2
Cancel
OK

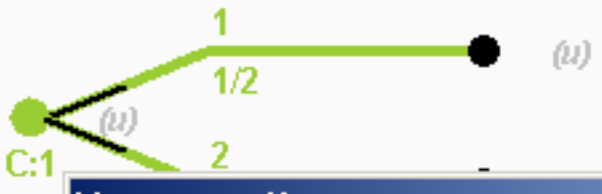
Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help

Chance

Alice

Bob



Move properties

Information set label

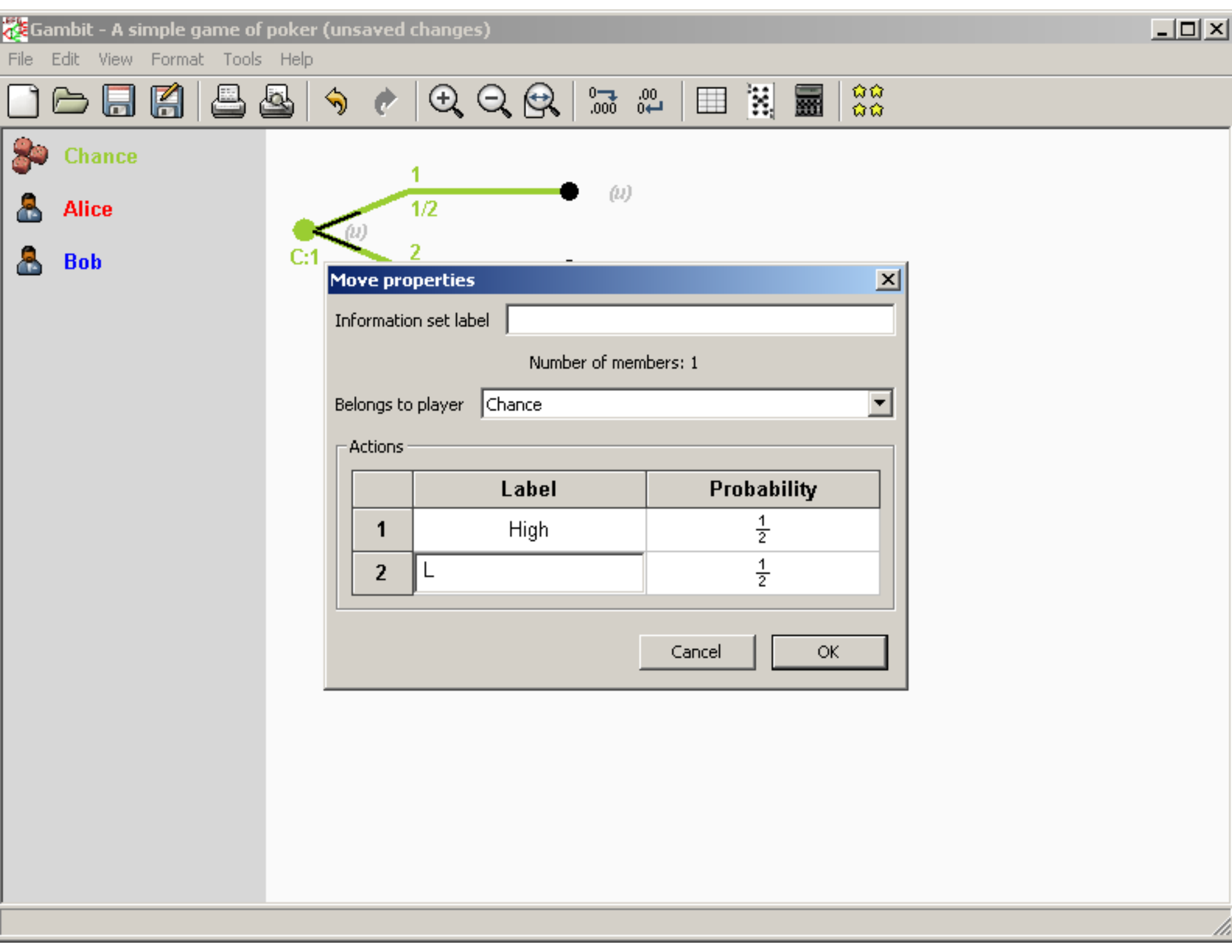
Number of members: 1

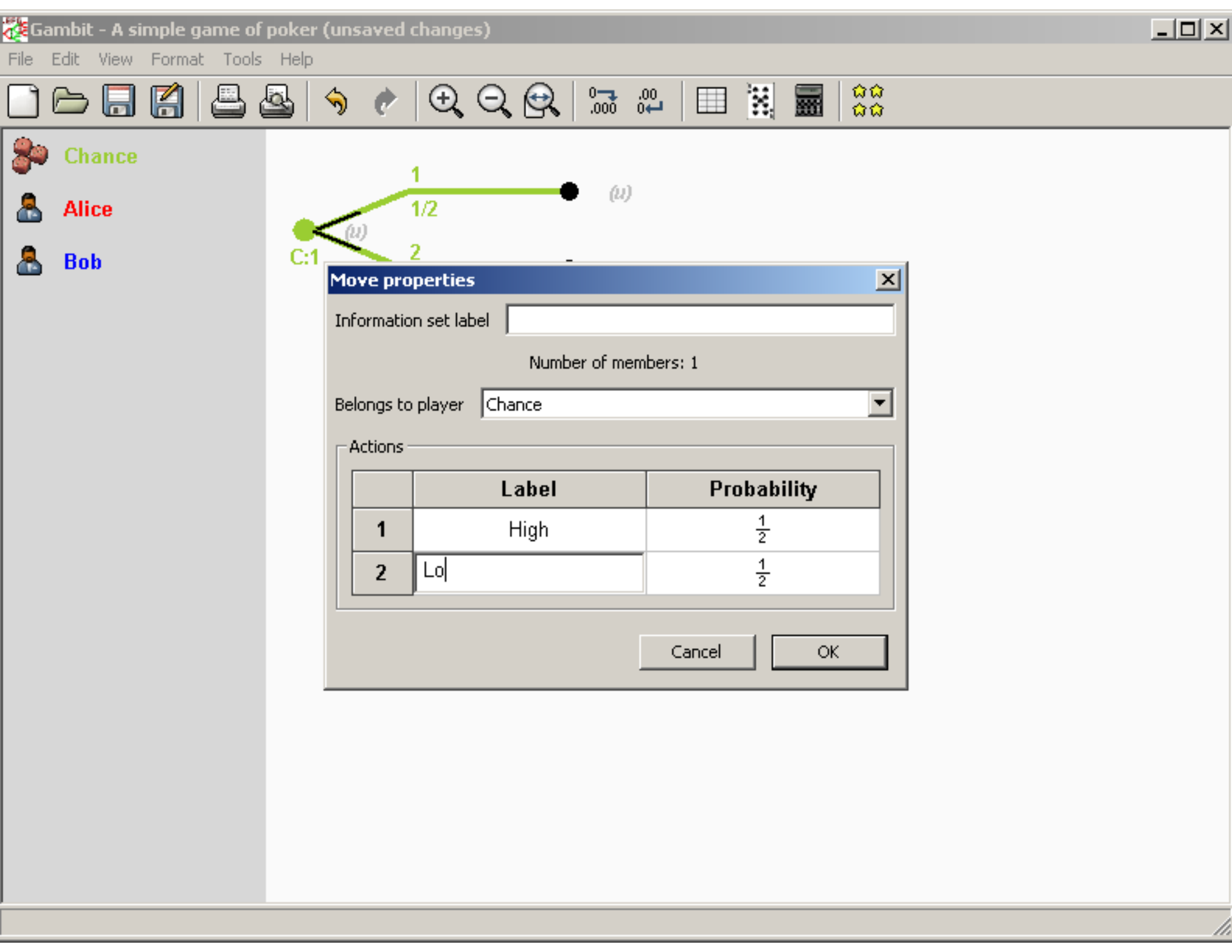
Belongs to player Chance

Actions

	Label	Probability
1	High	$\frac{1}{2}$
2	2	$\frac{1}{2}$

Cancel OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
1/2
2
(u)
(u)
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
High
1/2
2
L
1/2
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
1/2
2
(u)
(u)
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
High
1/2
2
Lo
1/2
Cancel
OK

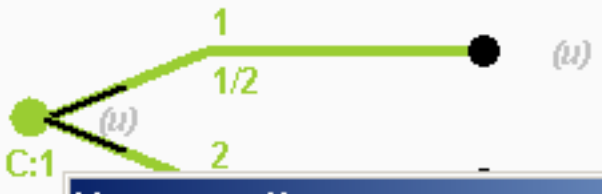
Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help

Chance

Alice

Bob



Move properties

Information set label

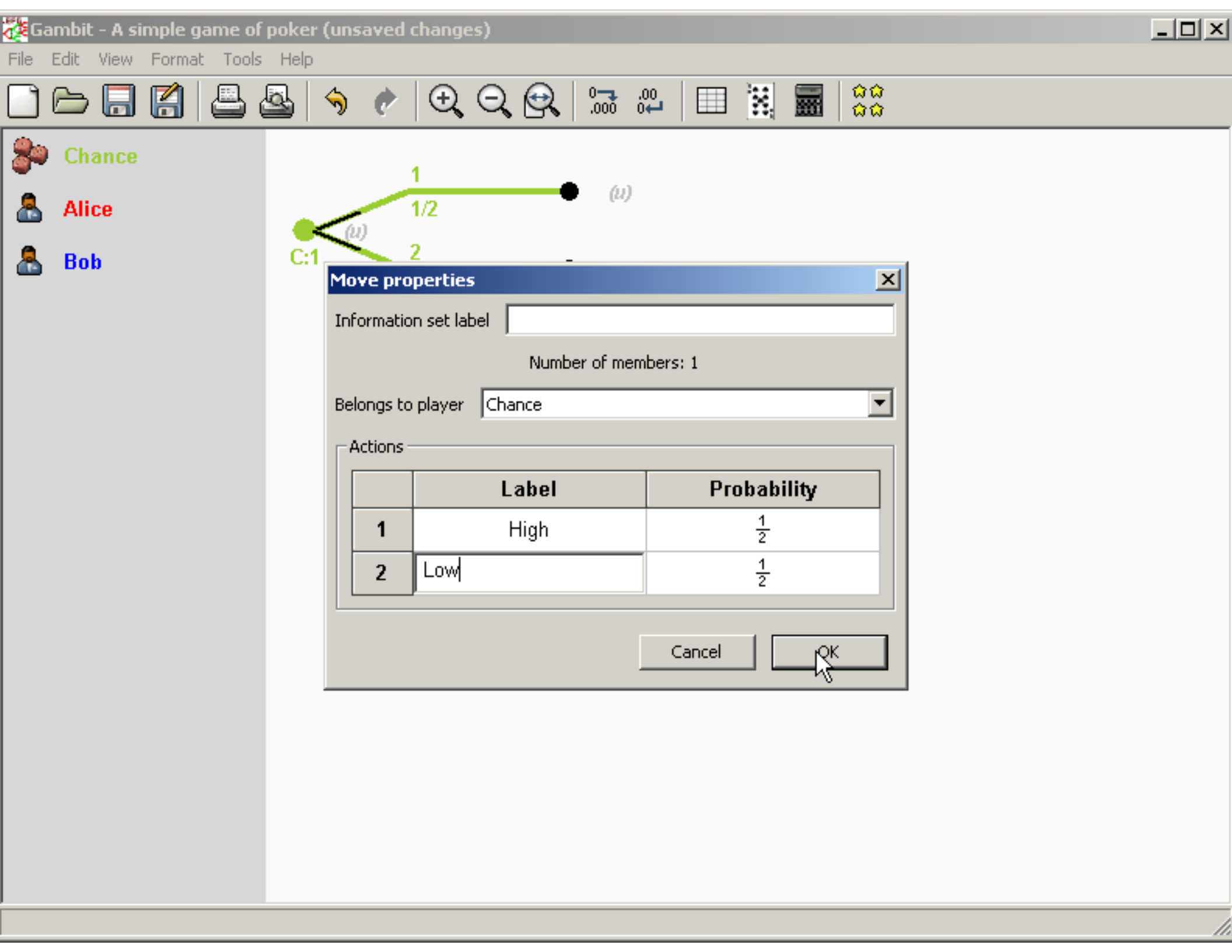
Number of members: 1

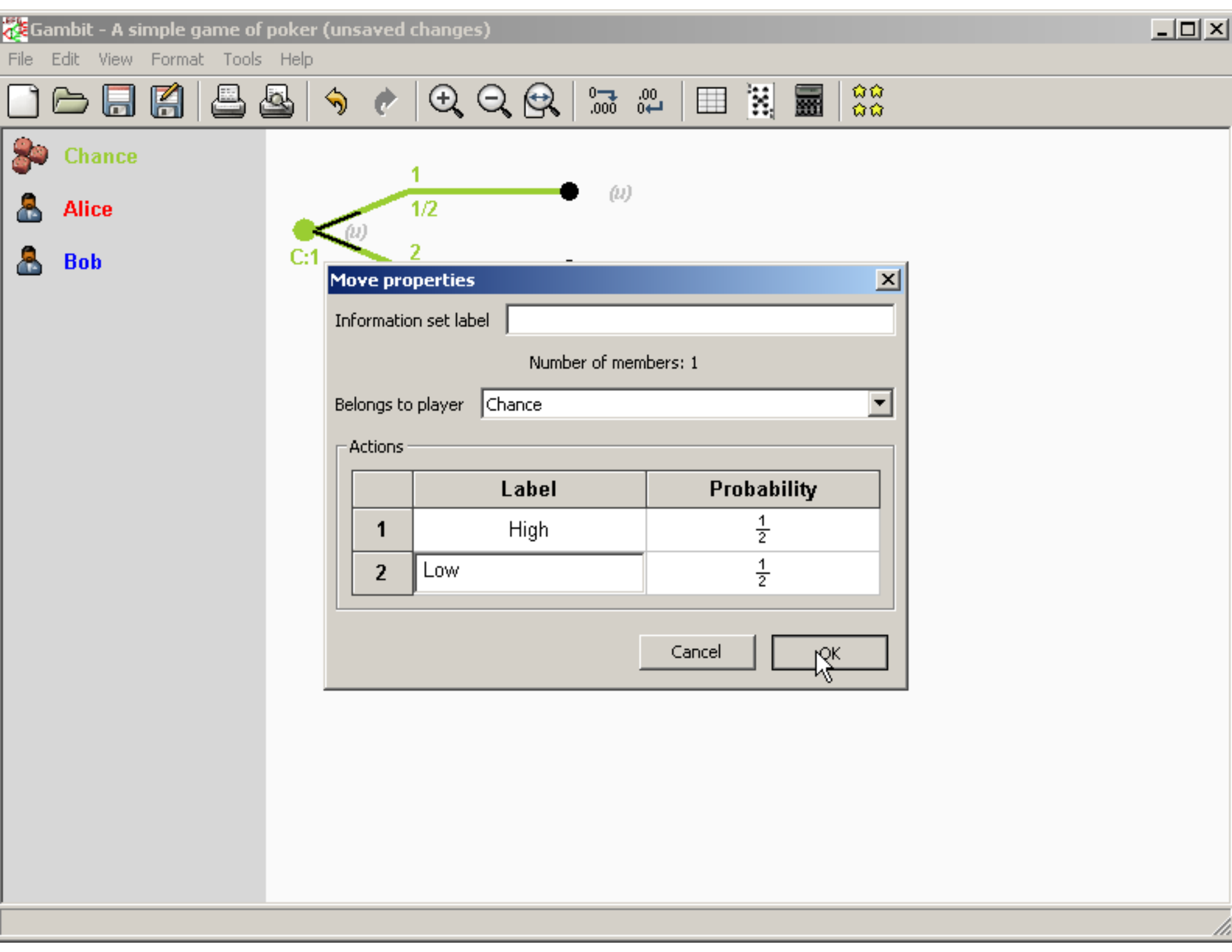
Belongs to player Chance

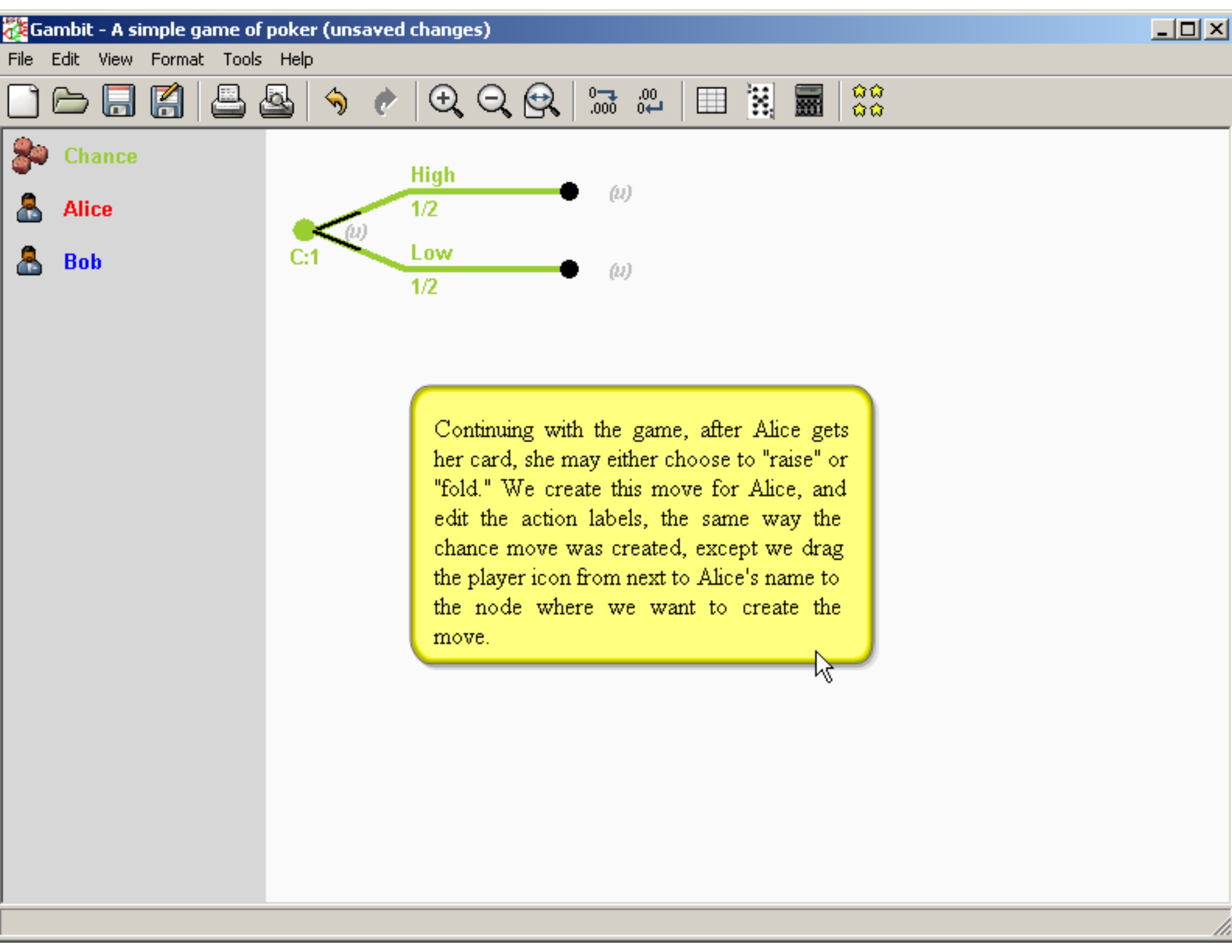
Actions

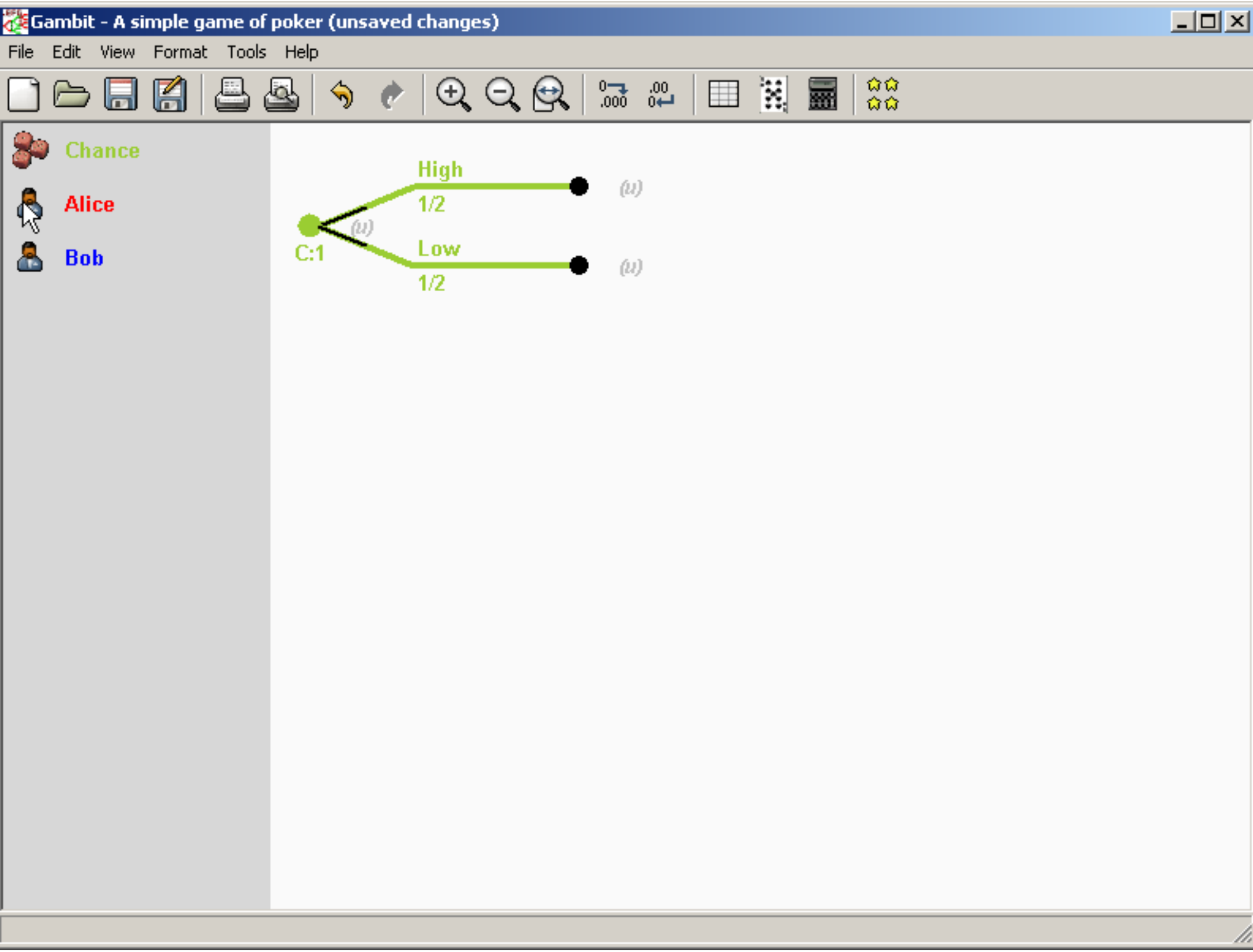
	Label	Probability
1	High	$\frac{1}{2}$
2	Low	$\frac{1}{2}$

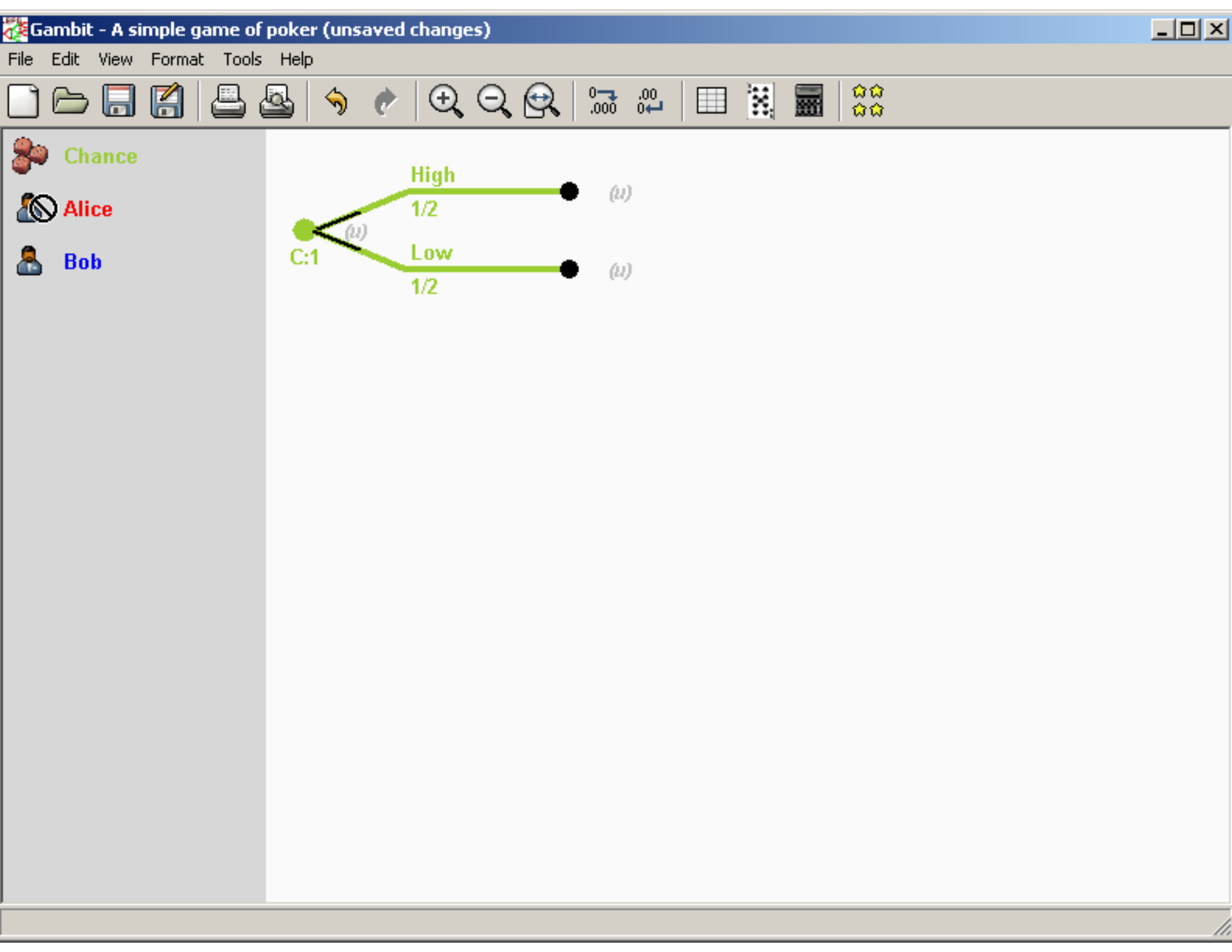
Cancel OK

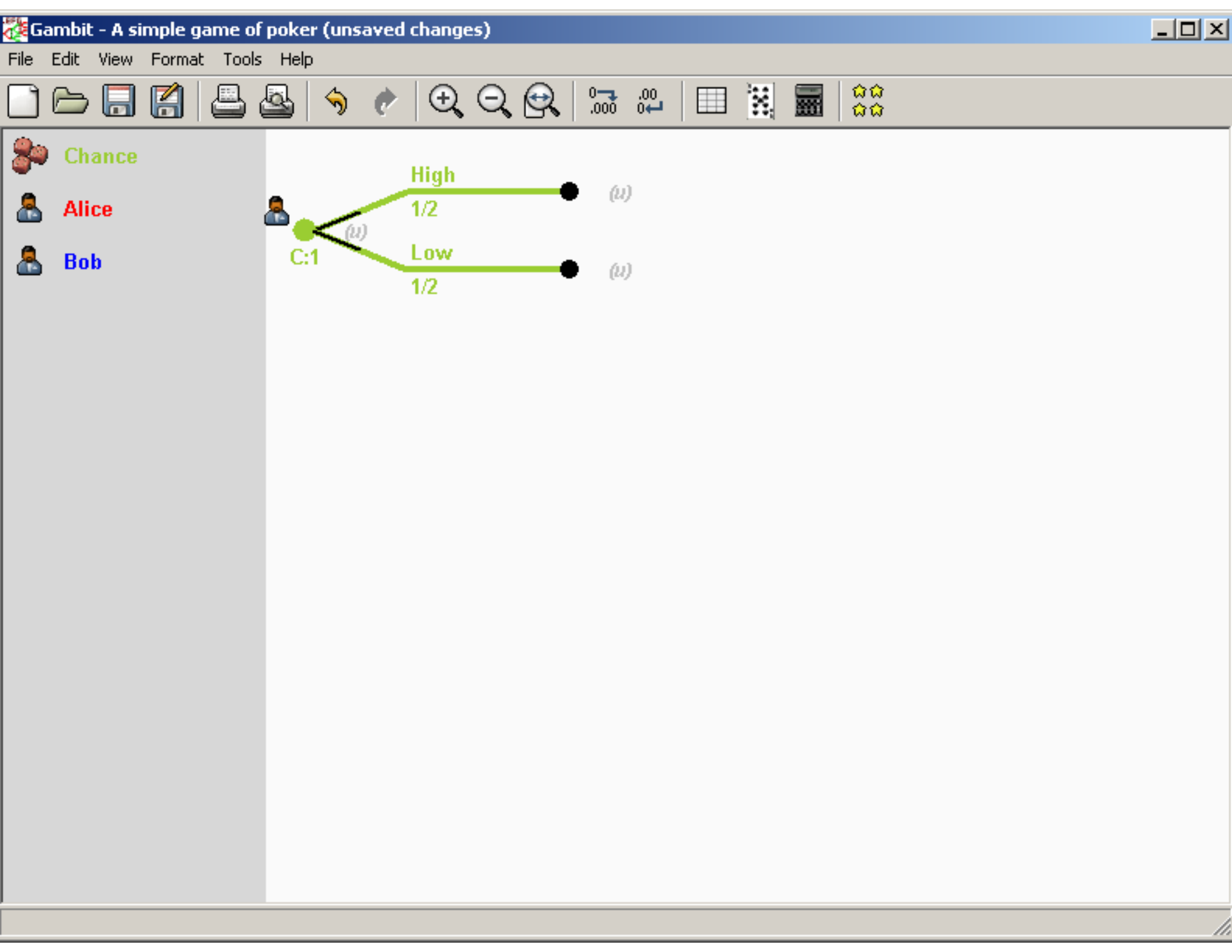

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
1/2
2
(u)
(u)
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
High
1/2
2
Low
1/2
Cancel
OK

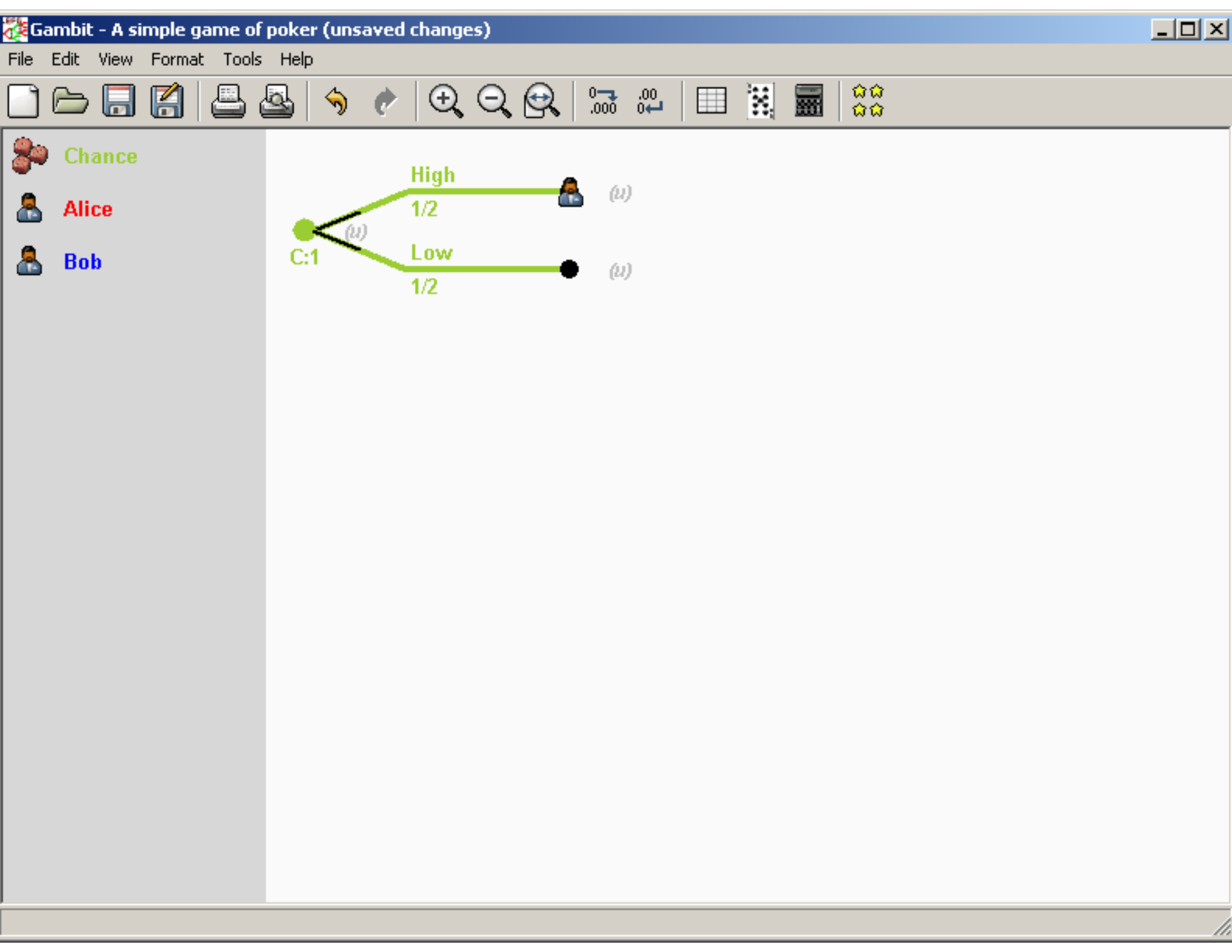

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
1/2
2
(u)
(u)
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
High
1/2
2
Low
1/2
Cancel
OK

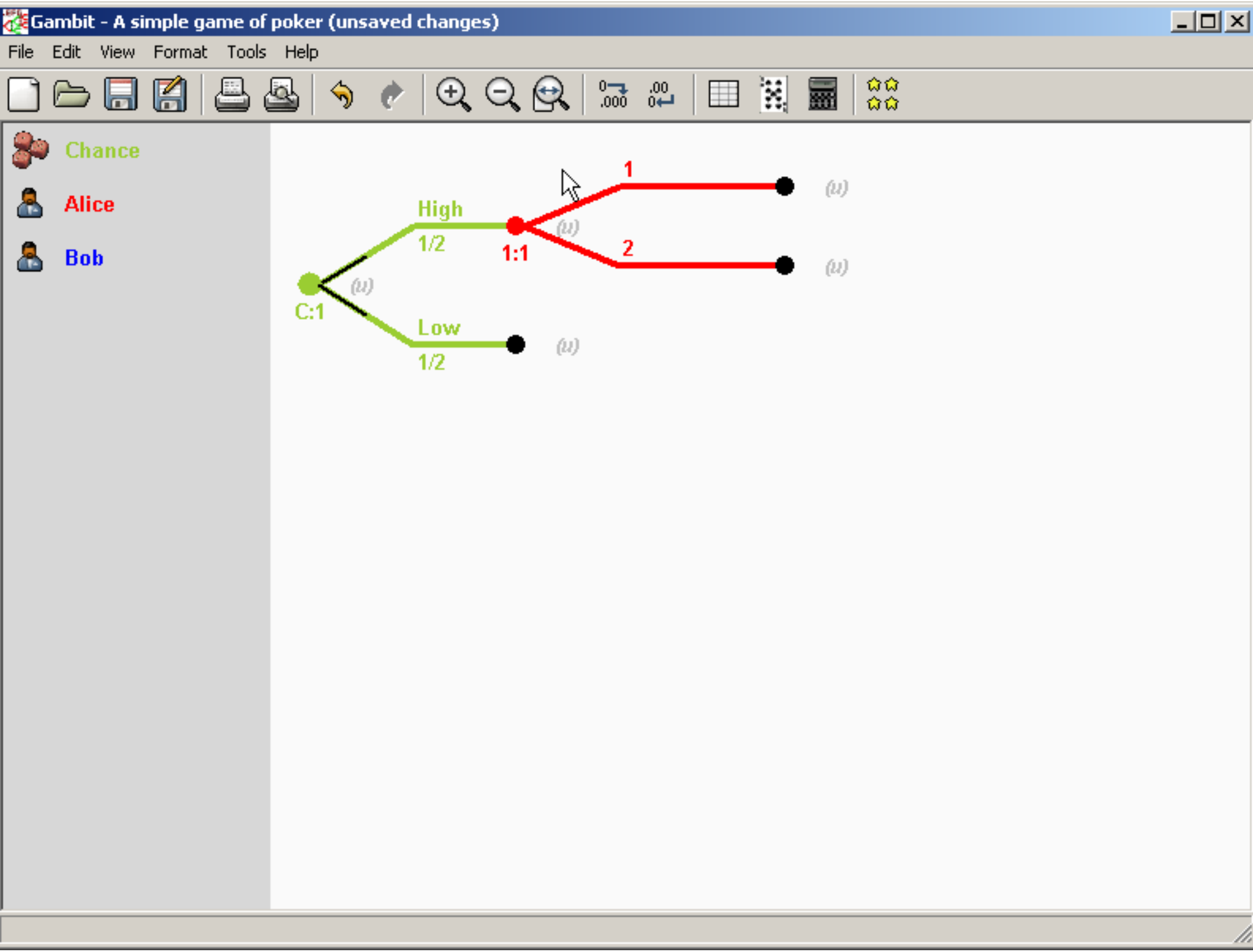

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
High
1/2
Low
1/2
C:1
(u)
(u)
(u)
Continuing with the game, after Alice gets her card, she may either choose to "raise" or "fold." We create this move for Alice, and edit the action labels, the same way the chance move was created, except we drag the player icon from next to Alice's name to the node where we want to create the move.

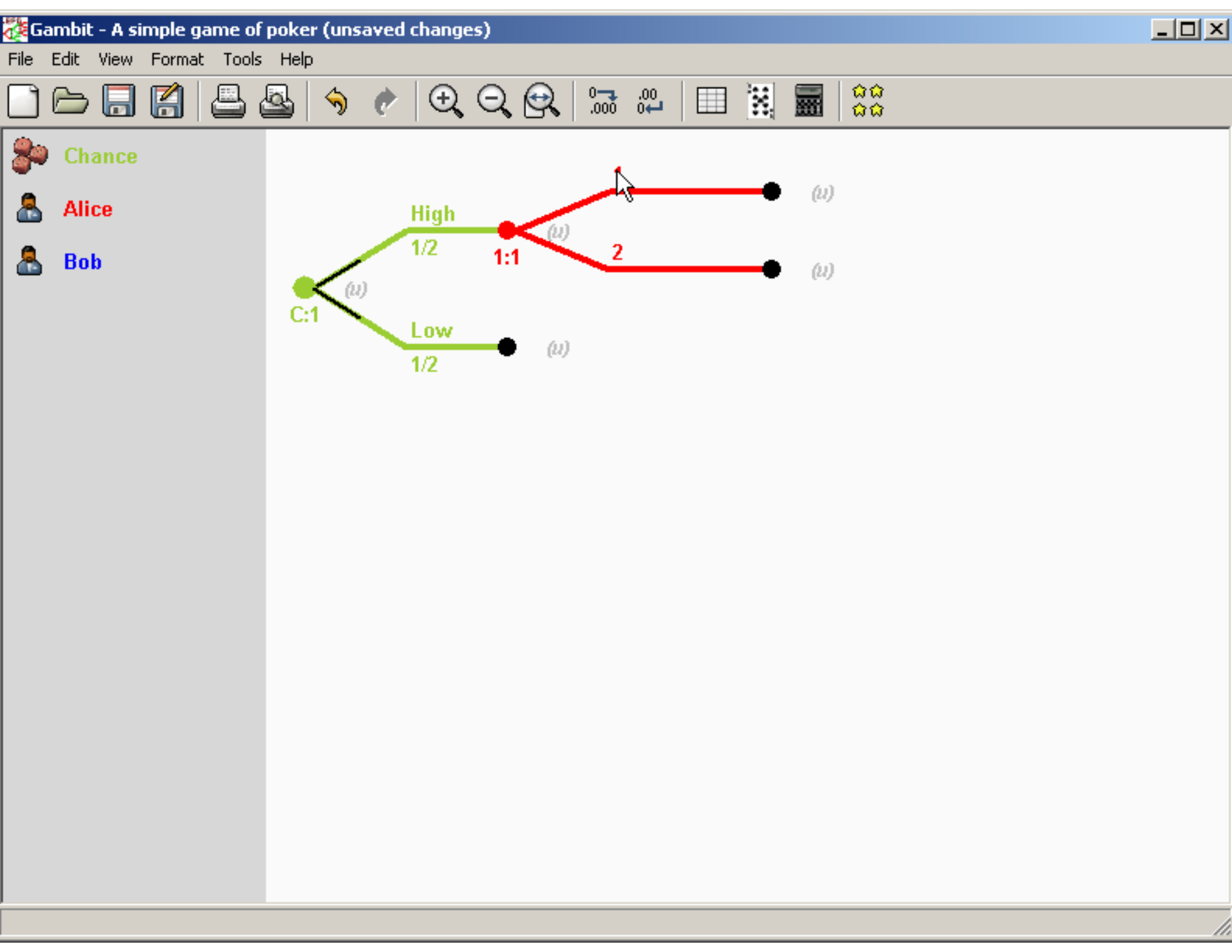

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
High
1/2
(u)
C:1
(u)
Low
1/2
(u)

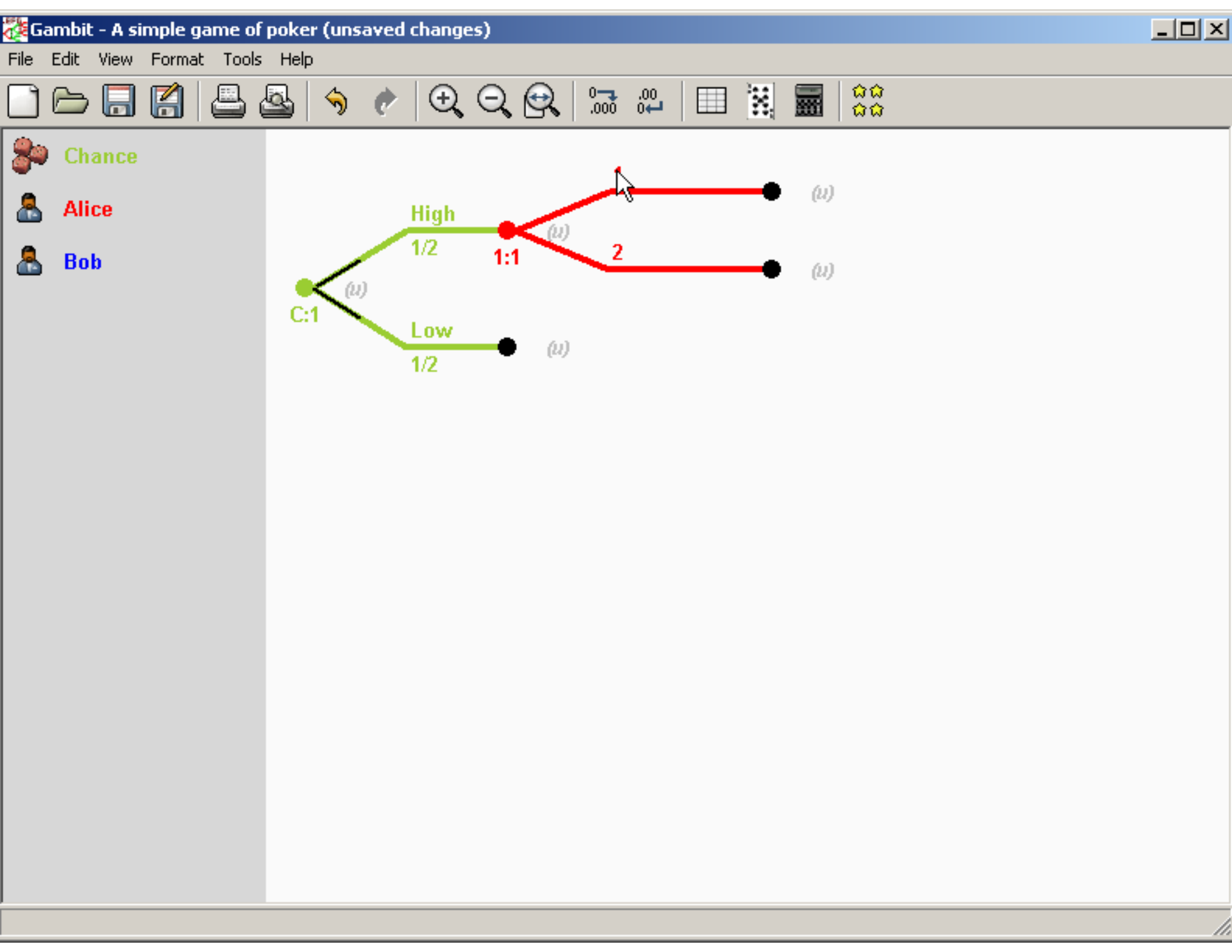

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
High
1/2
(u)
C:1
(u)
Low
1/2
(u)

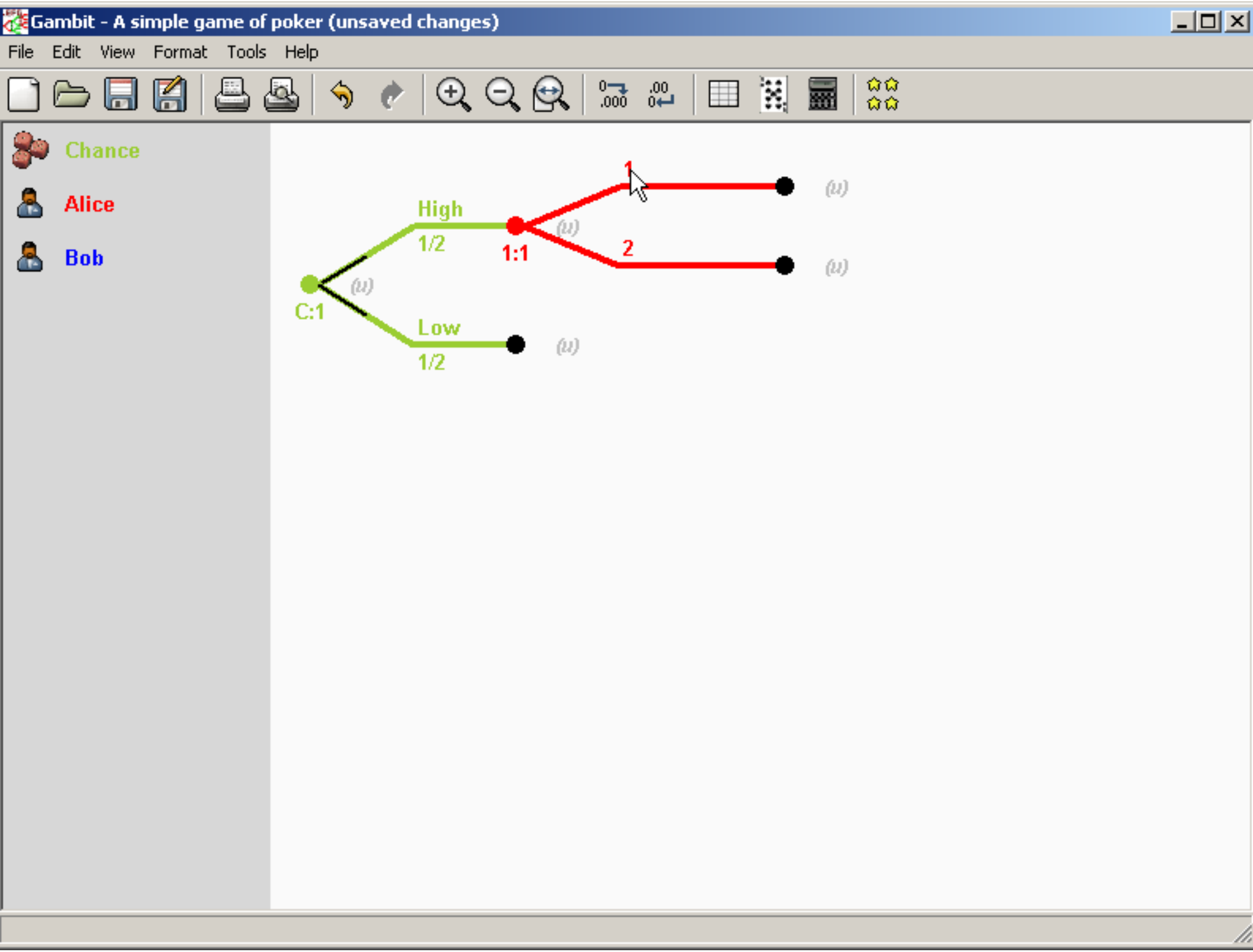

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
High
1/2
(u)
C:1
(u)
Low
1/2
(u)

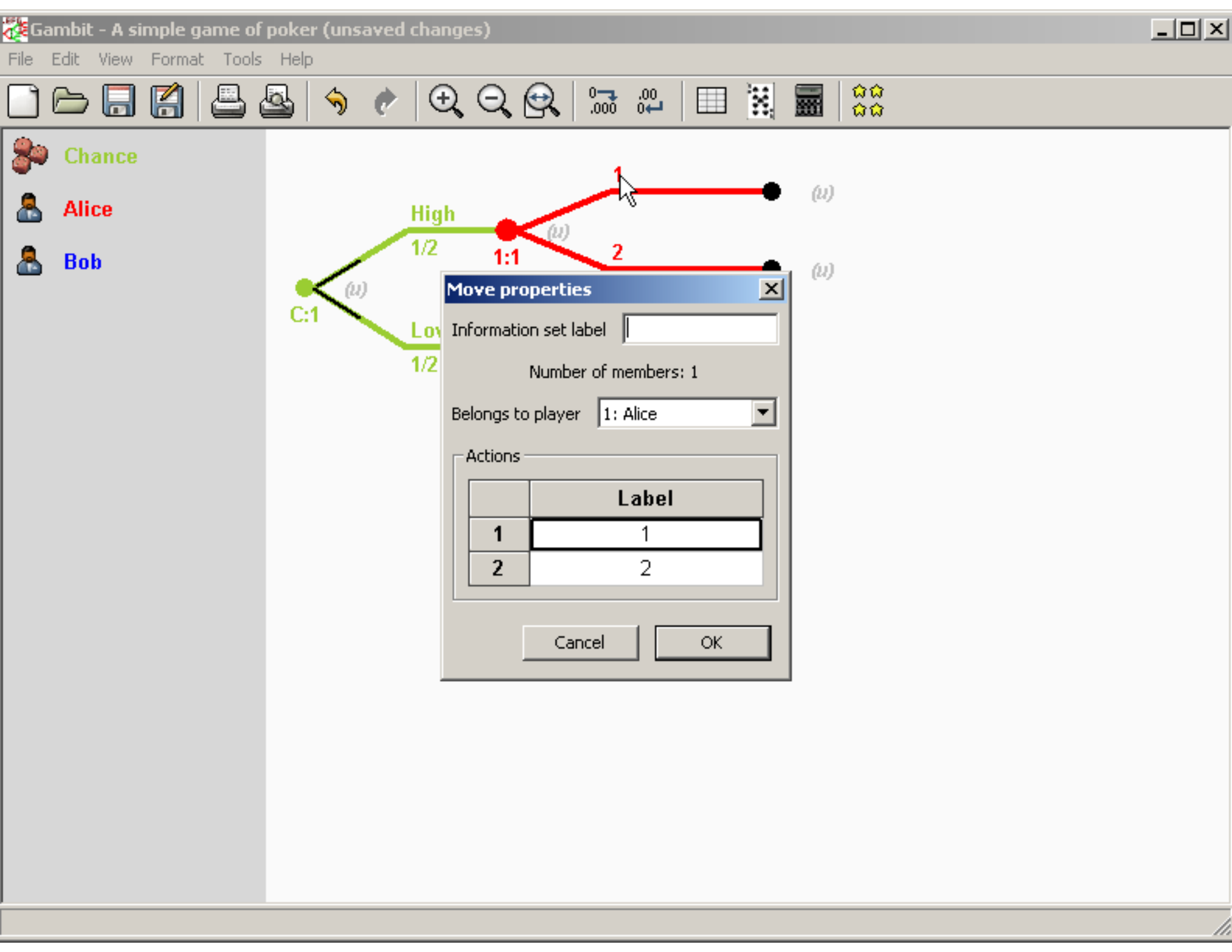

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
High
1/2
(u)
C:1
(u)
Low
1/2
(u)

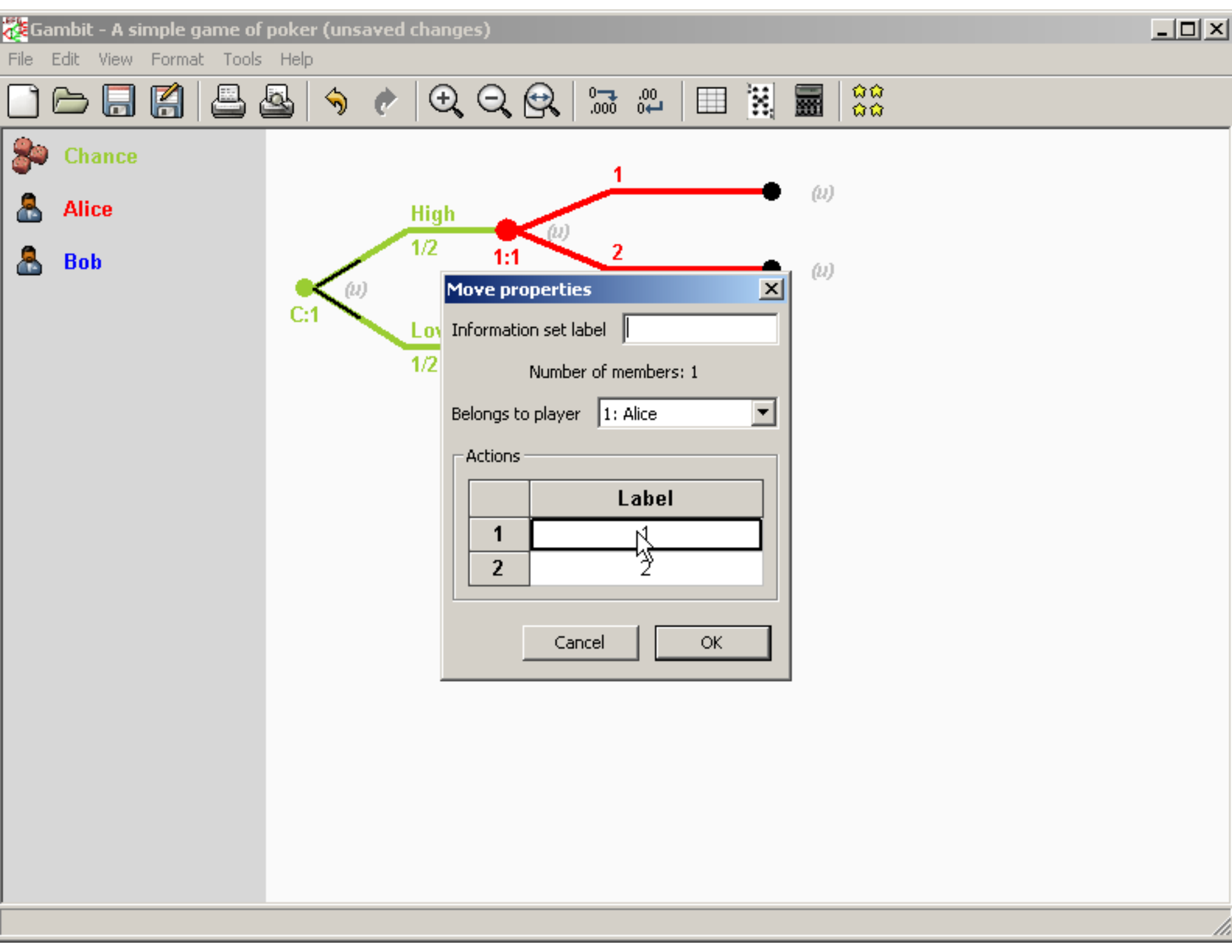

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
1
High
1/2
1:1
2
(u)
(u)
(u)
C:1
(u)
Low
1/2
(u)

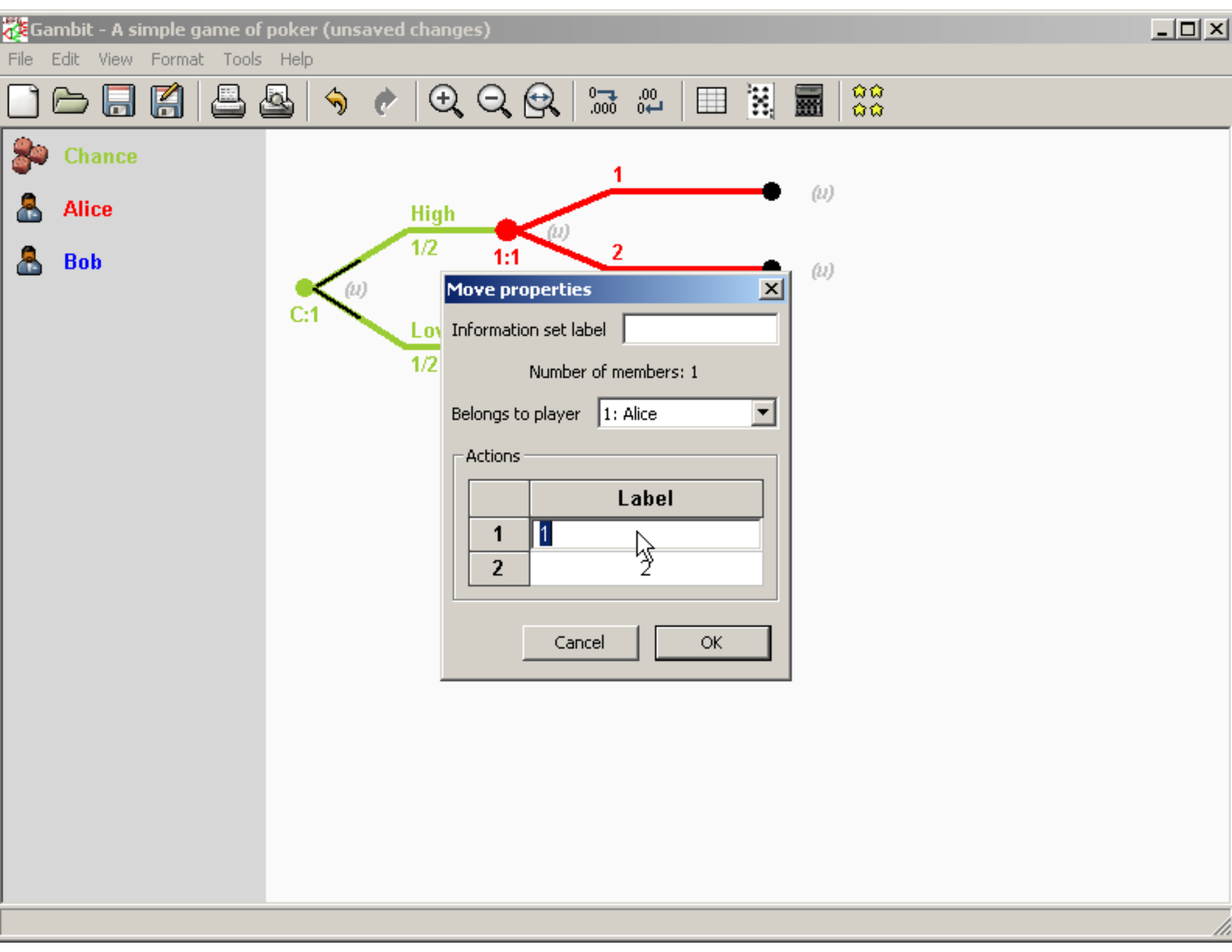

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
High
1/2
1:1
2
(u)
(u)
(u)
C:1
(u)
Low
1/2
(u)

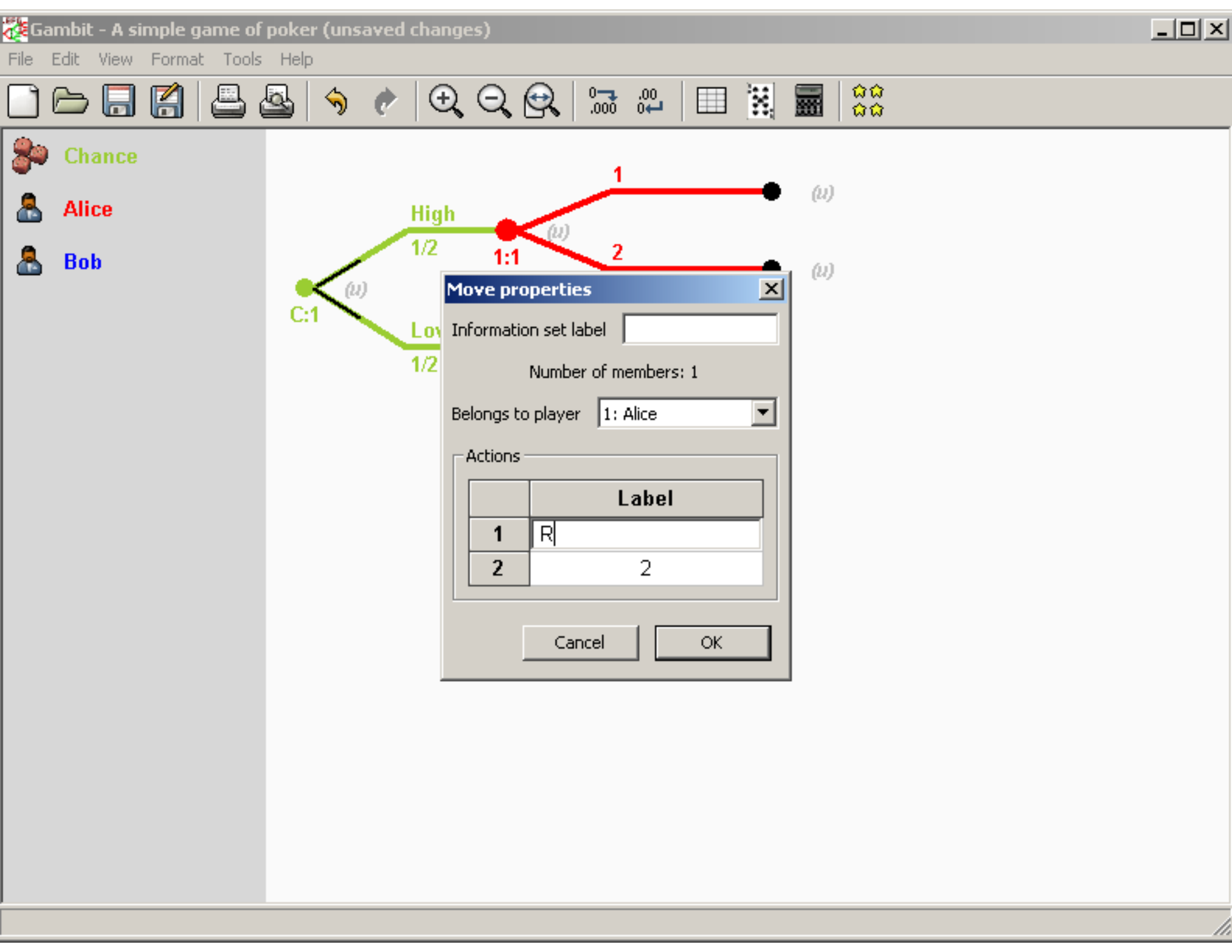

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
High
1/2
1:1
2
C:1
Low
1/2
(u)
(u)
(u)
(u)
(u)

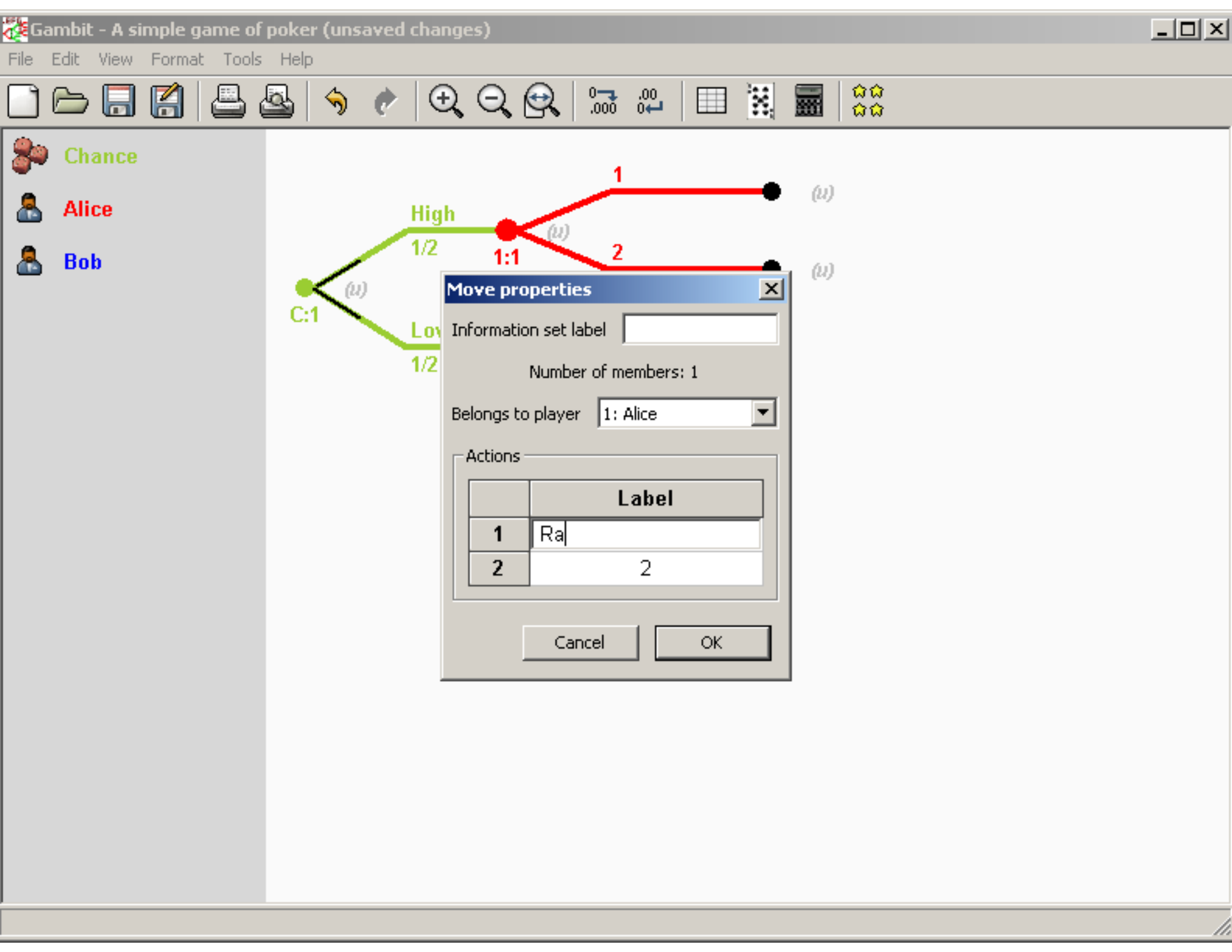

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
1
High
1/2
1:1
2
(u)
(u)
(u)
C:1
(u)
Low
1/2
(u)

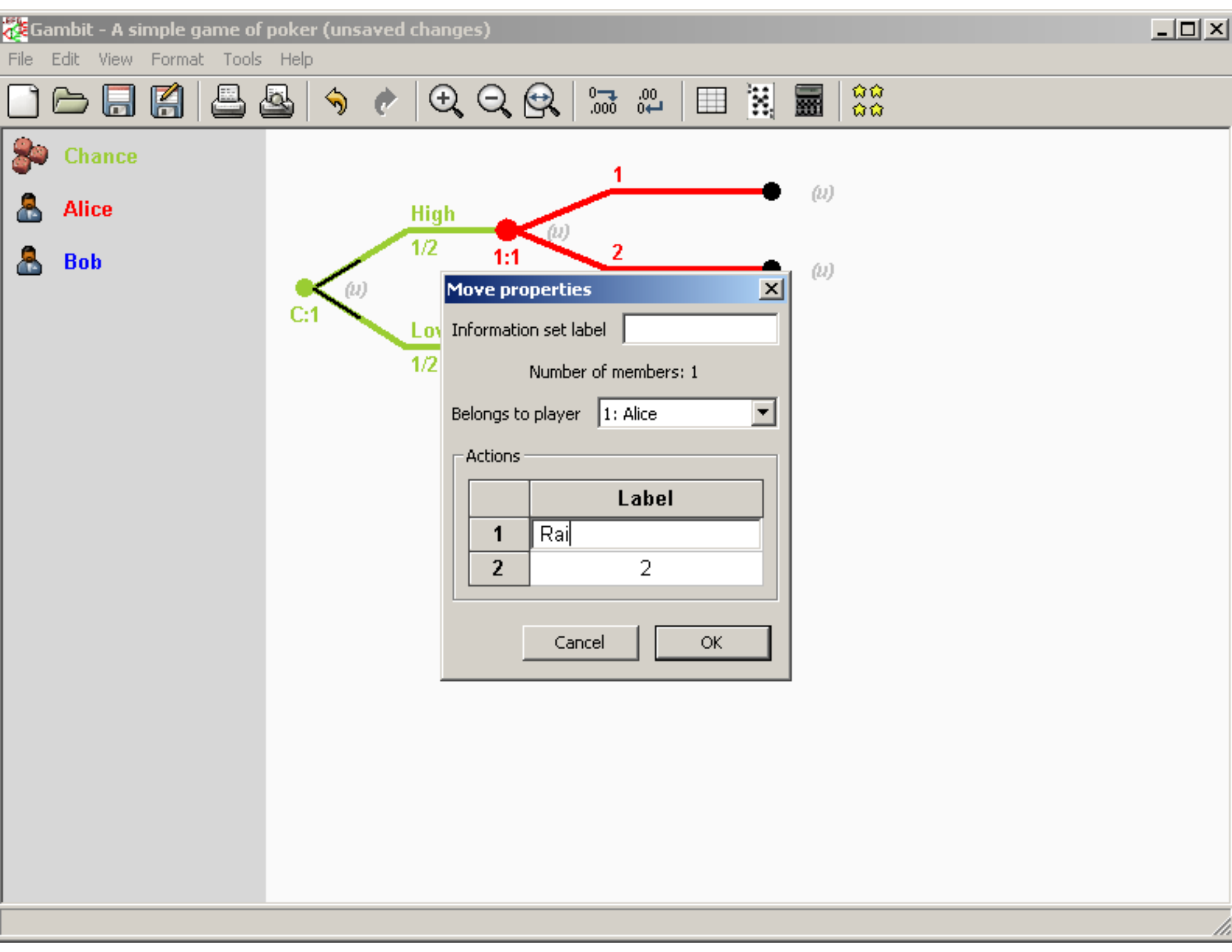

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
High
1/2
1:1
1
2
(u)
(u)
(u)
(u)
C:1
Lov
1/2
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
1
1
2
2
Cancel
OK

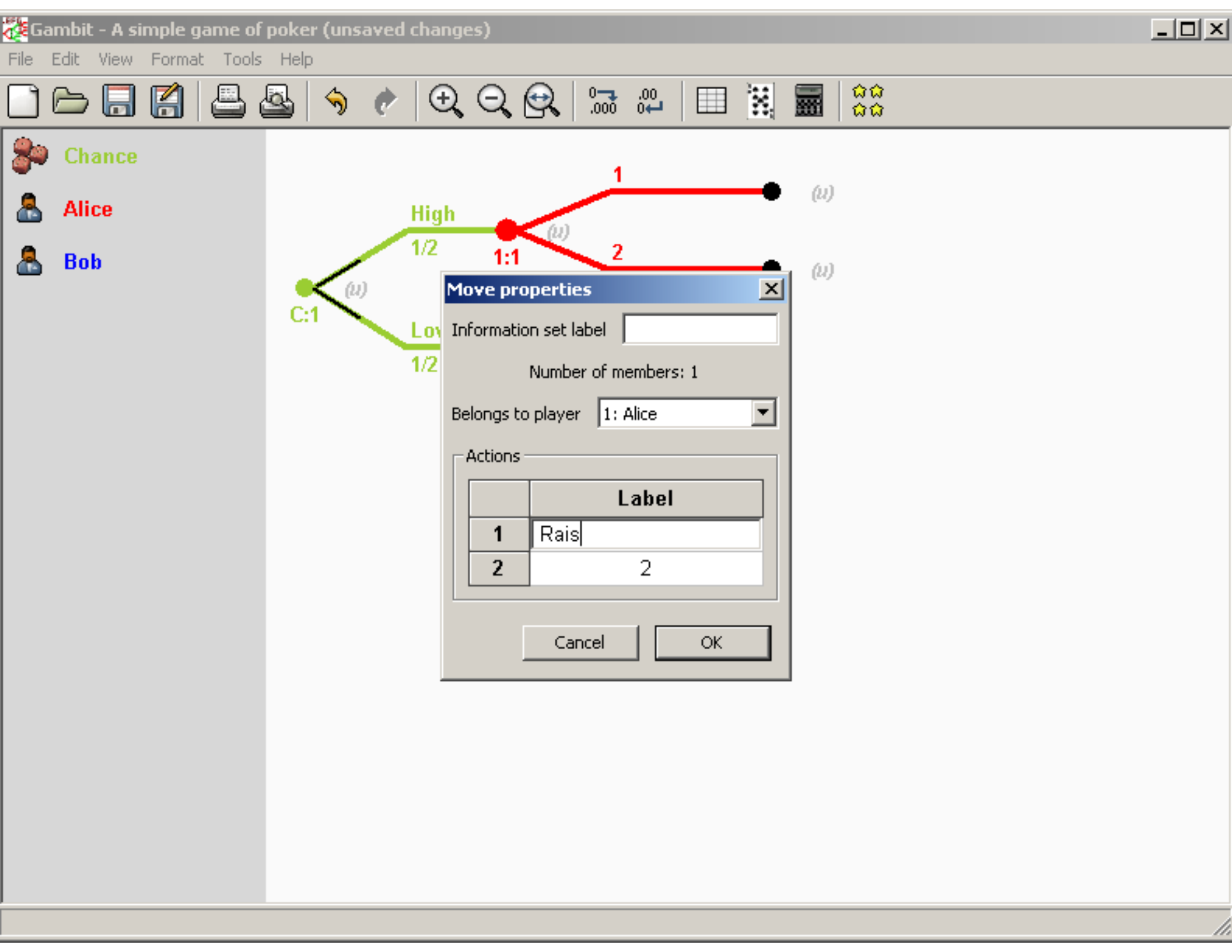

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
High
1/2
1:1
2
(u)
(u)
(u)
C:1
(u)
Lov
1/2
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
1
2
Cancel
OK

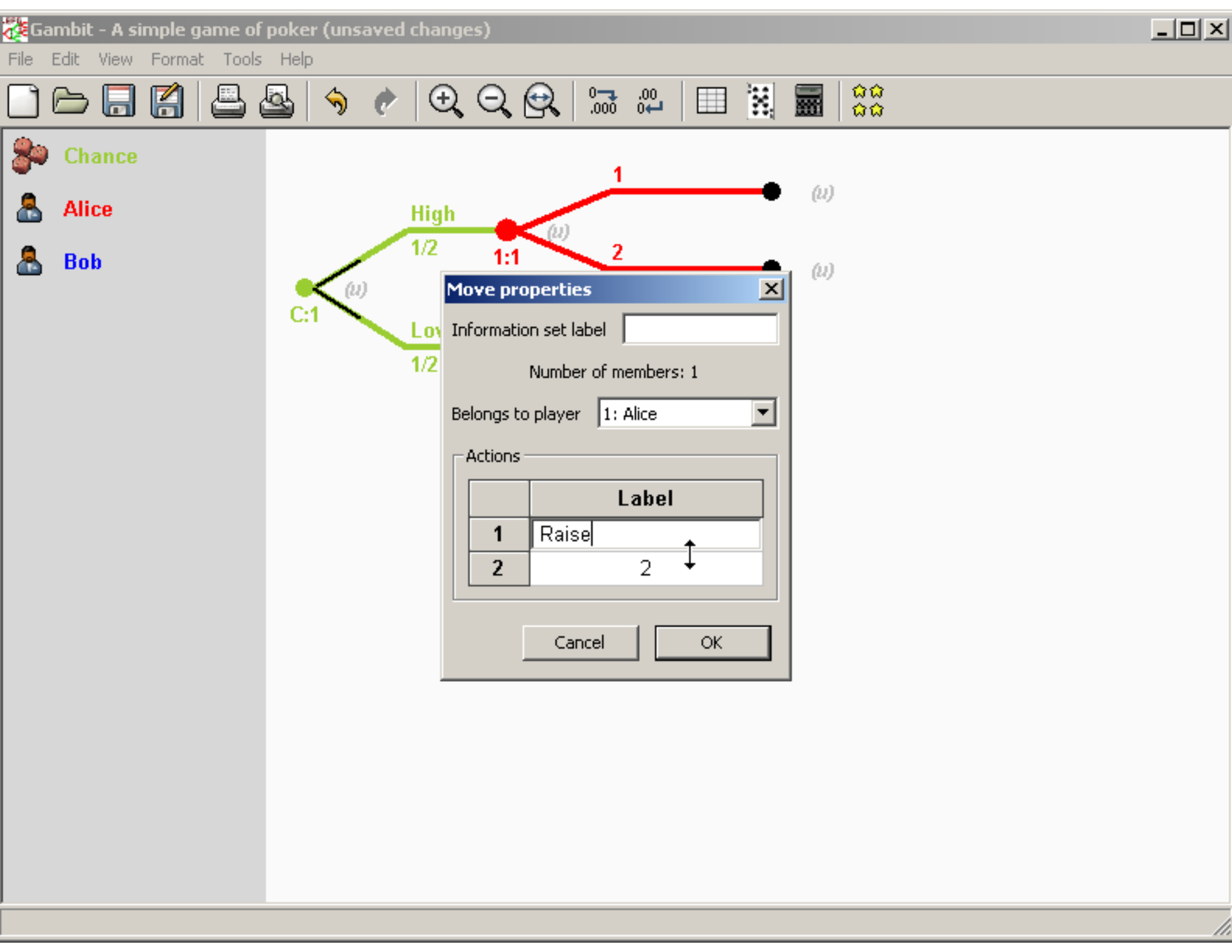

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
High
1/2
1:1
2
(u)
(u)
(u)
(u)
C:1
Lov
1/2
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
1
2
Cancel
OK

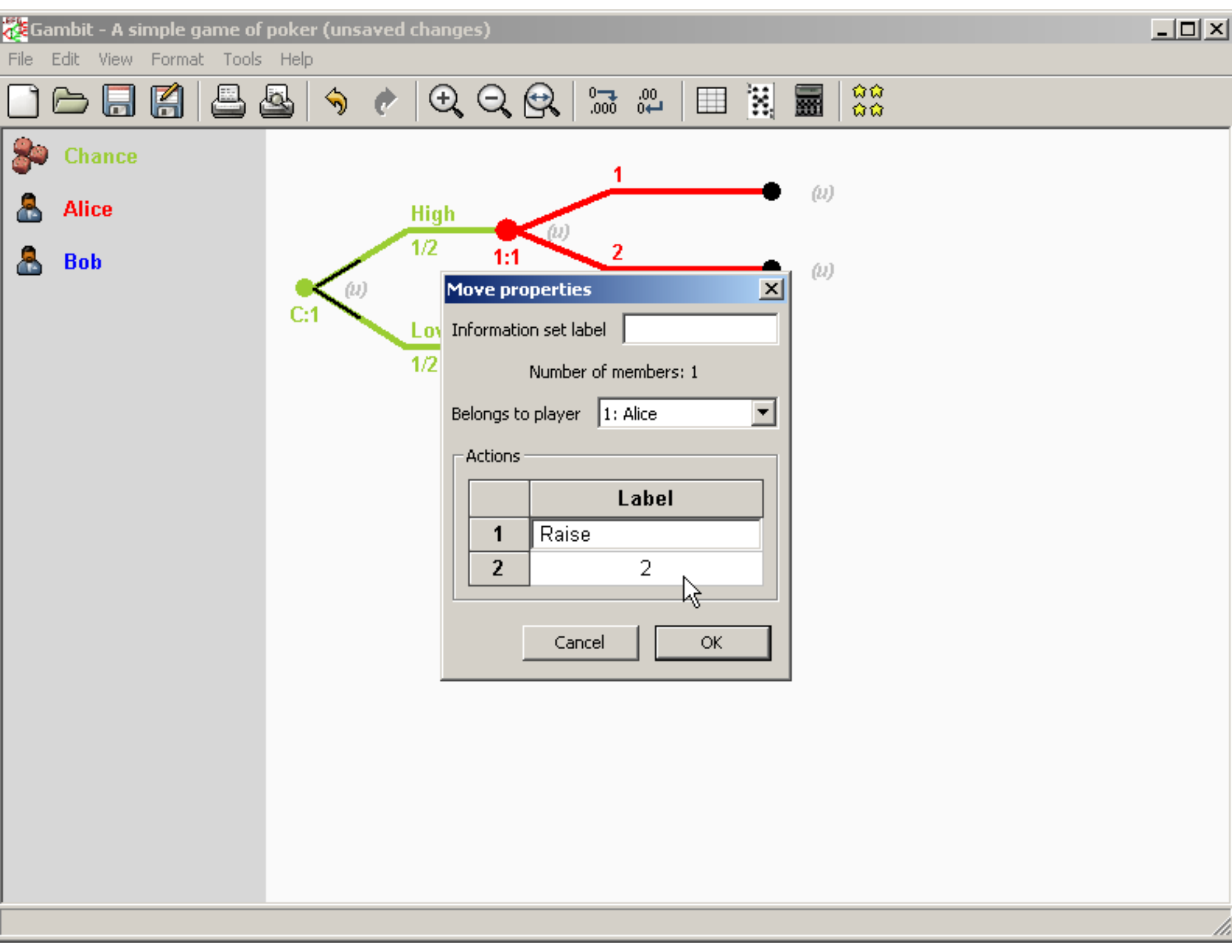

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
High
1/2
1:1
2
(u)
(u)
(u)
C:1
(u)
Lov
1/2
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
1
R
2
2
Cancel
OK

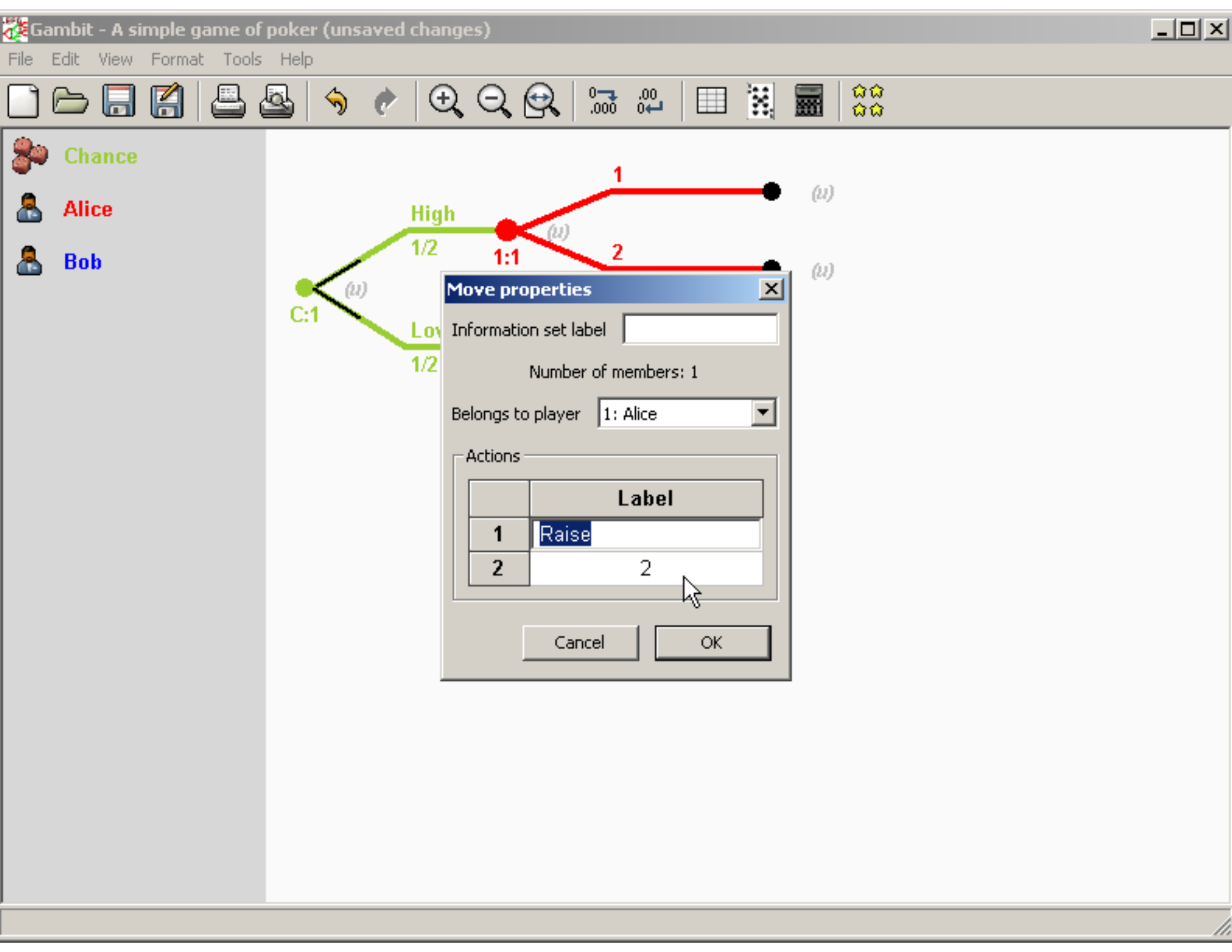

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
High
1/2
1:1
2
(u)
(u)
(u)
C:1
(u)
Lov
1/2
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
1
Ra
2
2
Cancel
OK

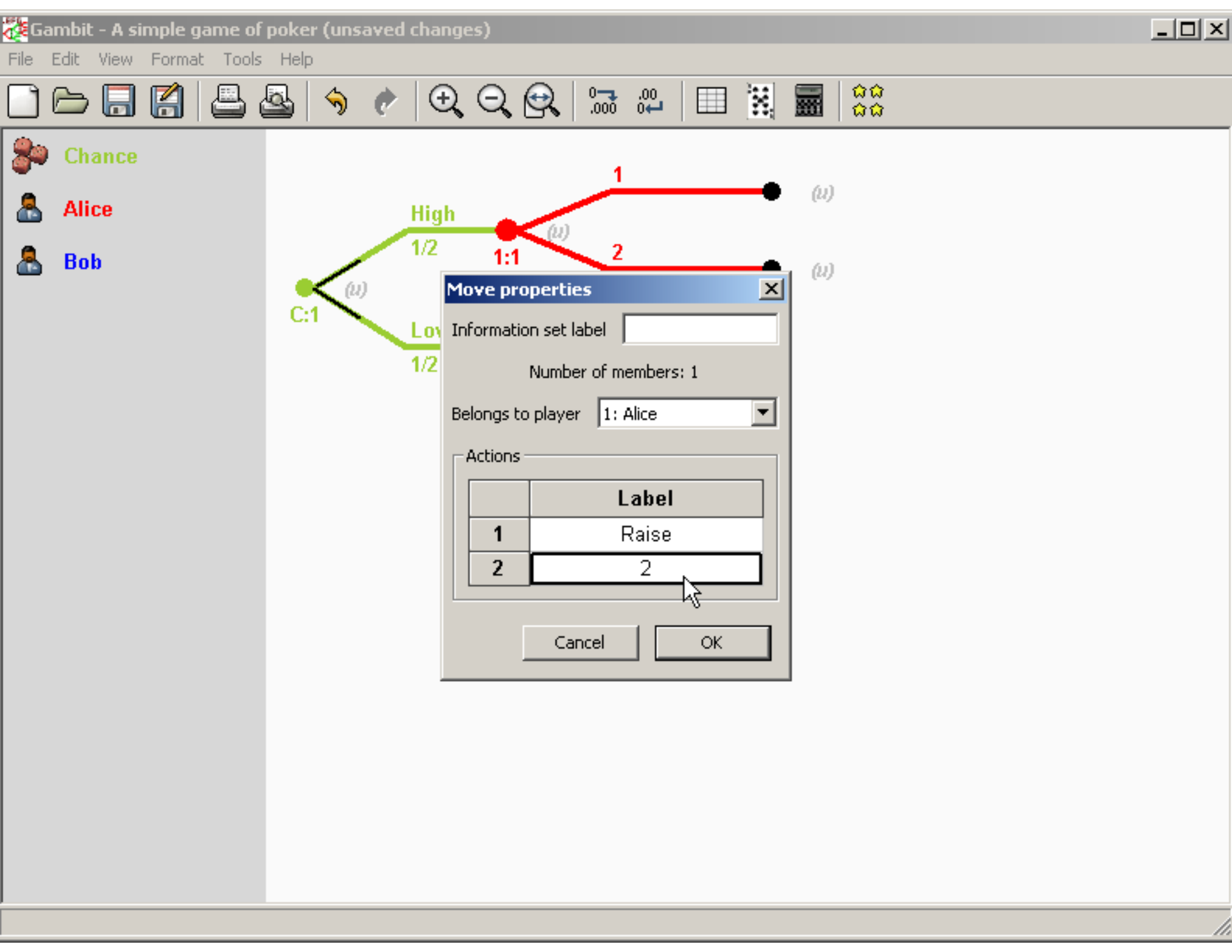

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
High
1/2
1:1
2
(u)
(u)
(u)
C:1
(u)
Lov
1/2
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
1
Rai
2
2
Cancel
OK

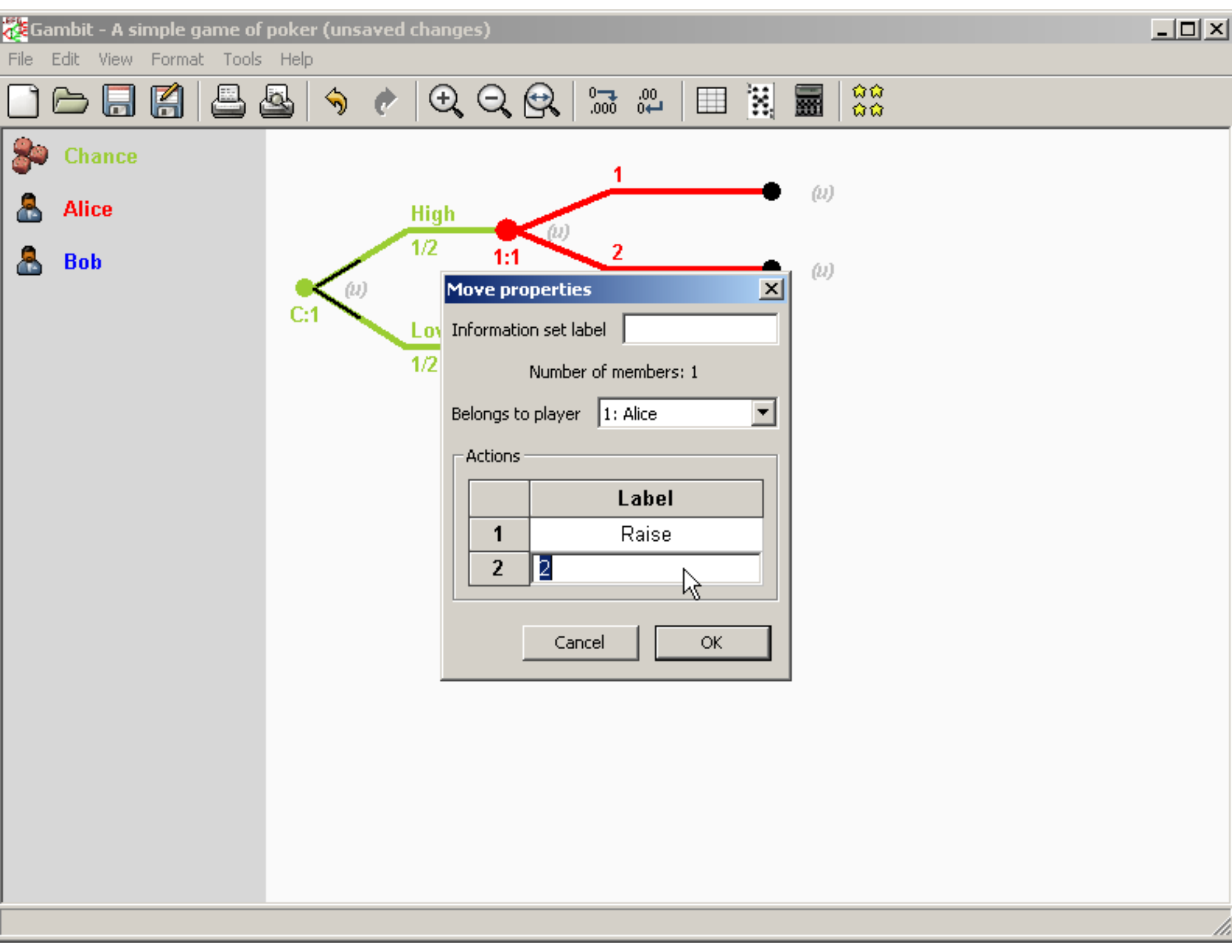

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
High
1/2
1:1
2
(u)
(u)
(u)
C:1
(u)
Lov
1/2
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
1
Rais
2
2
Cancel
OK

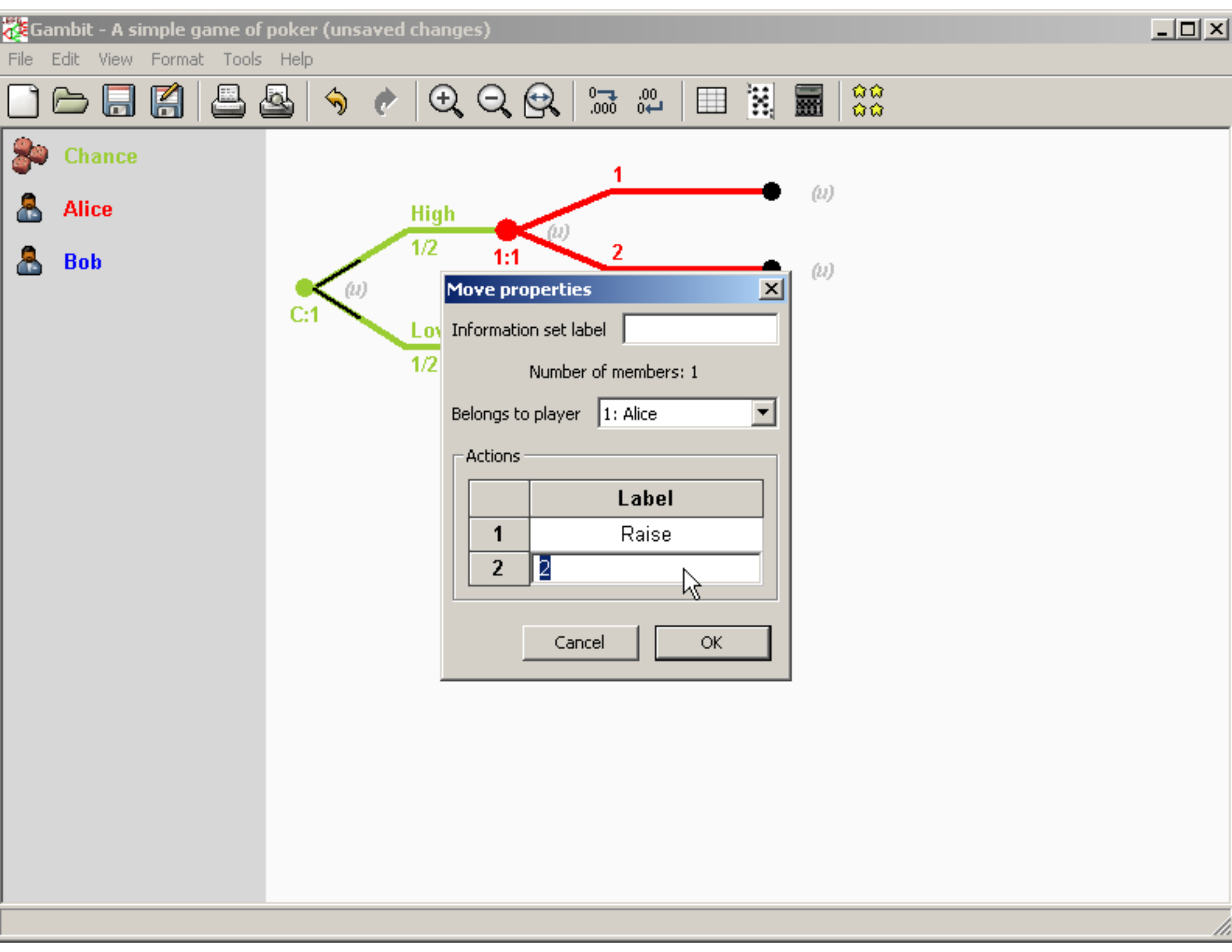

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
High
1/2
1:1
2
(u)
(u)
(u)
(u)
C:1
Lov
1/2
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
1
Raise
2
2
Cancel
OK

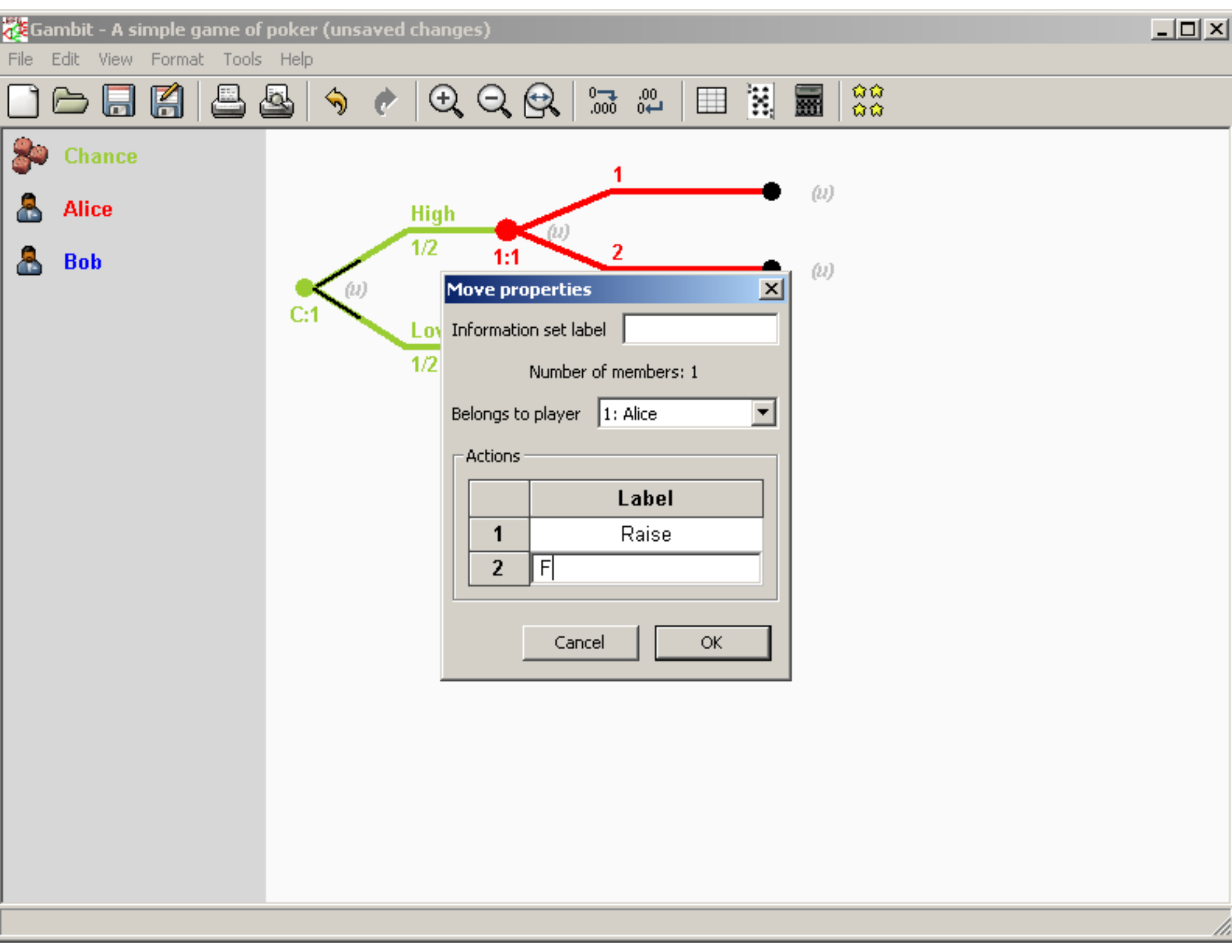

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
High
1/2
1:1
2
(u)
(u)
(u)
(u)
C:1
Lov
1/2
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
1
Raise
2
2
Cancel
OK

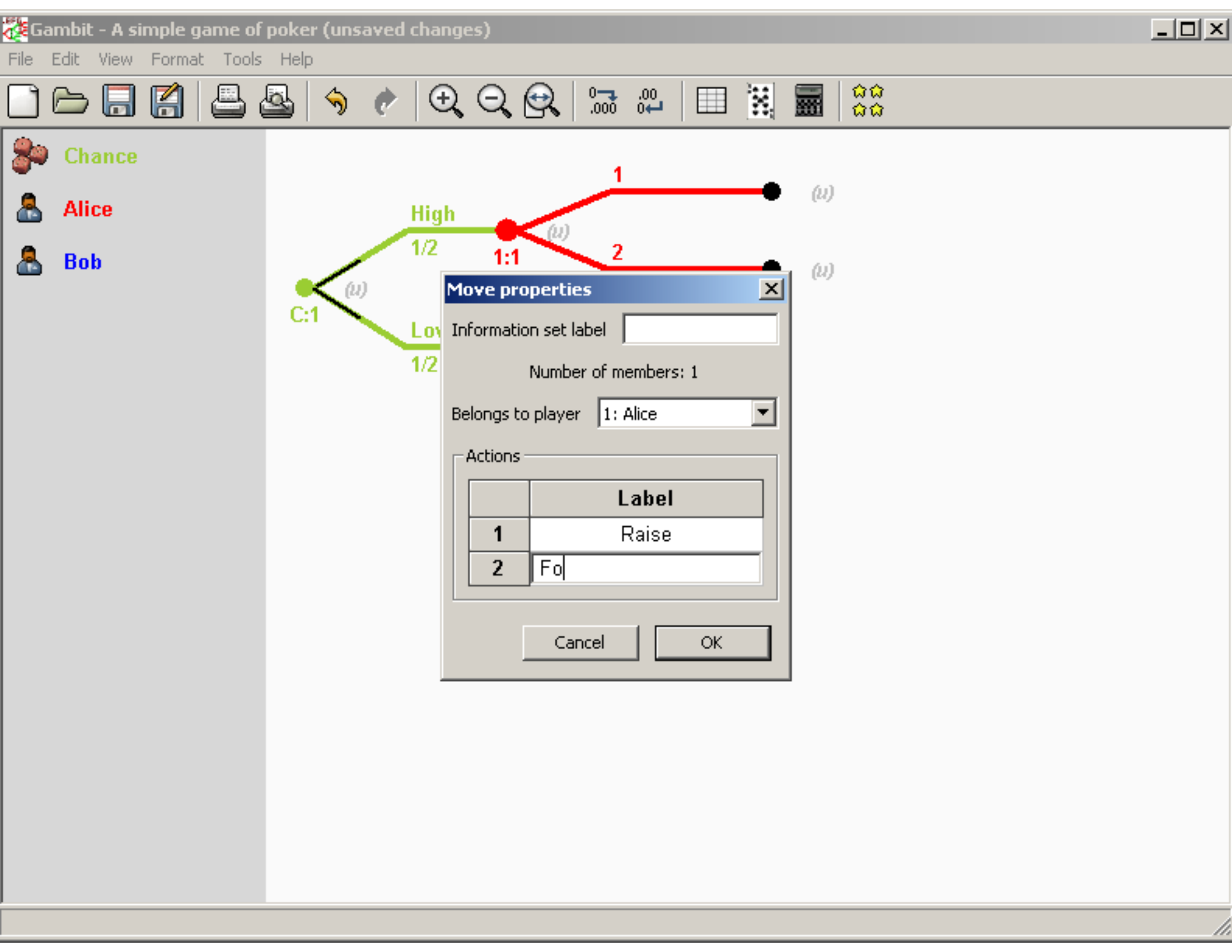

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
High
1/2
1:1
2
(u)
(u)
(u)
(u)
C:1
Lov
1/2
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
1
Raise
2
2
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
High
1/2
1:1
2
(u)
(u)
(u)
C:1
(u)
Lov
1/2
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
1
Raise
2
2
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
High
1/2
1:1
1
2
(u)
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
1
Raise
2
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
High
1/2
1:1
2
(u)
(u)
(u)
C:1
(u)
Lov
1/2
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
1
Raise
2
2
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
High
1/2
1:1
2
(u)
(u)
(u)
C:1
(u)
Lov
1/2
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
1
Raise
2
F
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
High
1/2
1:1
2
(u)
(u)
(u)
(u)
C:1
Lov
1/2
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
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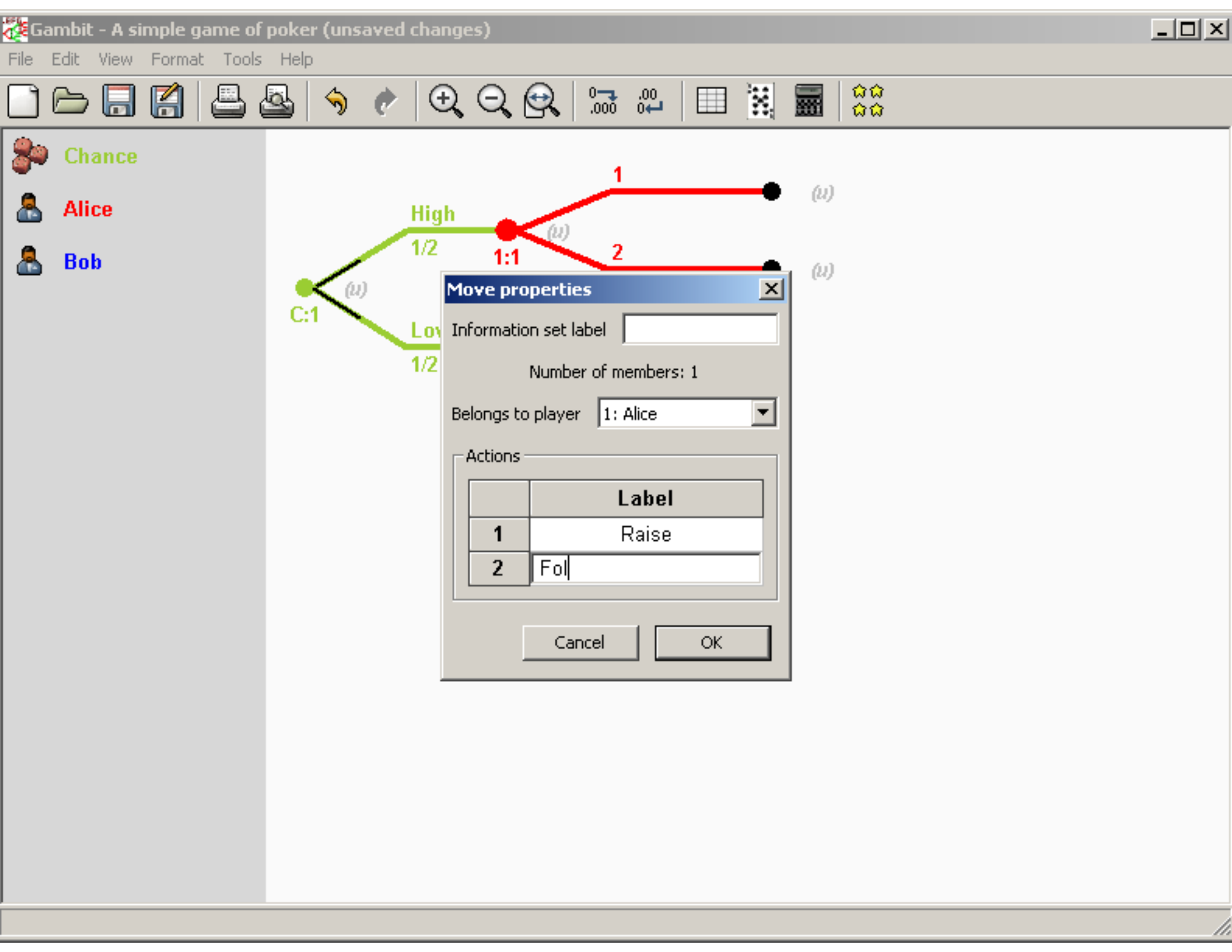
Raise
2
Fo
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
1
High
1/2
1:1
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(u)
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C:1
Lov
1/2
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
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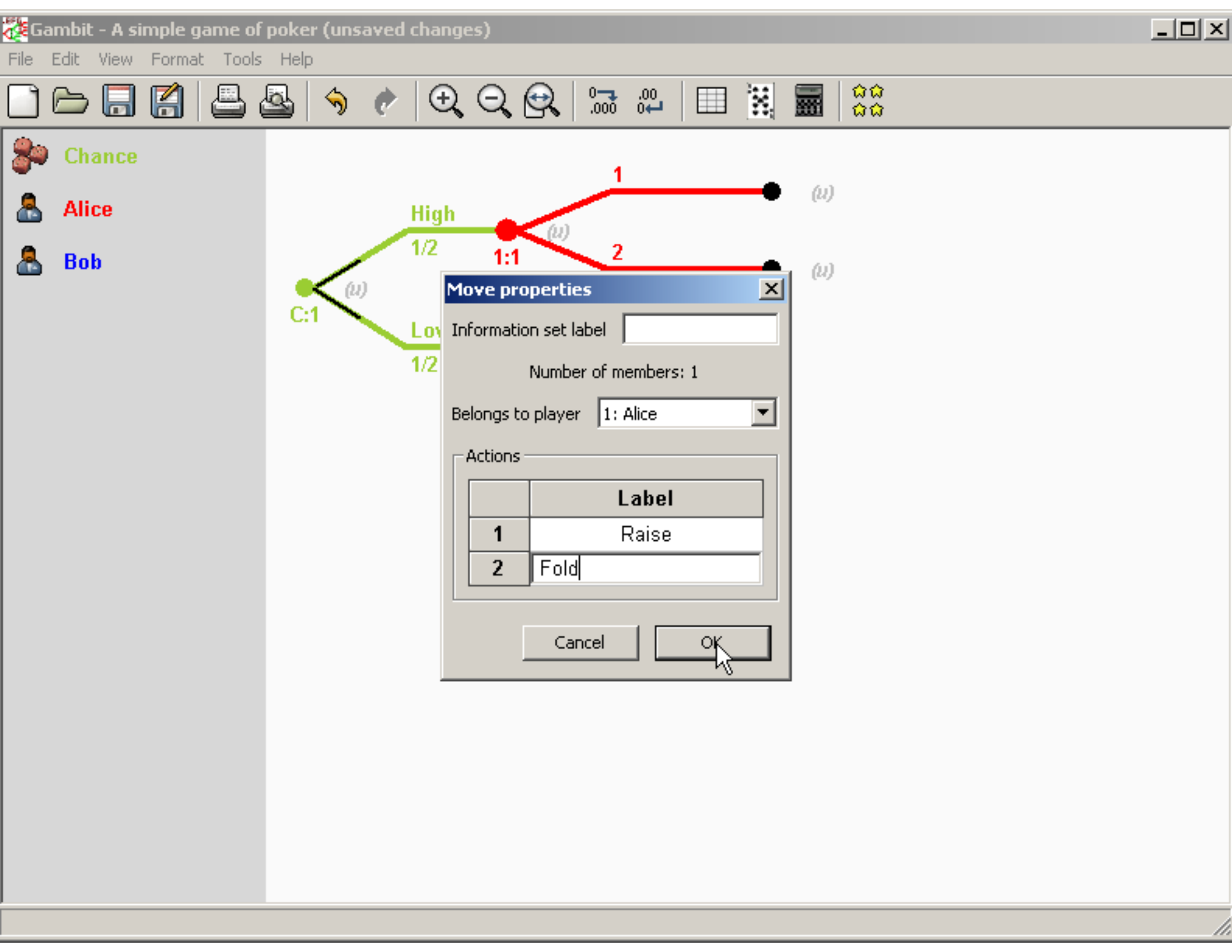
Raise
2
Fol
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
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High
1/2
1:1
2
(u)
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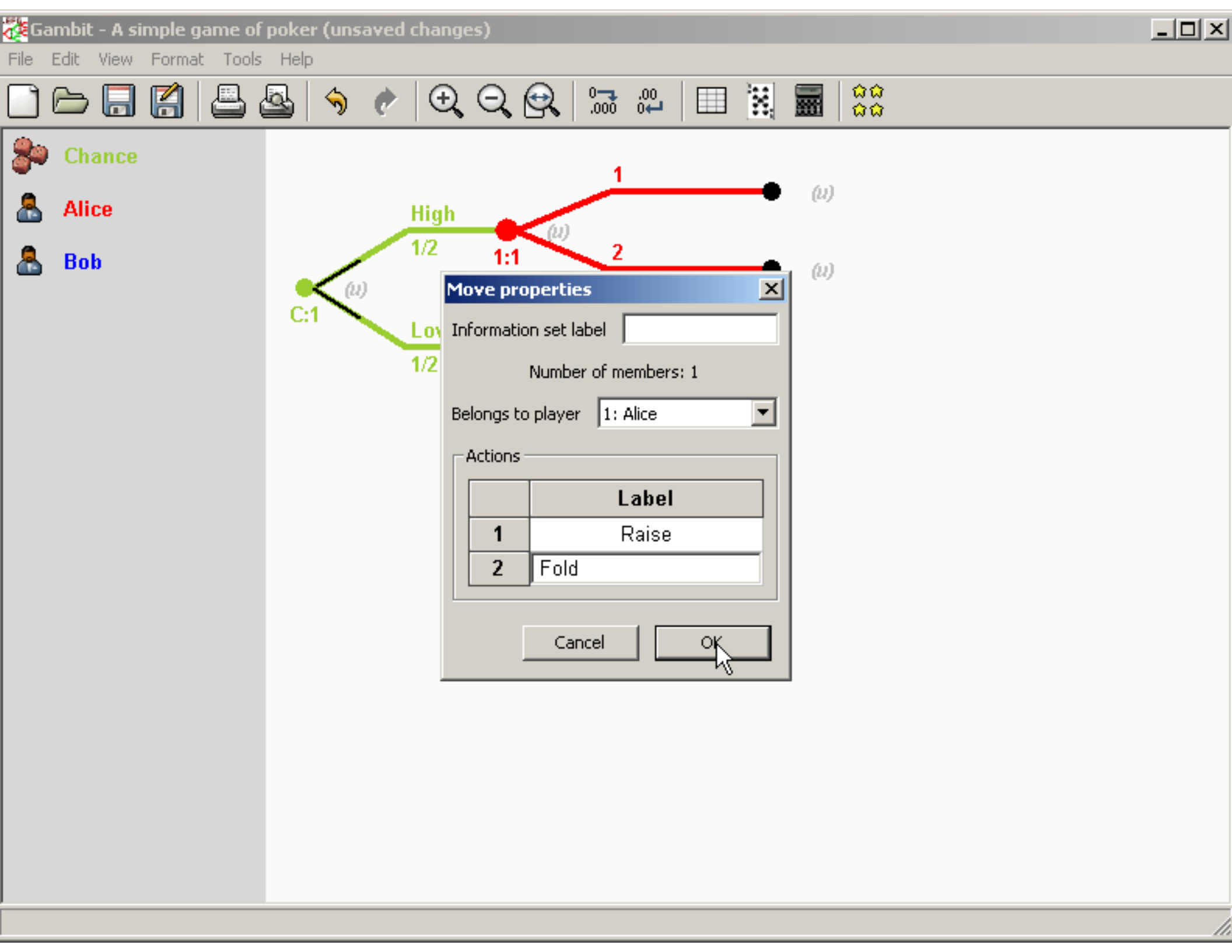
(u)
(u)
C:1
Lov
1/2
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
1
Raise
2
Fold
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
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High
1/2
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(u)
C:1
(u)
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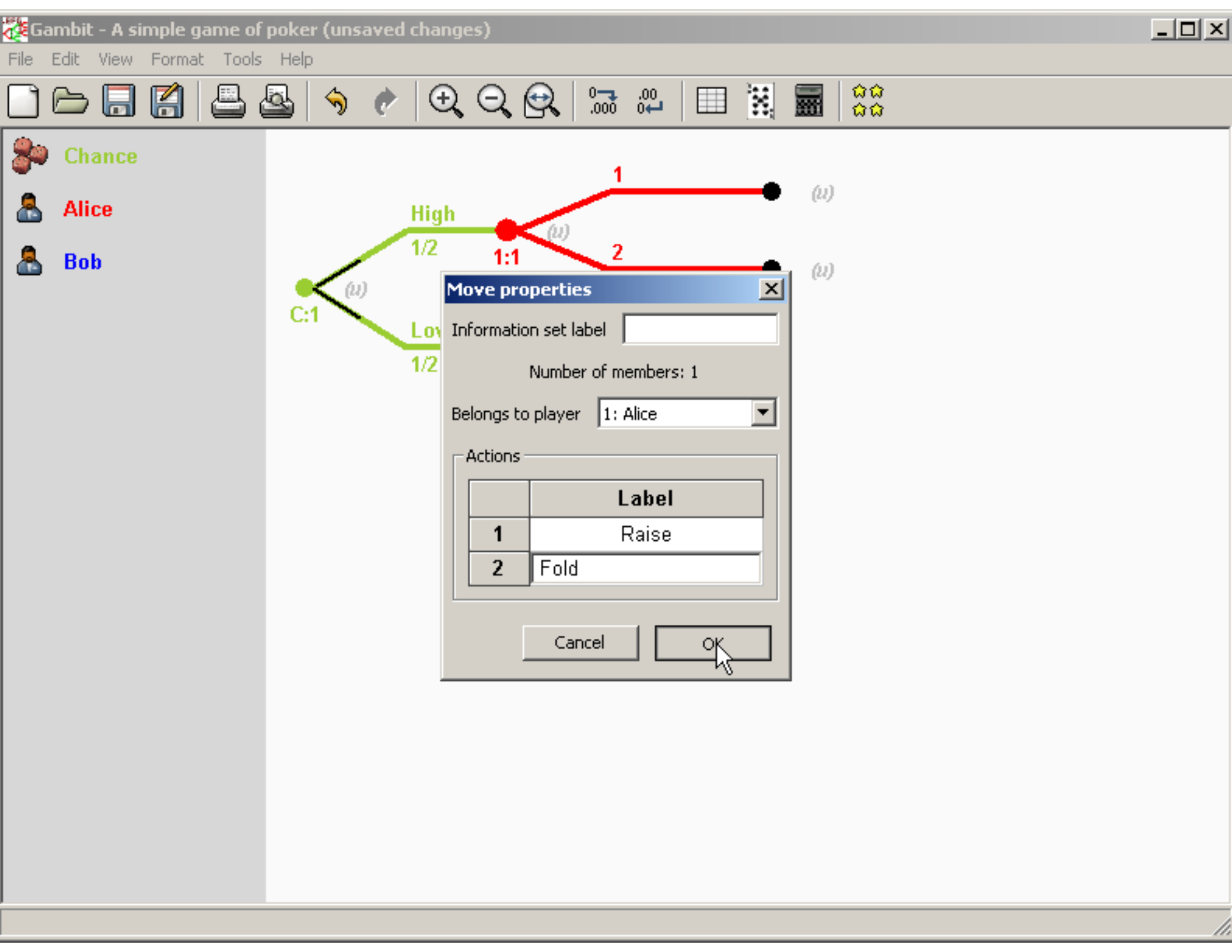
Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
1
Raise
2
Fold
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
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High
1/2
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C:1
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Move properties
Information set label
Number of members: 1
Belongs to player
1: Alice
Actions
Label
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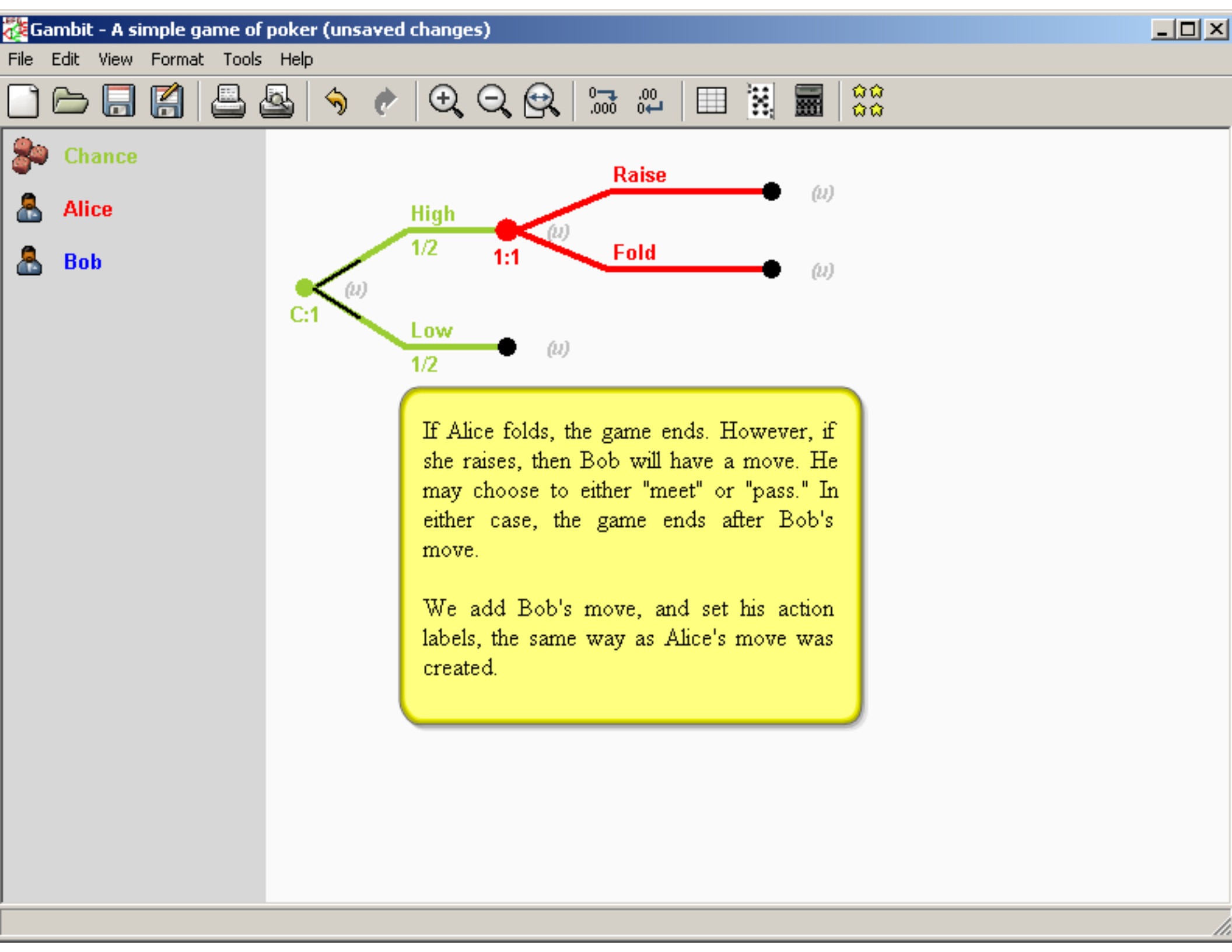
Raise
2
Fold
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Raise
High
1/2
1:1
Fold
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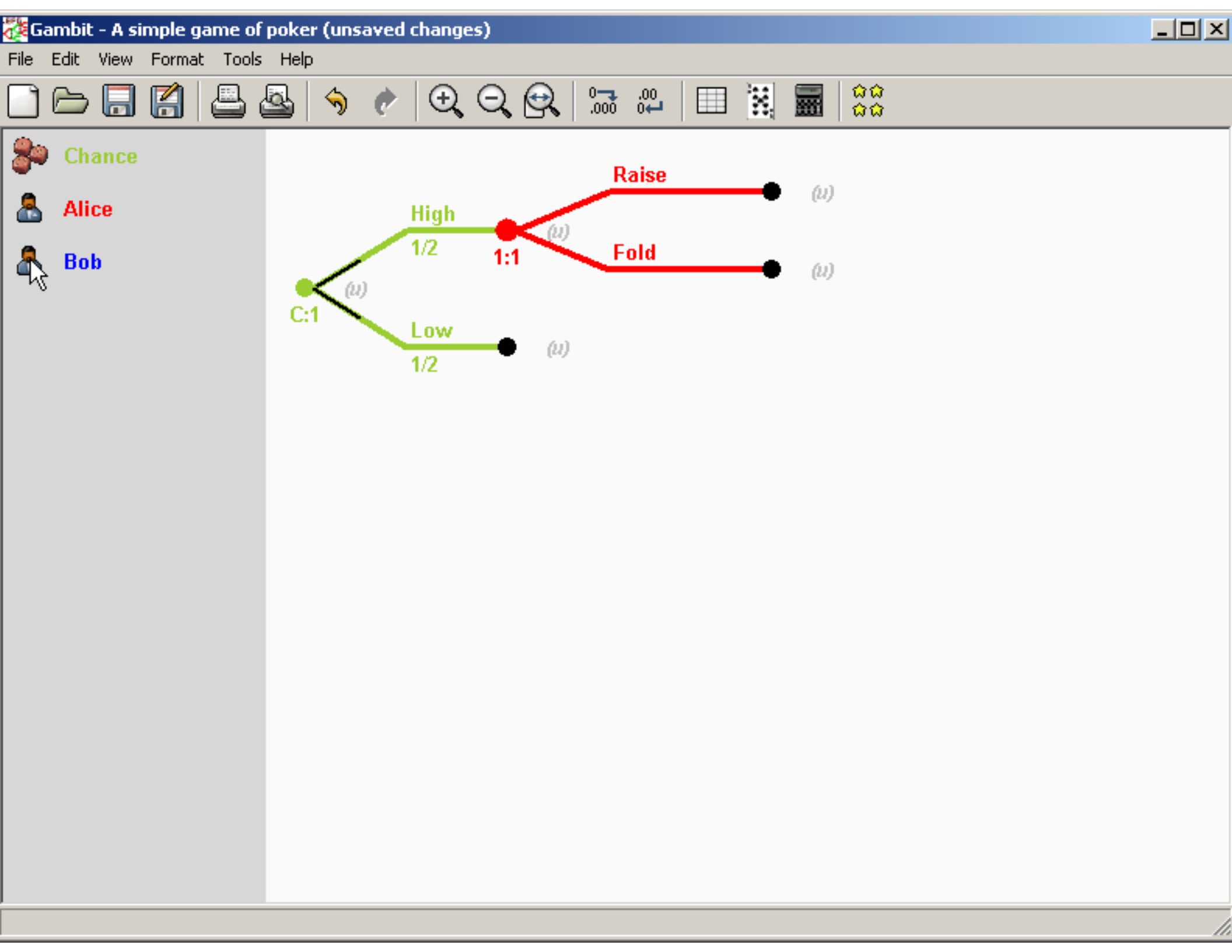
(u)
C:1
(u)
Low
1/2
(u)
If Alice folds, the game ends. However, if she raises, then Bob will have a move. He may choose to either "meet" or "pass." In either case, the game ends after Bob's move.
We add Bob's move, and set his action labels, the same way as Alice's move was created.


Gambit - A simple game of poker (unsaved changes)
File
Edit
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Tools
Help
Chance
Alice
Bob
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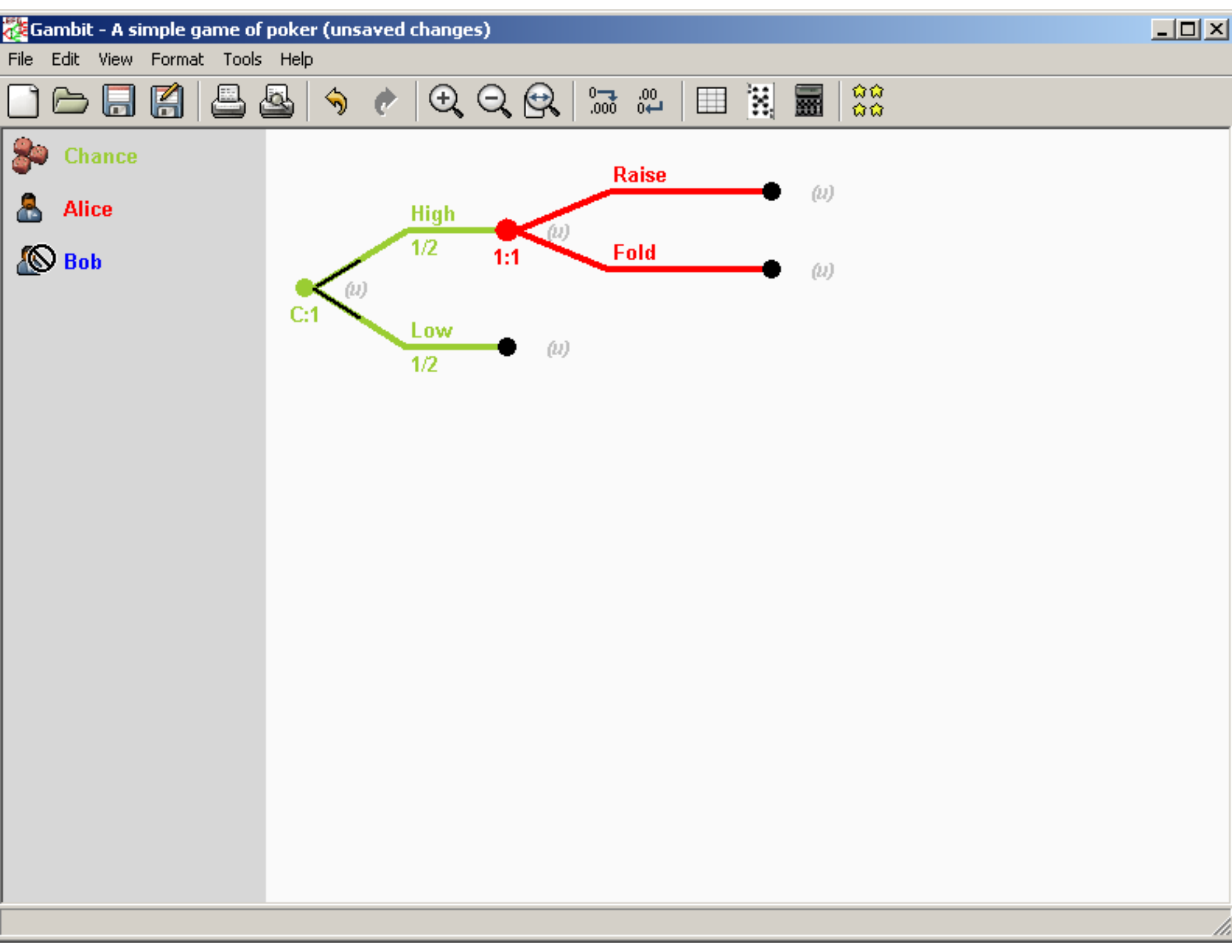
Gambit - A simple game of poker (unsaved changes)
File
Edit
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Tools
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Chance
Alice
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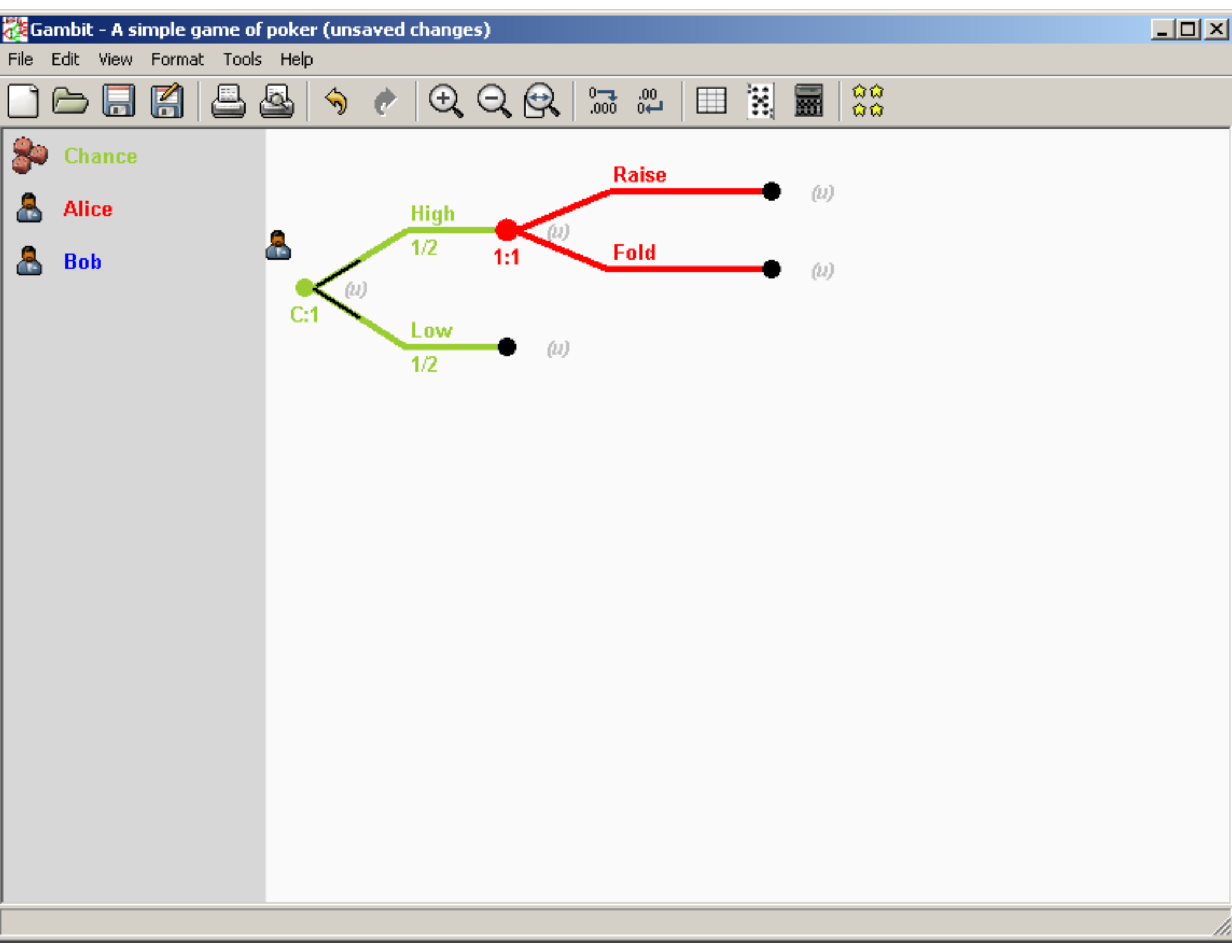
Gambit - A simple game of poker (unsaved changes)
File
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Tools
Help
Chance
Alice
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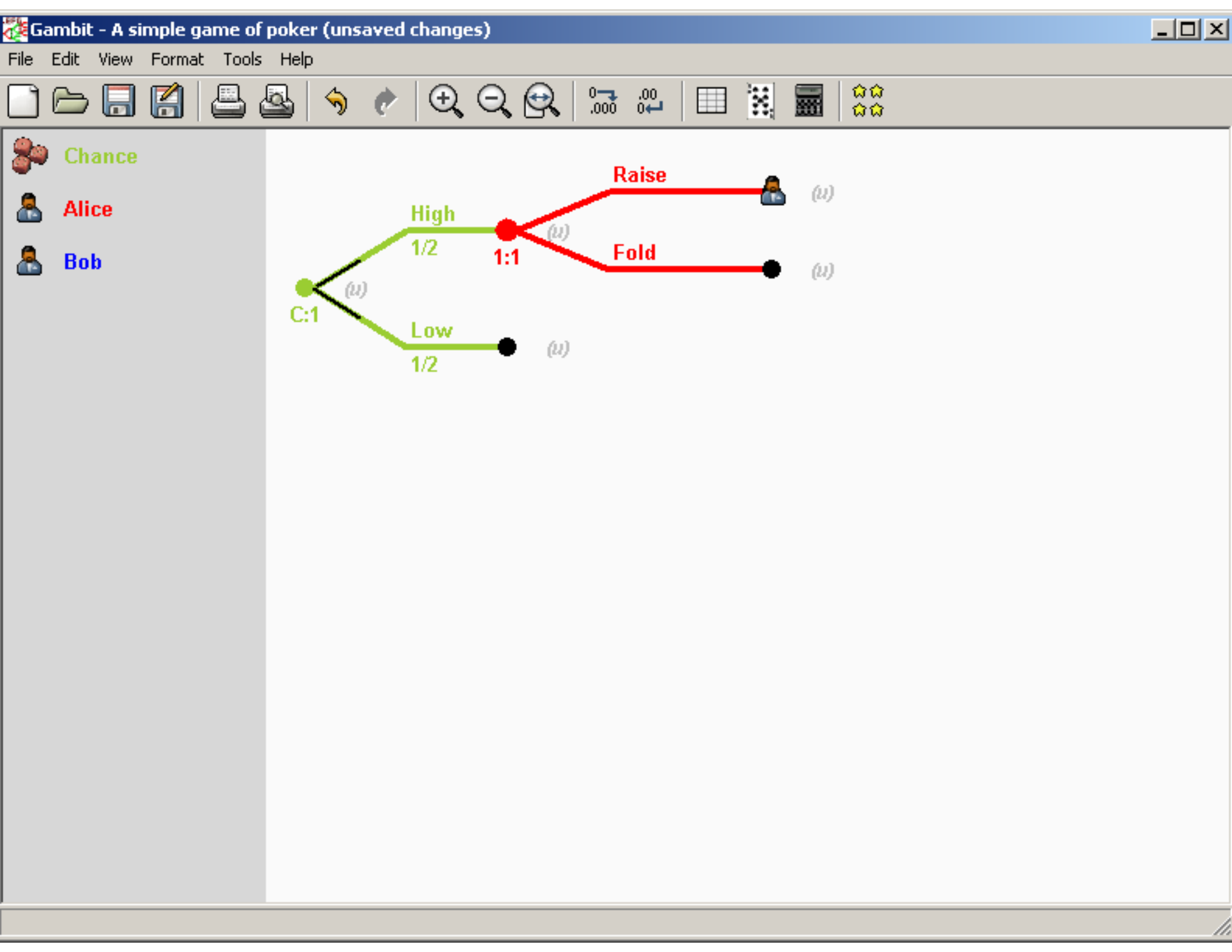
Gambit - A simple game of poker (unsaved changes)
File
Edit
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Tools
Help
Chance
Alice
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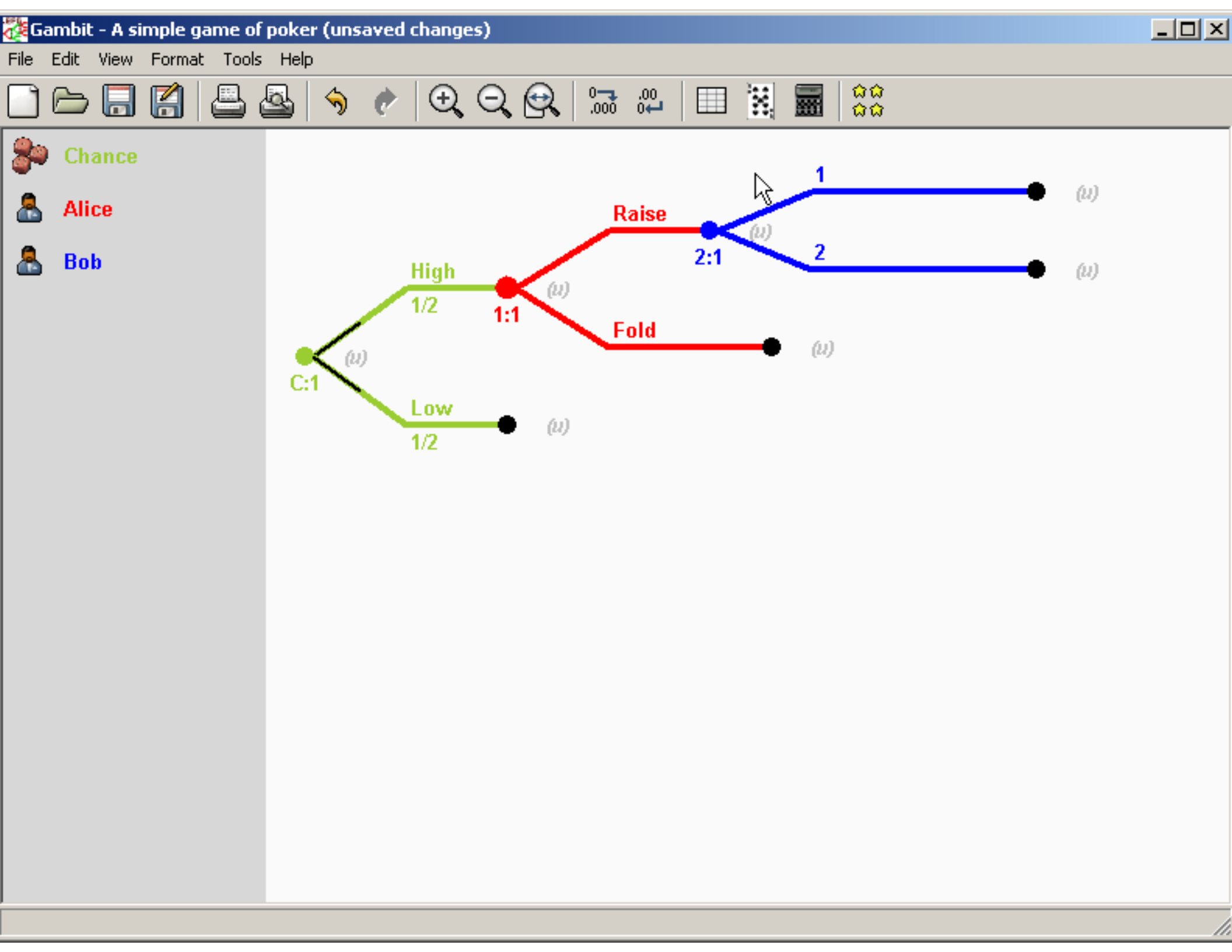
Gambit - A simple game of poker (unsaved changes)
File
Edit
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Format
Tools
Help
Chance
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High
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1:1
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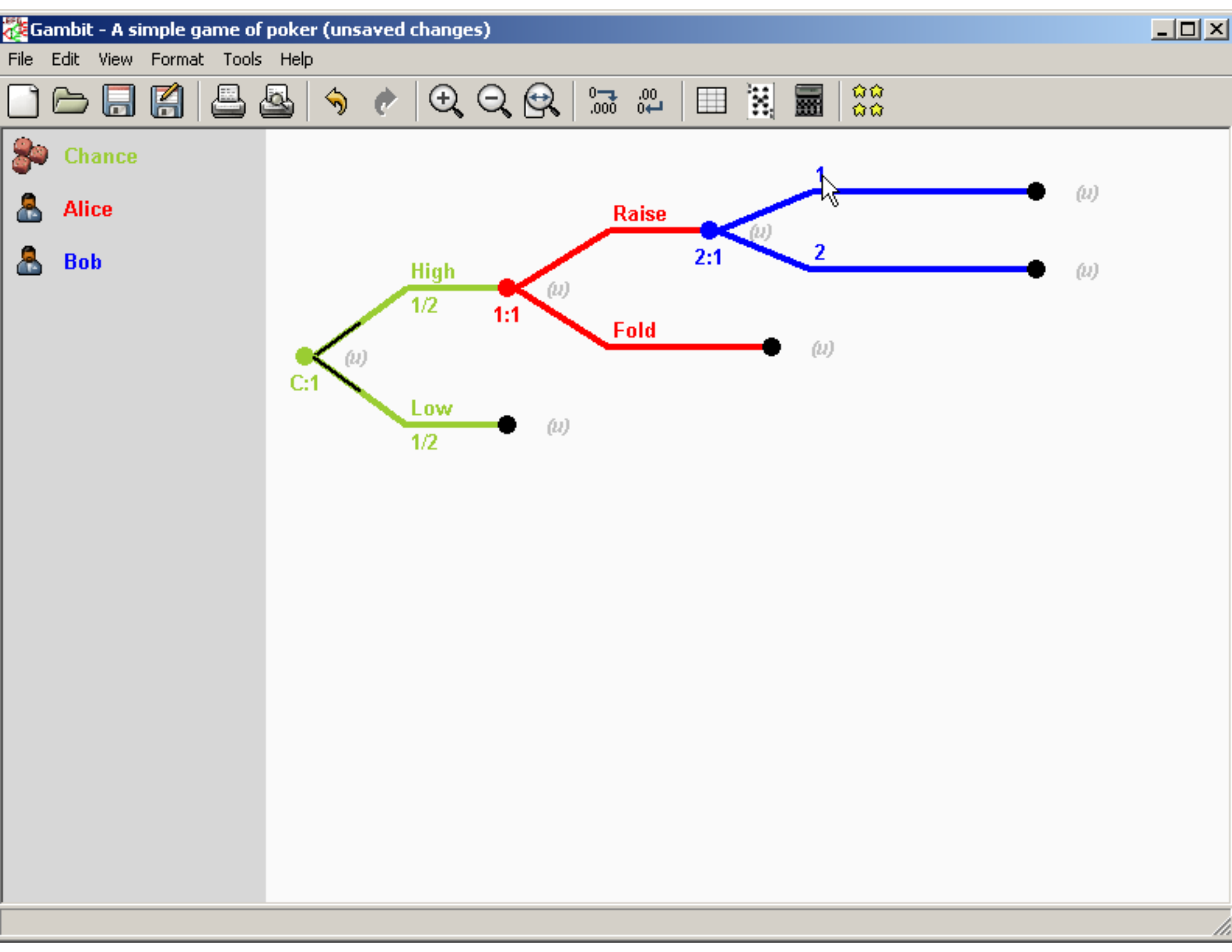
Gambit - A simple game of poker (unsaved changes)
File
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Tools
Help
Chance
Alice
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1:1
Raise
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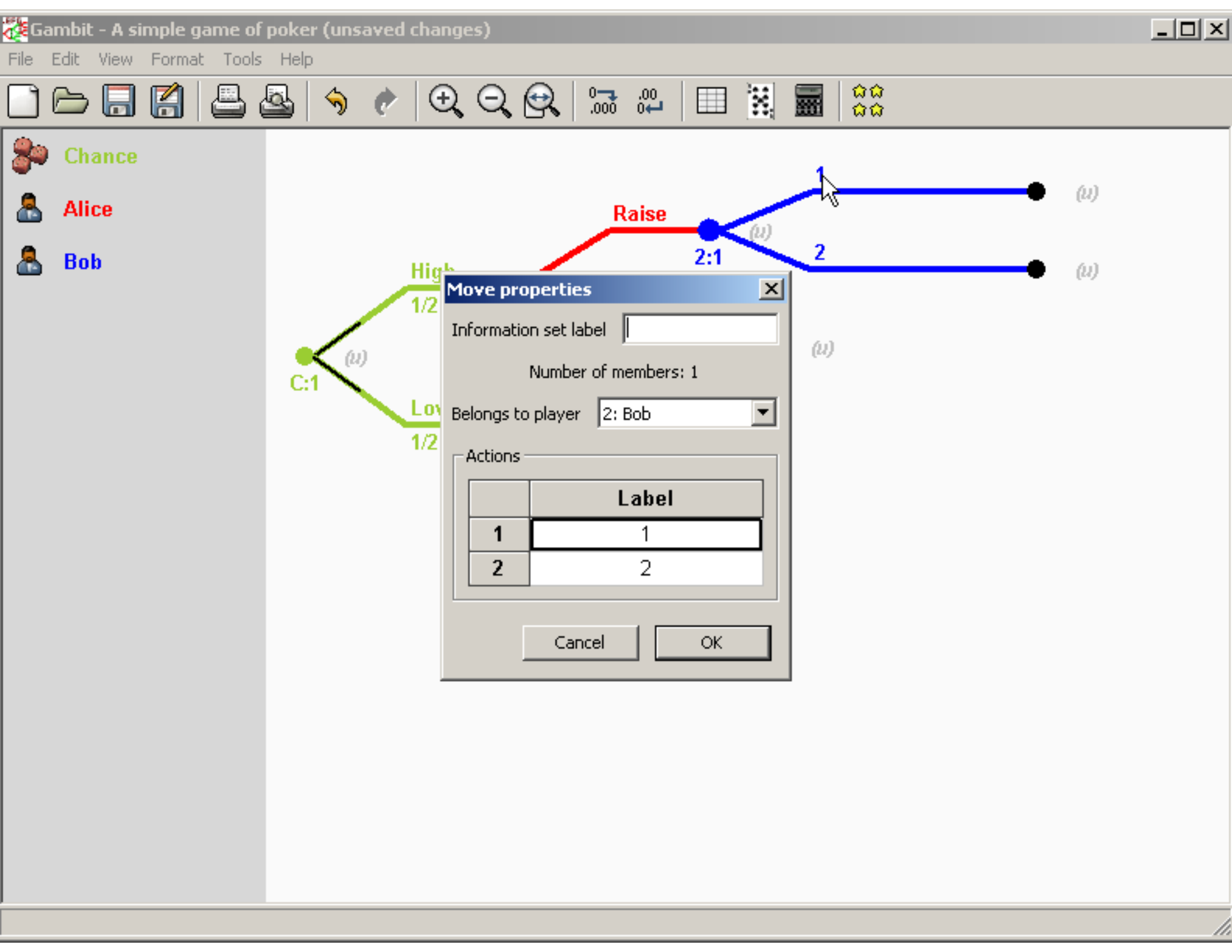
Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
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Raise
2:1
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C:1
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Move properties
Information set label
Number of members: 1
Belongs to player
2: Bob
Actions
Label
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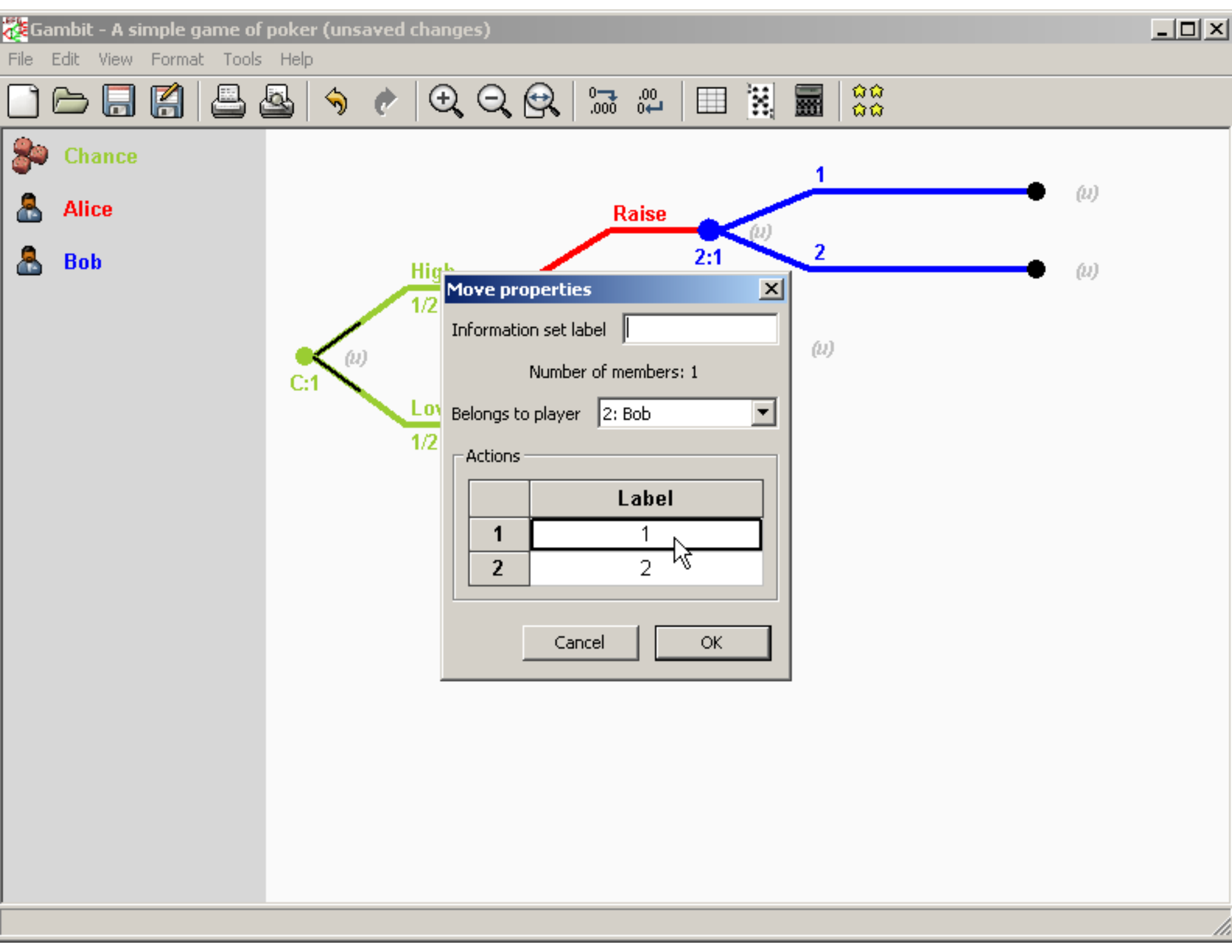
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
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Move properties
Information set label
Number of members: 1
Belongs to player
2: Bob
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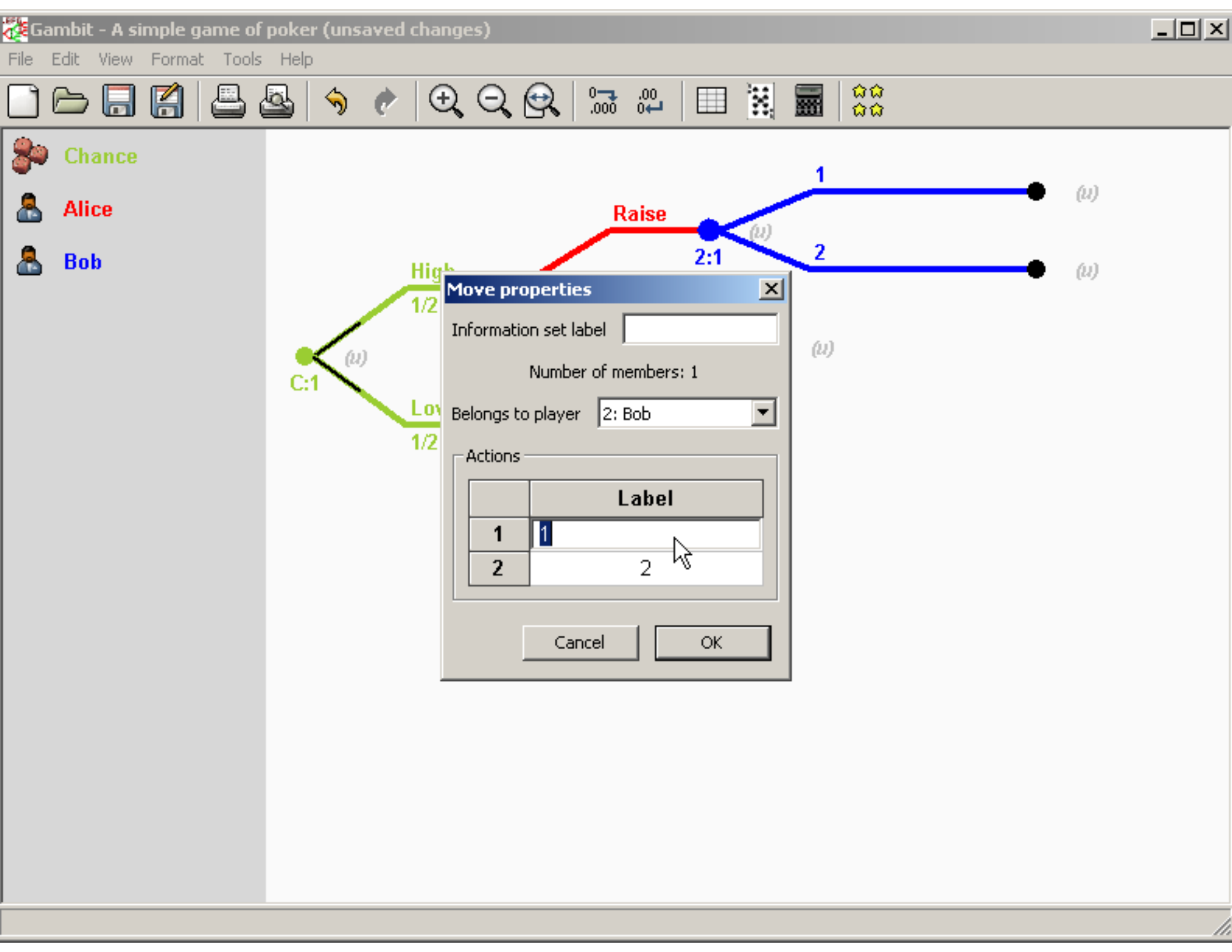
Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
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Move properties
Information set label
Number of members: 1
Belongs to player
2: Bob
Actions
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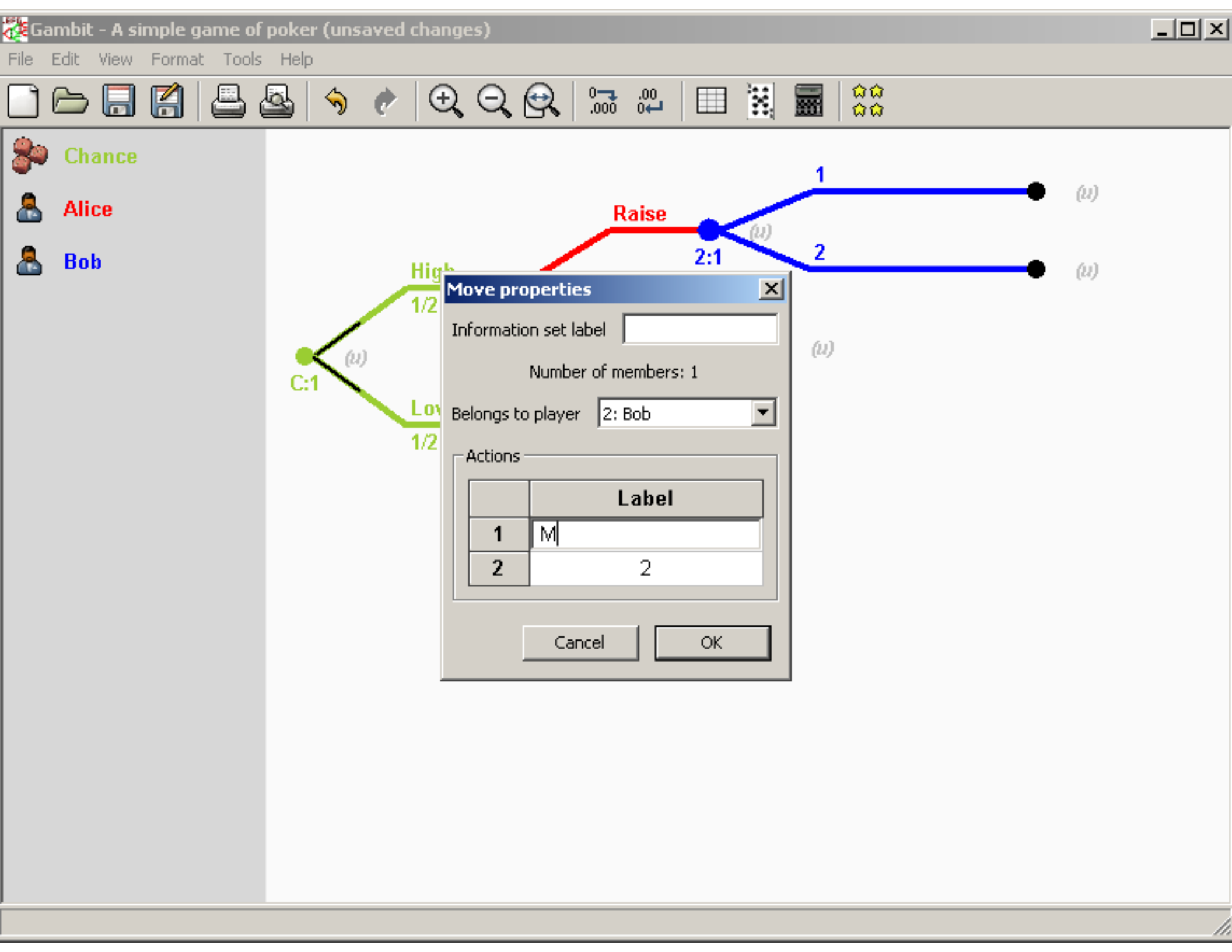
Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
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Information set label
Number of members: 1
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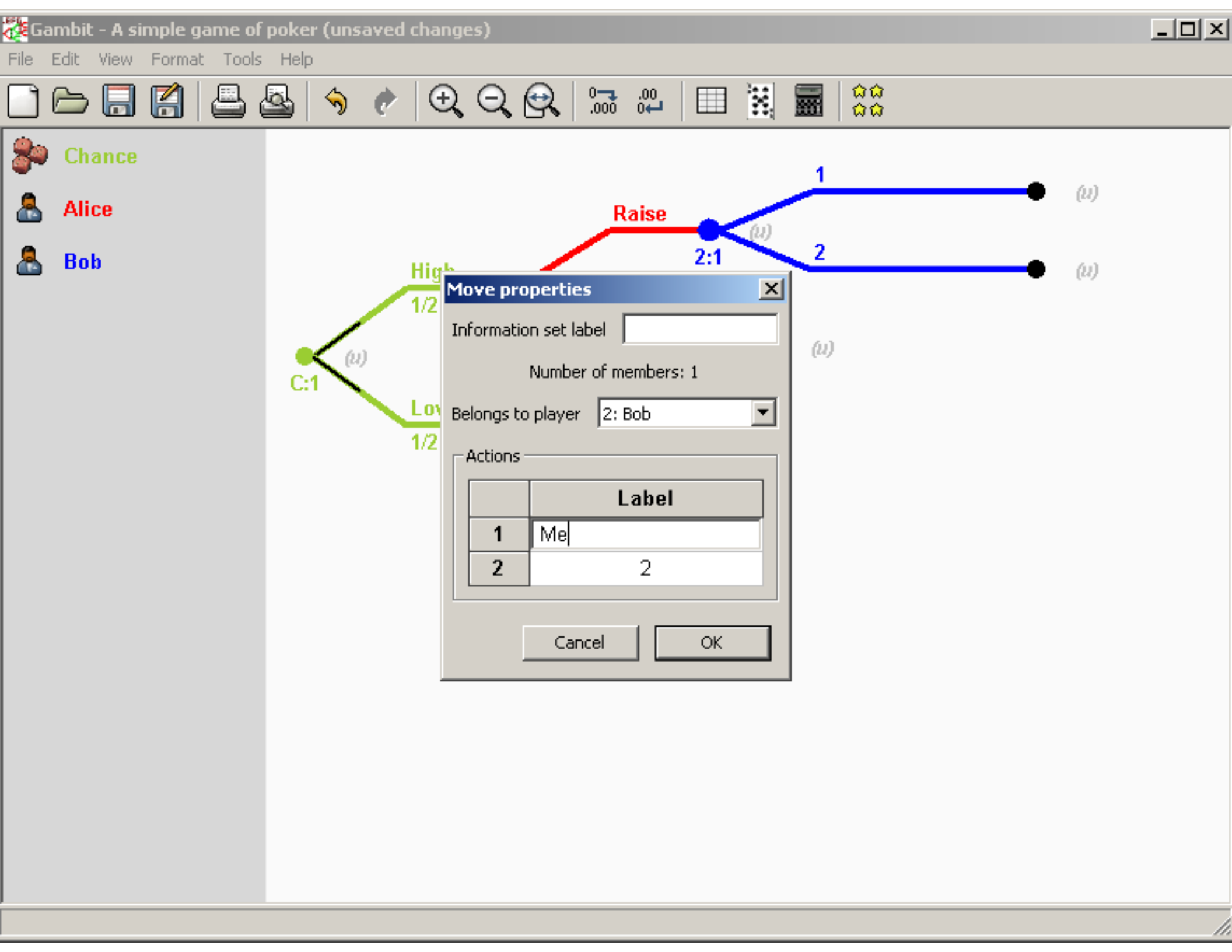
Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
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Move properties
Information set label
Number of members: 1
Belongs to player
2: Bob
Actions
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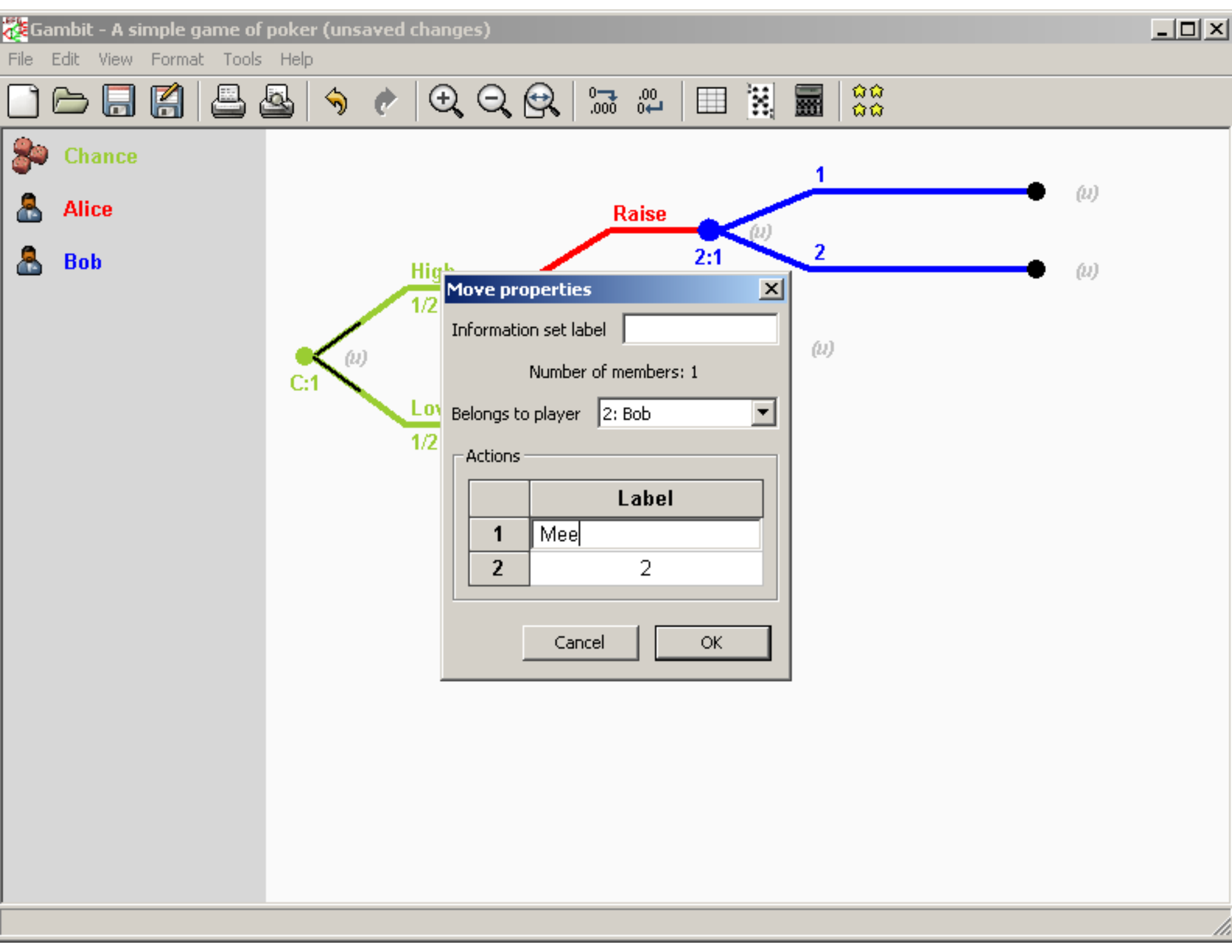
Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
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Move properties
Information set label
Number of members: 1
Belongs to player
2: Bob
Actions
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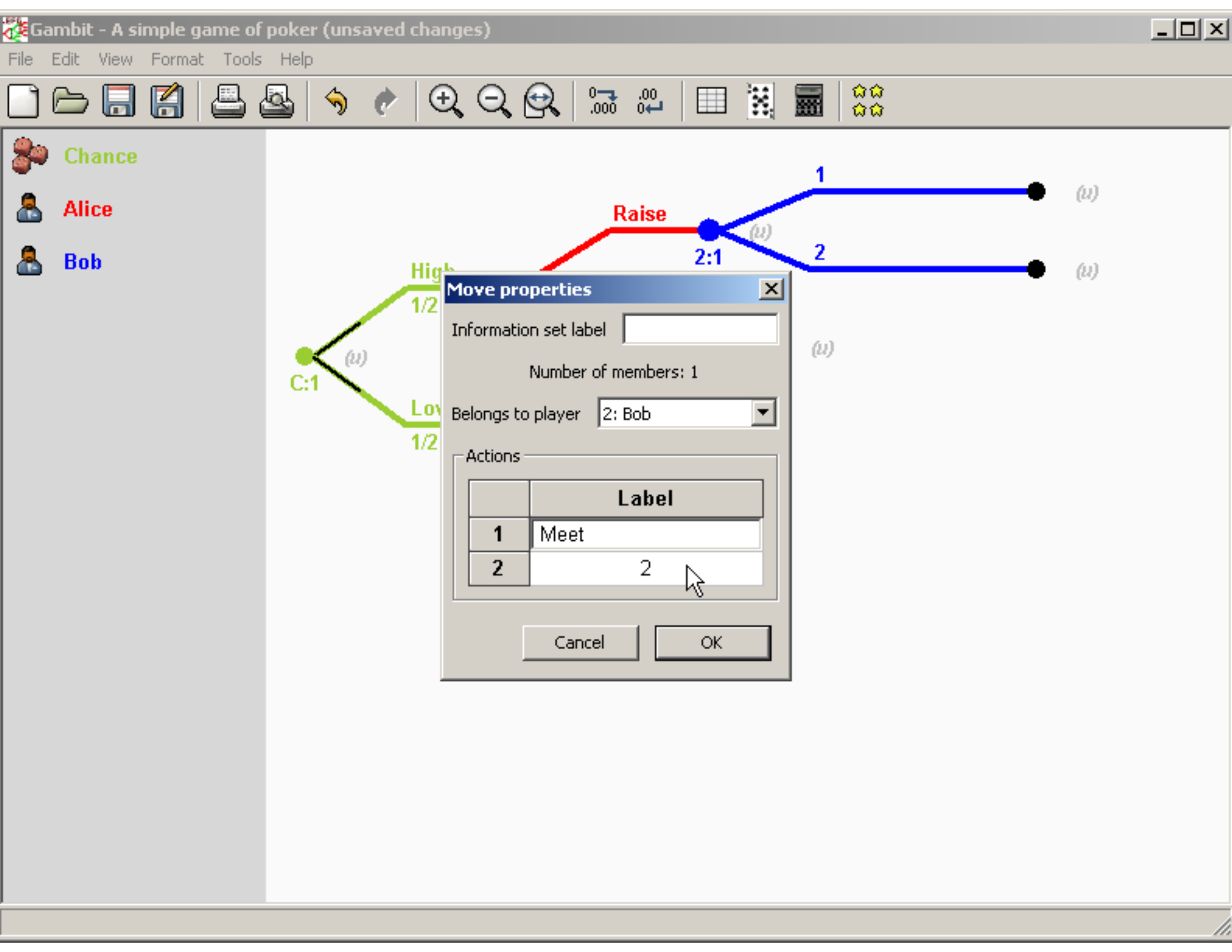
Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
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Move properties
Information set label
Number of members: 1
Belongs to player
2: Bob
Actions
Label
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Meet
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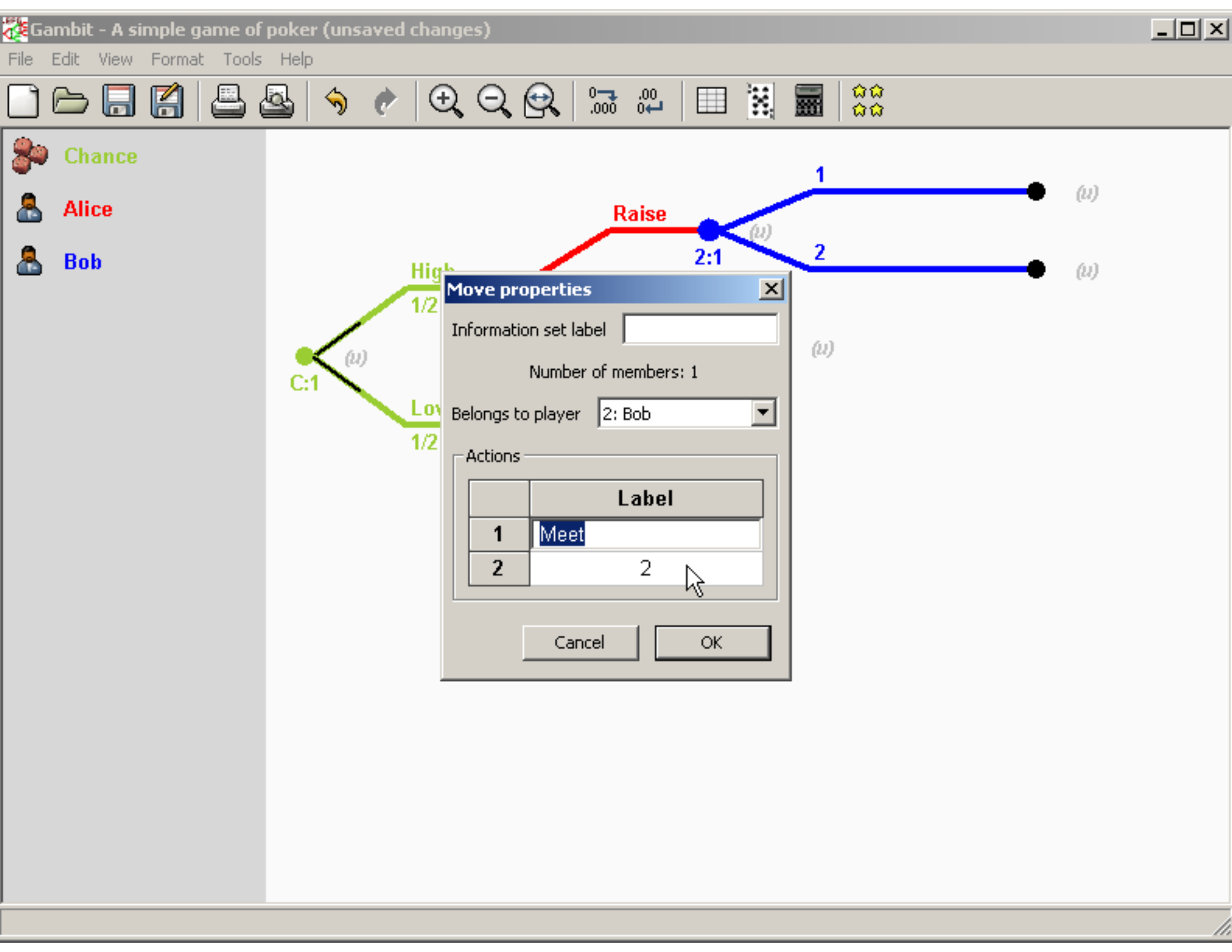
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
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Move properties
Information set label
Number of members: 1
Belongs to player
2: Bob
Actions
Label
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Meet
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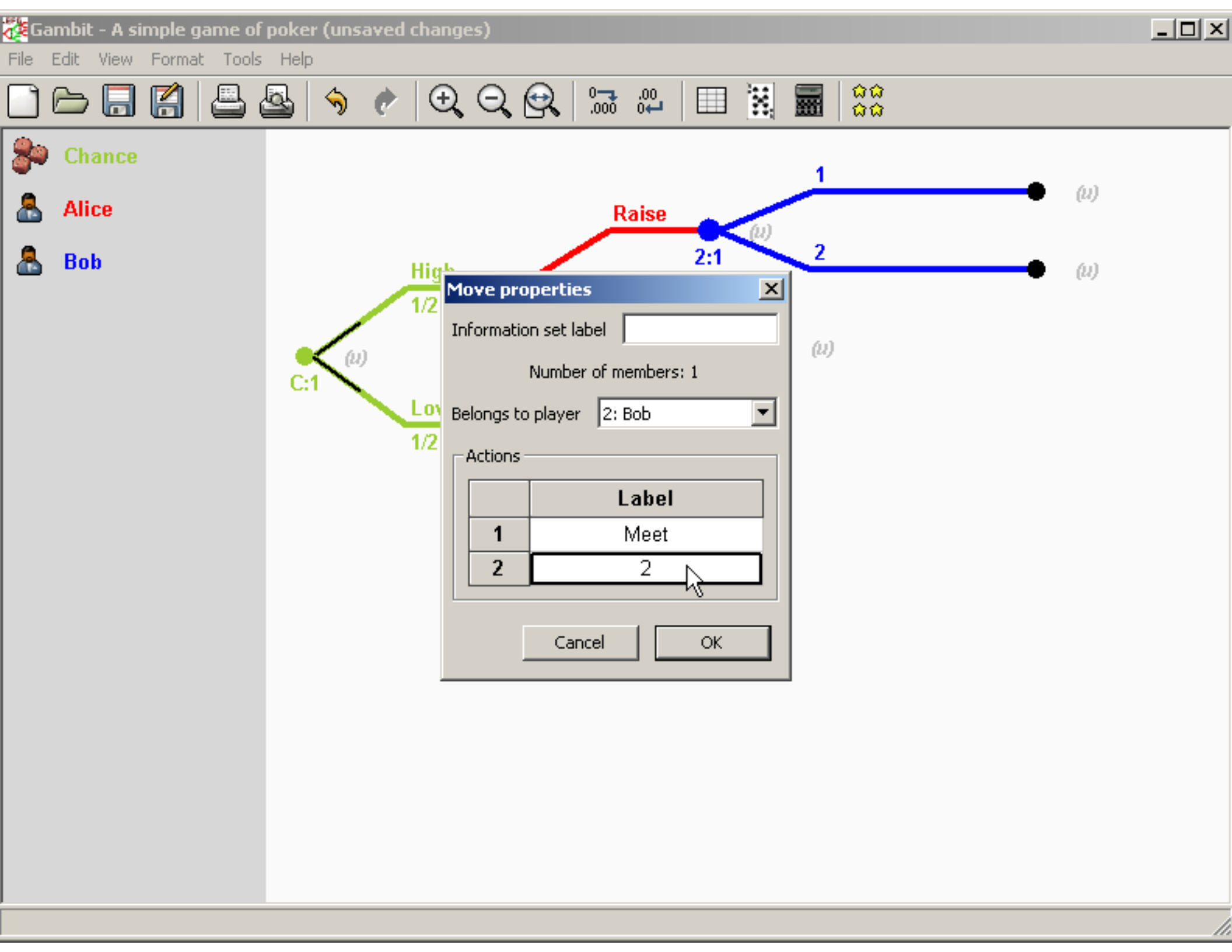
Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
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Move properties
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Number of members: 1
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2: Bob
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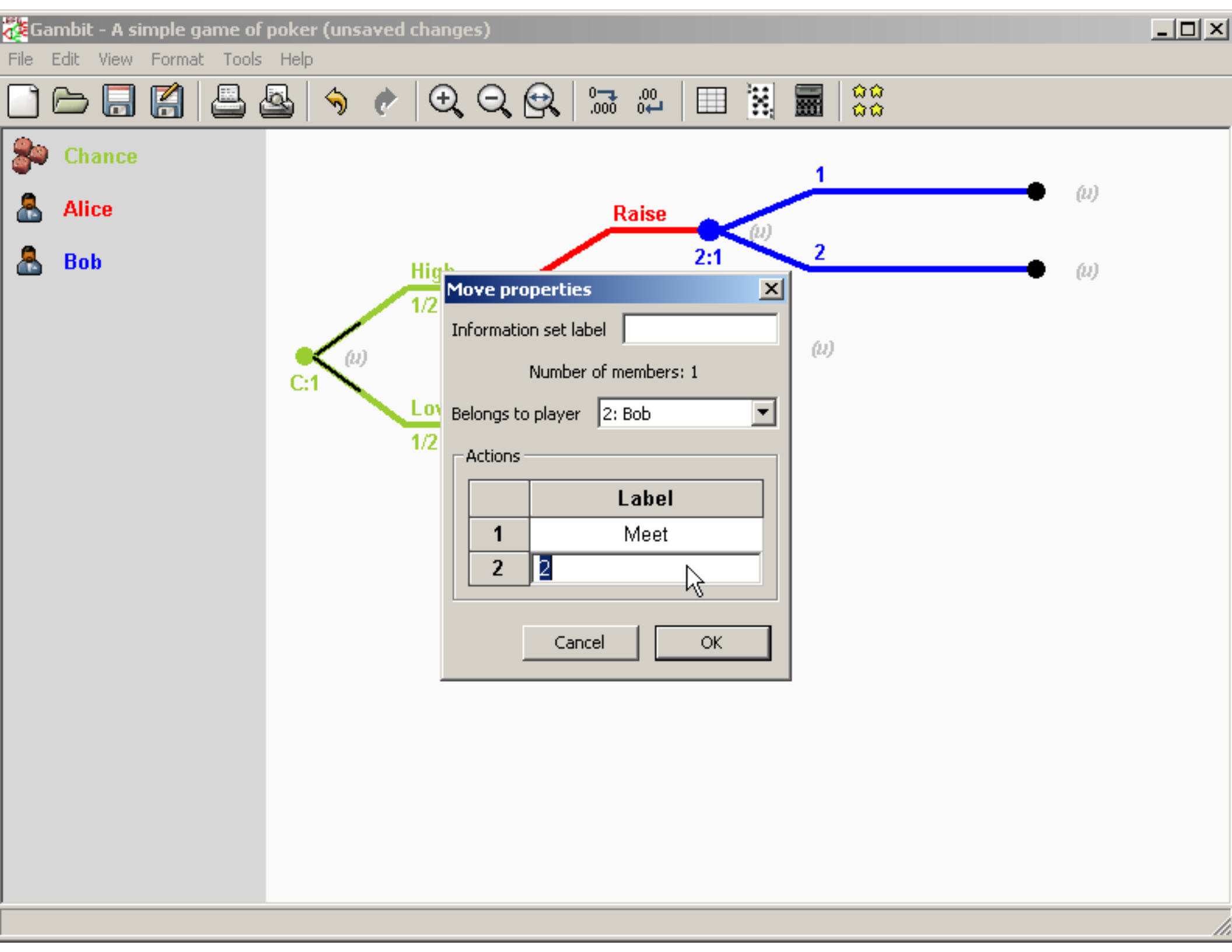
Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
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Information set label
Number of members: 1
Belongs to player
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Actions
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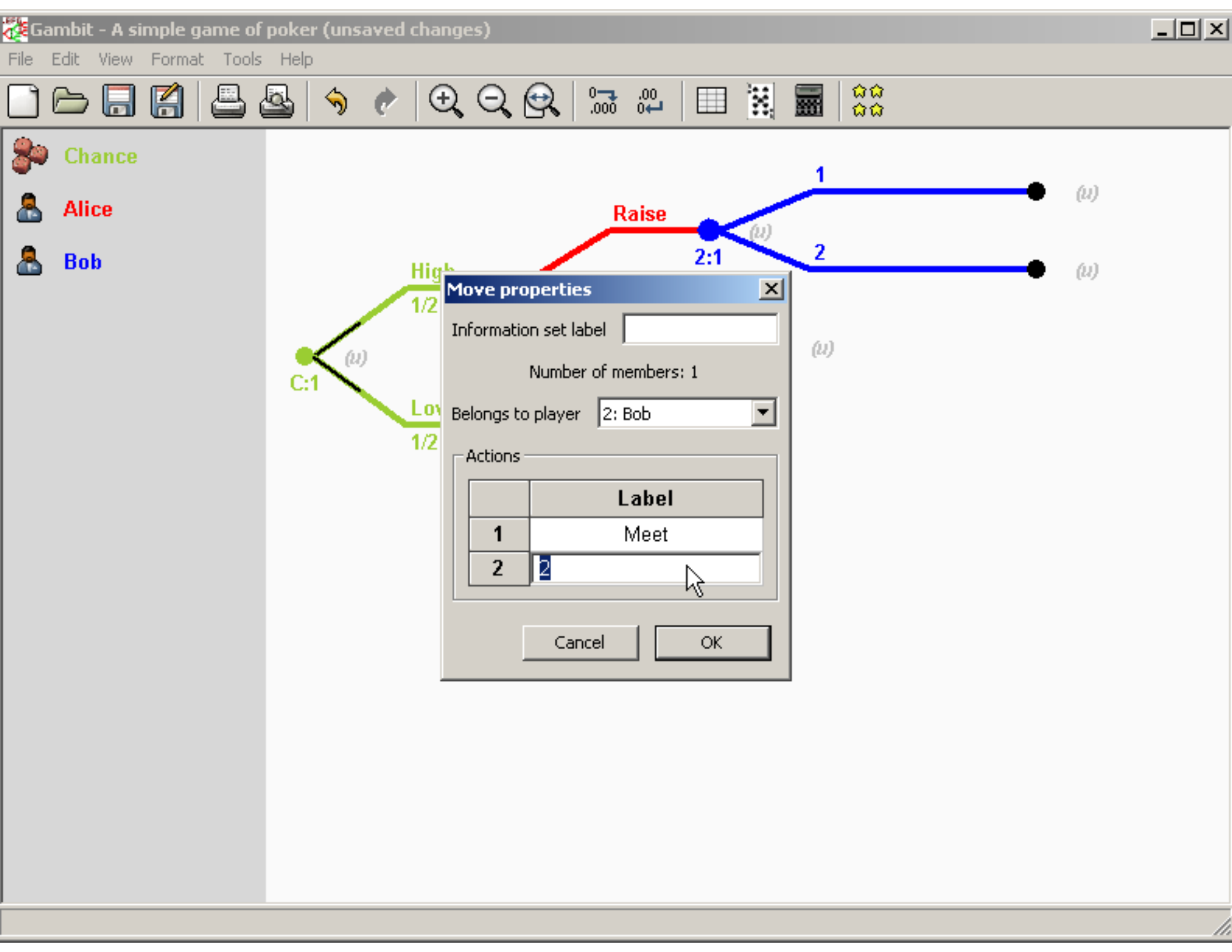
Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
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Move properties
Information set label
Number of members: 1
Belongs to player
2: Bob
Actions
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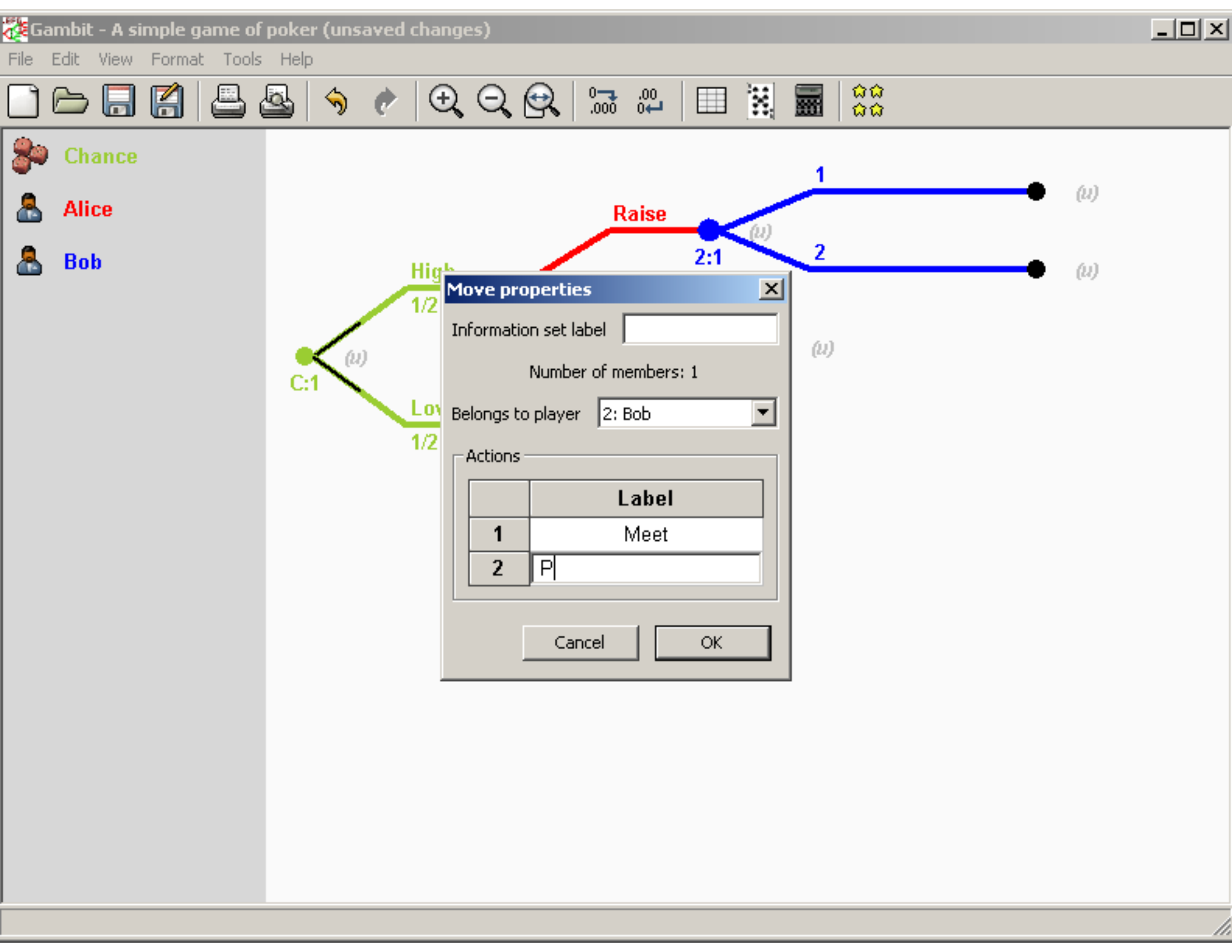
Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
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Information set label
Number of members: 1
Belongs to player
2: Bob
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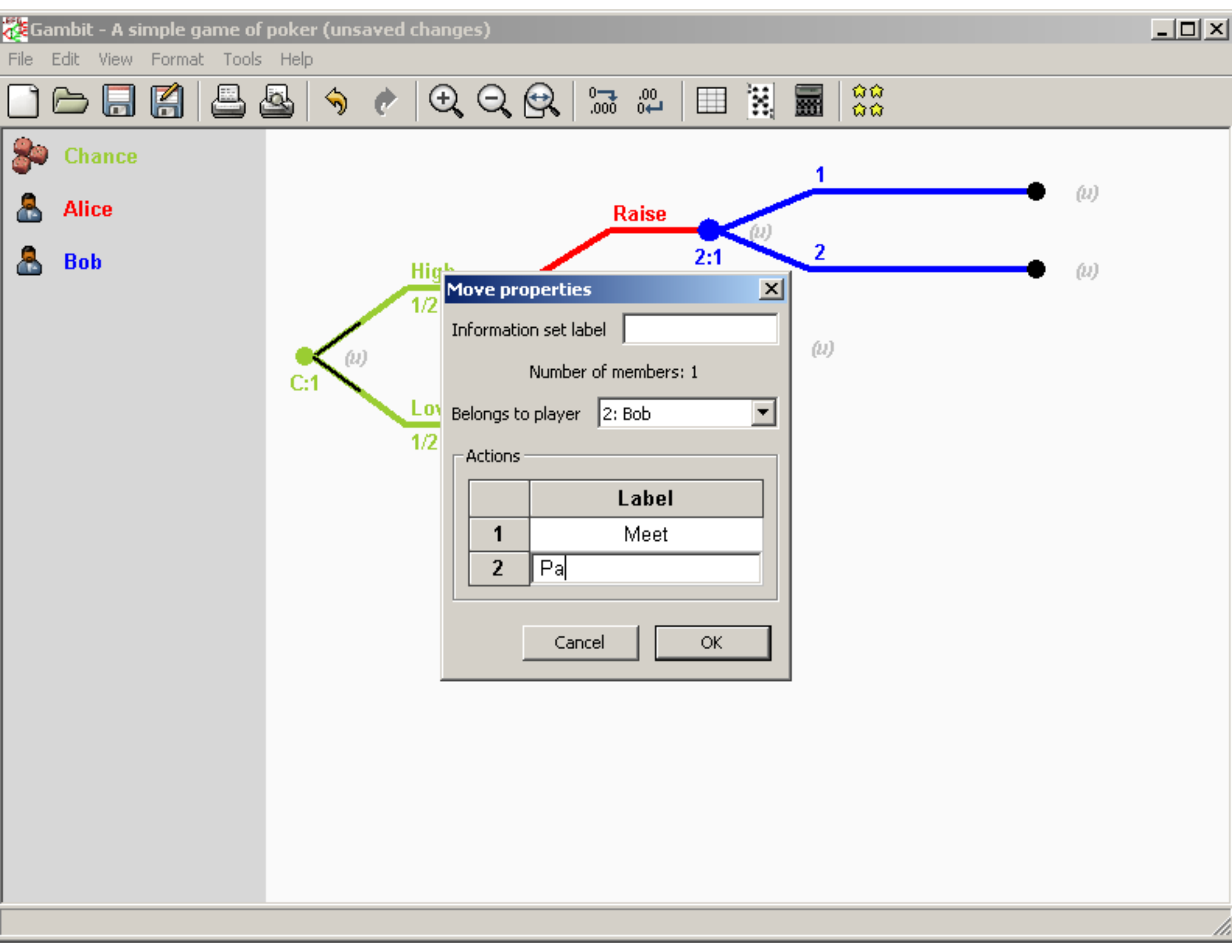
Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
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C:1
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Move properties
Information set label
Number of members: 1
Belongs to player
2: Bob
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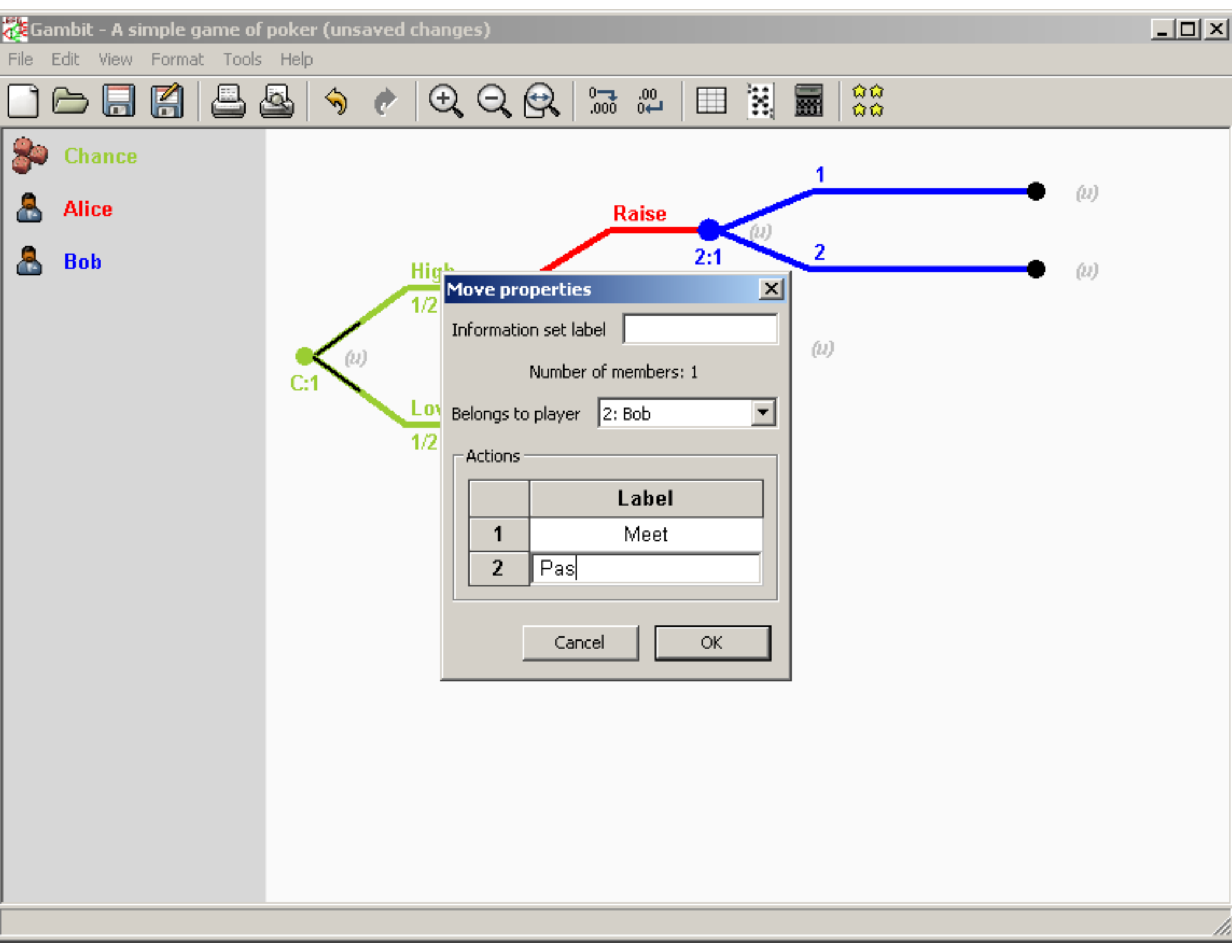
Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
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Move properties
Information set label
Number of members: 1
Belongs to player
2: Bob
Actions
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Cancel
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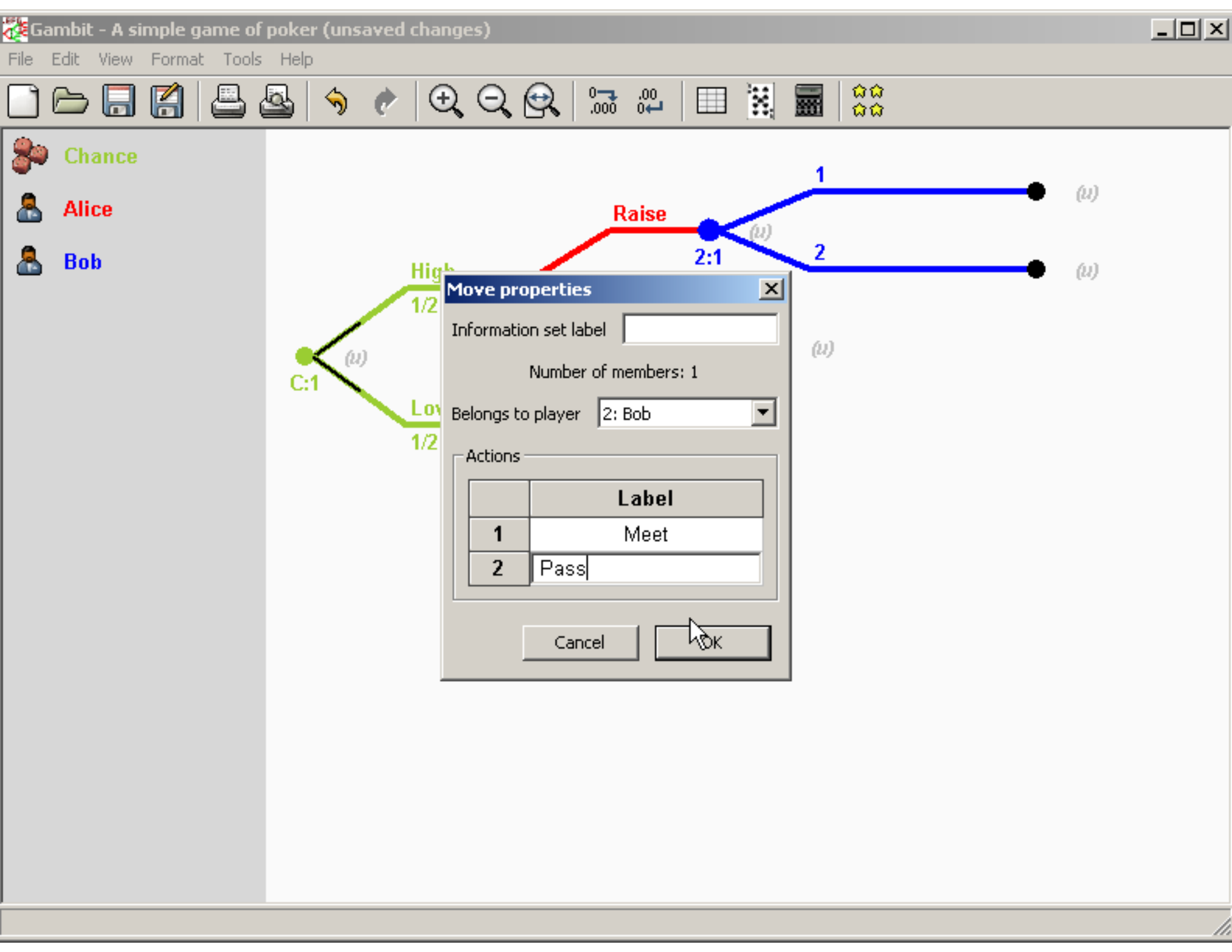
Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
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Move properties
Information set label
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Belongs to player
2: Bob
Actions
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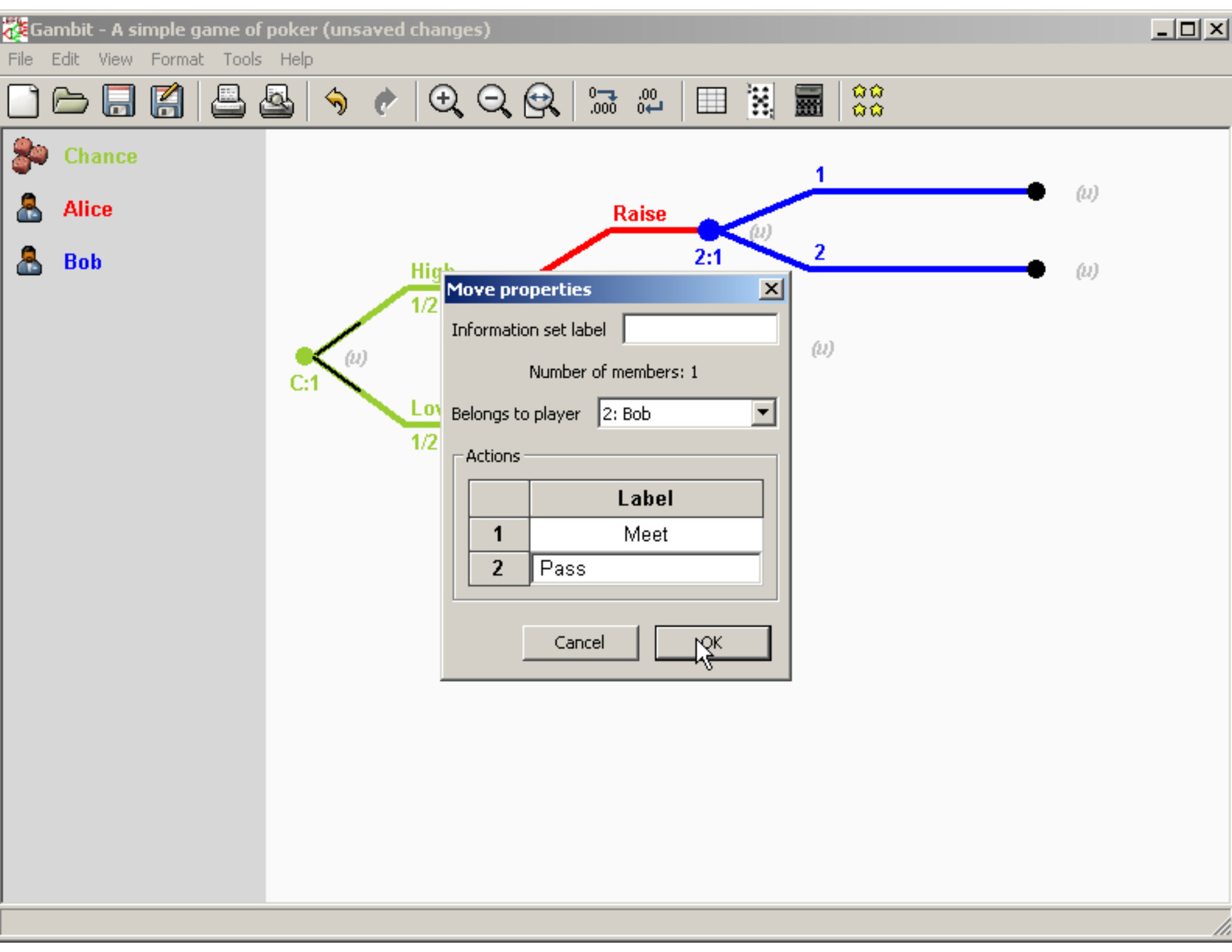
Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
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Move properties
Information set label
Number of members: 1
Belongs to player
2: Bob
Actions
Label
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Meet
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Pass
Cancel
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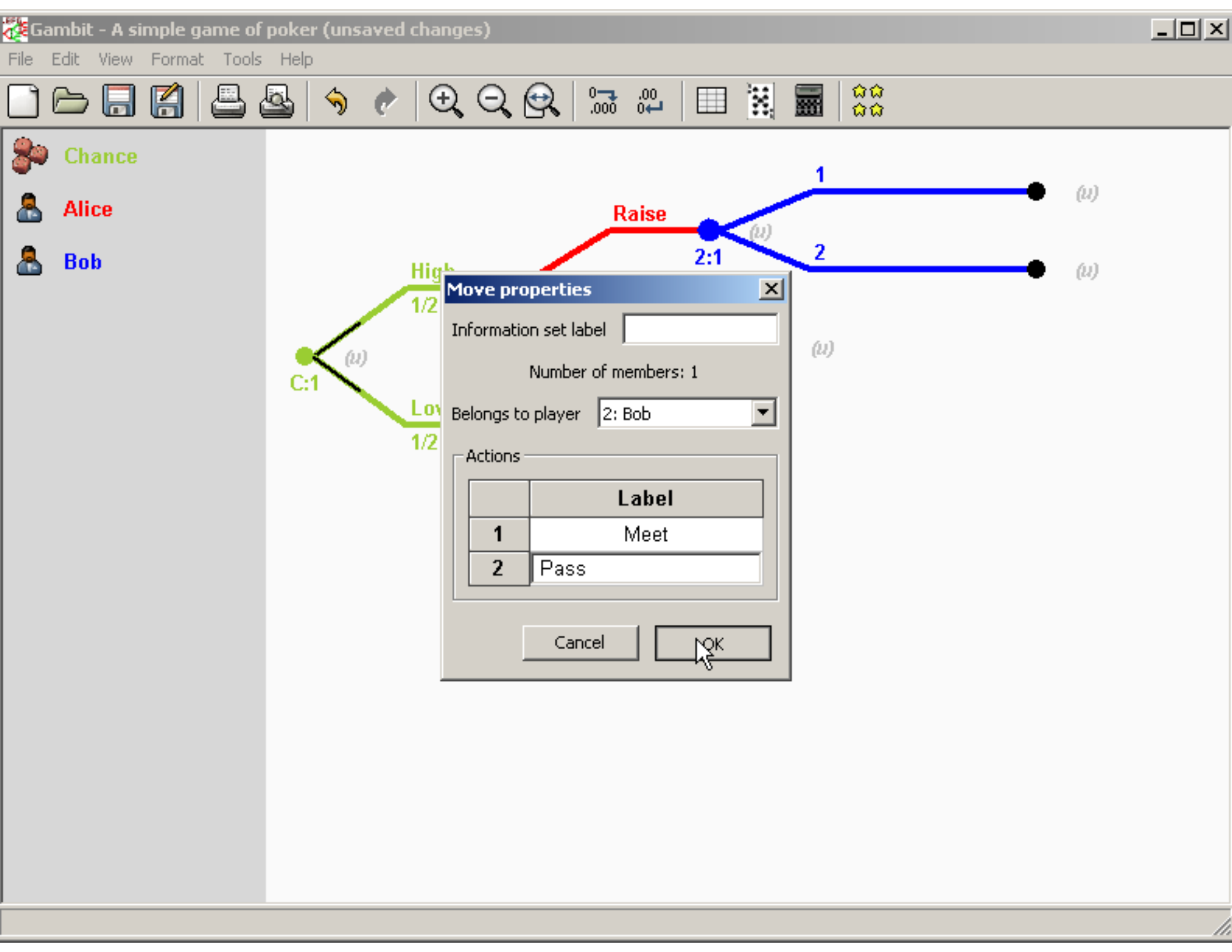
Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
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C:1
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Move properties
Information set label
Number of members: 1
Belongs to player
2: Bob
Actions
Label
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Meet
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Pass
Cancel
OK

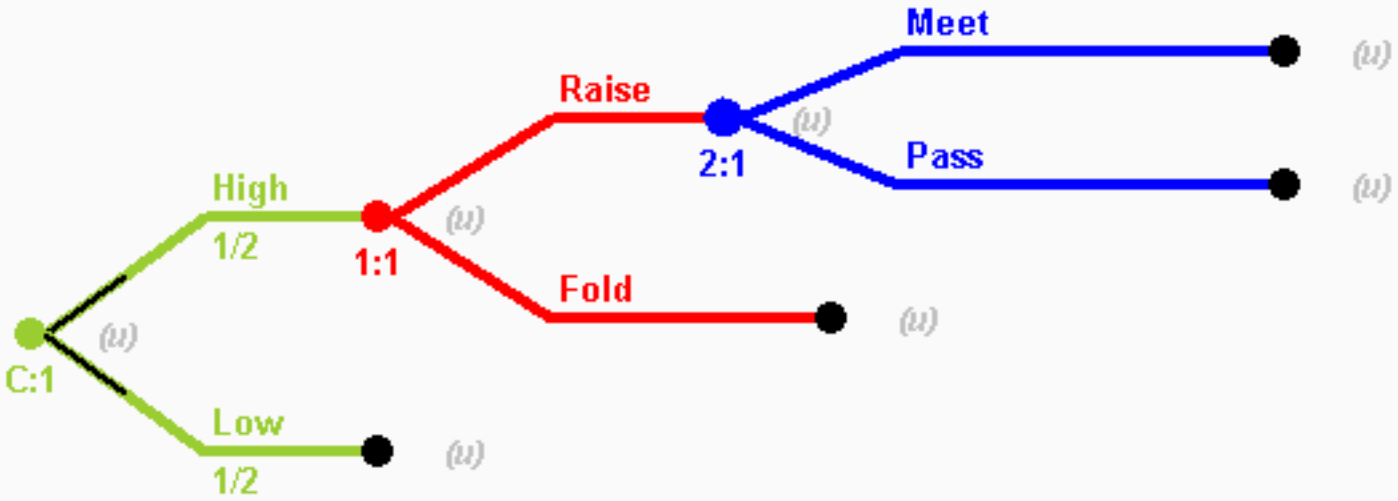
Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help

Chance

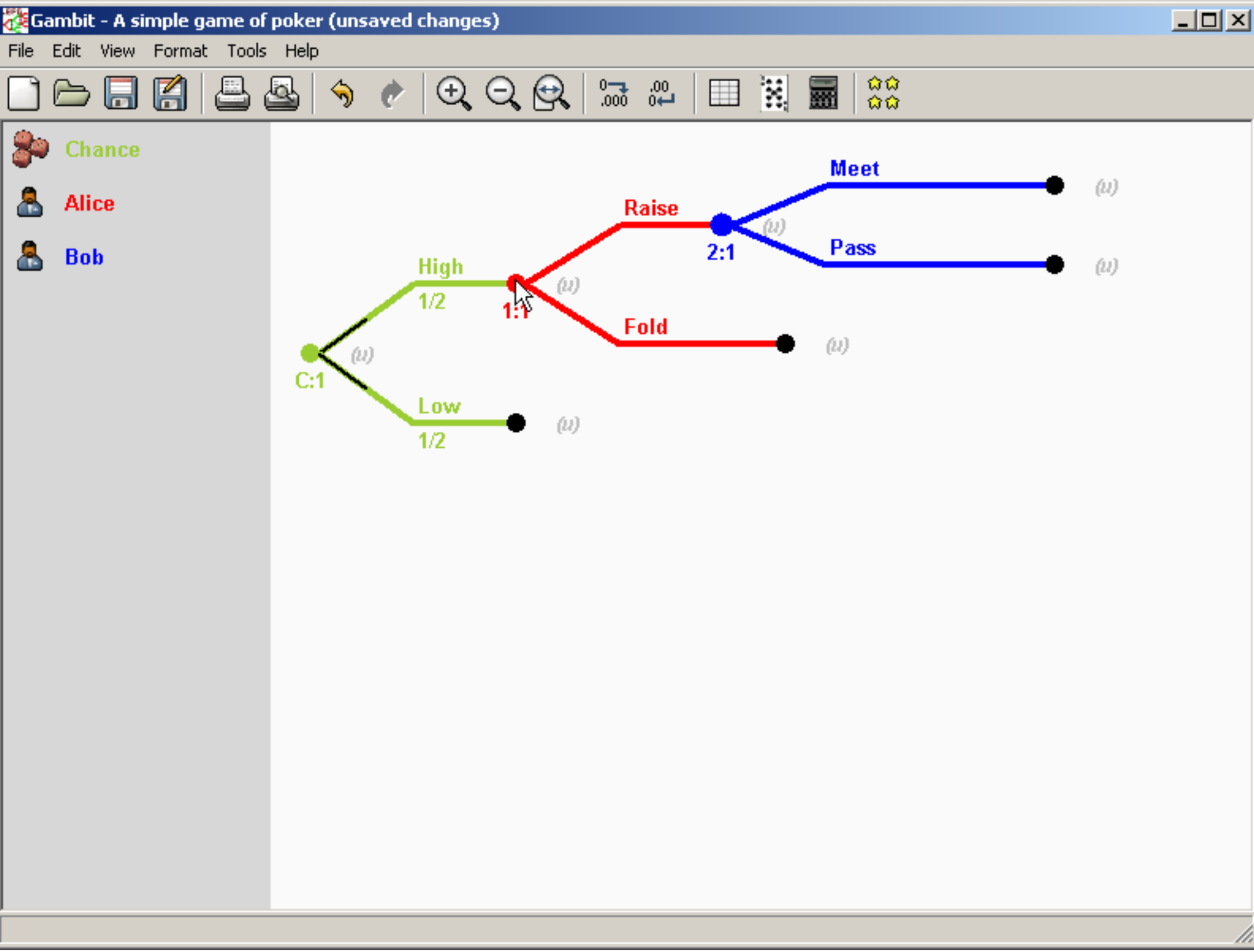
Alice

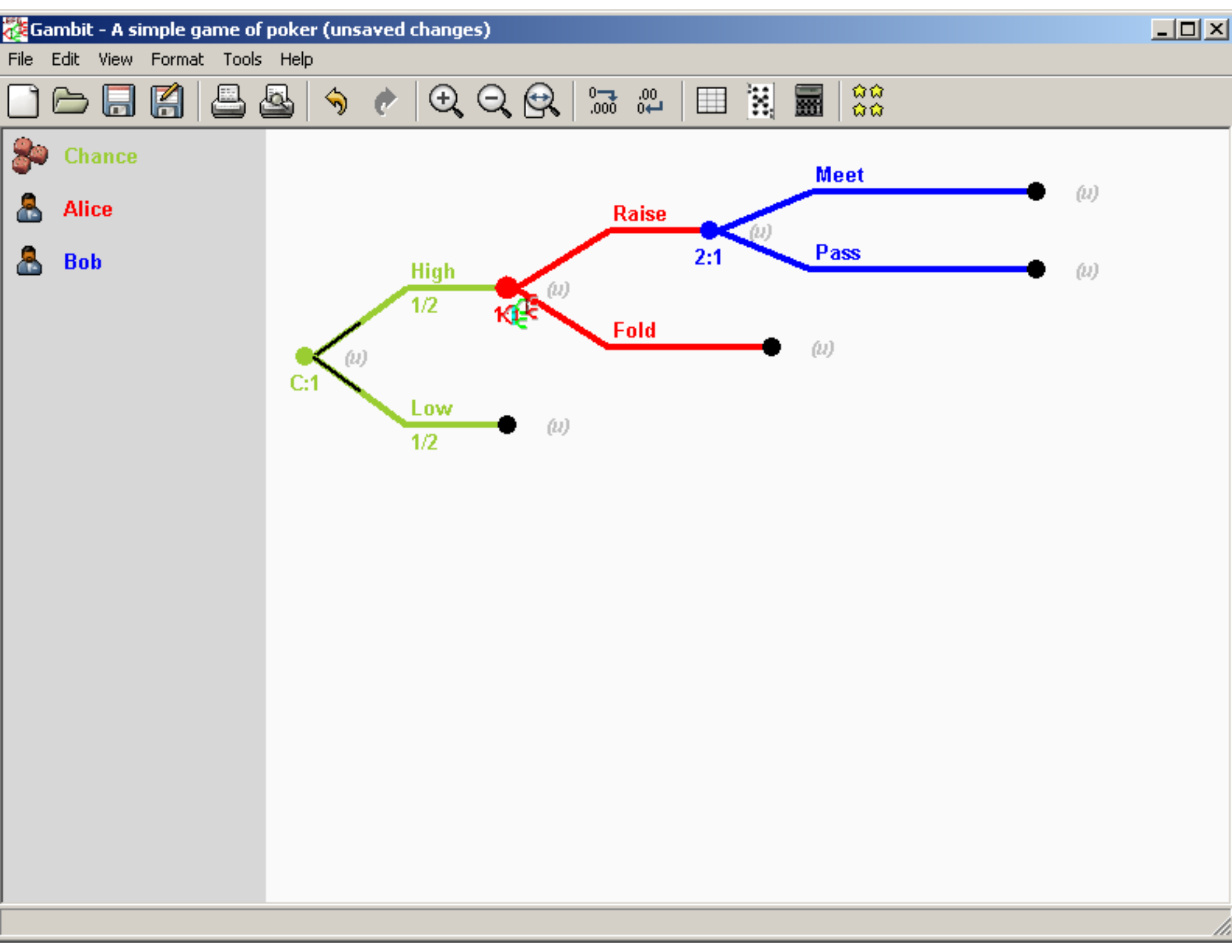
Bob

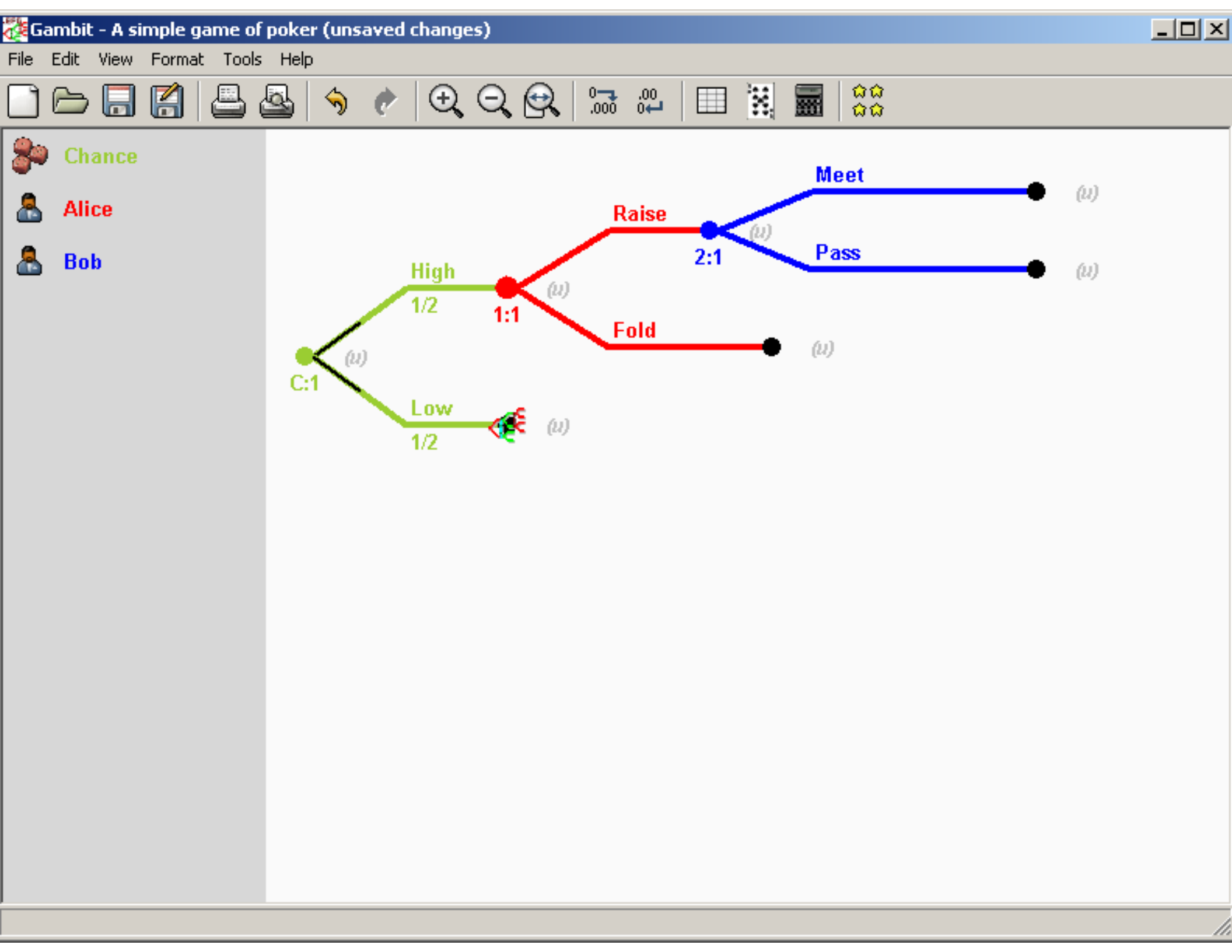


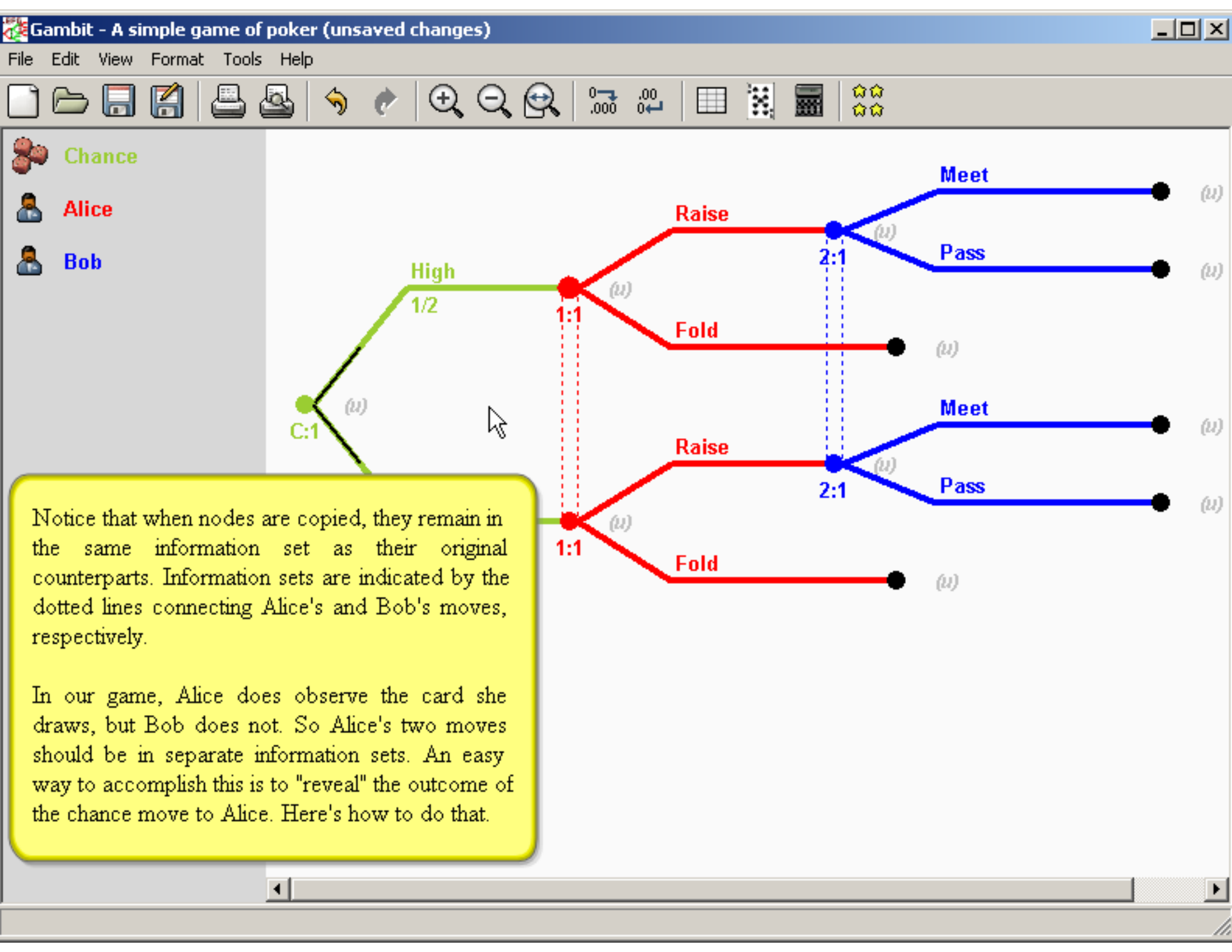
So far, we have only drawn the interaction when Alice draws a high card. The same rules apply when she draws a low card as well.

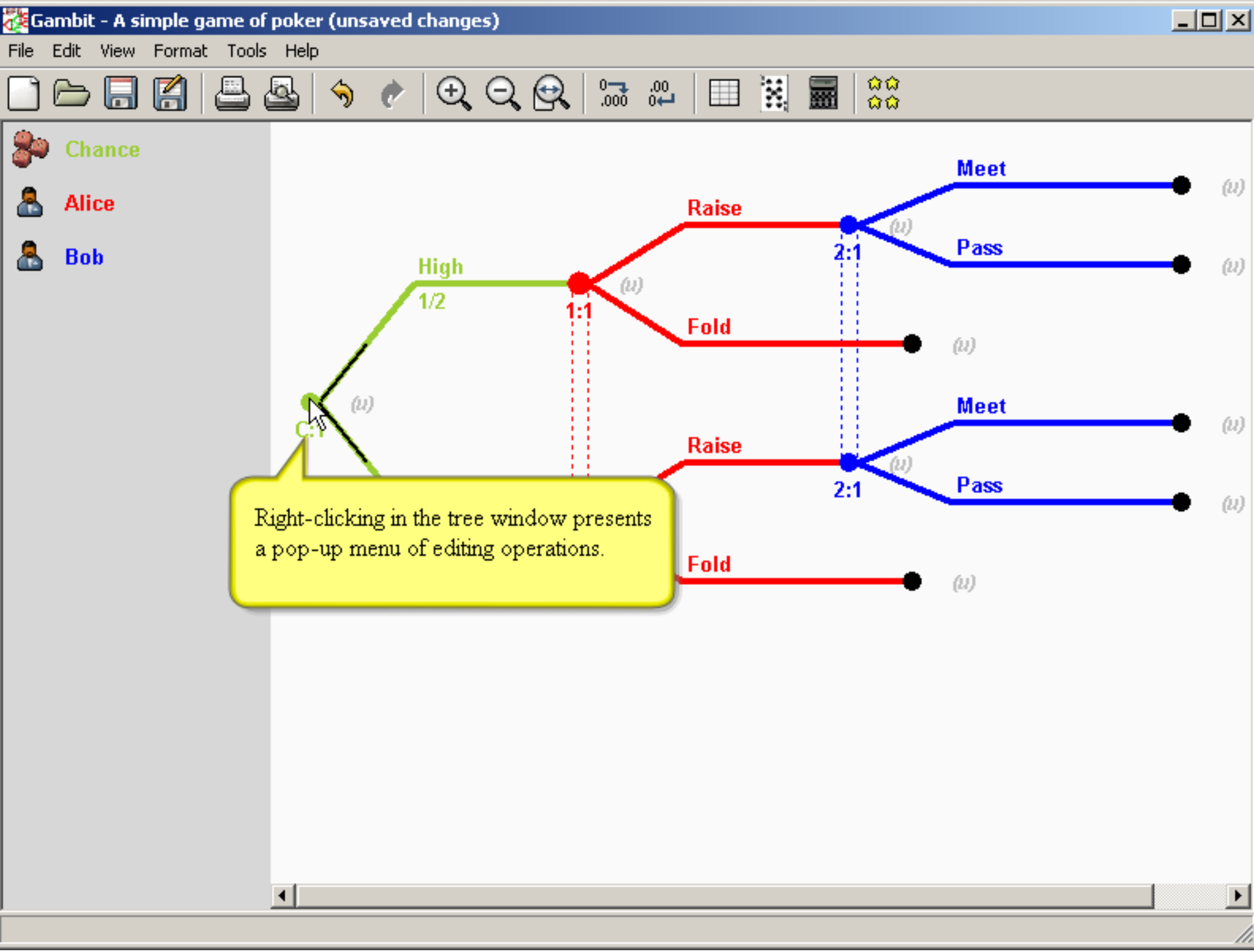
We can easily build this by copying the tree that follows the draw of a high card to the node after the draw of a low card. To do this, hold down the control key on the keyboard, and drag from Alice's move node to the node following chance's "low" action.

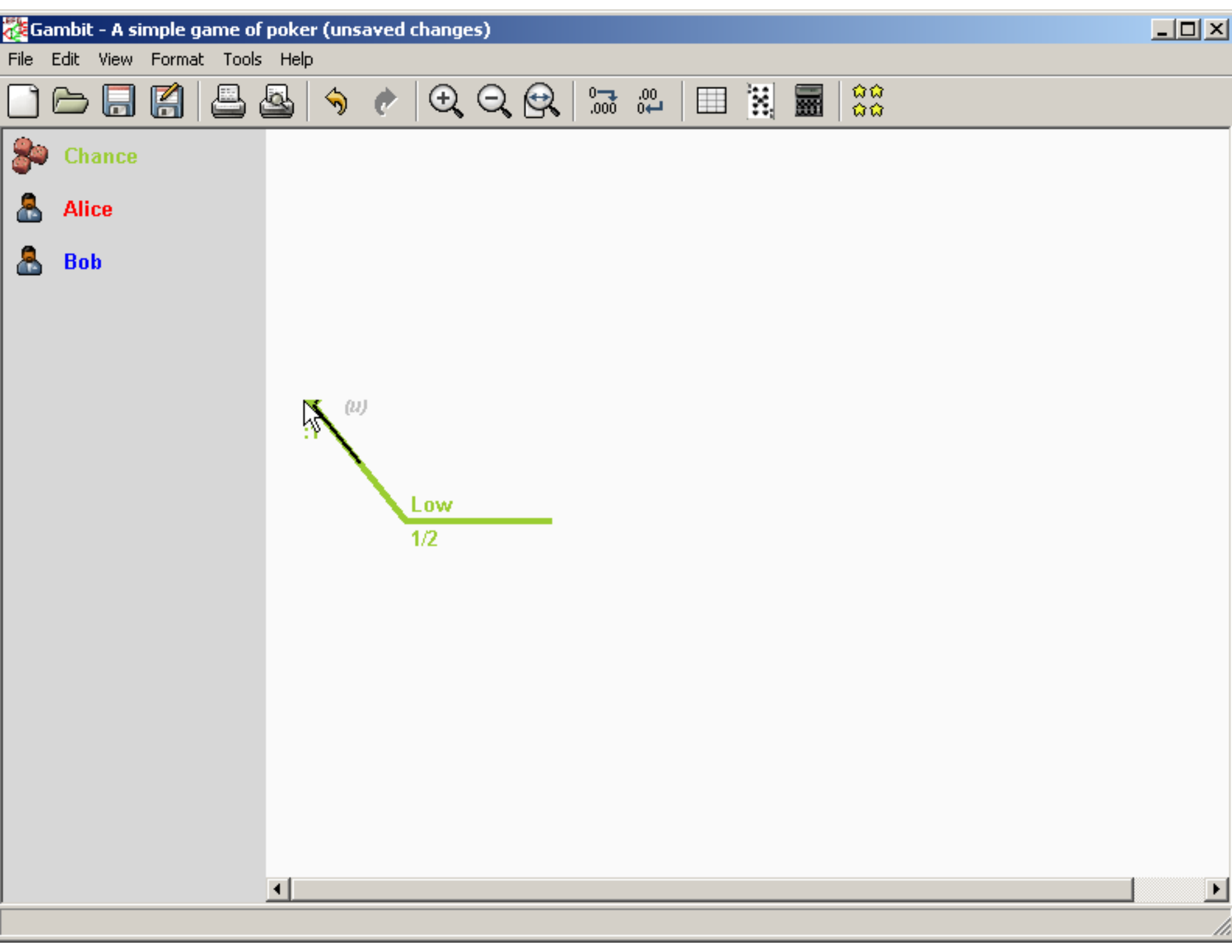

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Low
1/2
(u)

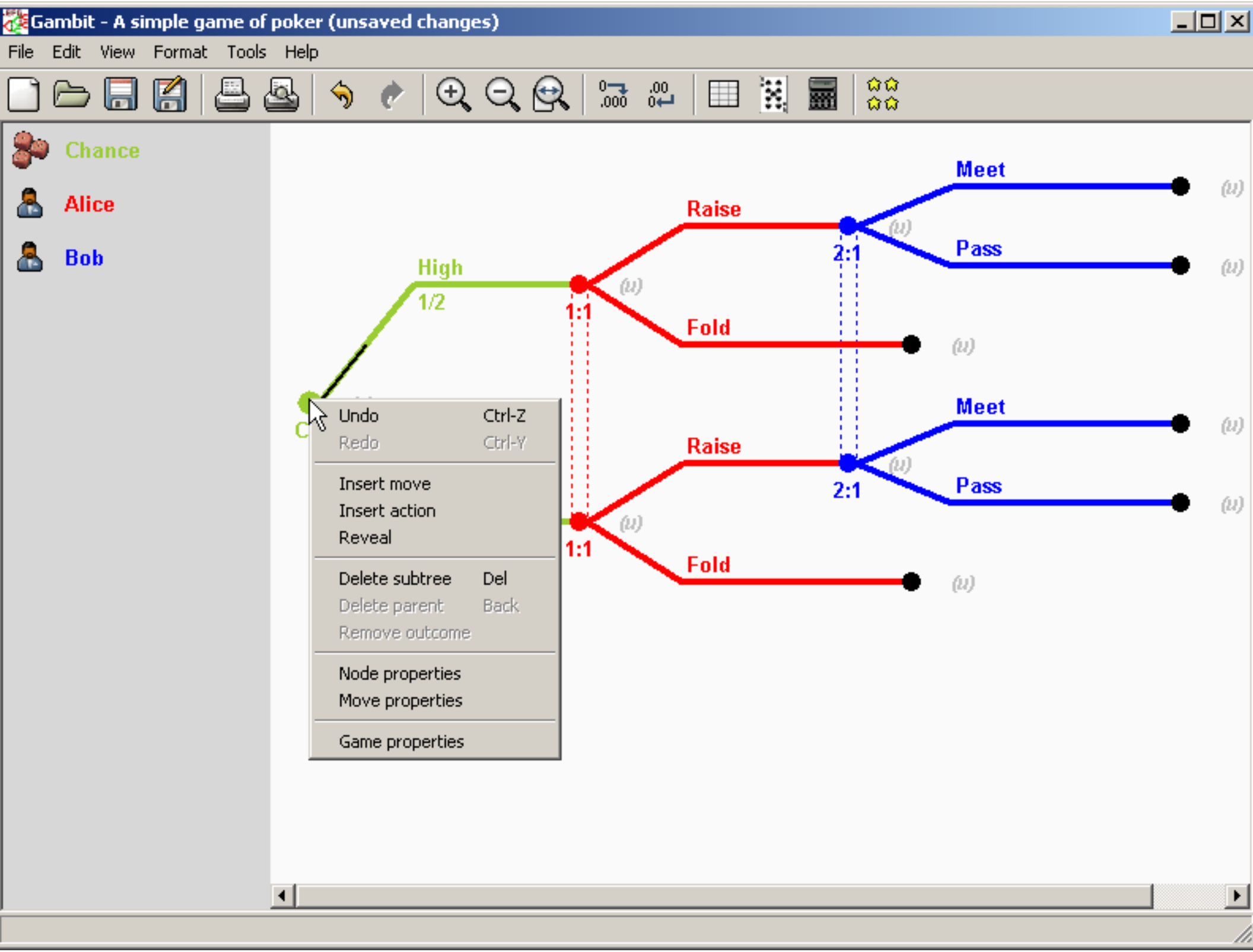

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
High
1/2
K:1
Fold
C:1
Low
1/2
(u)

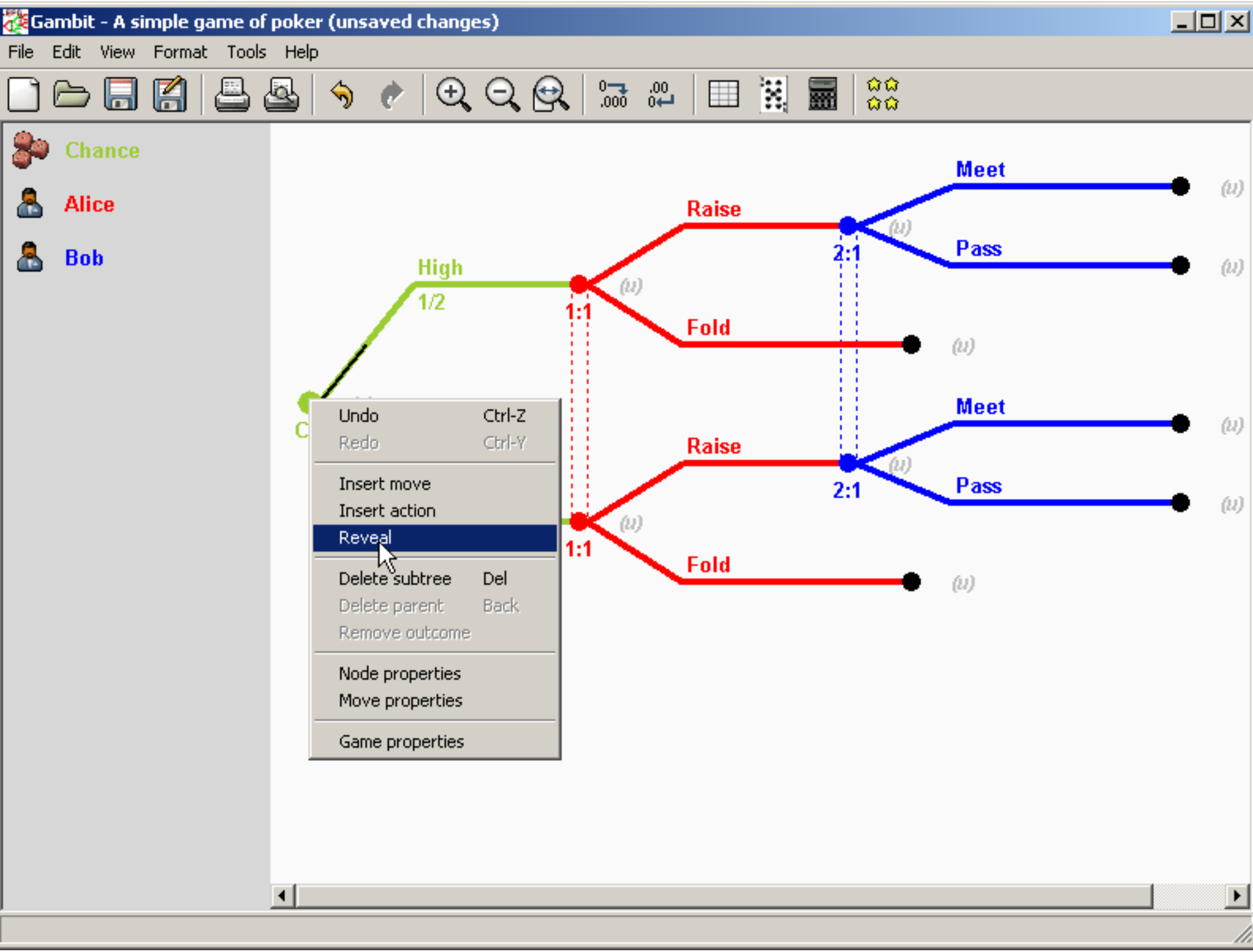

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Low
1/2
(u)

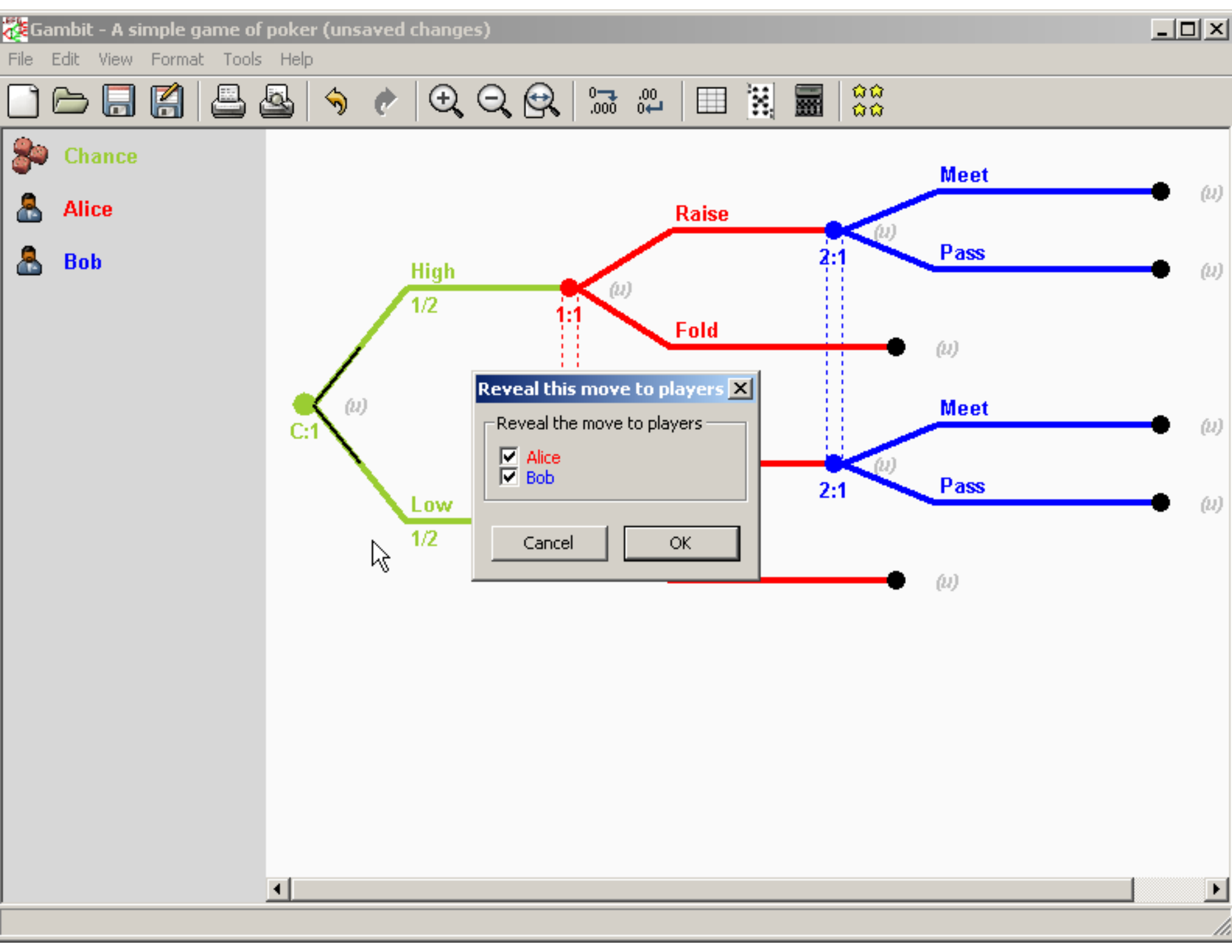

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
High
1/2
C:1
1:1
Raise
Fold
2:1
Meet
Pass
1:1
Raise
Fold
2:1
Meet
Pass
(u)
Notice that when nodes are copied, they remain in the same information set as their original counterparts. Information sets are indicated by the dotted lines connecting Alice's and Bob's moves, respectively.
In our game, Alice does observe the card she draws, but Bob does not. So Alice's two moves should be in separate information sets. An easy way to accomplish this is to "reveal" the outcome of the chance move to Alice. Here's how to do that.

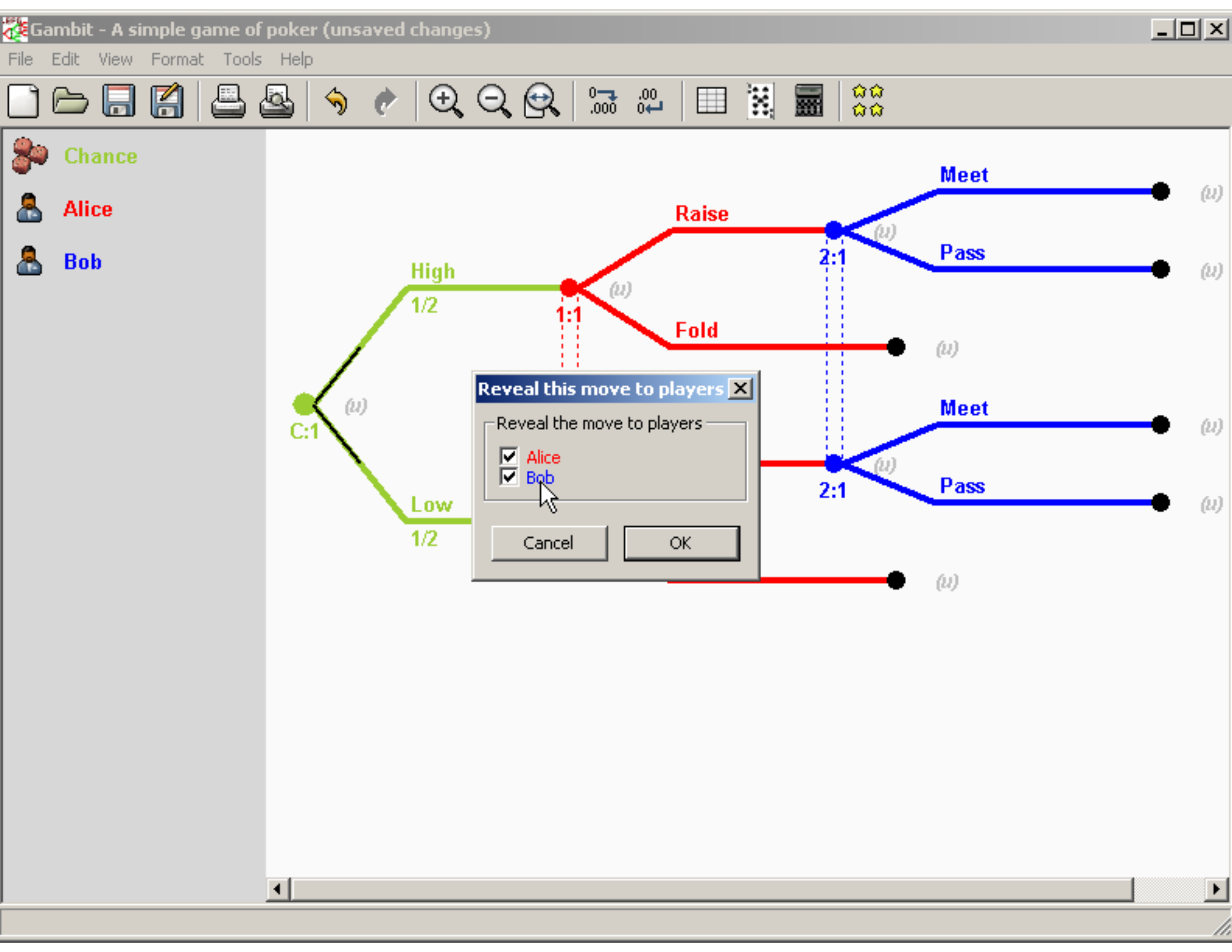

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
High
1/2
1:1
Raise
Fold
2:1
Meet
Pass
Raise
Fold
2:1
Meet
Pass
(u)
C:1
Right-clicking in the tree window presents a pop-up menu of editing operations.

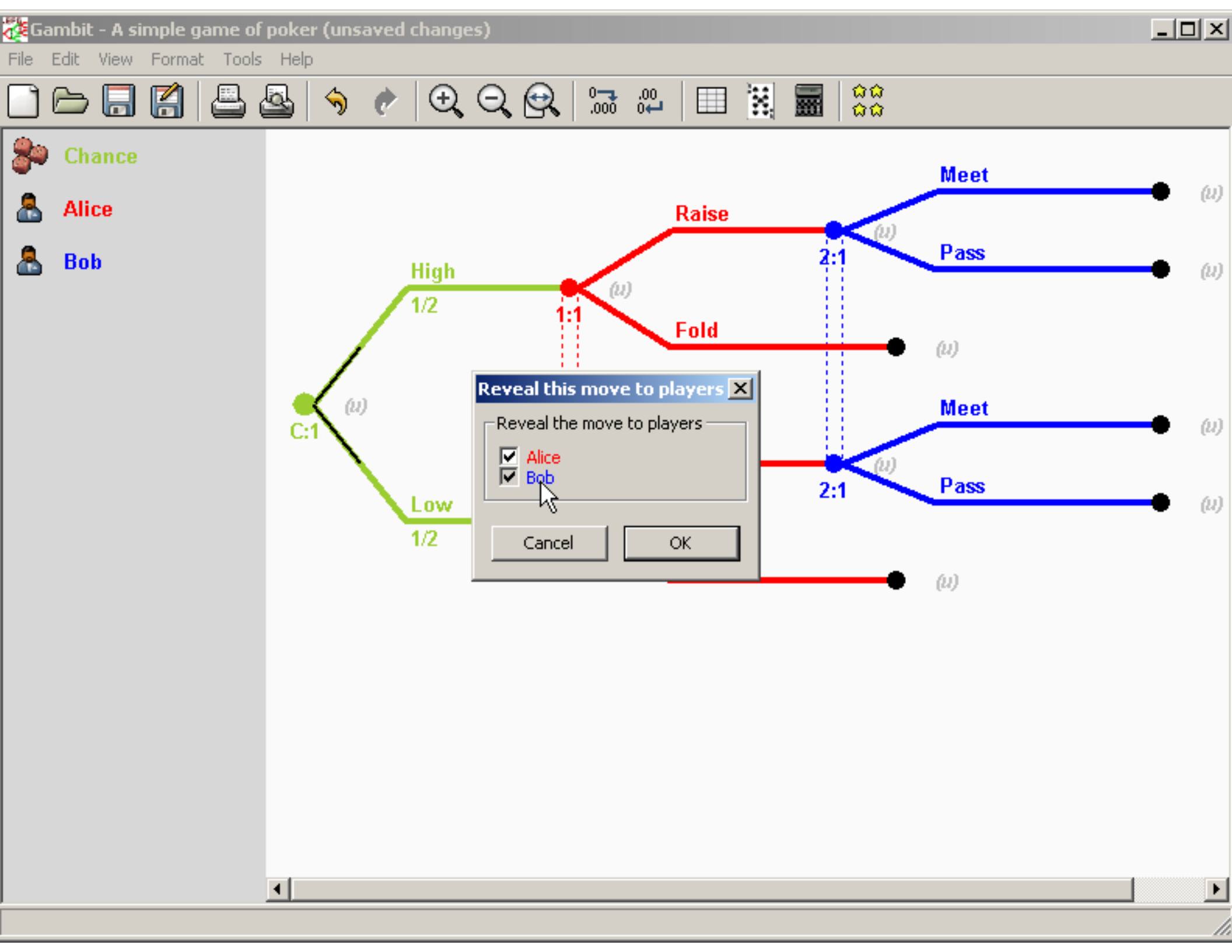

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
(u)
Low
1/2

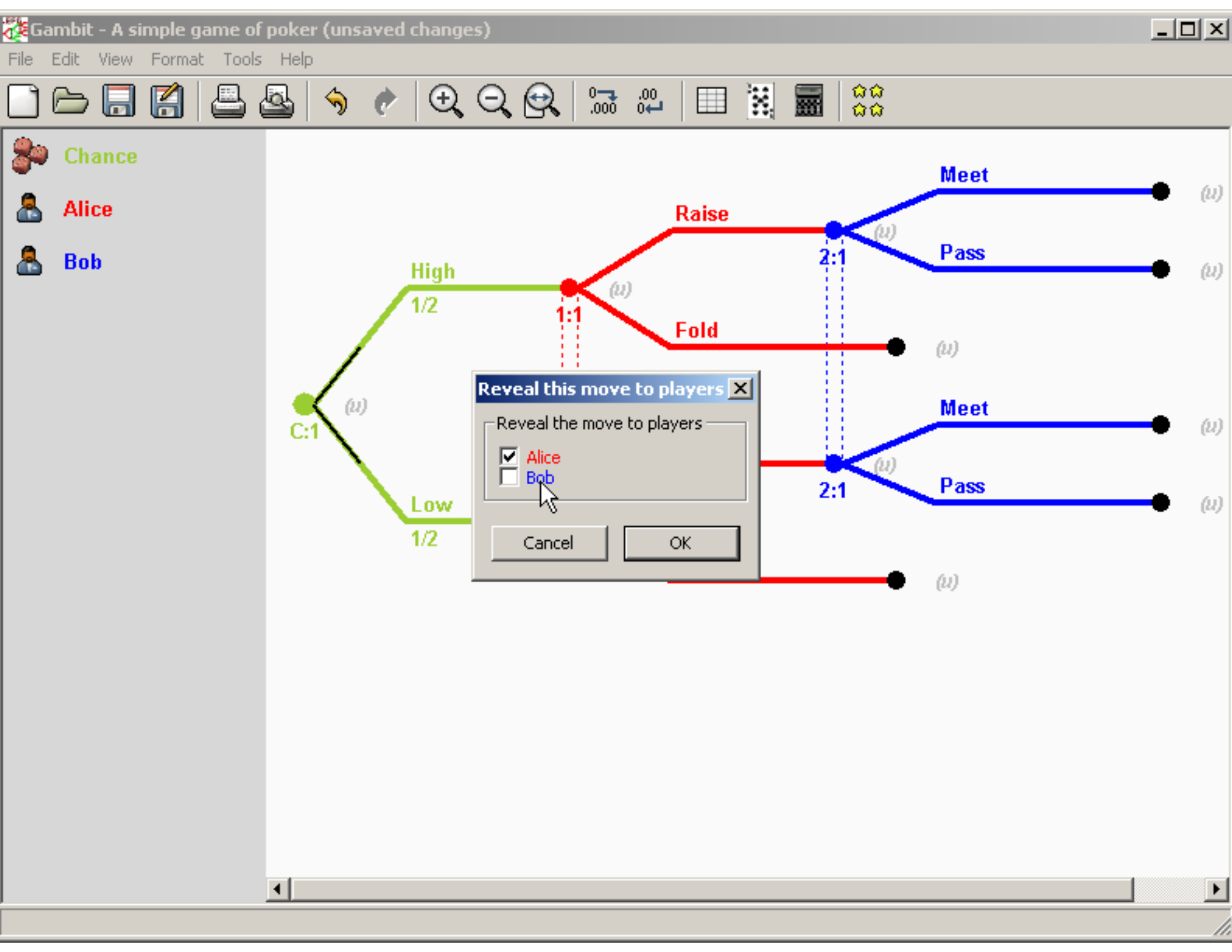

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
High
1/2
1:1
Raise
Fold
2:1
Meet
Pass
Raise
Fold
2:1
Meet
Pass
1:1
(u)
Undo Ctrl-Z
Redo Ctrl-Y
Insert move
Insert action
Reveal
Delete subtree Del
Delete parent Back
Remove outcome
Node properties
Move properties
Game properties

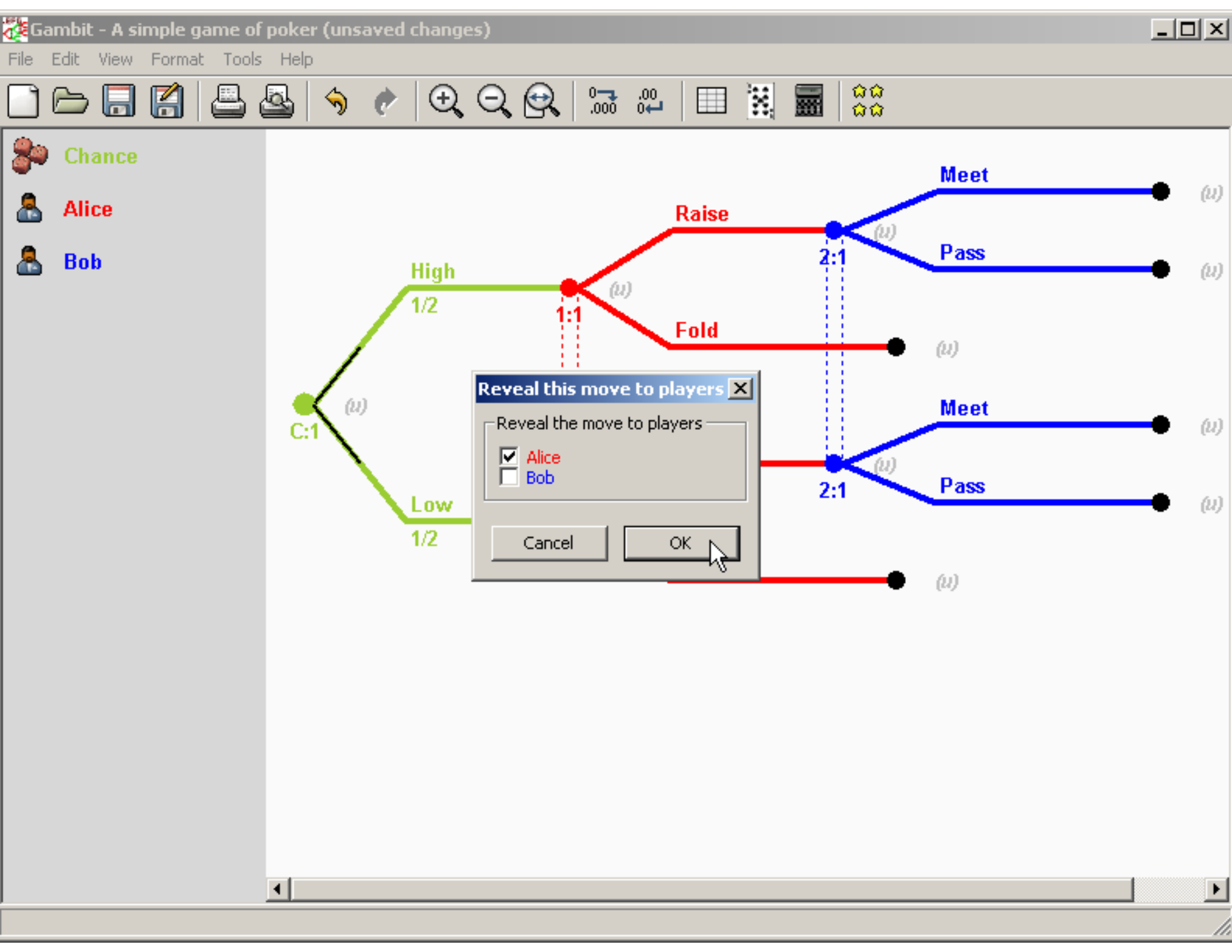

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
High
1/2
1:1
Raise
Fold
2:1
Meet
Pass
Raise
Fold
2:1
Meet
Pass
1:1
(u)
Undo Ctrl-Z
Redo Ctrl-Y
Insert move
Insert action
Reveal
Delete subtree Del
Delete parent Back
Remove outcome
Node properties
Move properties
Game properties

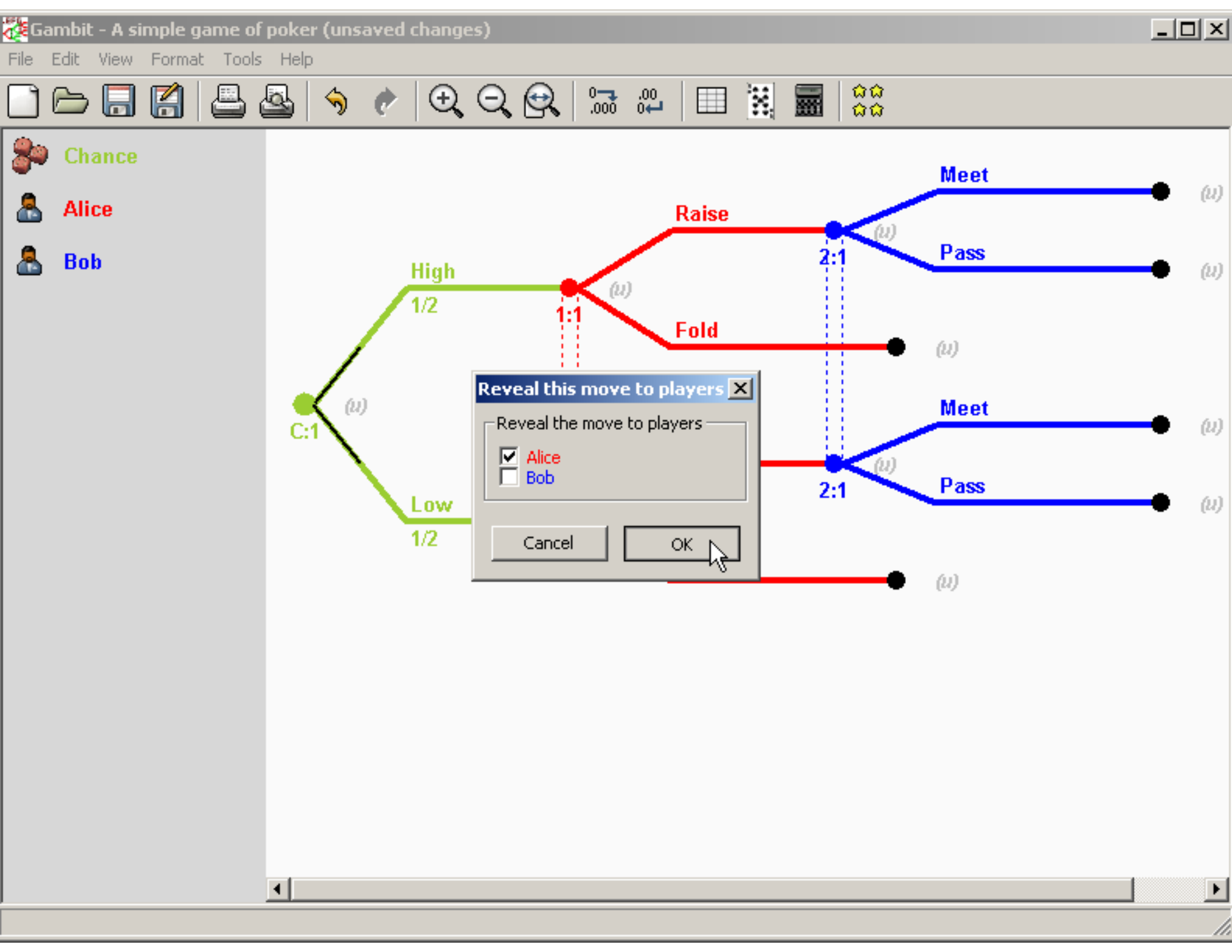

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
Low
1/2
1:1
Raise
Fold
2:1
Meet
Pass
2:1
Meet
Pass
(u)
Reveal this move to players
Reveal the move to players
Alice
Bob
Cancel
OK

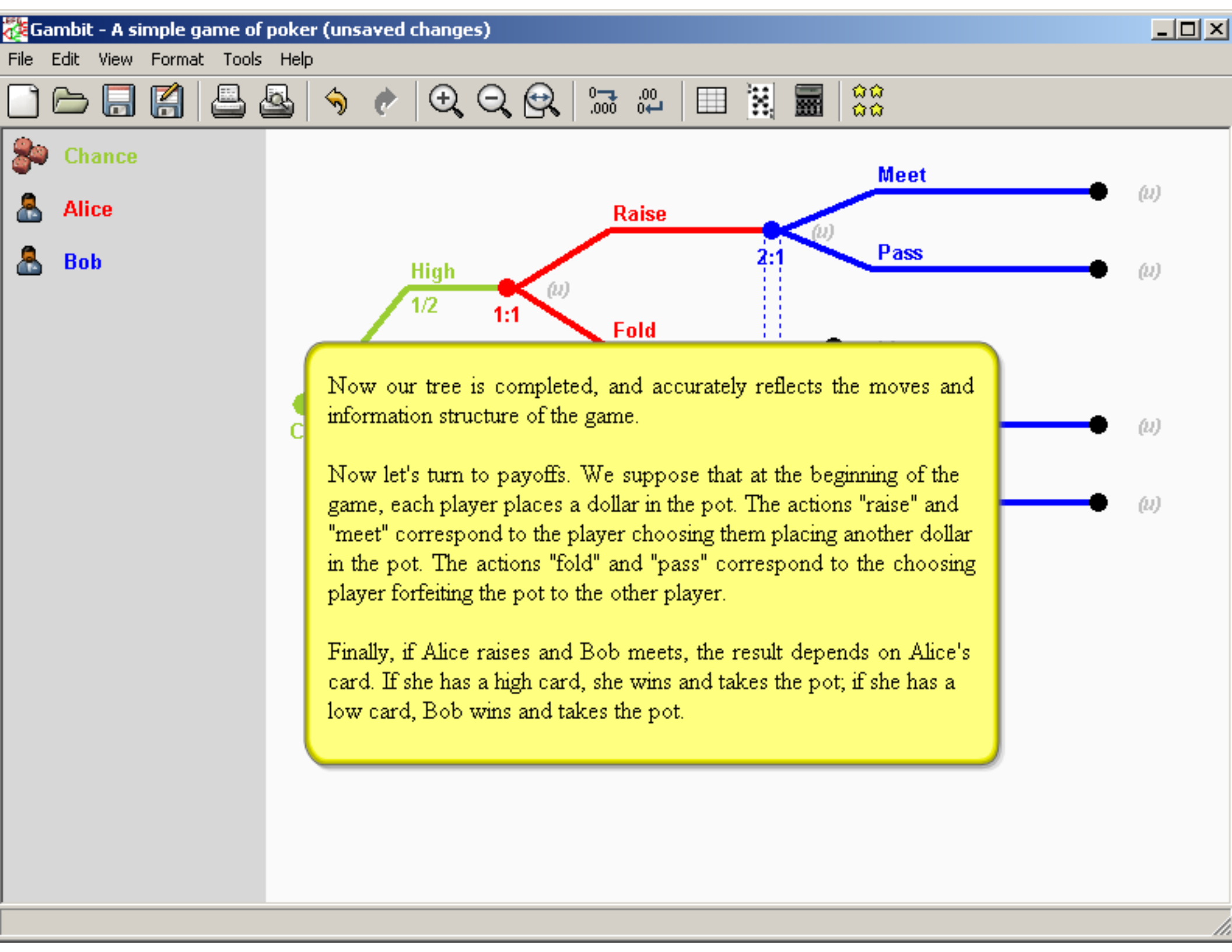

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
Low
1/2
1:1
Raise
Fold
2:1
Meet
Pass
2:1
Meet
Pass
(u)
Reveal this move to players
Reveal the move to players
Alice
Bob
Cancel
OK

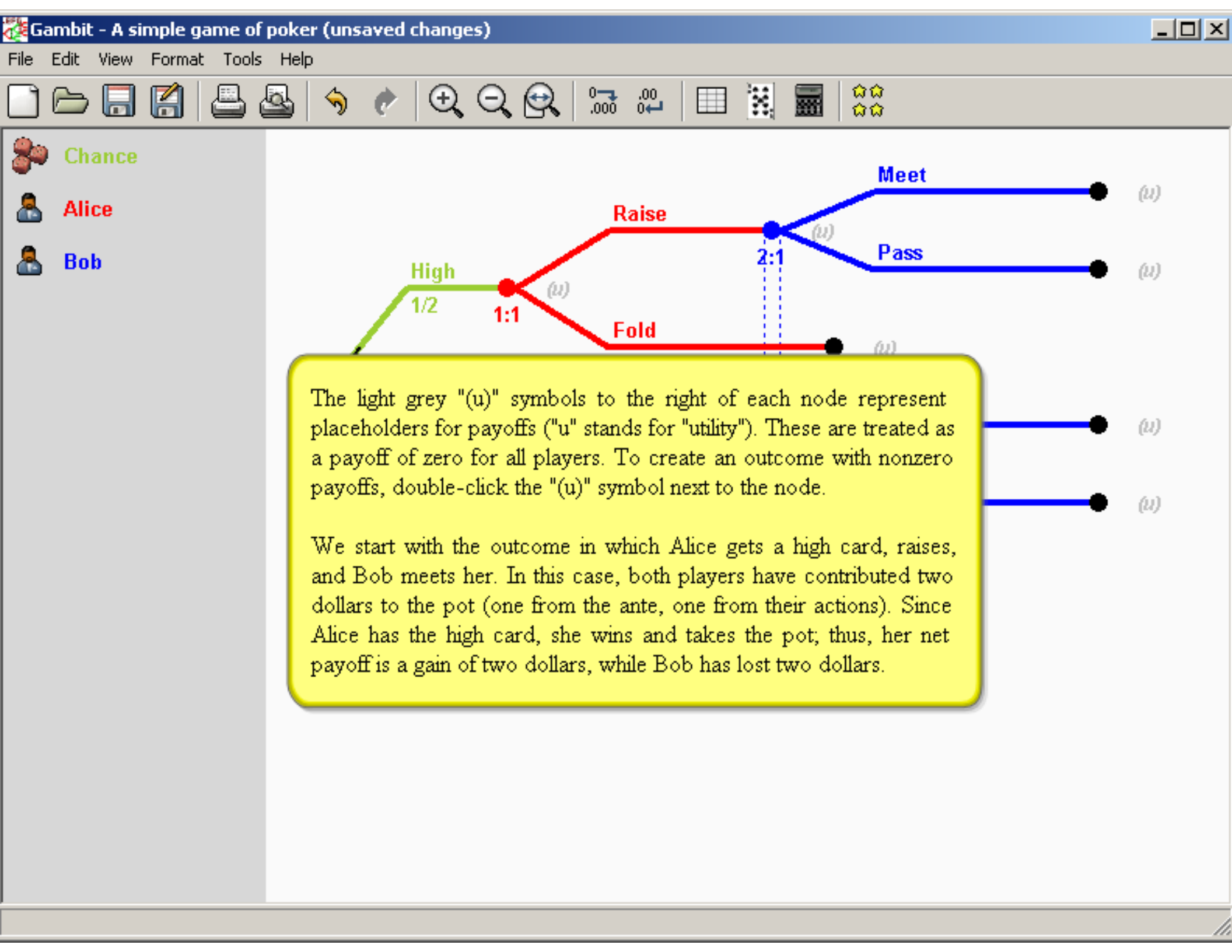

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
Low
1/2
1:1
Raise
Fold
2:1
Meet
Pass
2:1
Meet
Pass
(u)
Reveal this move to players
Reveal the move to players
Alice
Bob
Cancel
OK

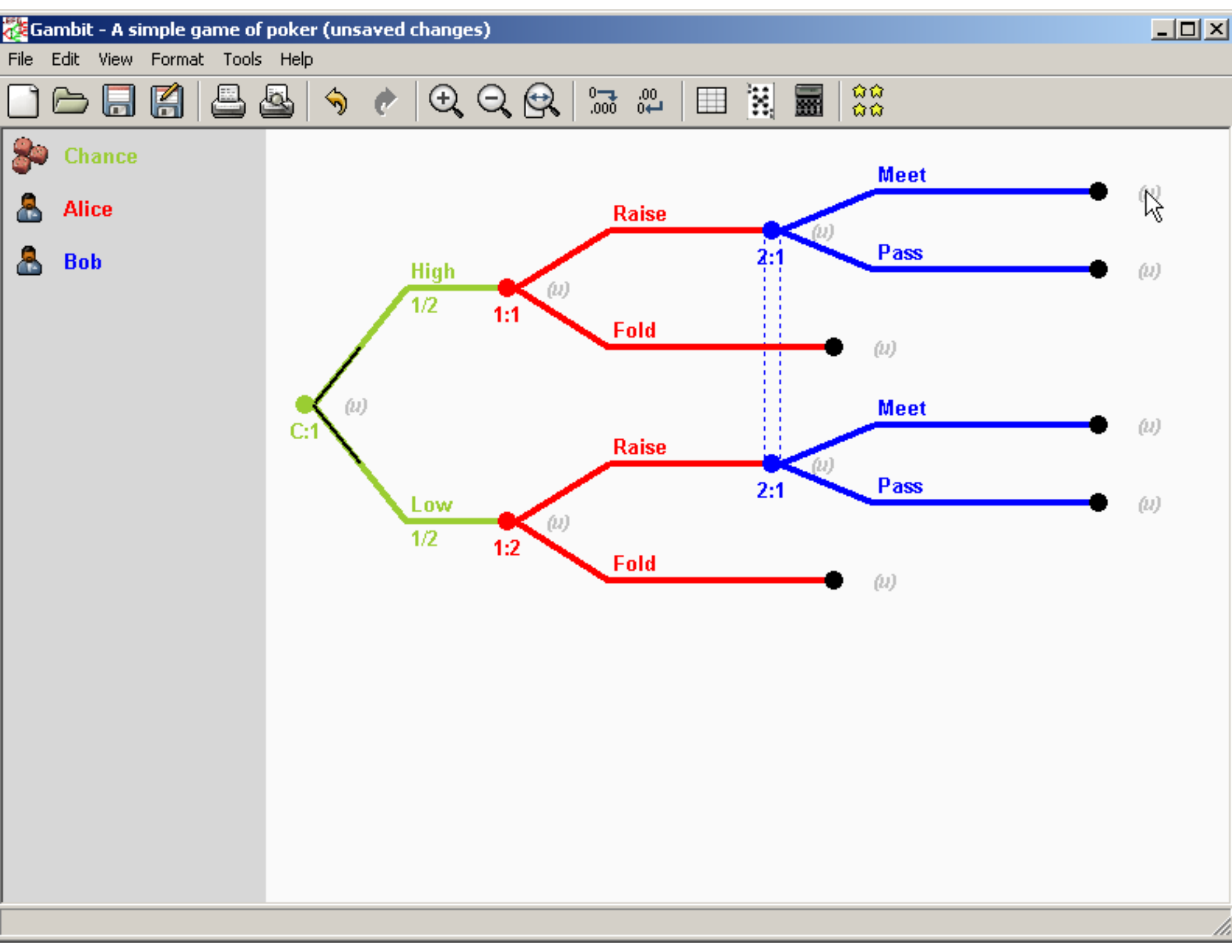

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
Low
1/2
1:1
Raise
Fold
2:1
Meet
Pass
2:1
Meet
Pass
(u)
Reveal this move to players
Reveal the move to players
Alice
Bob
Cancel
OK

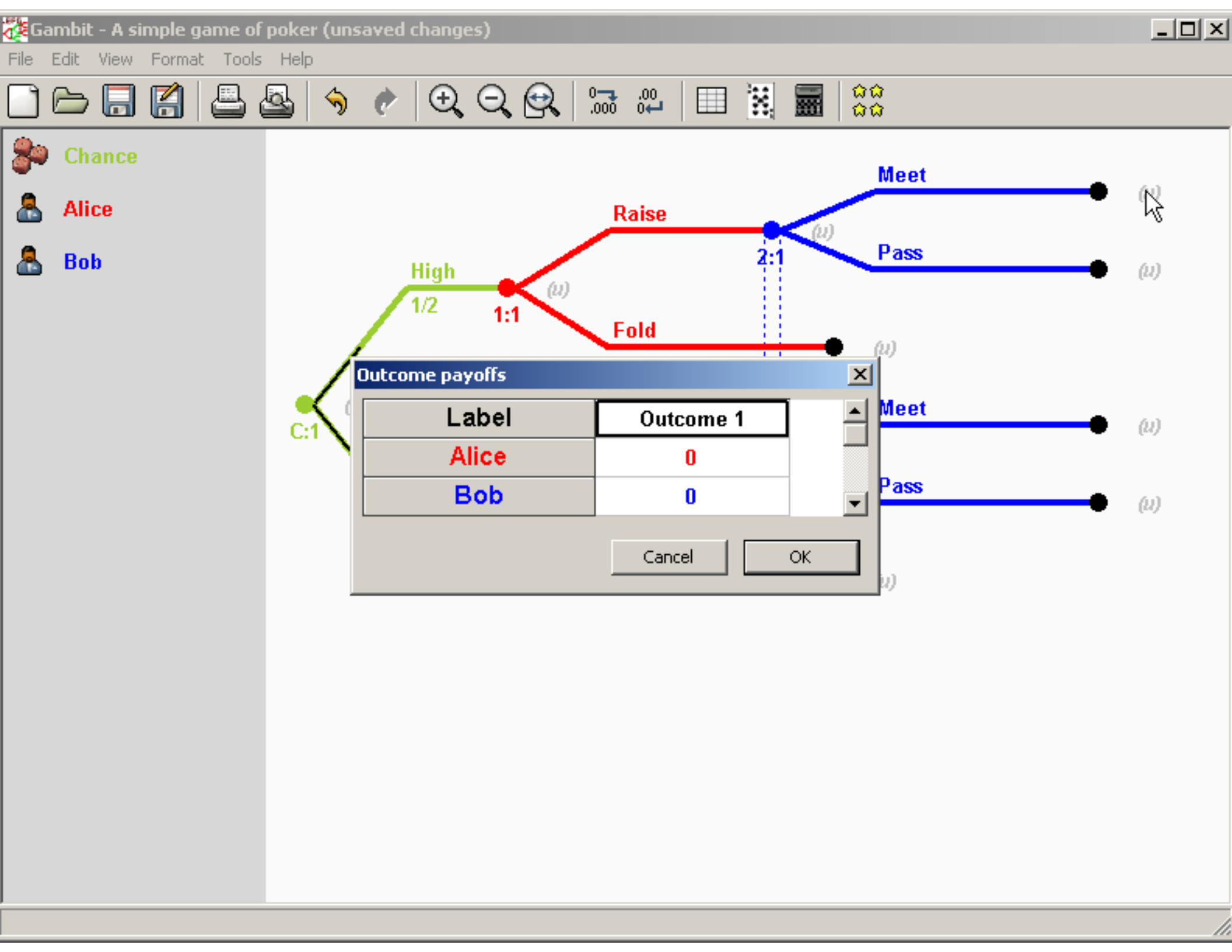

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
Low
1/2
1:1
Raise
Fold
2:1
Meet
Pass
2:1
Meet
Pass
(u)
Reveal this move to players
Reveal the move to players
Alice
Bob
Cancel
OK

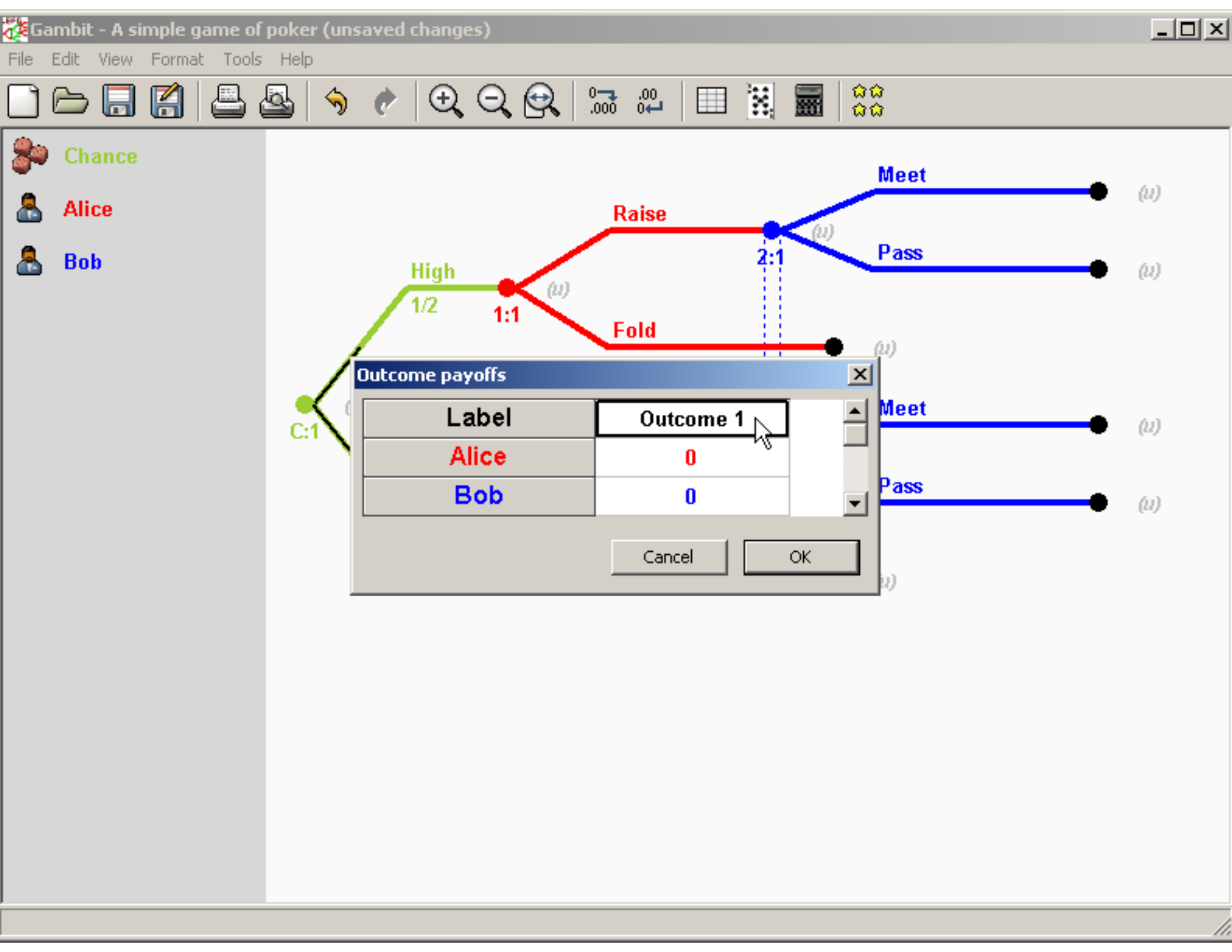

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
Low
1/2
1:1
Raise
Fold
2:1
Meet
Pass
2:1
Meet
Pass
(u)
Reveal this move to players
Reveal the move to players
Alice
Bob
Cancel
OK

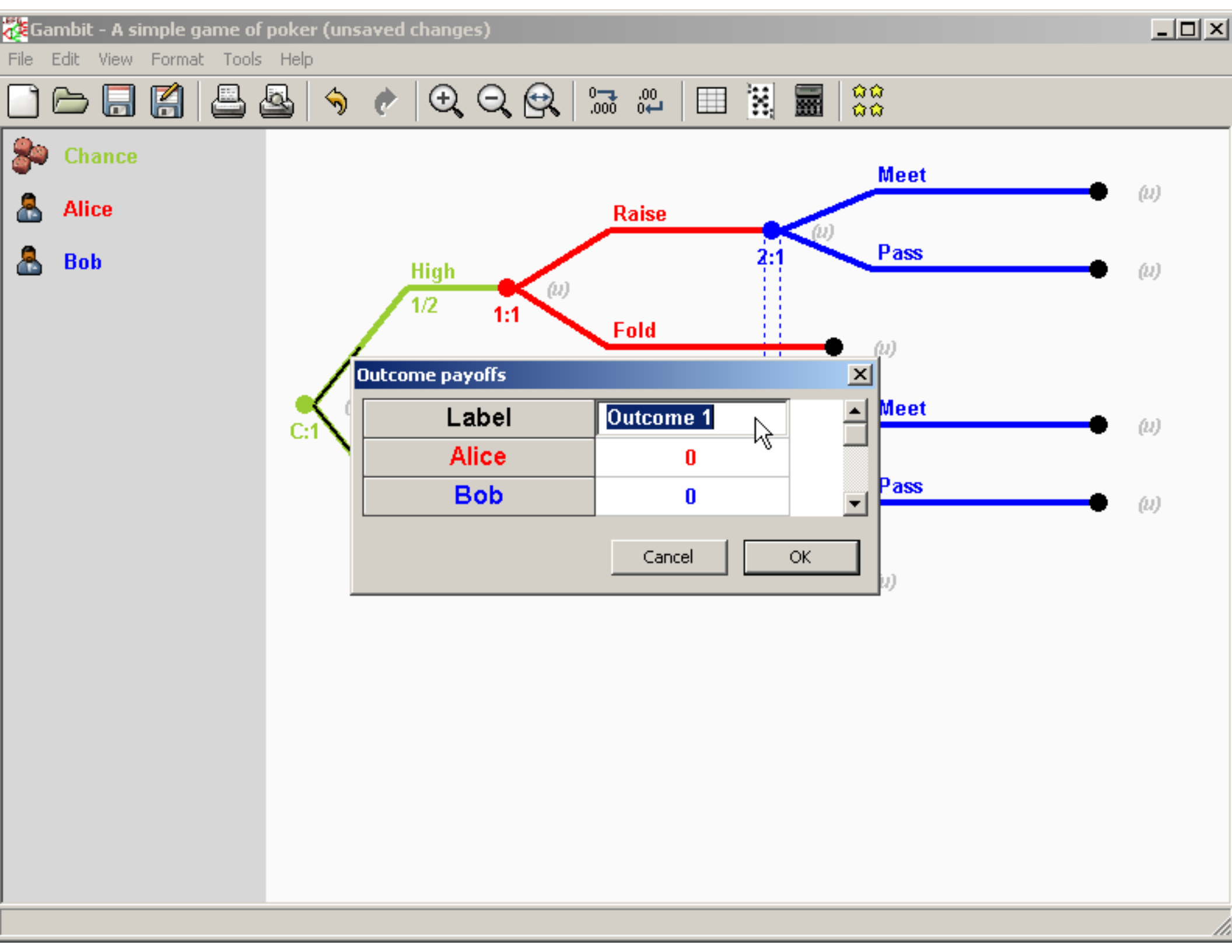

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
Now our tree is completed, and accurately reflects the moves and information structure of the game.
Now let's turn to payoffs. We suppose that at the beginning of the game, each player places a dollar in the pot. The actions "raise" and "meet" correspond to the player choosing them placing another dollar in the pot. The actions "fold" and "pass" correspond to the choosing player forfeiting the pot to the other player.
Finally, if Alice raises and Bob meets, the result depends on Alice's card. If she has a high card, she wins and takes the pot; if she has a low card, Bob wins and takes the pot.

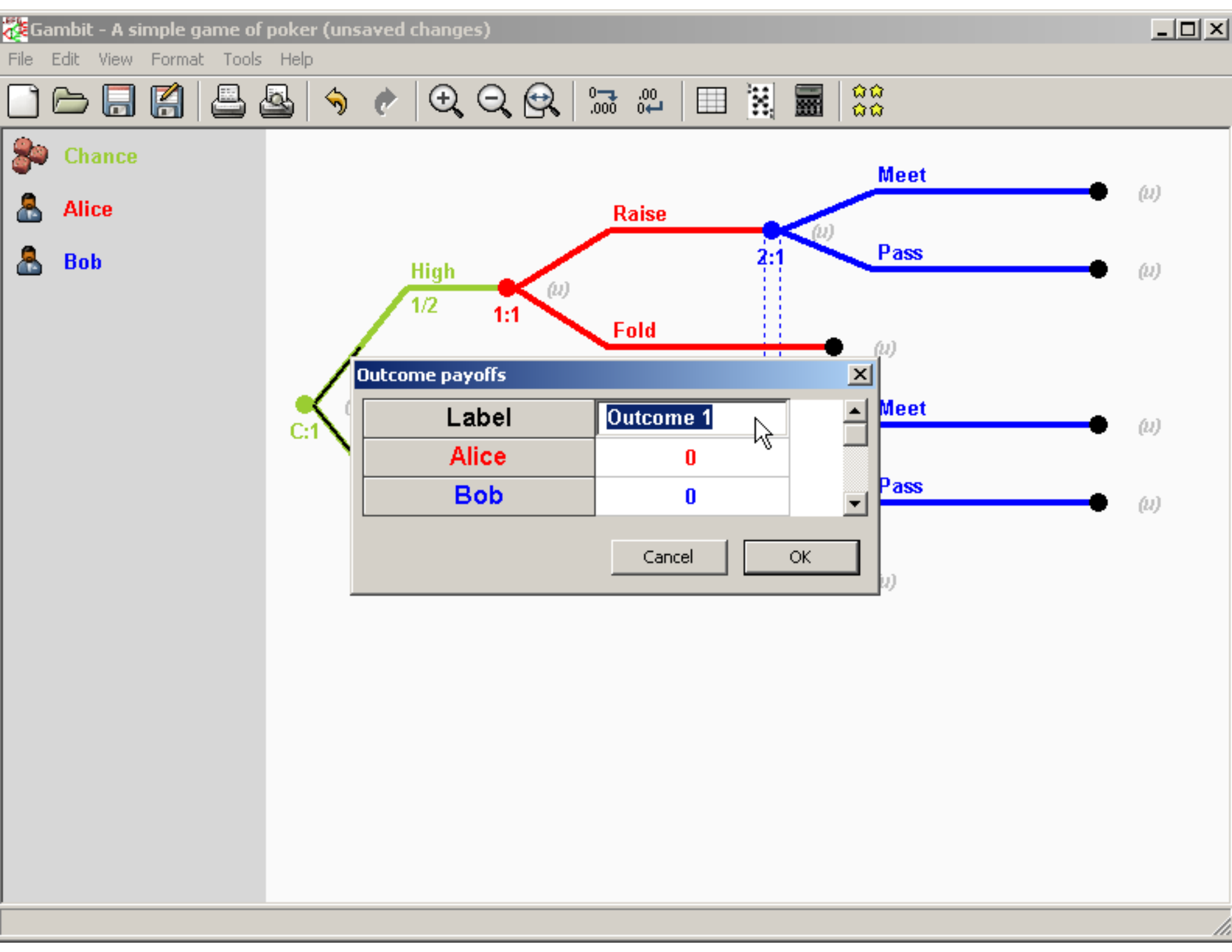

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
The light grey "(u)" symbols to the right of each node represent placeholders for payoffs ("u" stands for "utility"). These are treated as a payoff of zero for all players. To create an outcome with nonzero payoffs, double-click the "(u)" symbol next to the node.
We start with the outcome in which Alice gets a high card, raises, and Bob meets her. In this case, both players have contributed two dollars to the pot (one from the ante, one from their actions). Since Alice has the high card, she wins and takes the pot; thus, her net payoff is a gain of two dollars, while Bob has lost two dollars.

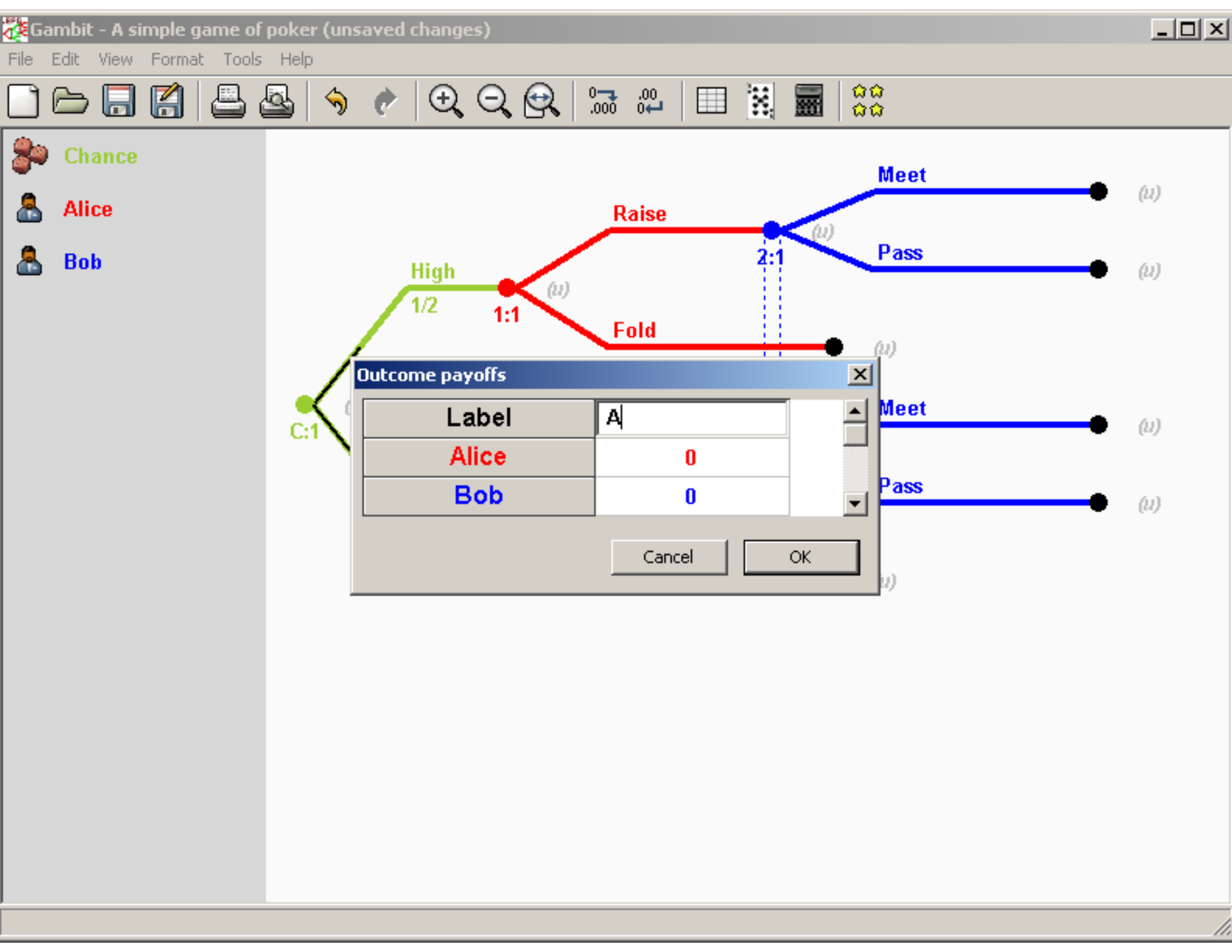

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
2:1
2:1
Meet
Pass
Meet
Pass
(u)

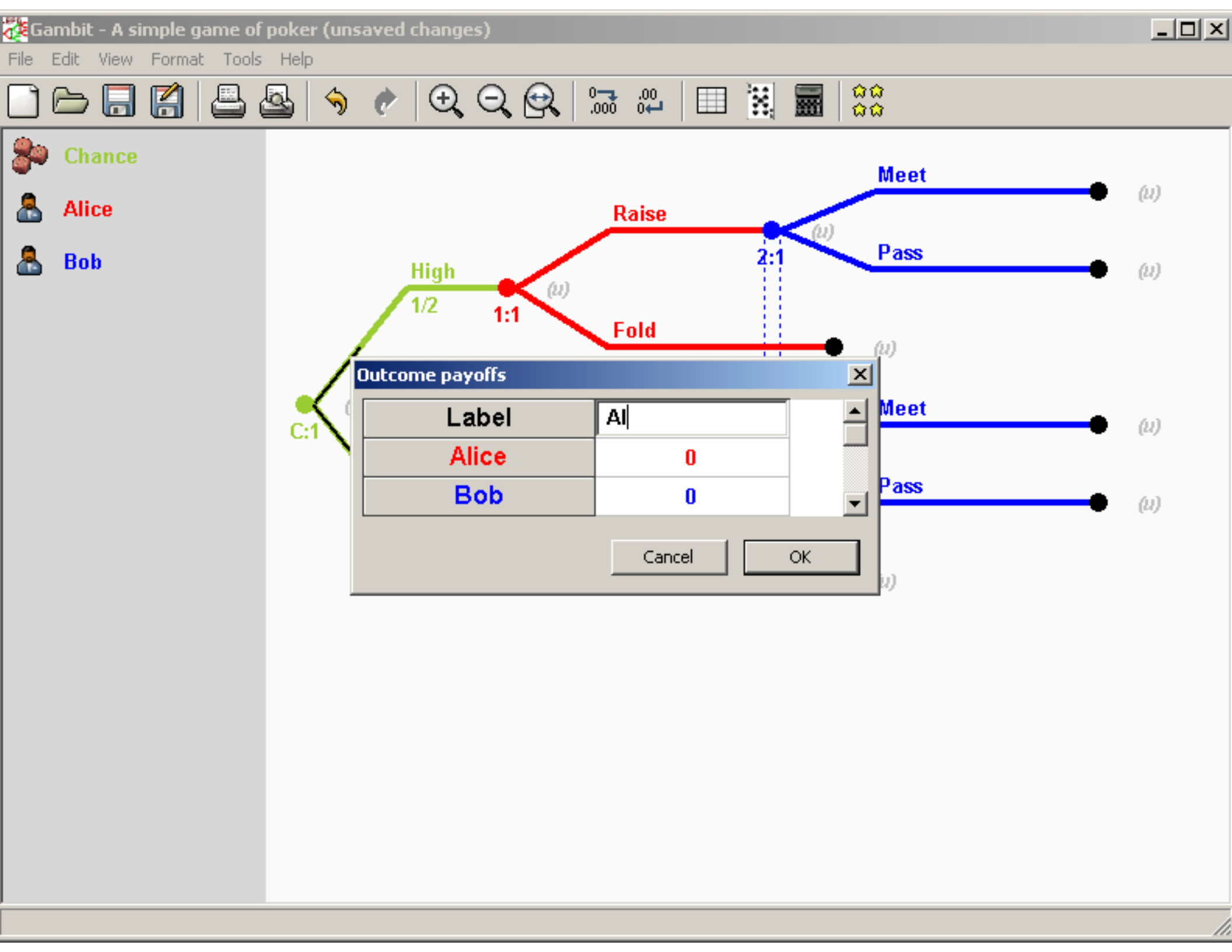

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Outcome 1
Alice
0
Bob
0
Cancel
OK

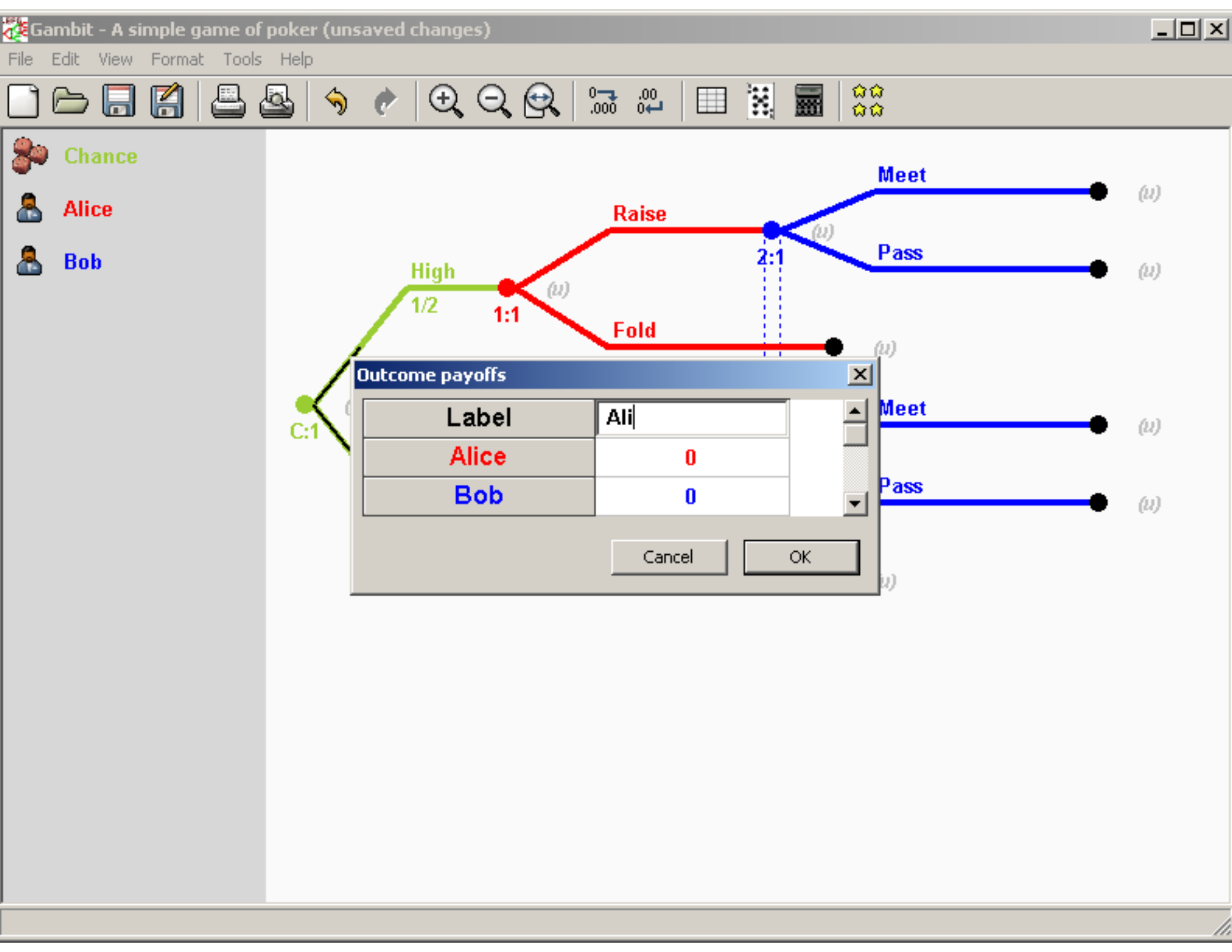

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Outcome 1
Alice
0
Bob
0
Cancel
OK
Meet
Pass

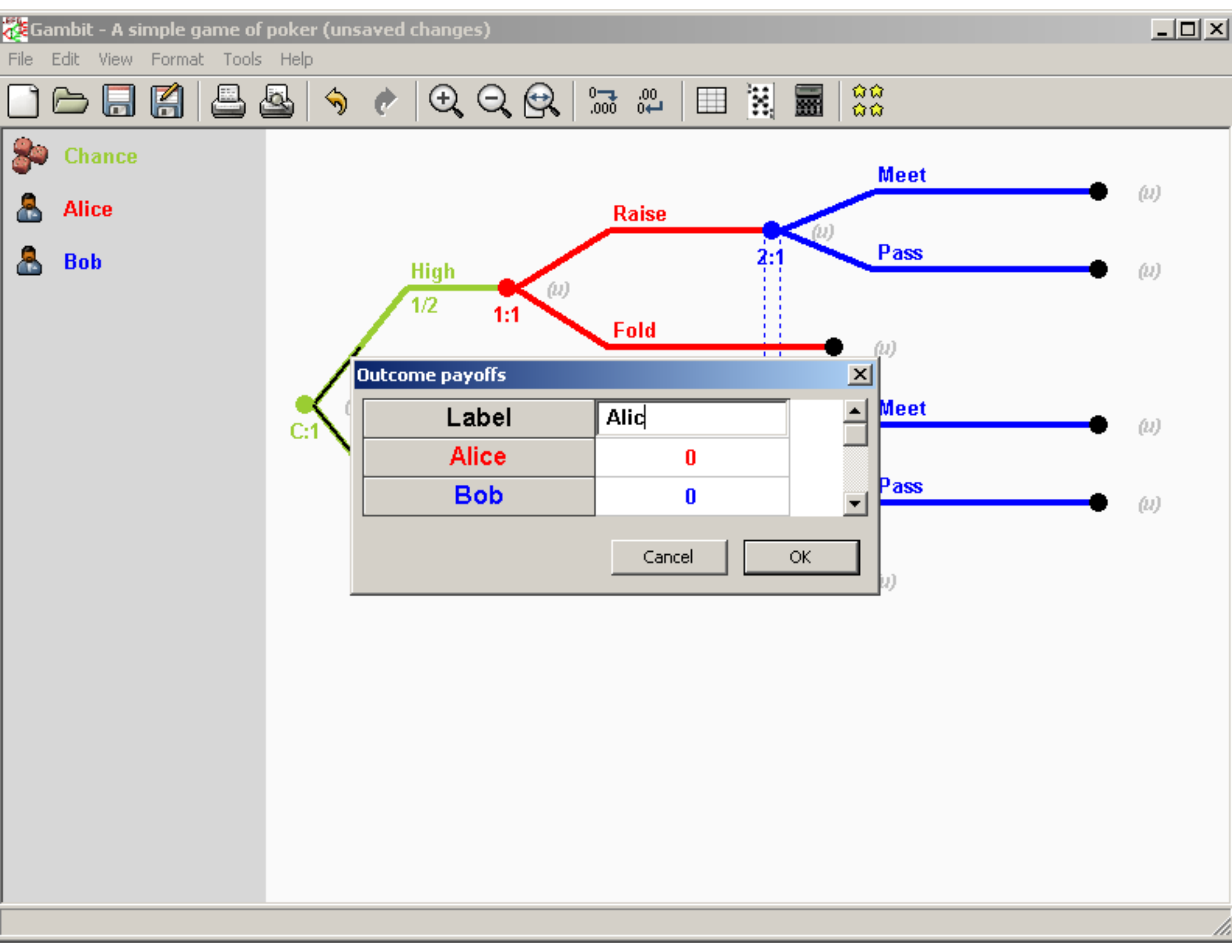

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Meet
Pass
Outcome payoffs
Label
Outcome 1
Alice
0
Bob
0
Cancel
OK

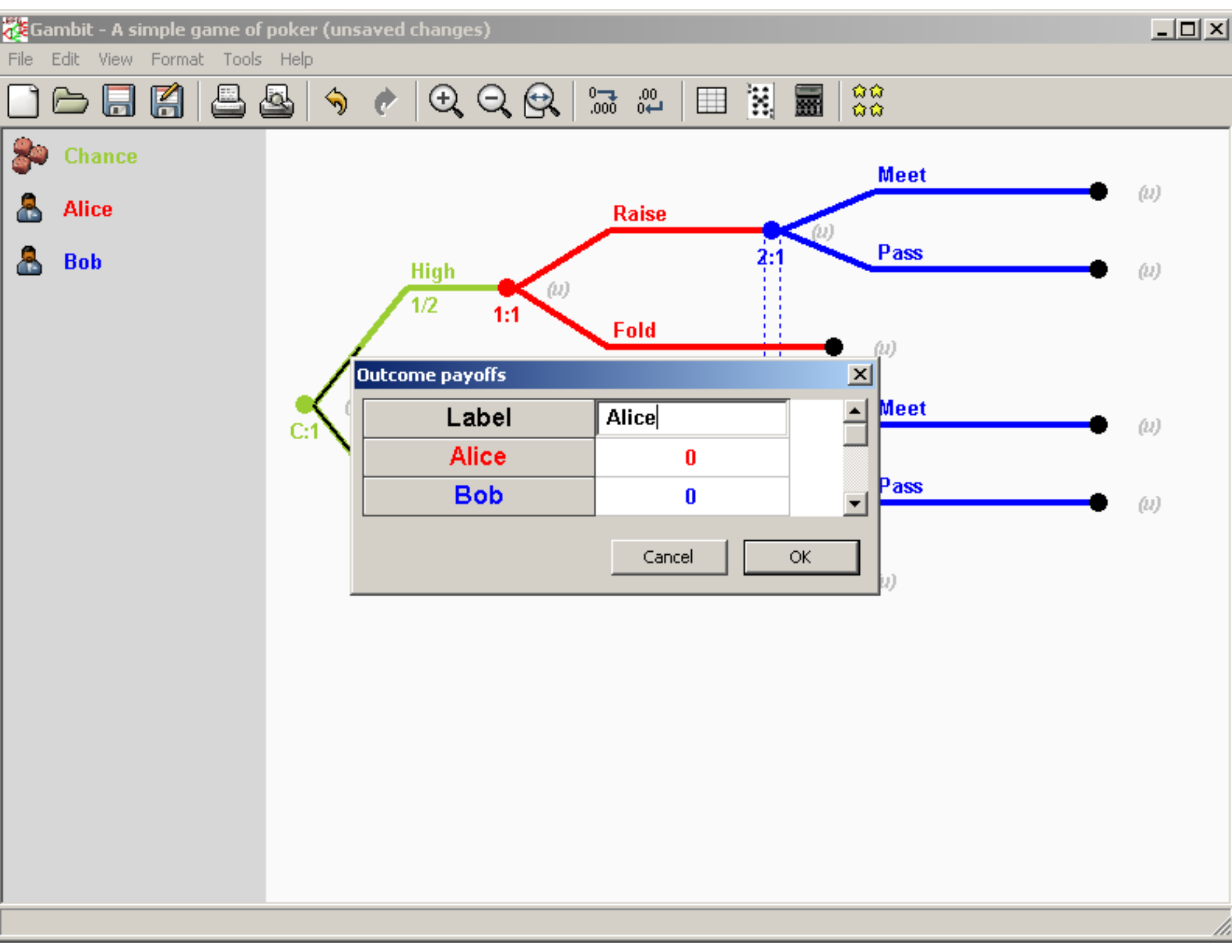

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Meet
Pass
Outcome payoffs
Label
Outcome 1
Alice
0
Bob
0
Cancel
OK

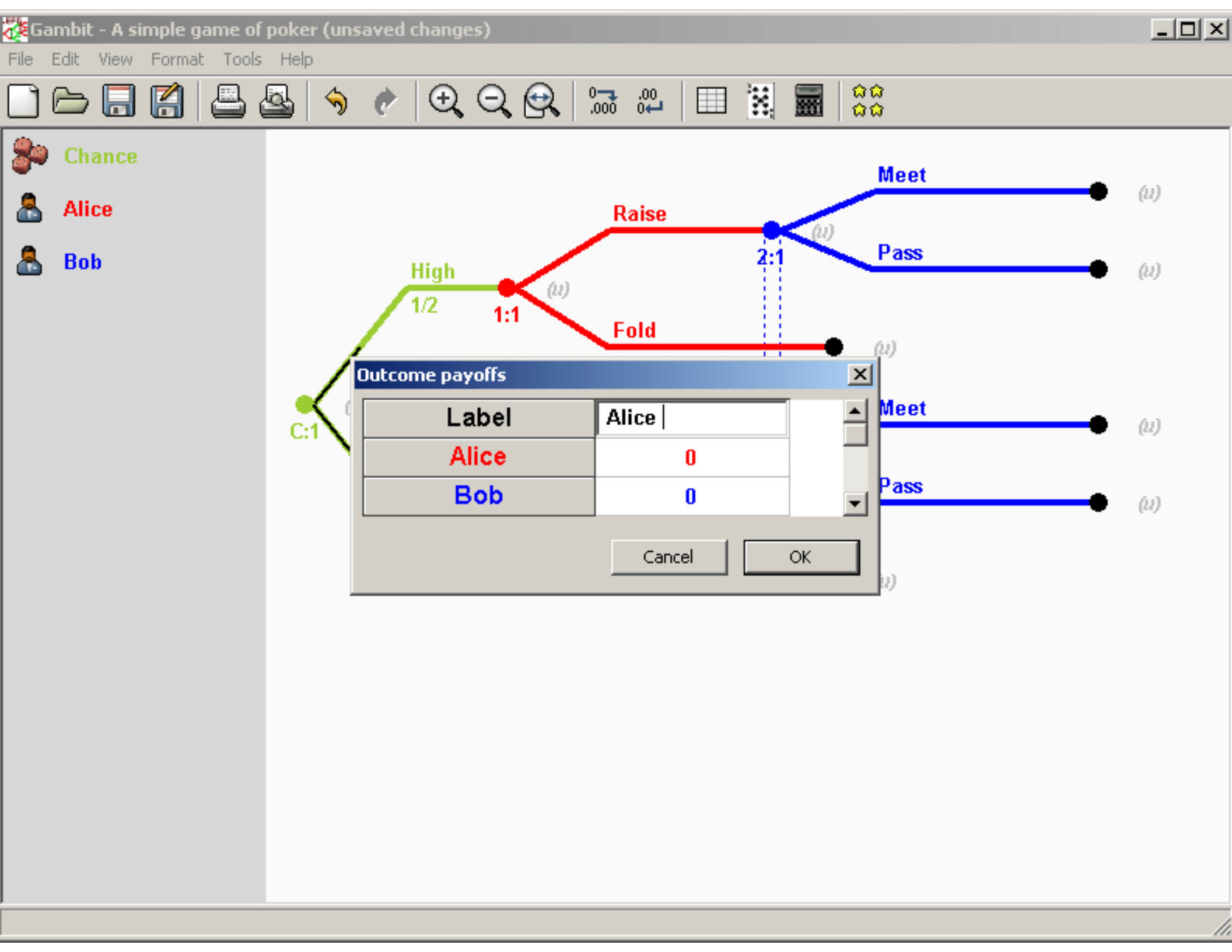

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
A
Alice
0
Bob
0
Cancel
OK
Meet
Pass

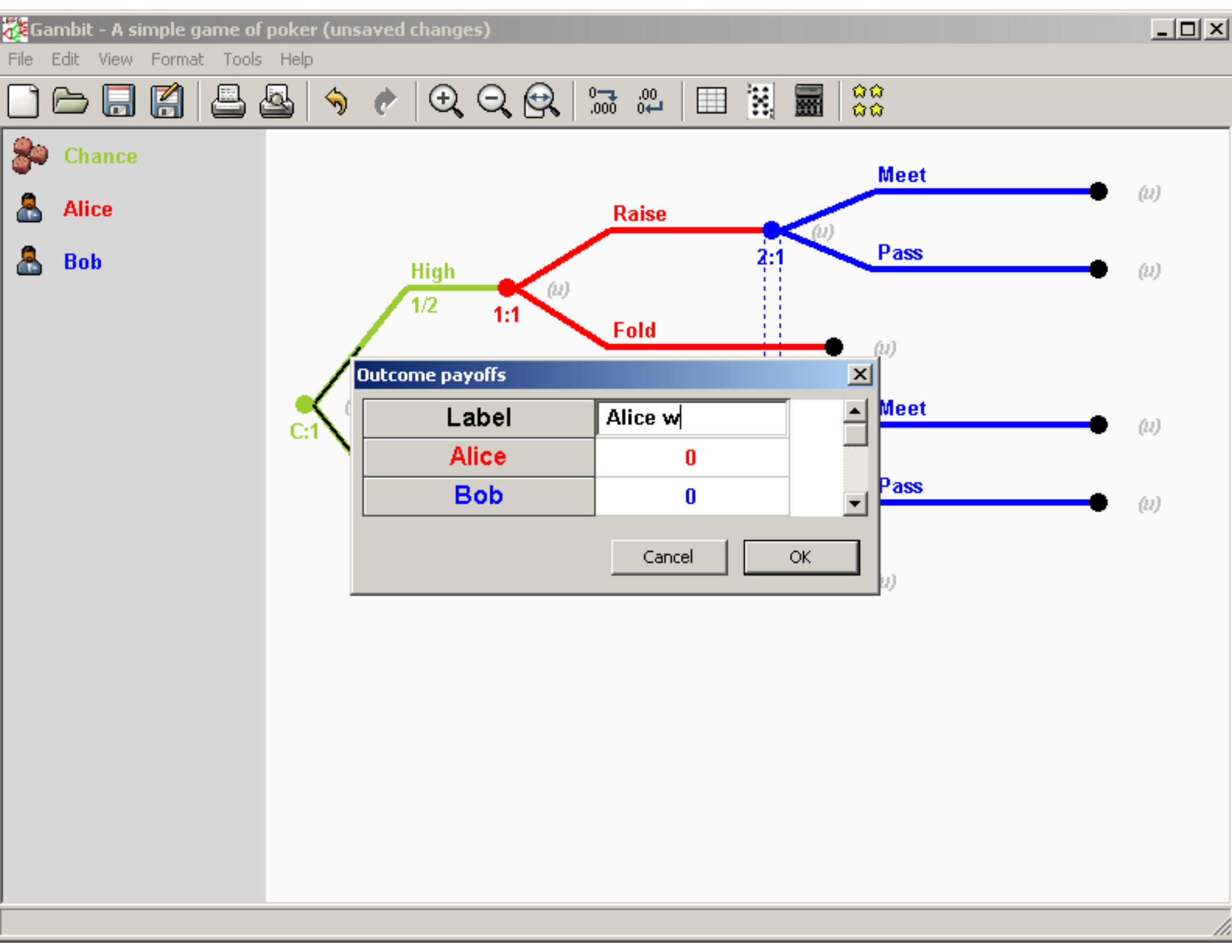

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Al
Alice
0
Bob
0
Cancel
OK
Meet
Pass

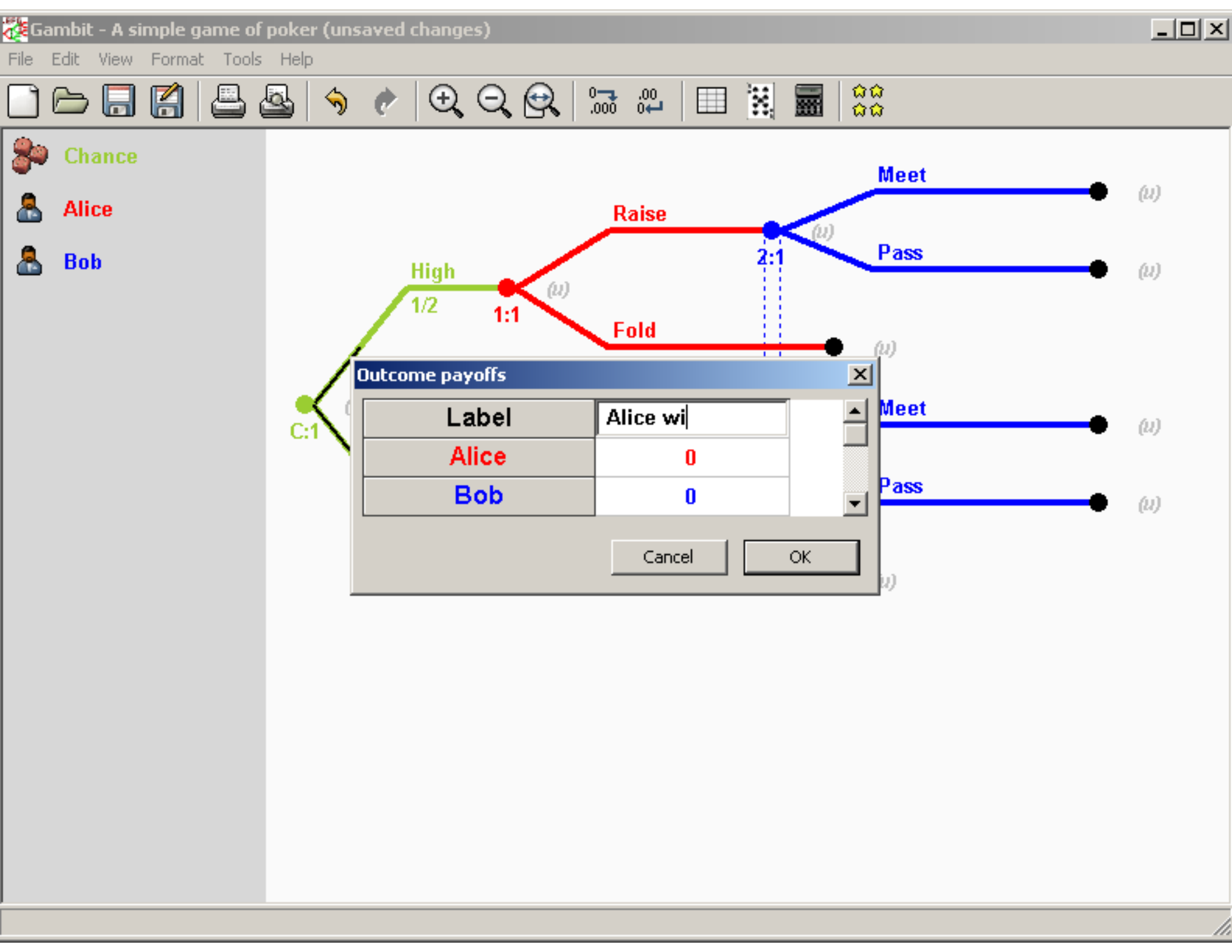

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Ali
Alice
0
Bob
0
Cancel
OK
Meet
Pass

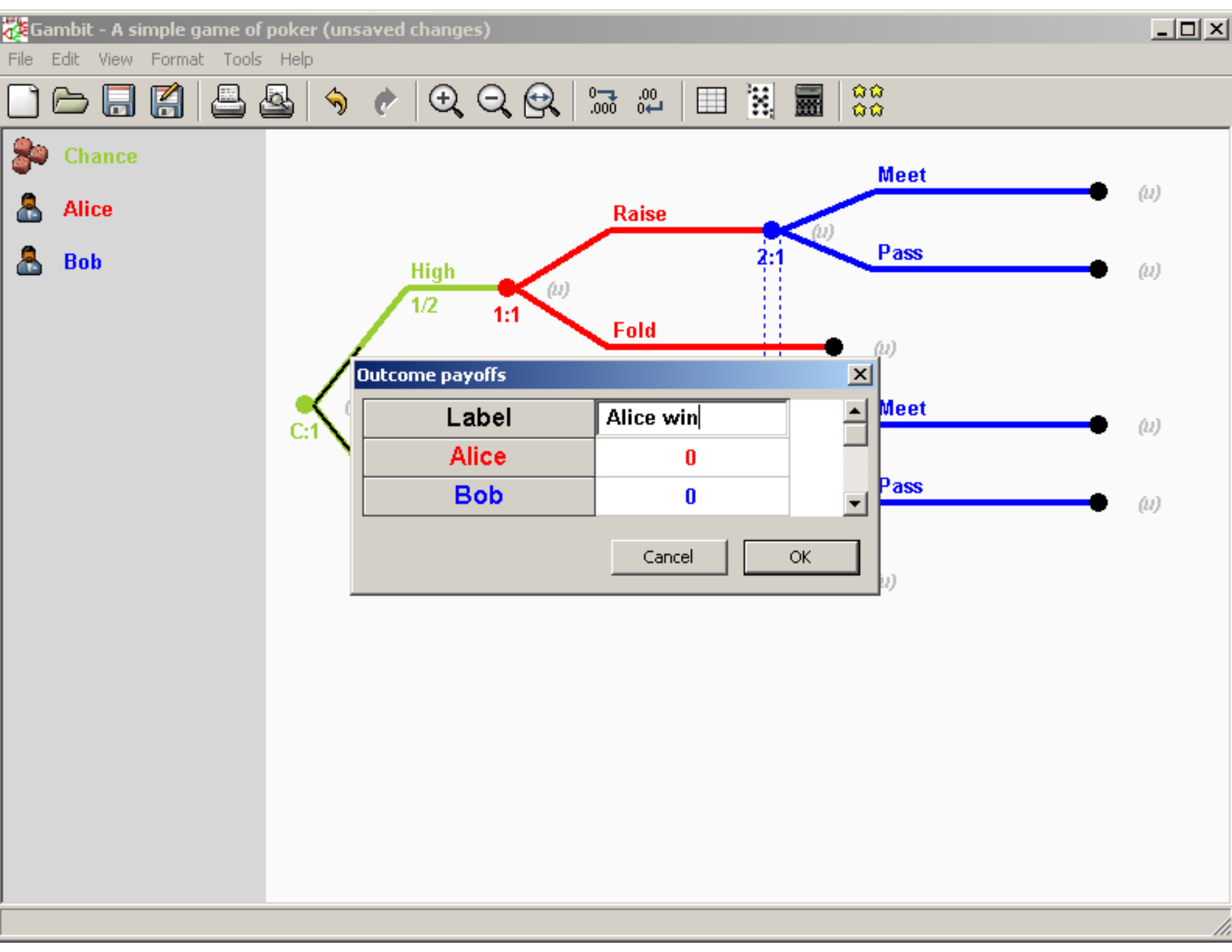

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alic
Alice
0
Bob
0
Cancel
OK
Meet
Pass

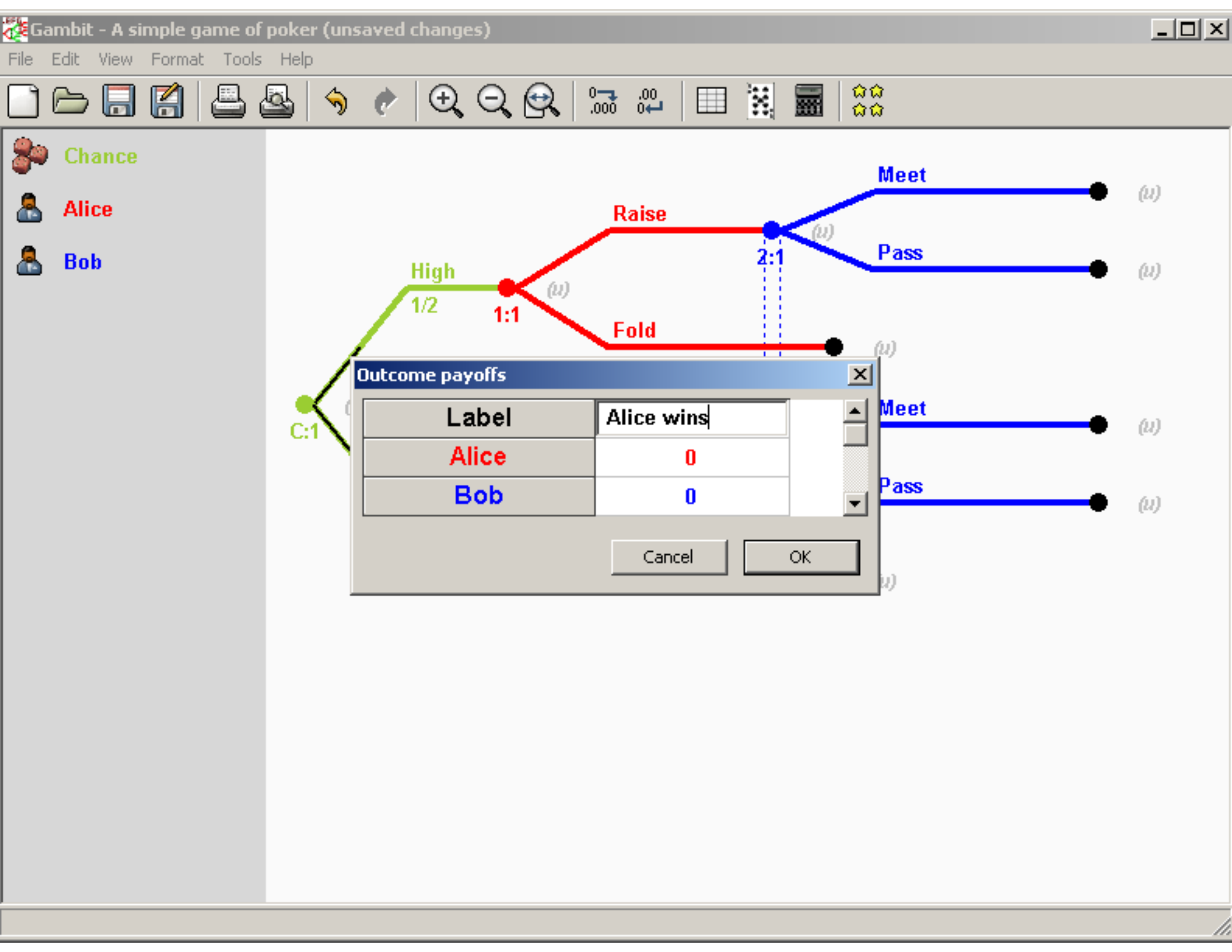

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice
Alice
0
Bob
0
Cancel
OK
Meet
Pass

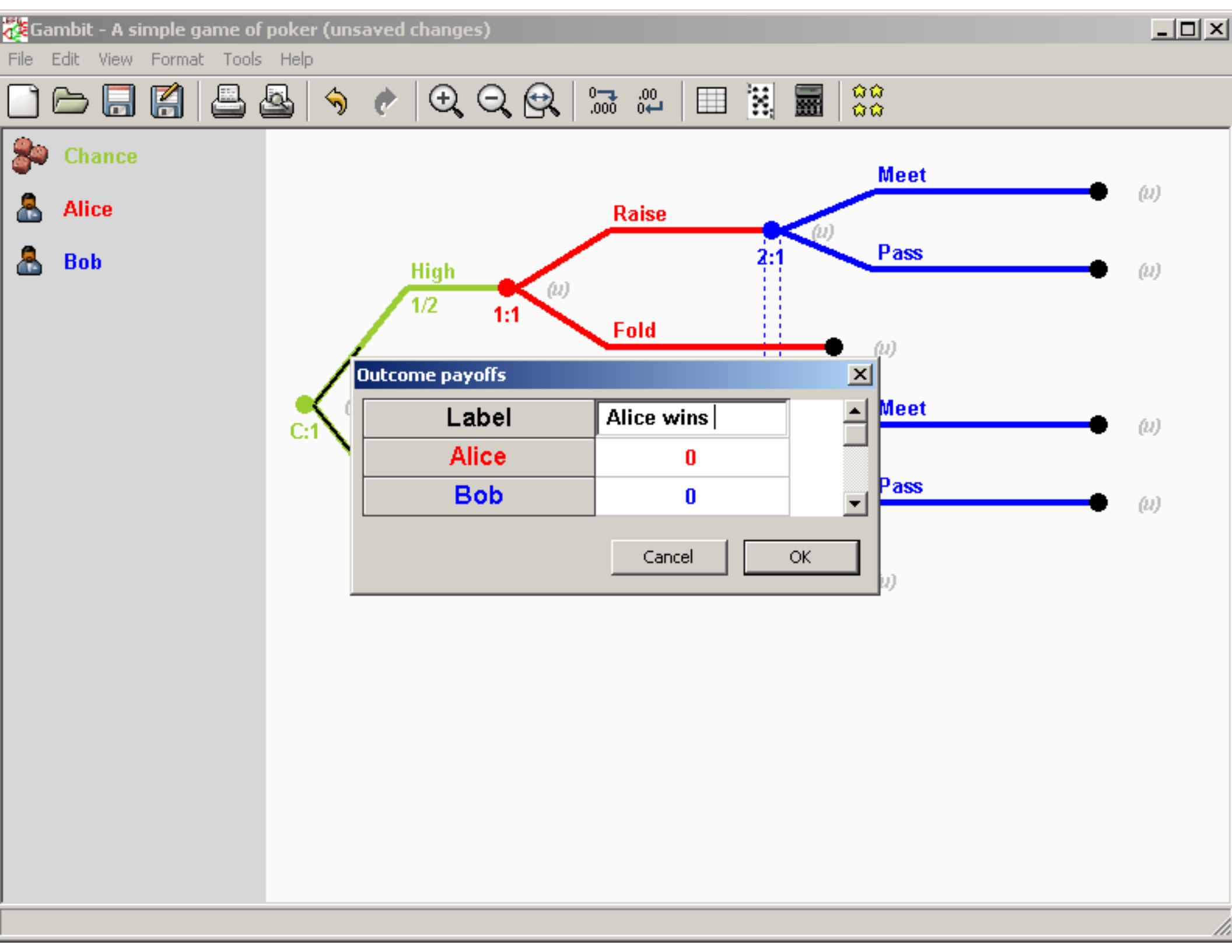

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice
Alice
0
Bob
0
Cancel
OK
Meet
Pass

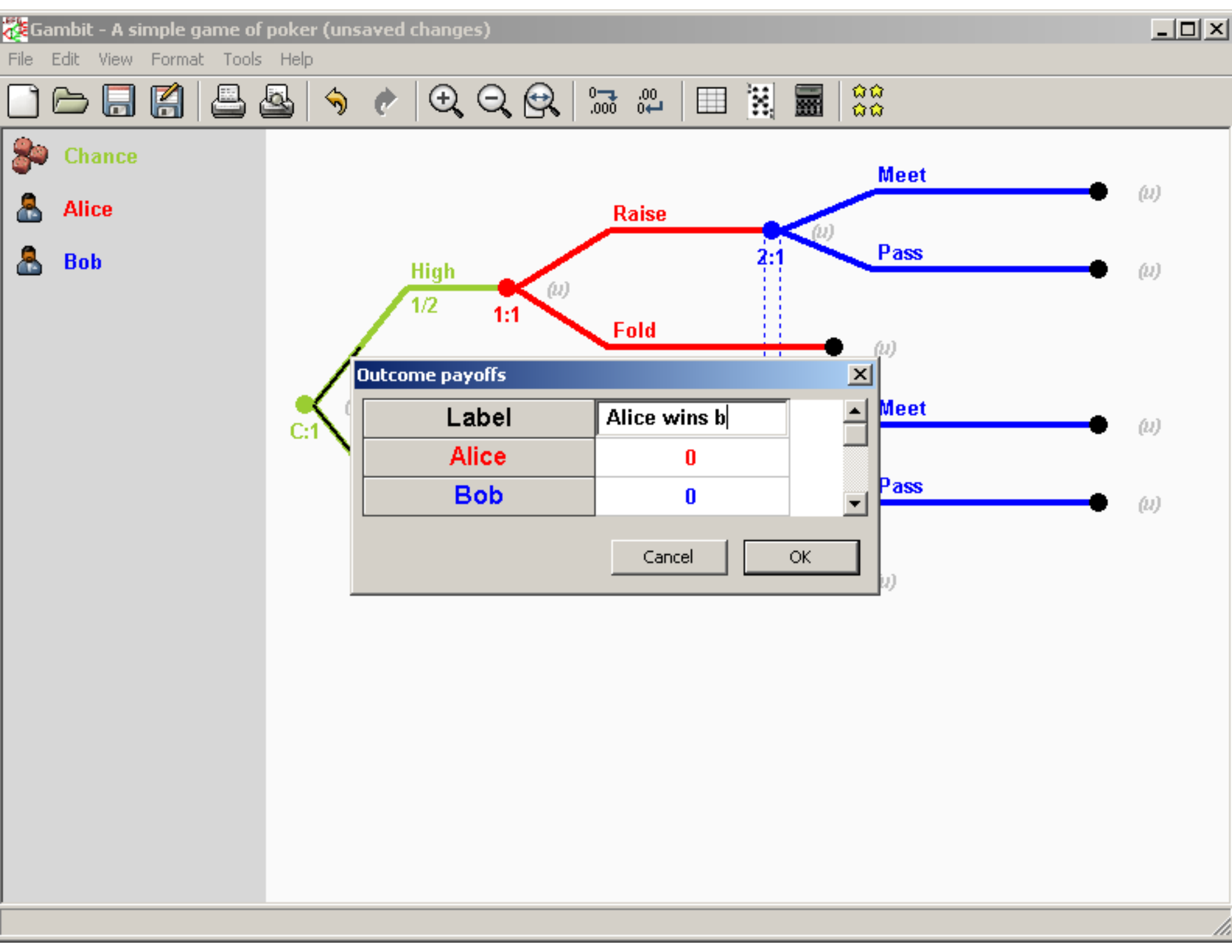

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
1:1
Raise
Fold
2:1
Meet
Pass
Meet
Pass
(u)
Outcome payoffs
Label
Alice w
Alice
0
Bob
0
Cancel
OK

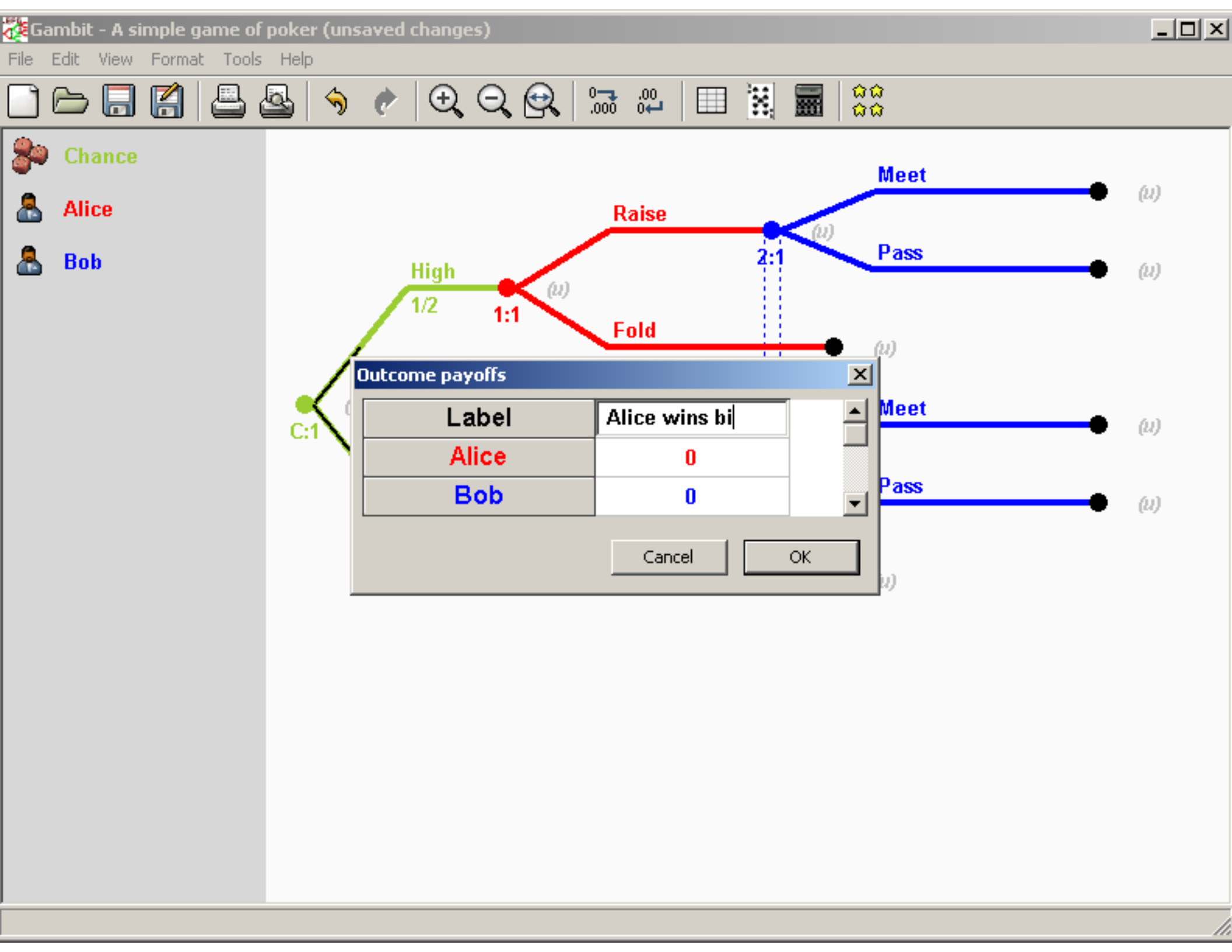

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
1:1
Raise
Fold
2:1
Meet
Pass
Meet
Pass
(u)
Outcome payoffs
Label
Alice wi
Alice
0
Bob
0
Cancel
OK

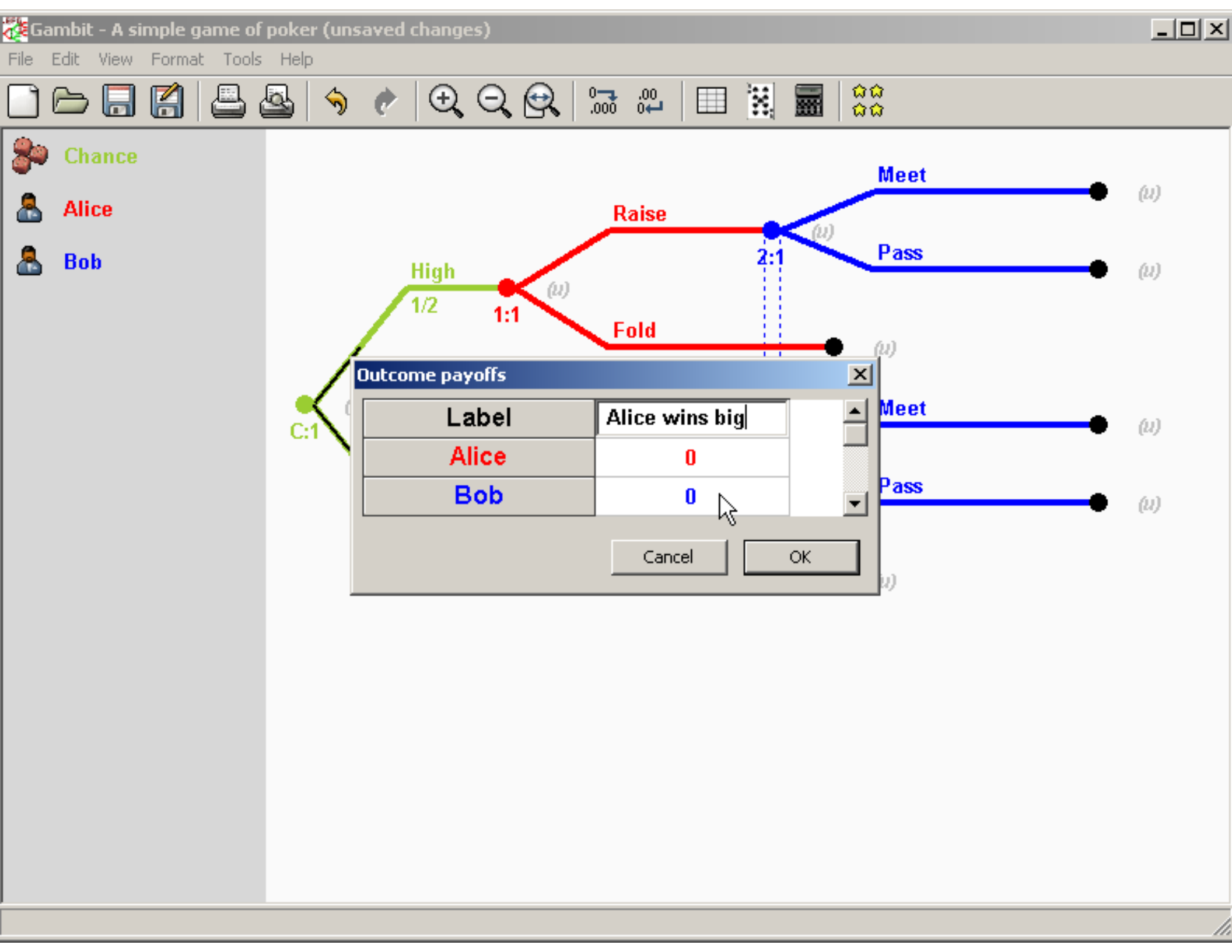

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
1:1
Raise
Fold
2:1
Meet
Pass
Meet
Pass
(u)
Outcome payoffs
Label
Alice win
Alice
0
Bob
0
Cancel
OK

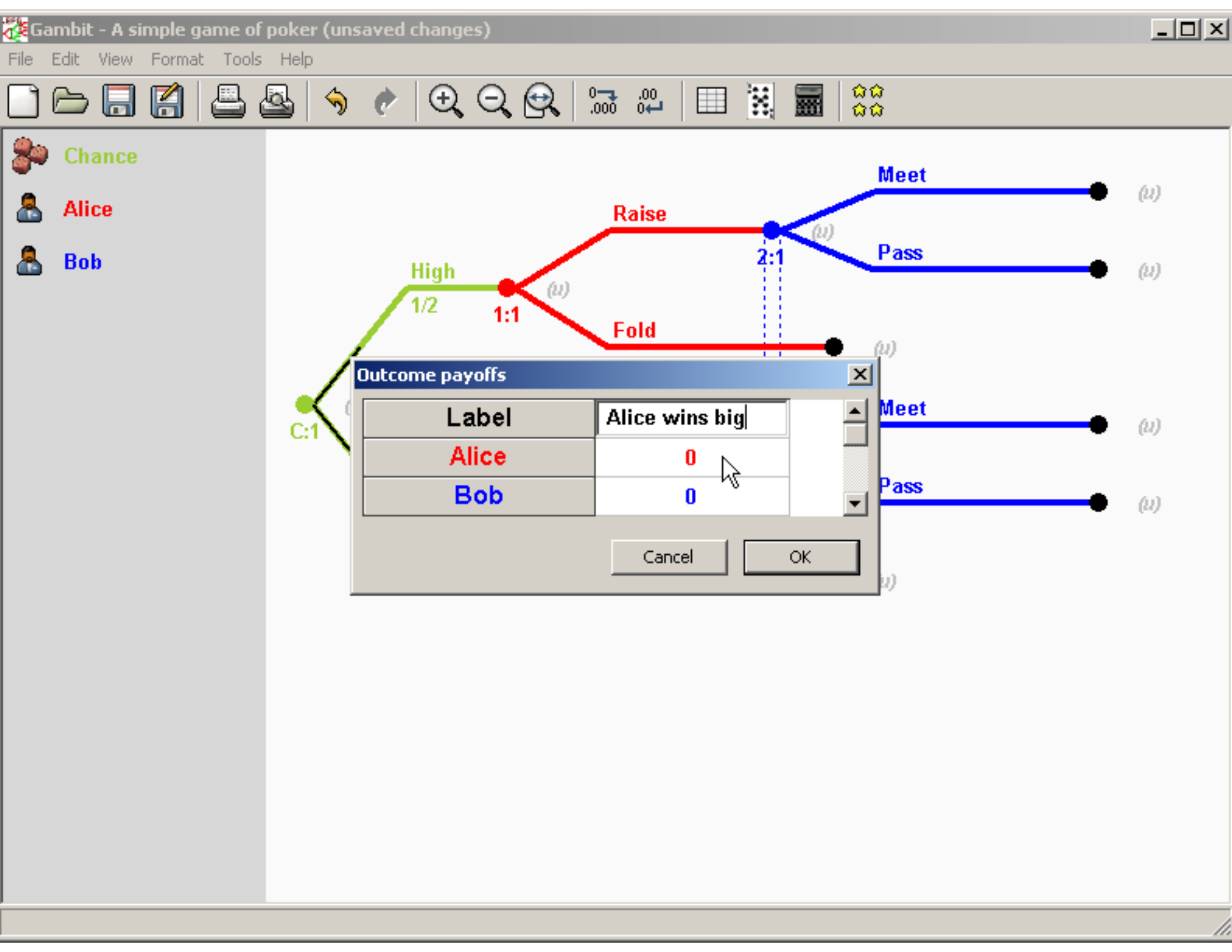

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins
Alice
0
Bob
0
Cancel
OK
Meet
Pass

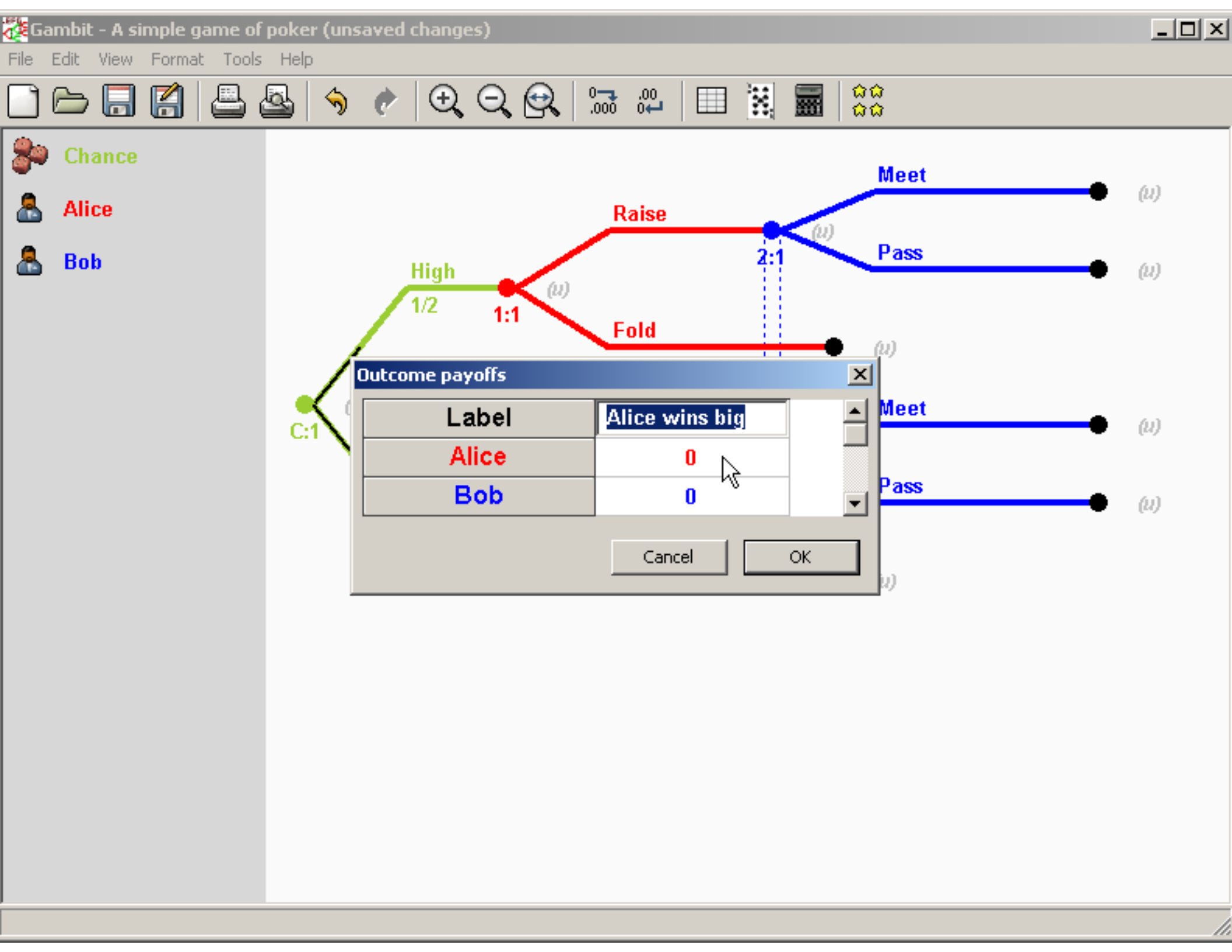

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins
Alice
0
Bob
0
Cancel
OK
Meet
Pass

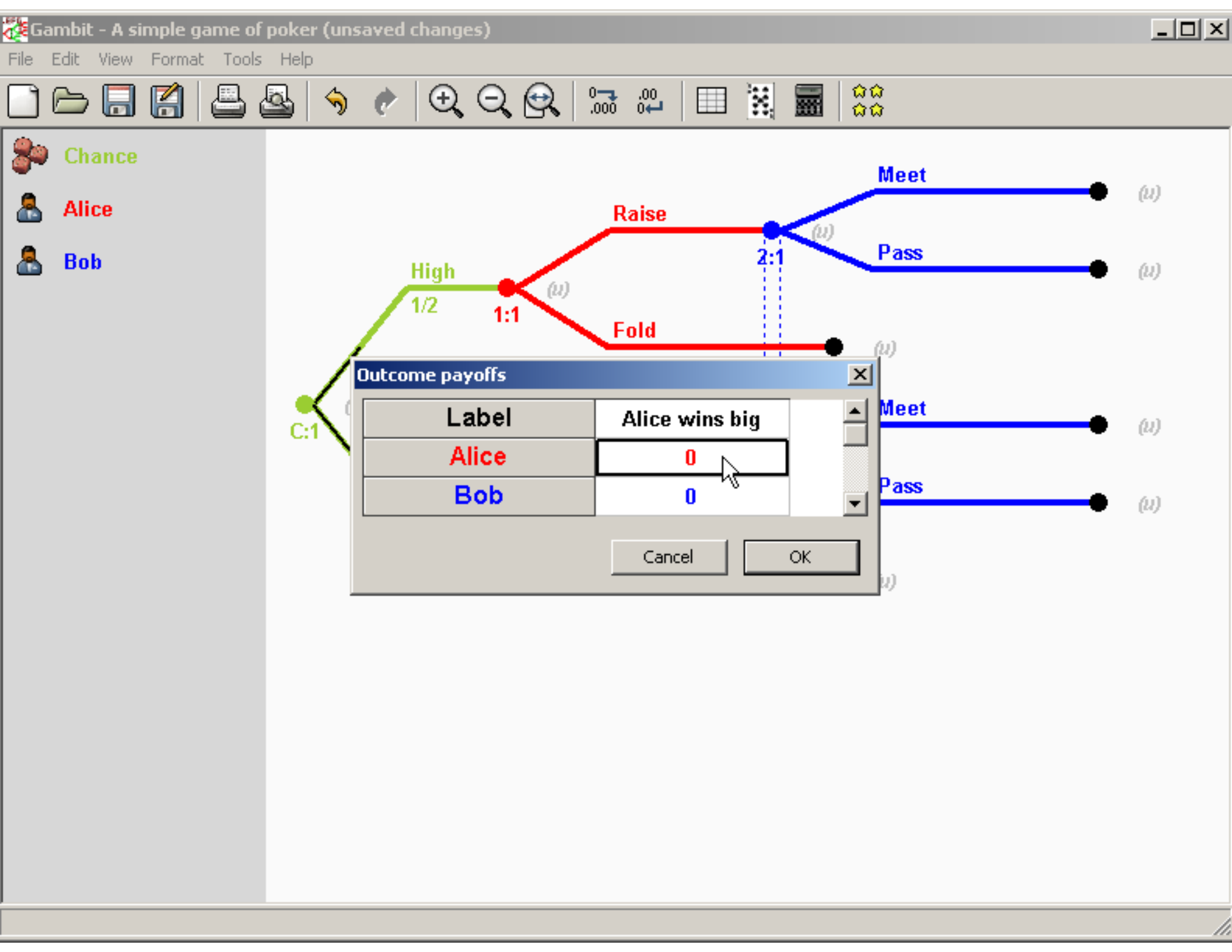

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins b
Alice
0
Bob
0
Cancel
OK
Meet
Pass


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins bi
Alice
0
Bob
0
Cancel
OK
Meet
Pass


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins big
Alice
0
Bob
0
Cancel
OK
Meet
Pass


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins big
Alice
0
Bob
0
Cancel
OK
Meet
Pass


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
1:1
Raise
Fold
2:1
Meet
Pass
Meet
Pass
(u)
Outcome payoffs
Label
Alice wins big
Alice
0
Bob
0
Cancel
OK


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
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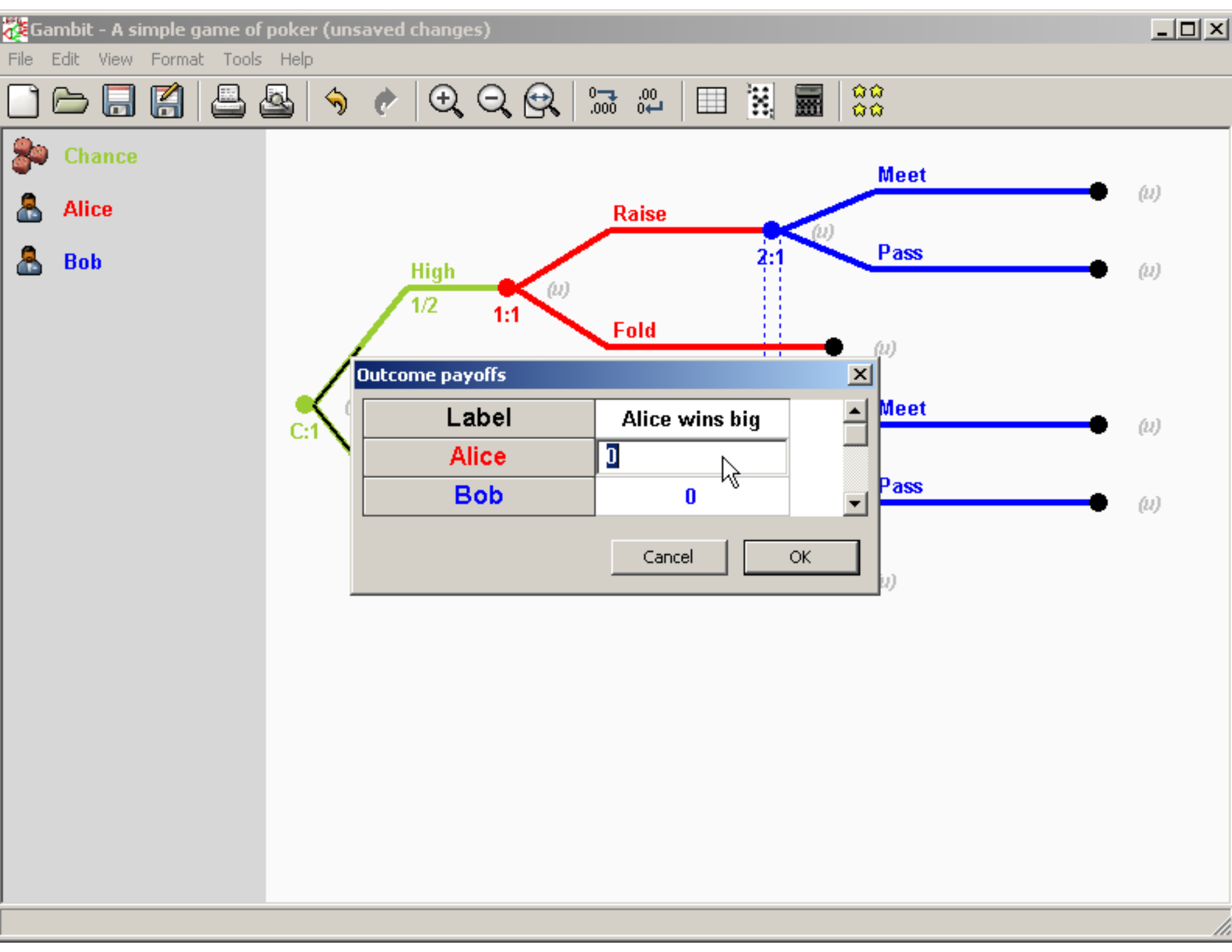
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins big
Alice
0
Bob
0
Cancel
OK
Meet
Pass


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
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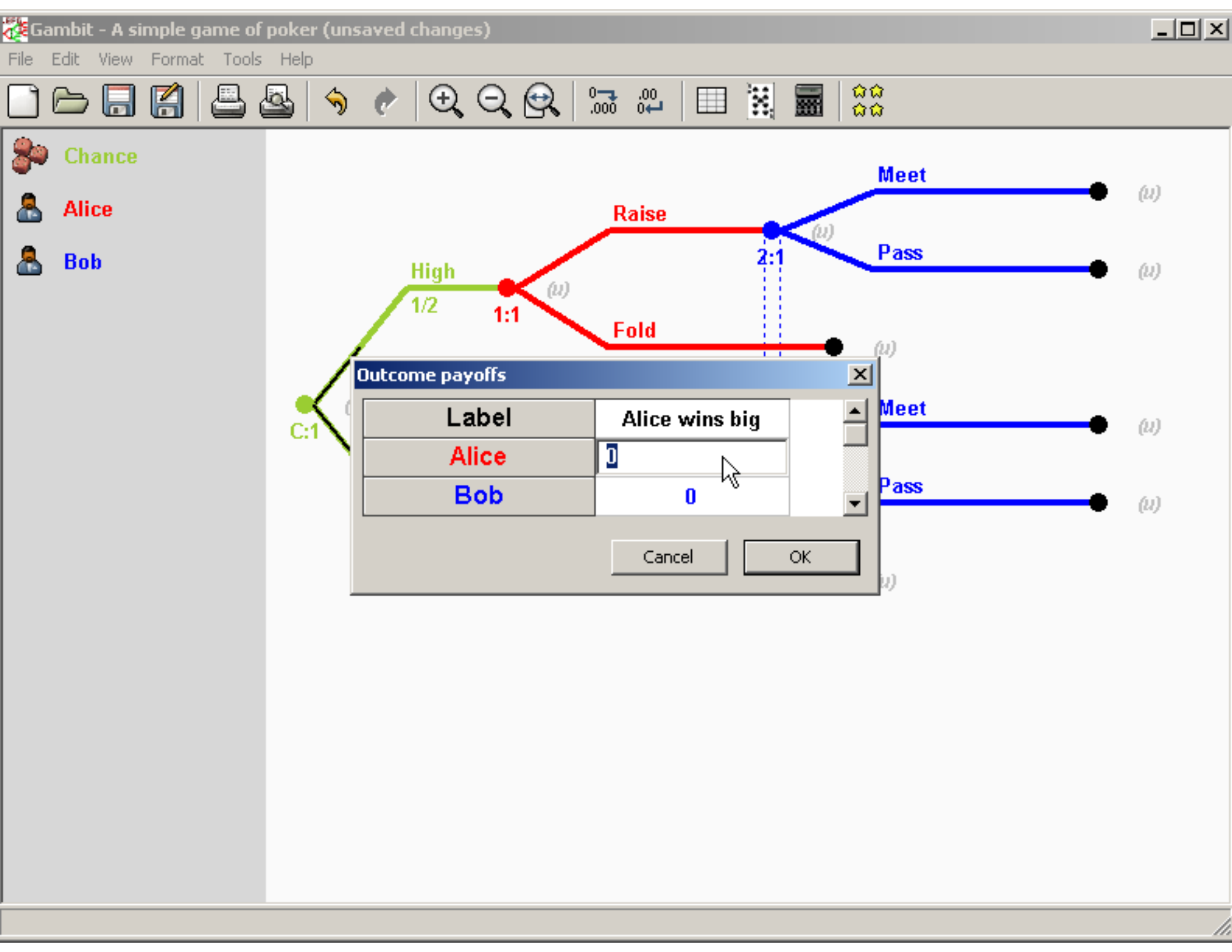
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins big
Alice
1
Bob
0
Cancel
OK
Meet
Pass


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
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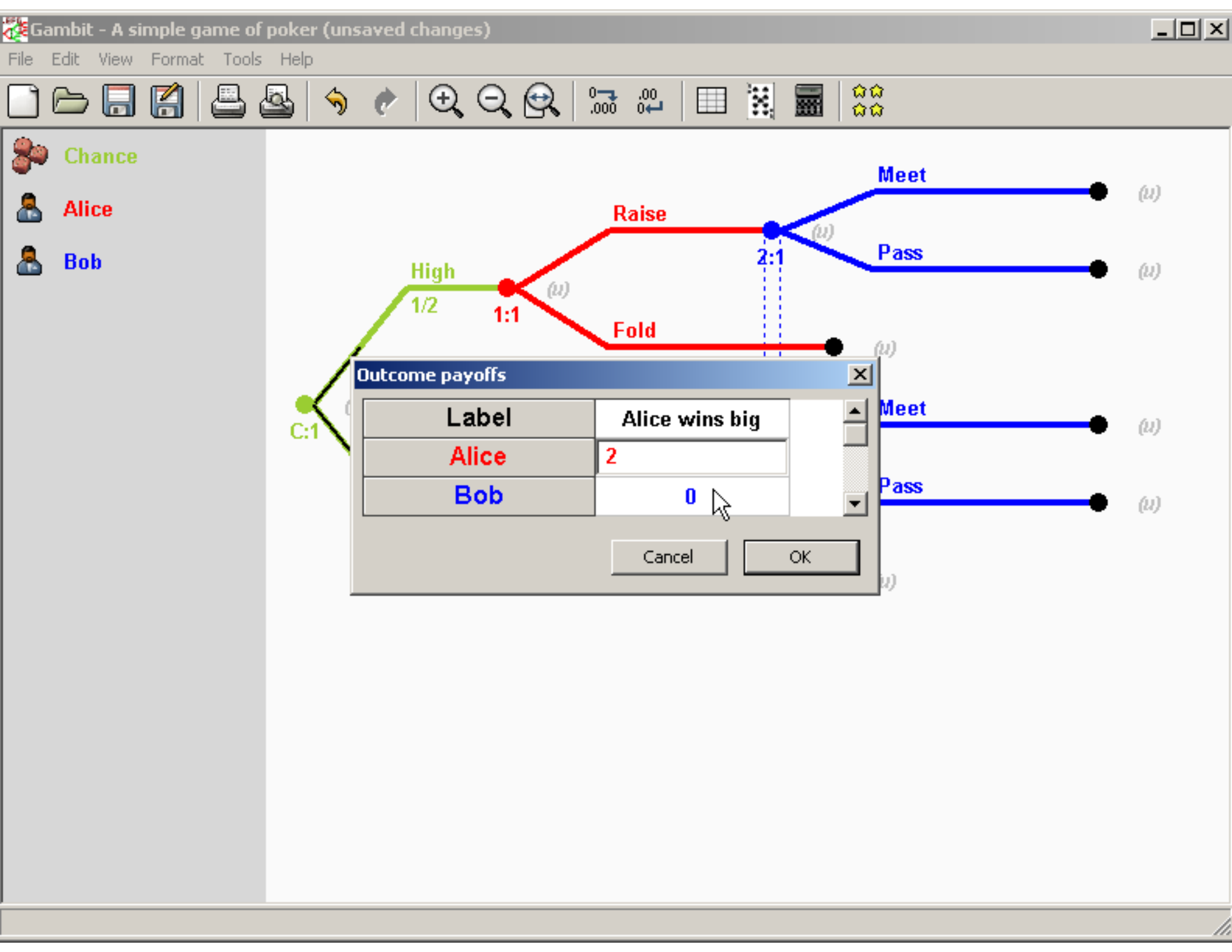
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins big
Alice
1
Bob
0
Cancel
OK
Meet
Pass


Gambit - A simple game of poker (unsaved changes)
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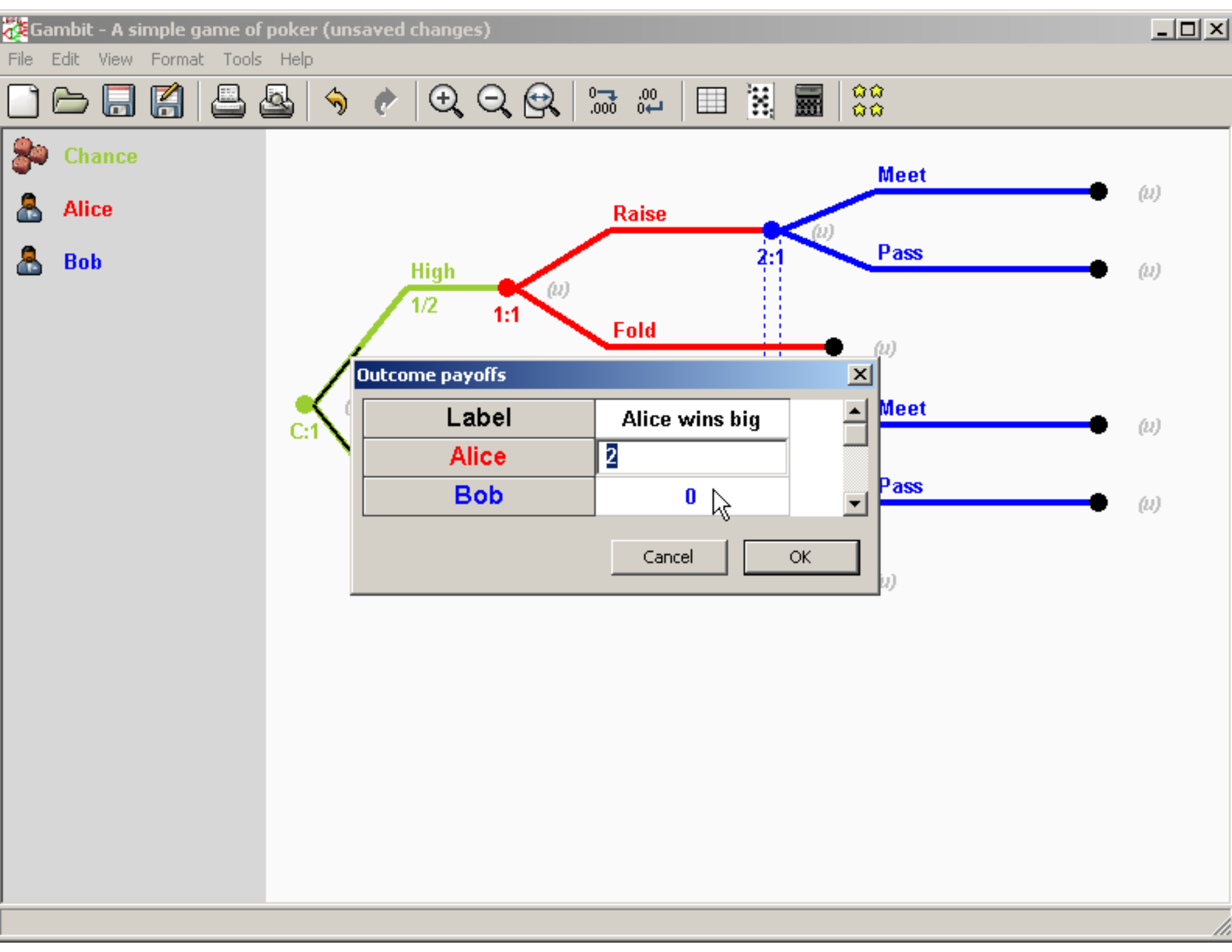
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins big
Alice
2
Bob
0
Cancel
OK
Meet
Pass


Gambit - A simple game of poker (unsaved changes)
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Chance
Alice
Bob
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2:1
High
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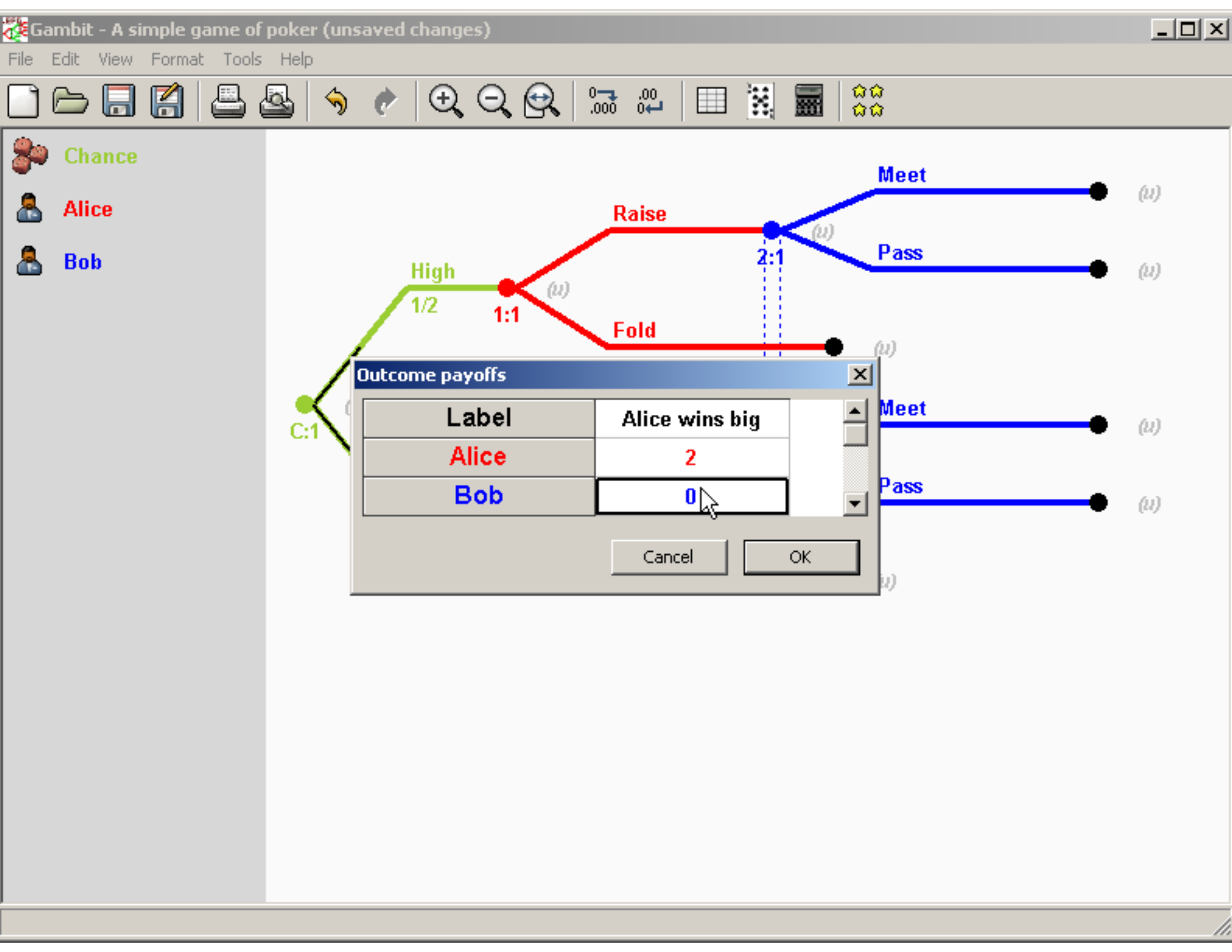
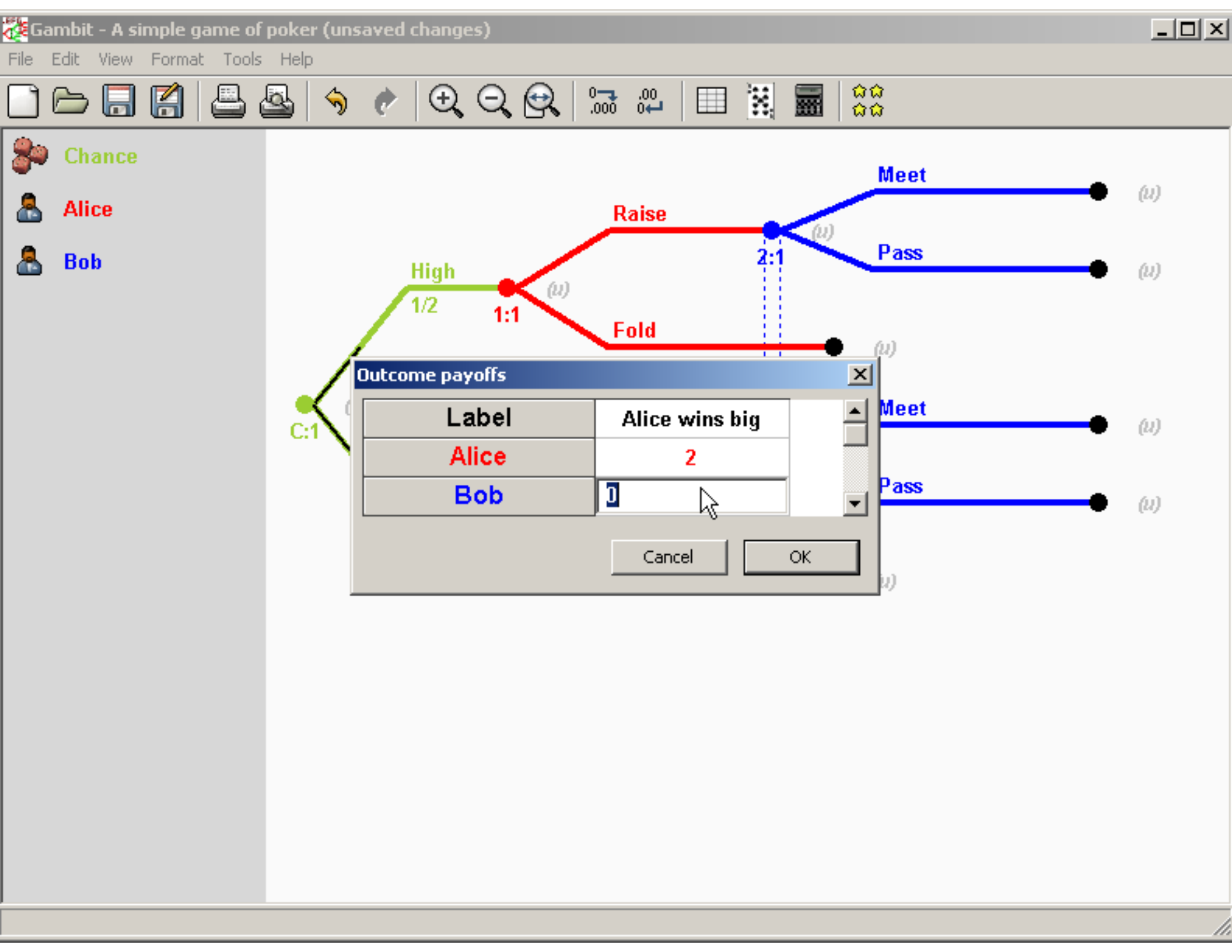
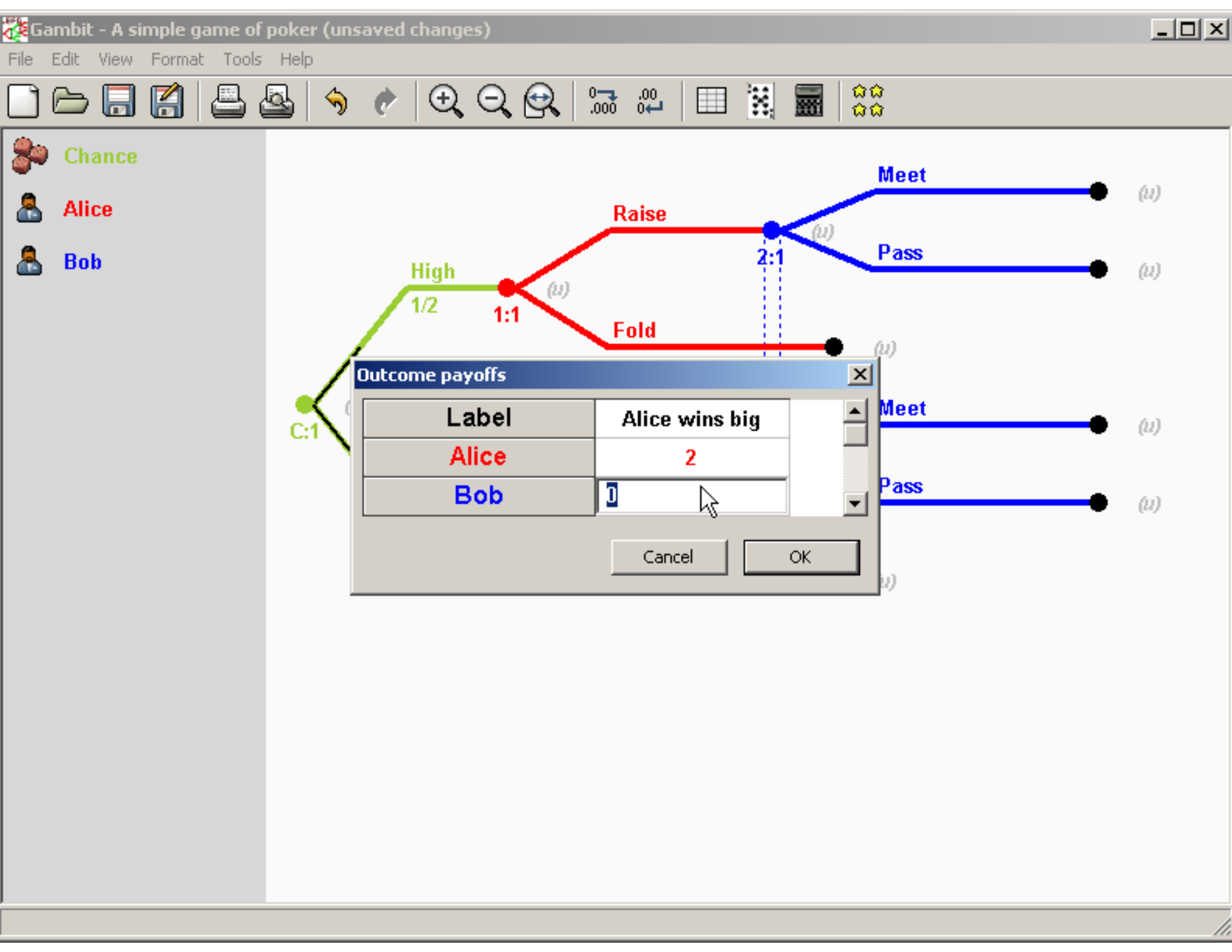
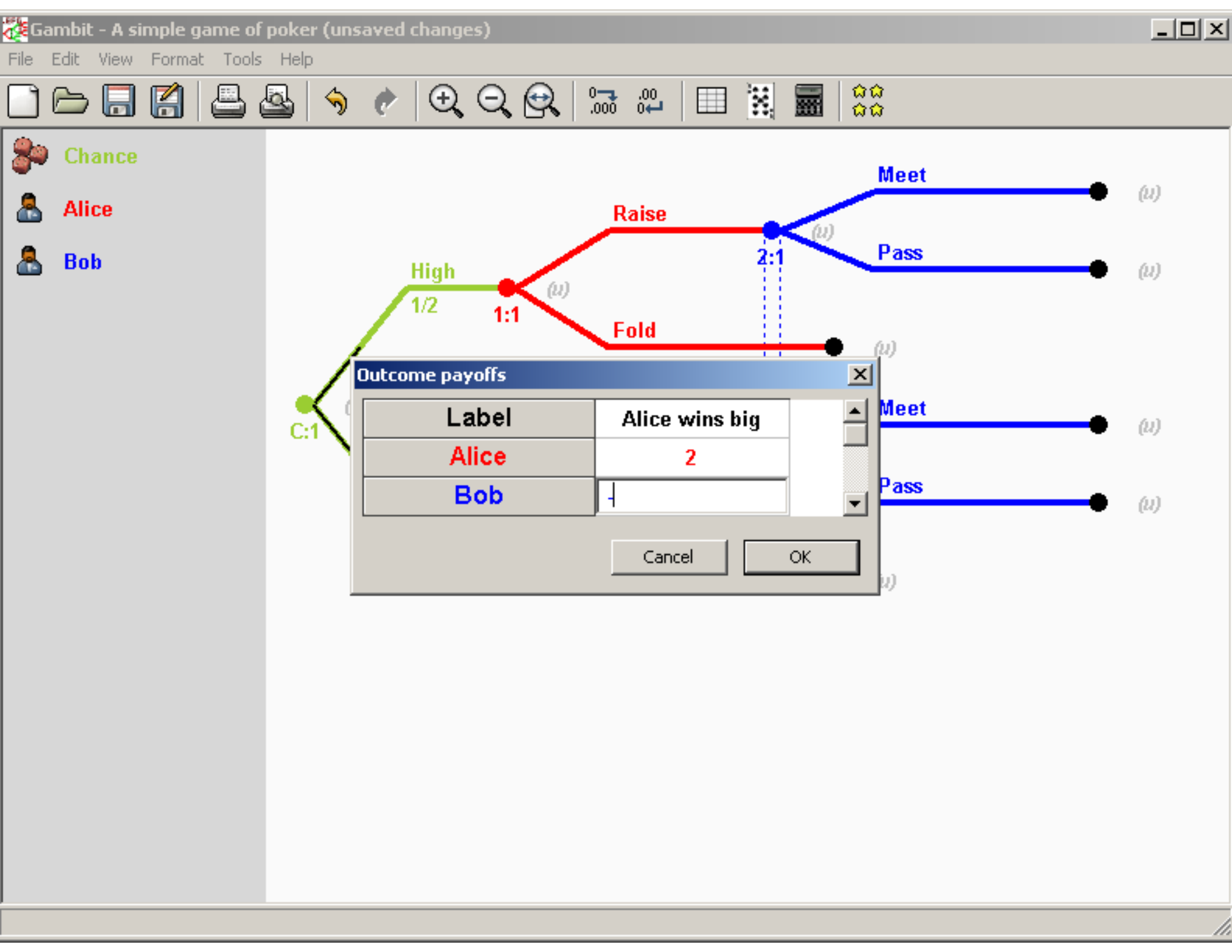
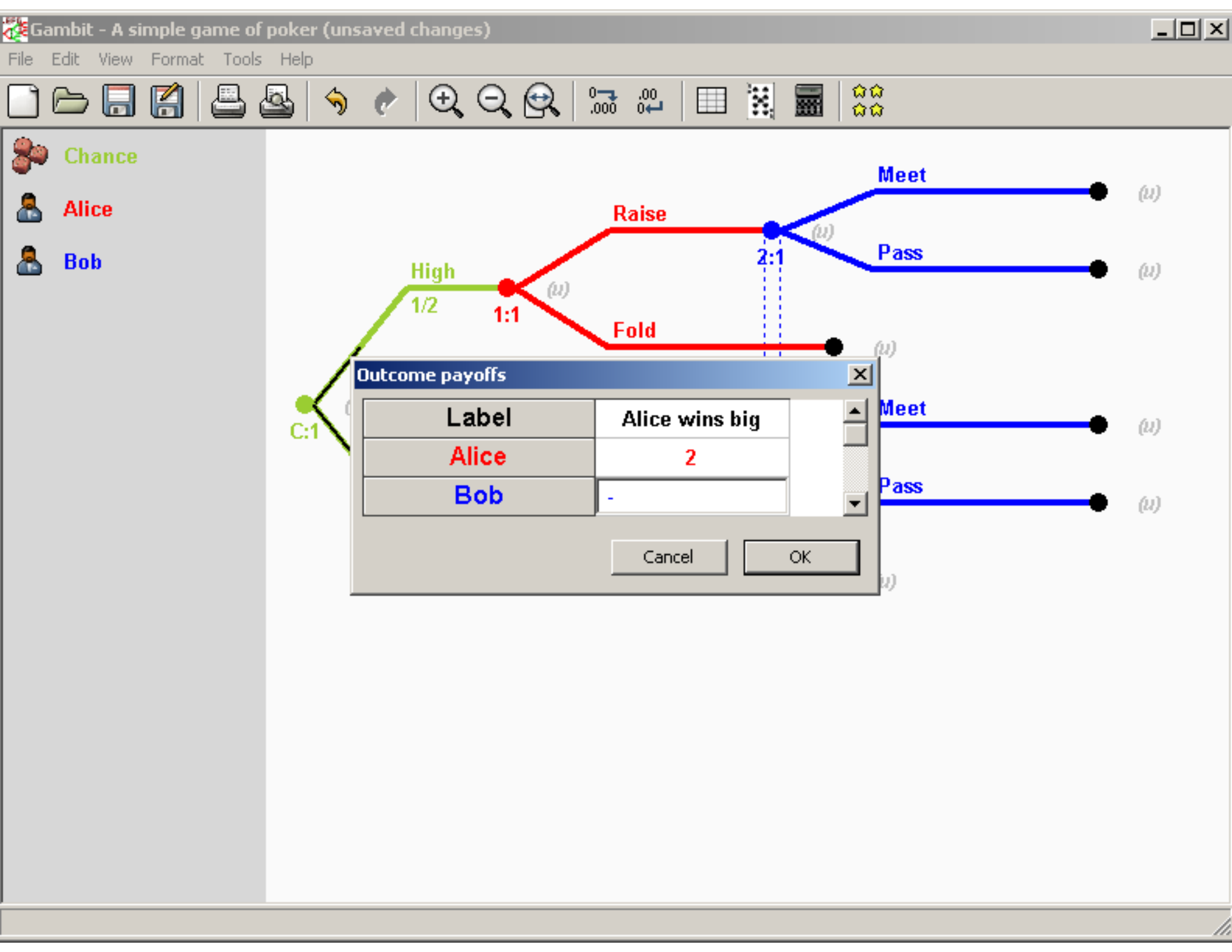
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins big
Alice
2
Bob
0
Cancel
OK
Meet
Pass

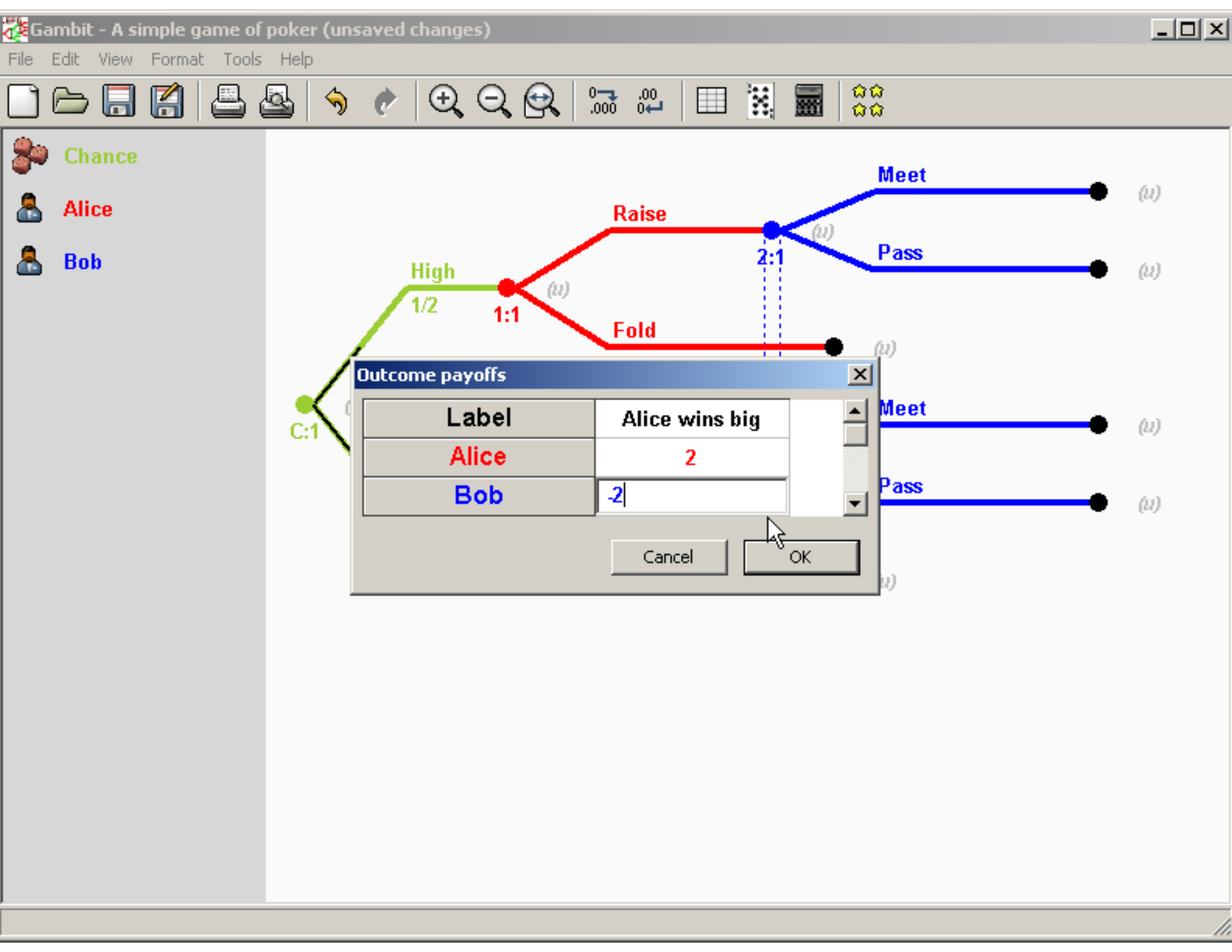

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
1:1
Raise
Fold
2:1
Meet
Pass
Meet
Pass
(u)
Outcome payoffs
Label
Alice wins big
Alice
2
Bob
0
Cancel
OK

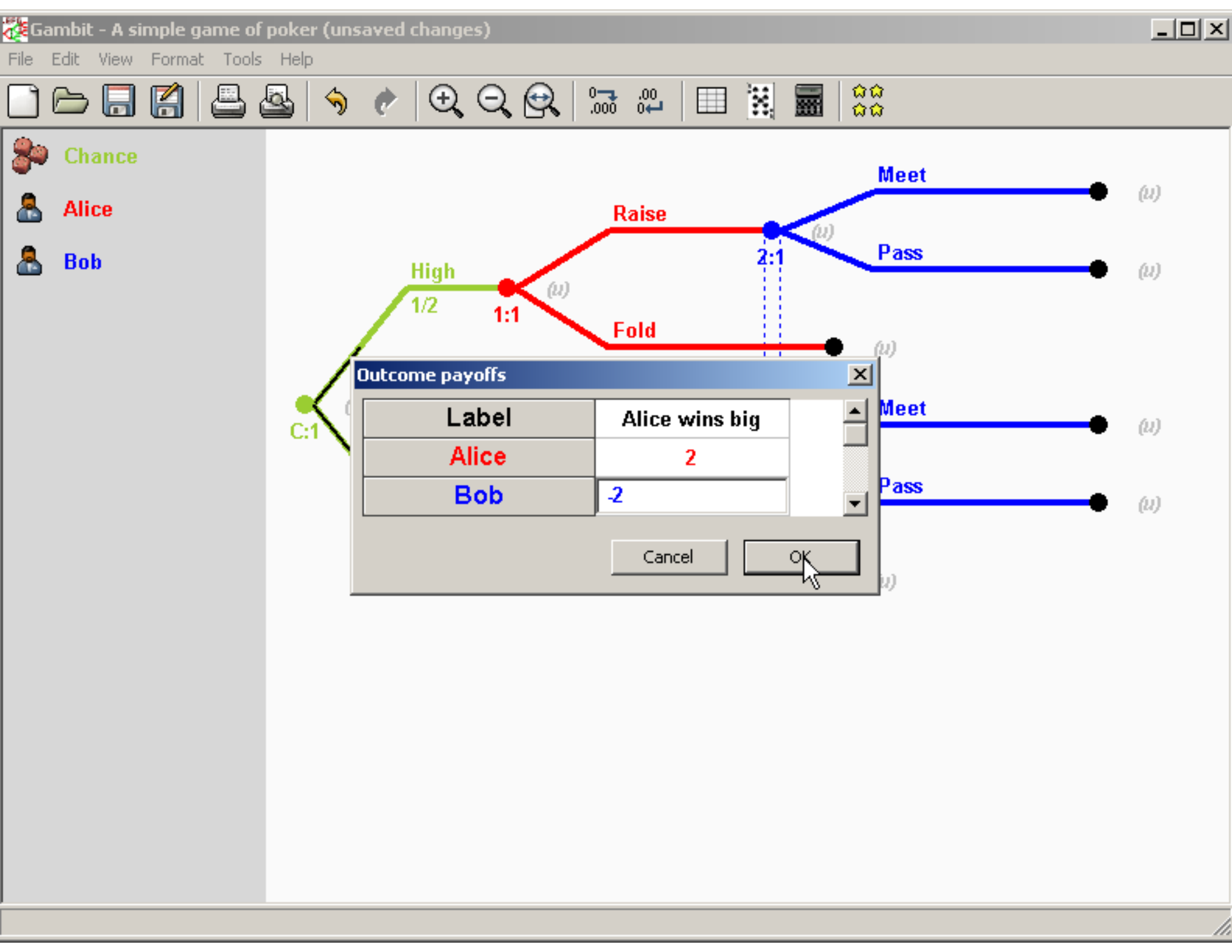

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins big
Alice
2
Bob
0
Cancel
OK
Meet
Pass

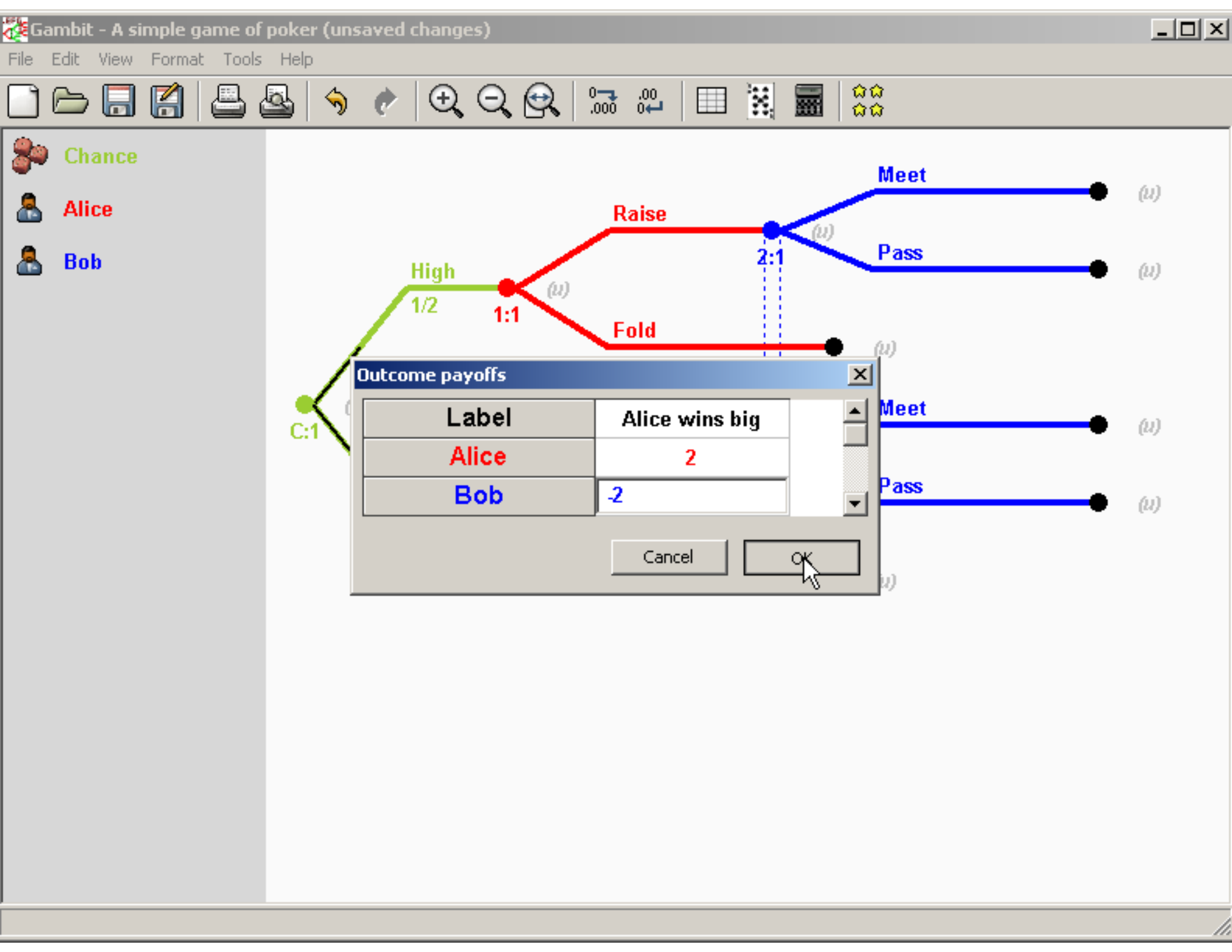

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins big
Alice
2
Bob
0
Cancel
OK
Meet
Pass

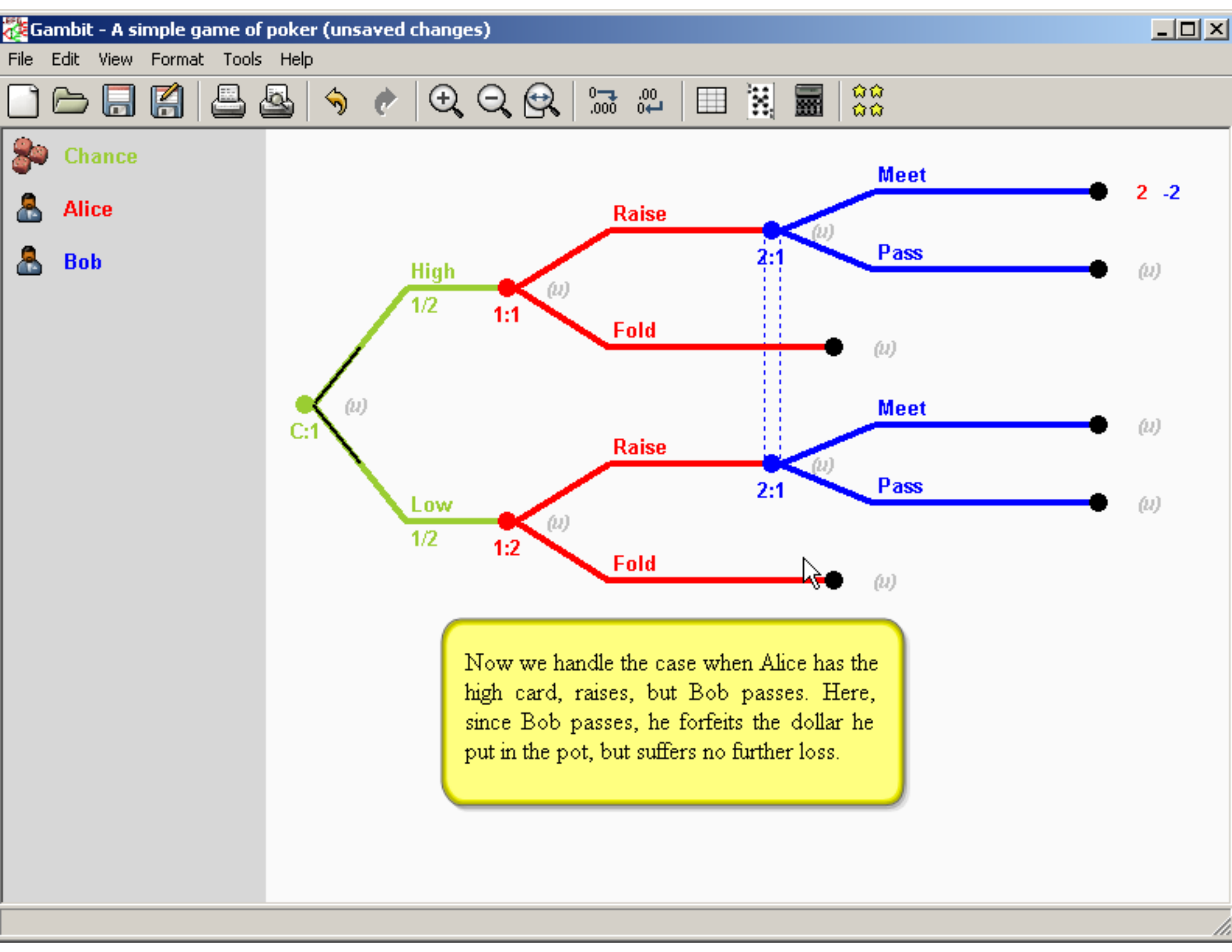

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins big
Alice
2
Bob
Cancel
OK
Meet
Pass

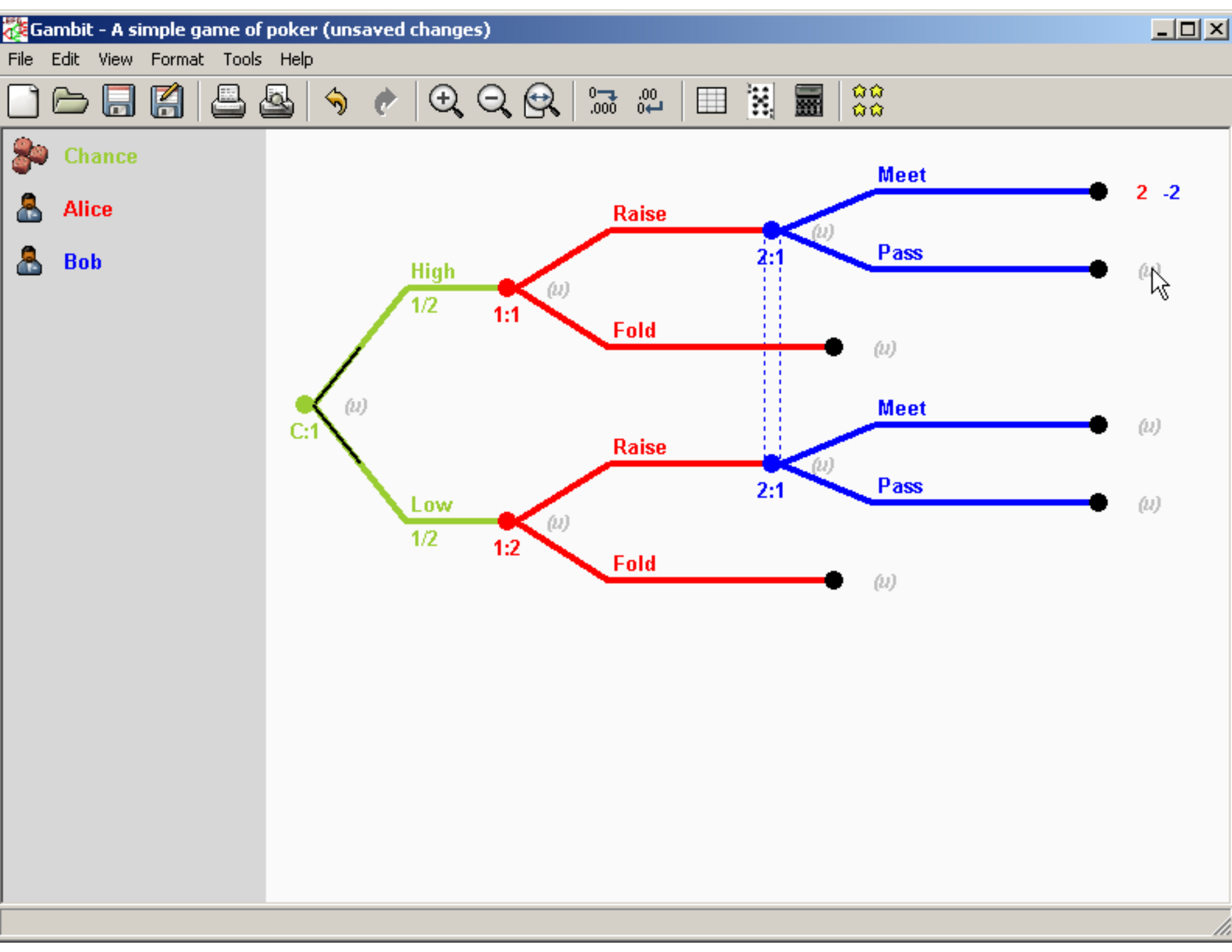

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins big
Alice
2
Bob
-
Cancel
OK
Meet
Pass

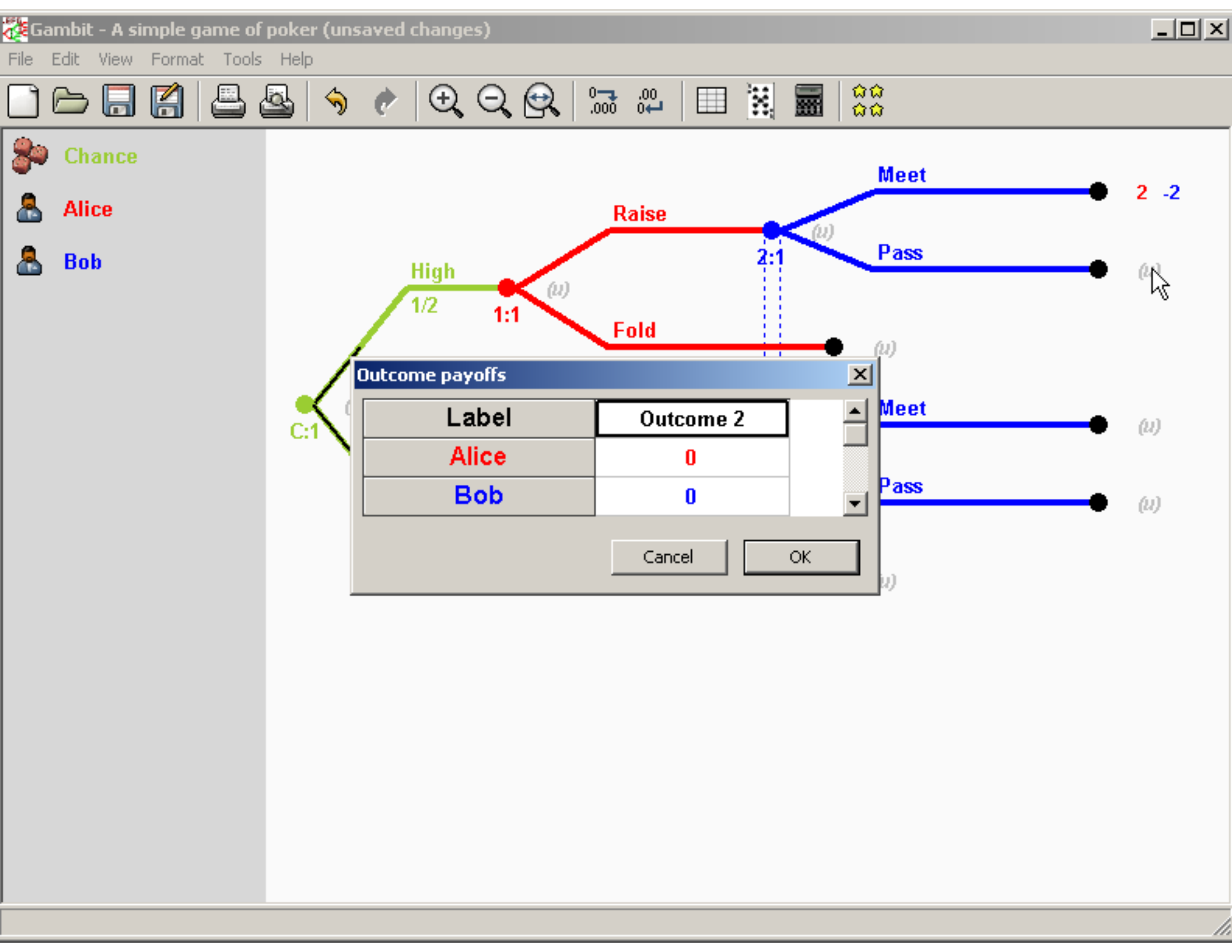

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins big
Alice
2
Bob
-2
Cancel
OK
Meet
Pass

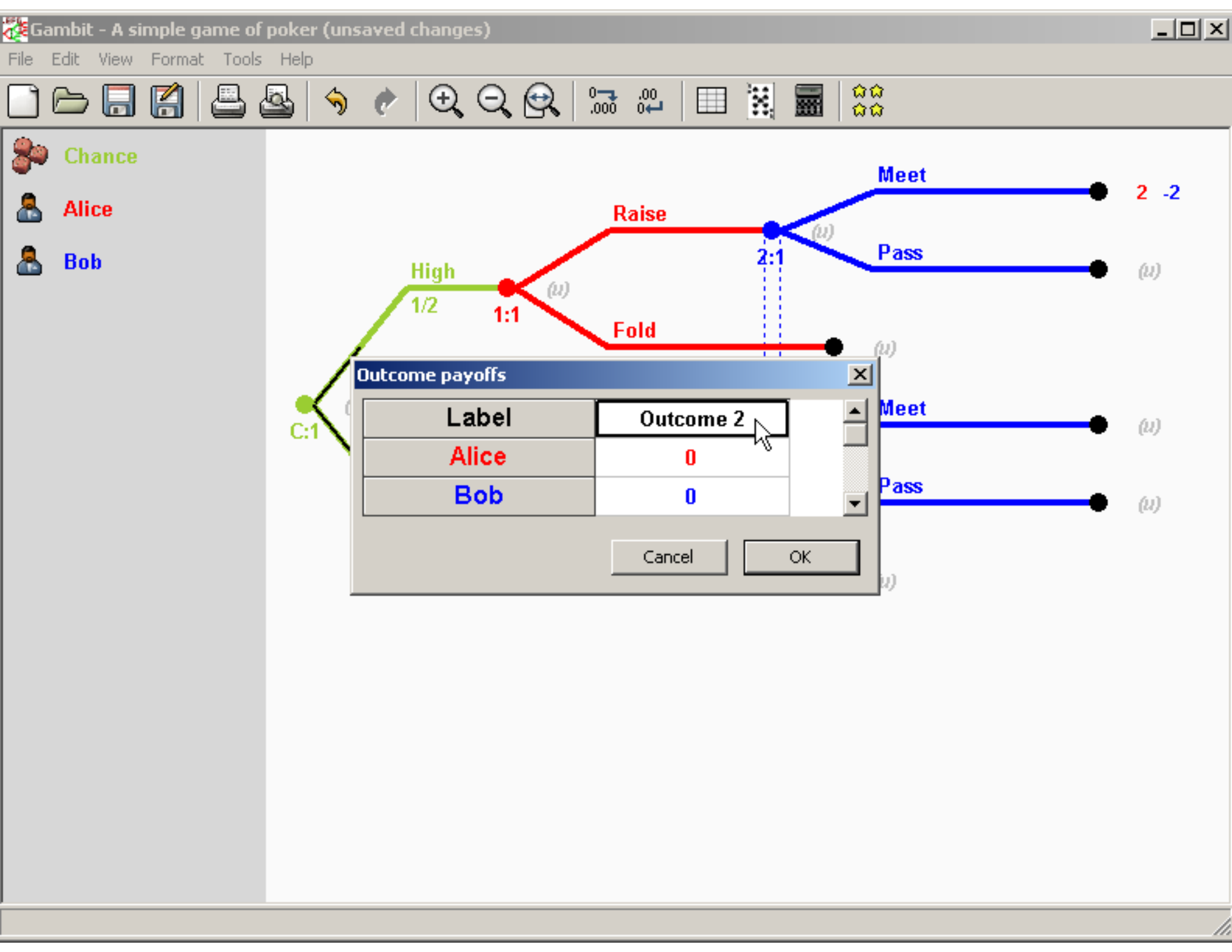

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
High
1/2
1:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins big
Alice
2
Bob
-2
Cancel
OK
Meet
Pass

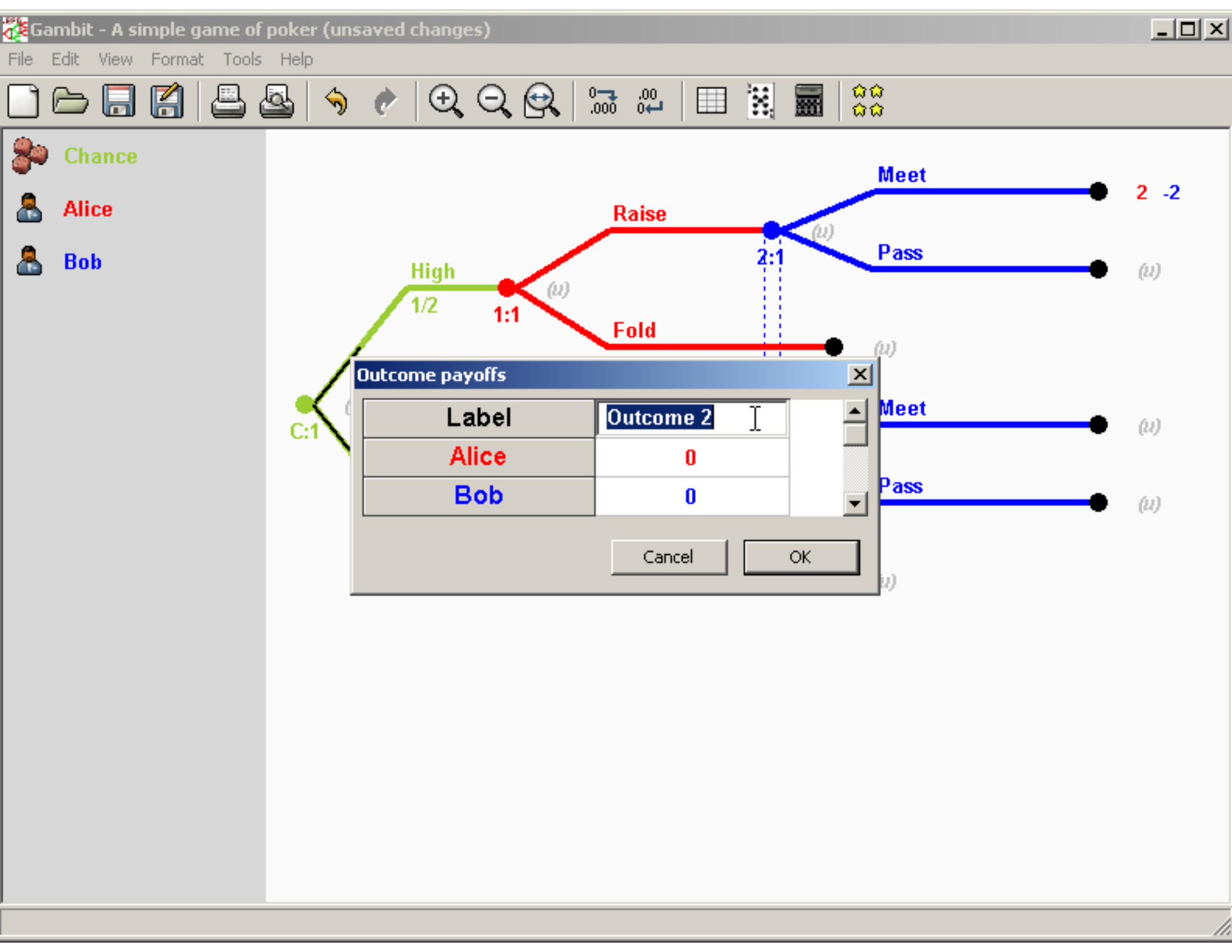

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
High
1/2
1:1
2:1
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins big
Alice
2
Bob
-2
Cancel
OK
Meet
Pass

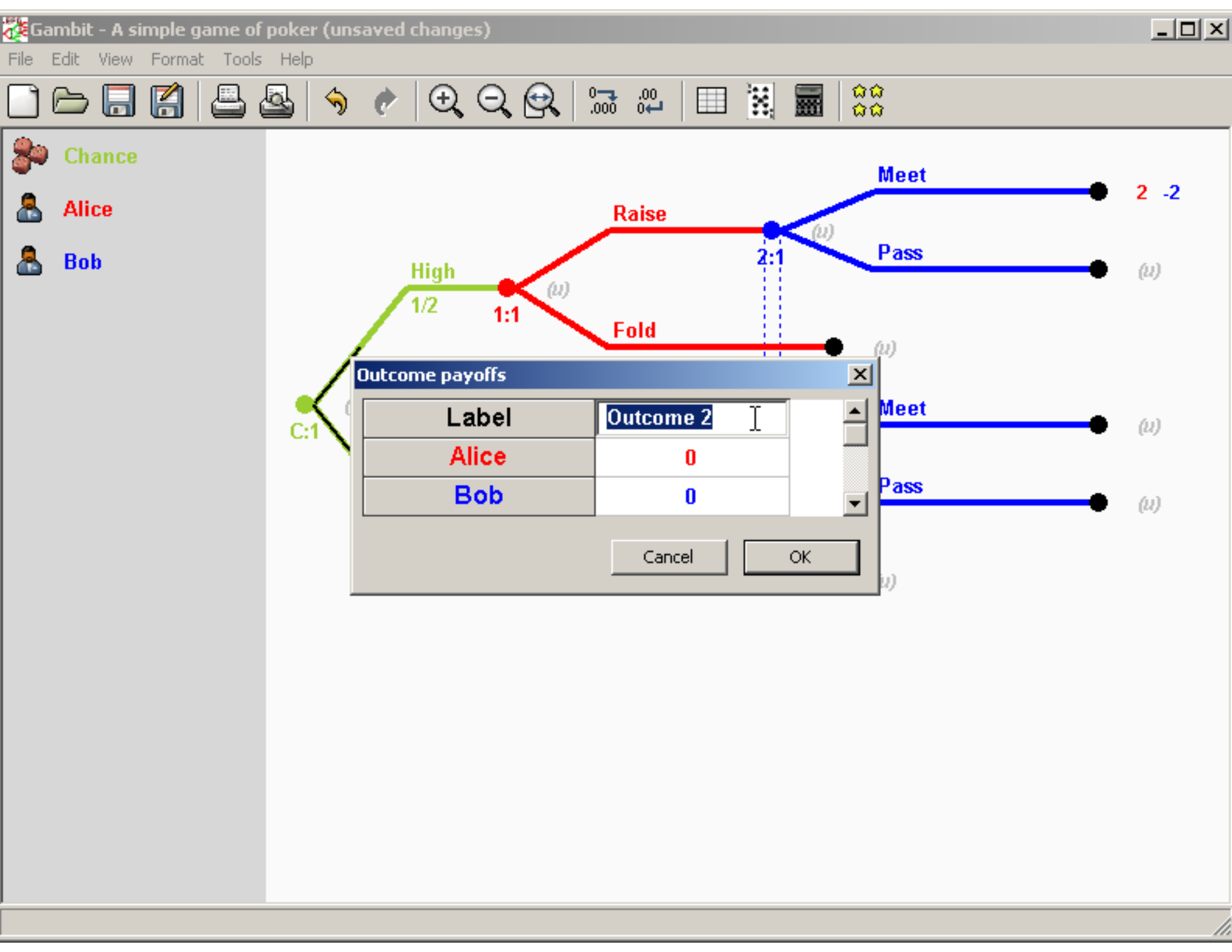

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
(u)
(u)
(u)
(u)
2:1
2:1
Meet
Pass
Meet
Pass
(u)
(u)
(u)
(u)
2 -2
Now we handle the case when Alice has the high card, raises, but Bob passes. Here, since Bob passes, he forfeits the dollar he put in the pot, but suffers no further loss.

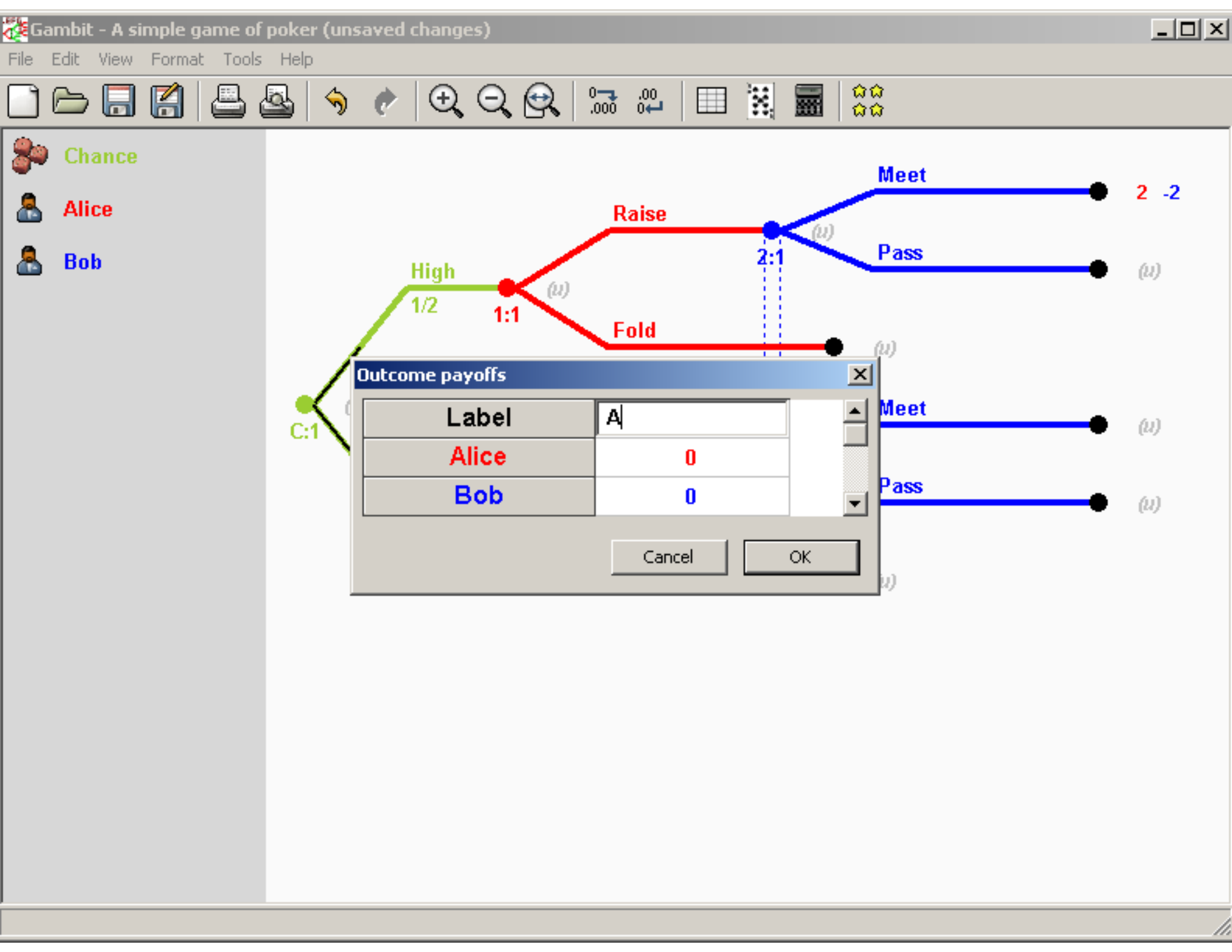

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
(u)
(u)
(u)
(u)
2:1
2:1
Meet
Pass
Meet
Pass
(u)
(u)
(u)
(u)
2 -2

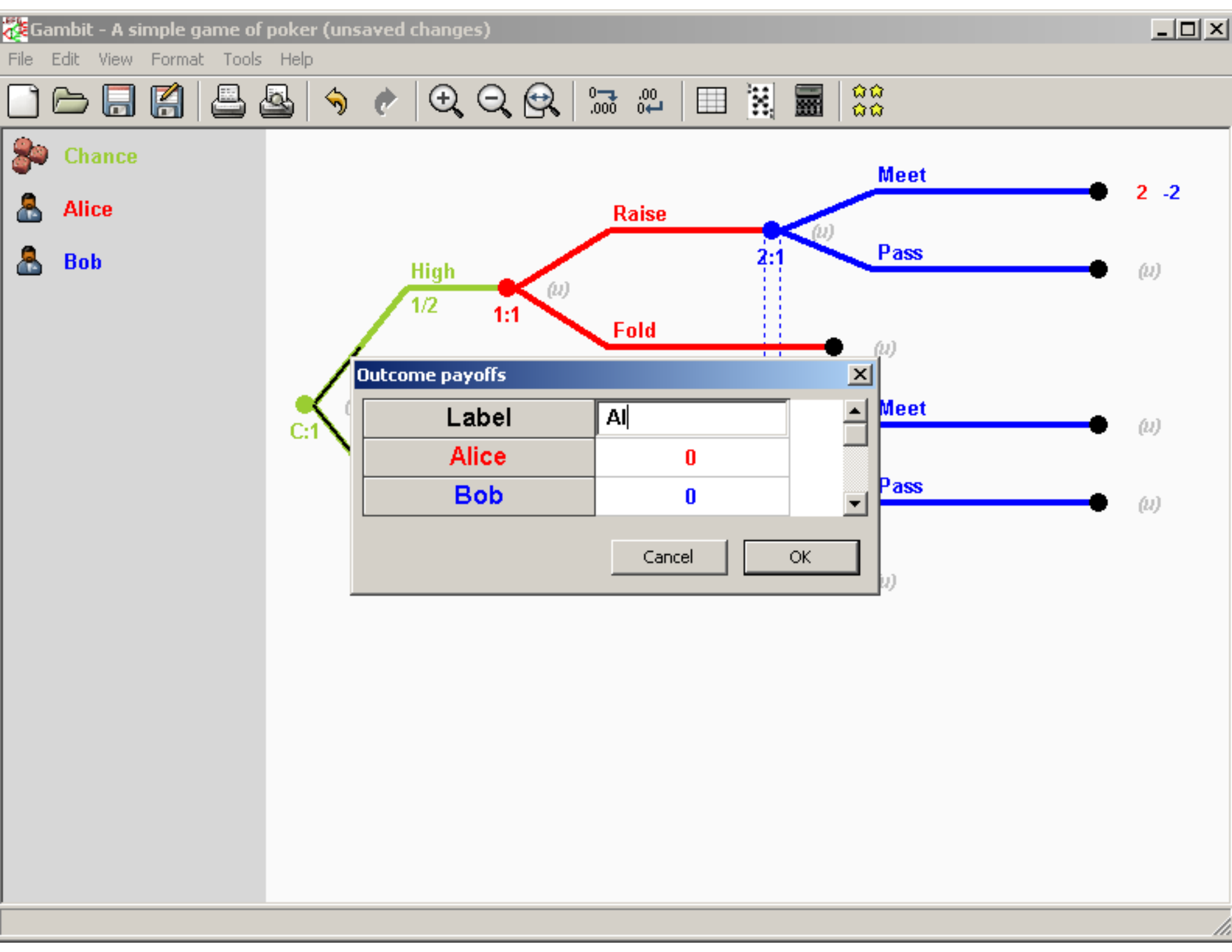

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Outcome 2
Alice
0
Bob
0
Cancel
OK

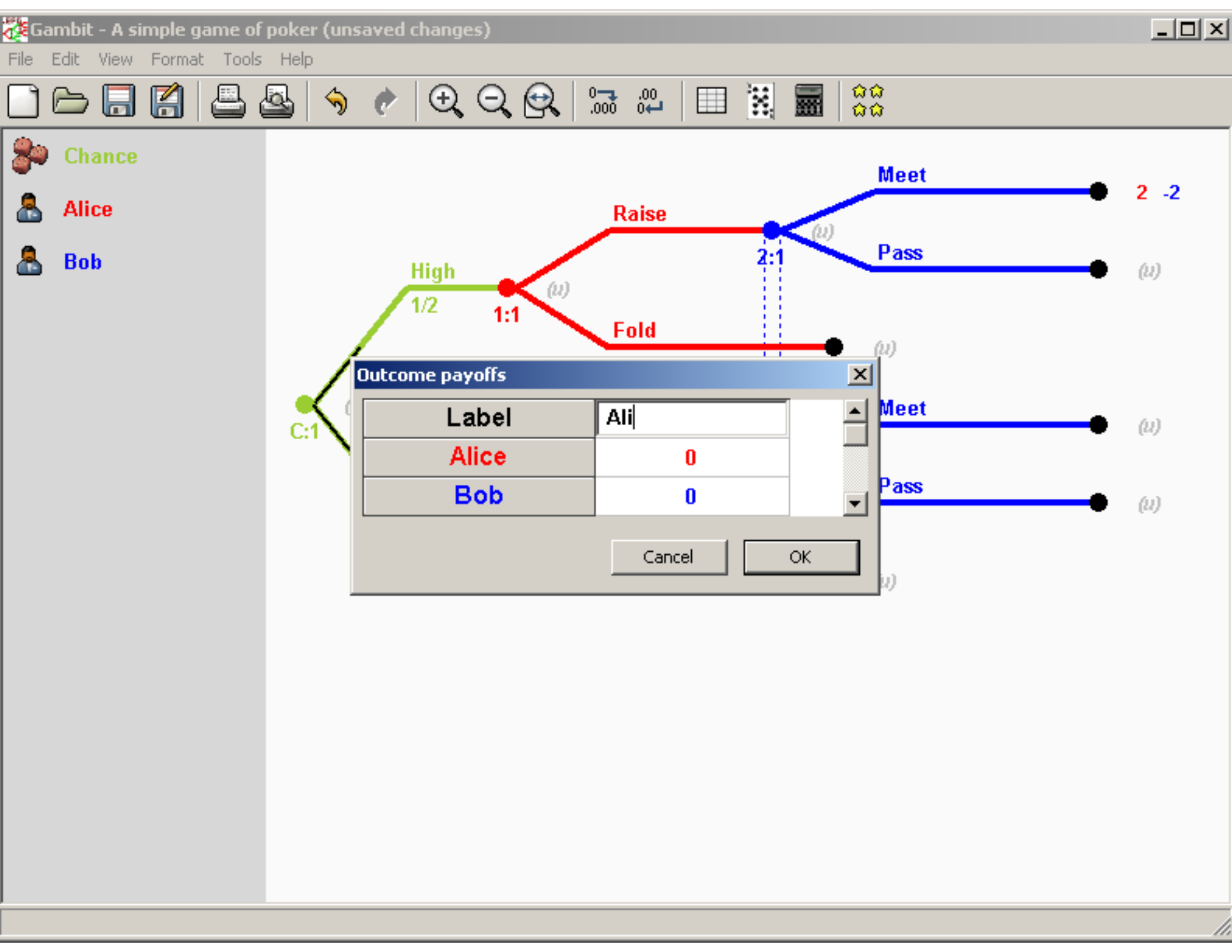

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Outcome 2
Alice
0
Bob
0
Cancel
OK

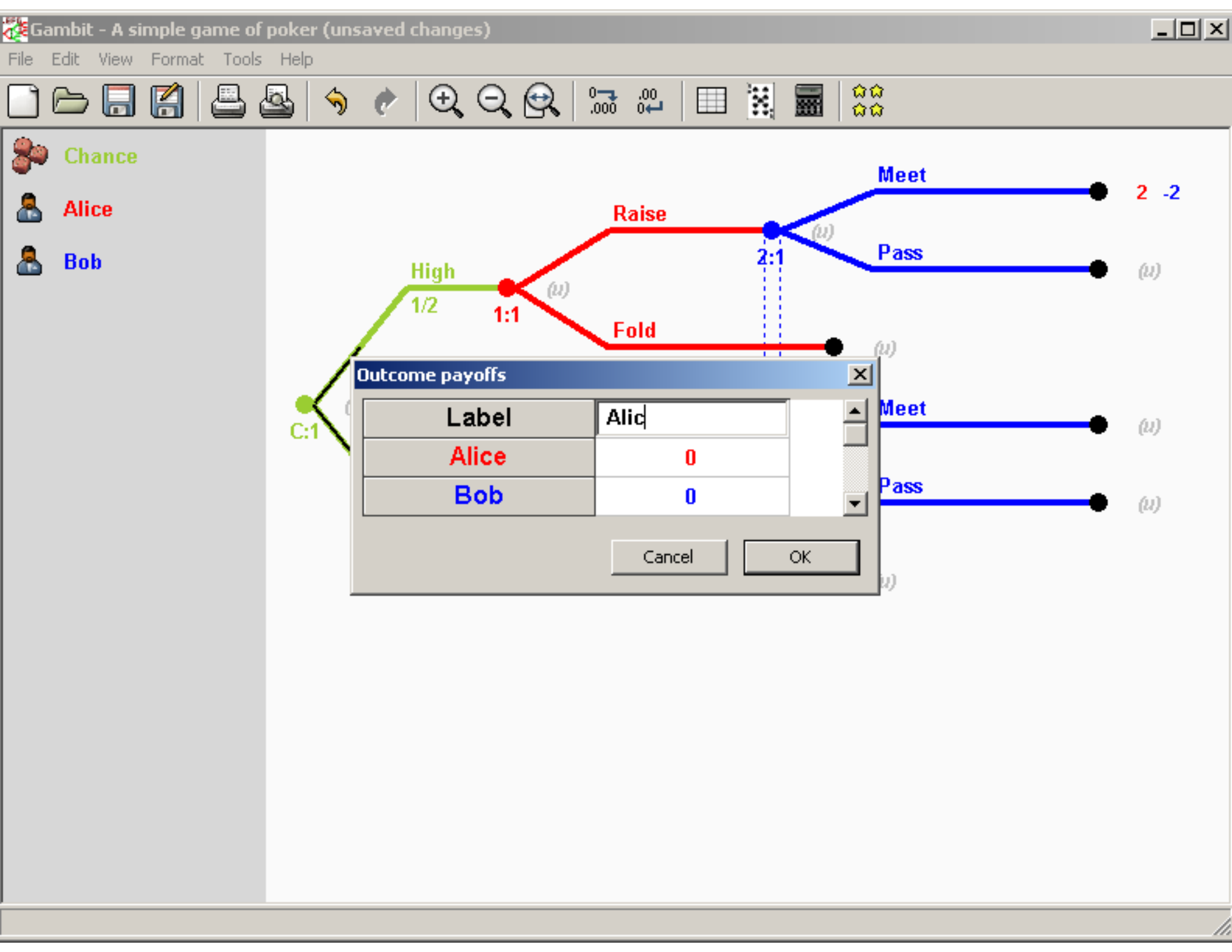

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
(u)
2:1
Pass
(u)
High
1/2
1:1
(u)
Fold
(u)
C:1
Outcome payoffs
Label
Outcome 2
Alice
0
Bob
0
Cancel
OK
Meet
(u)
Pass
(u)
(u)

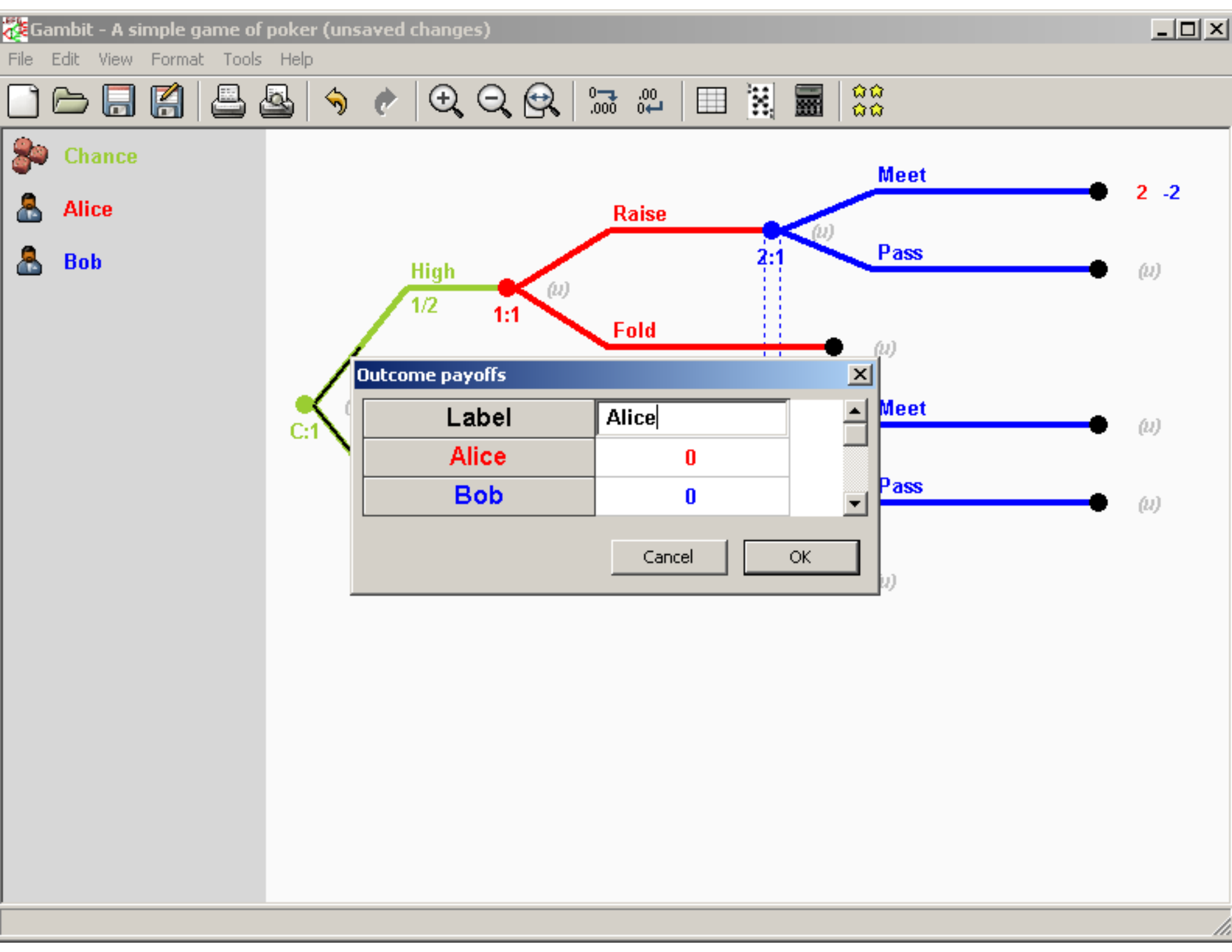

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
(u)
2:1
Pass
(u)
High
1/2
1:1
(u)
Fold
(u)
C:1
Outcome payoffs
Label
Outcome 2
Alice
0
Bob
0
Cancel
OK
Meet
(u)
Pass
(u)
(u)

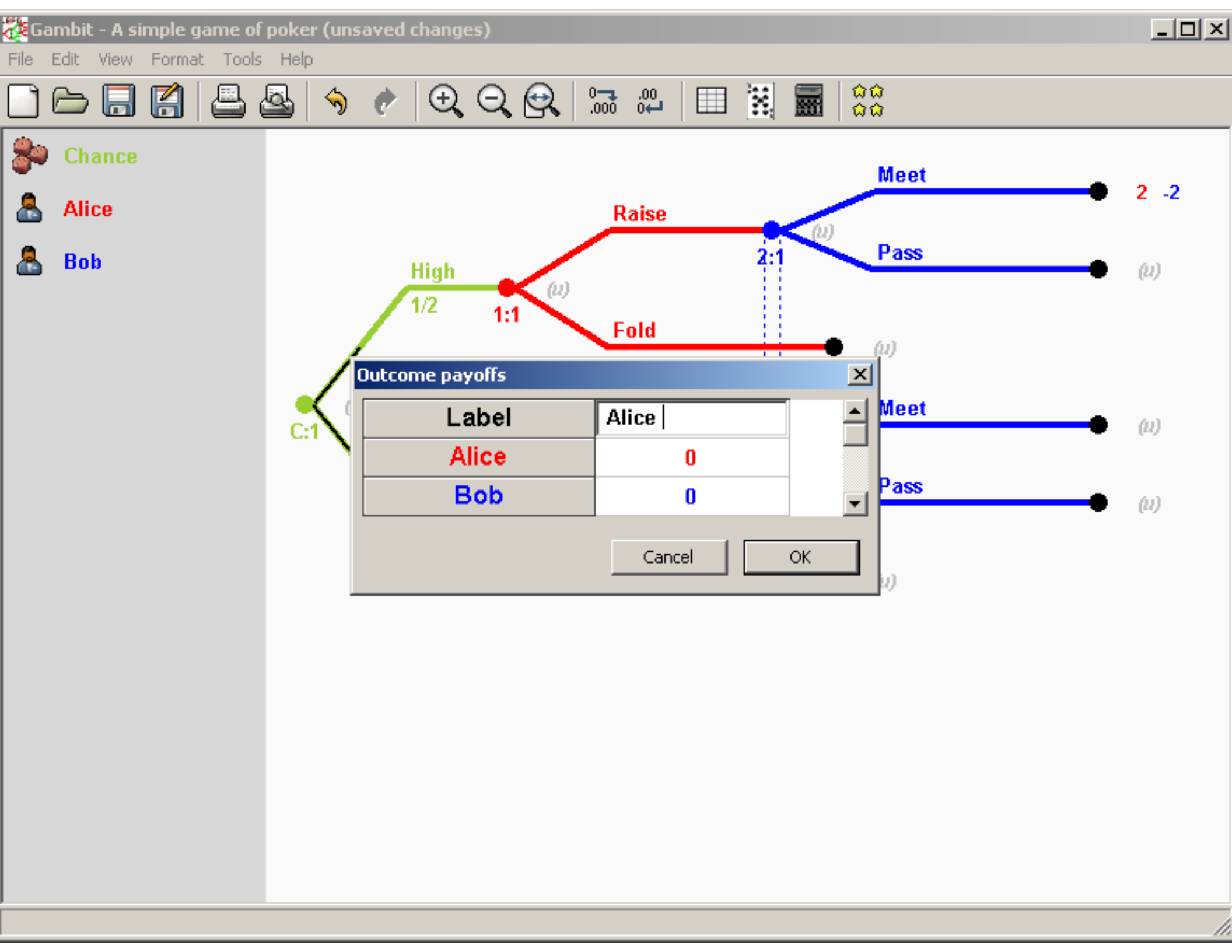

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
A
Alice
0
Bob
0
Cancel
OK

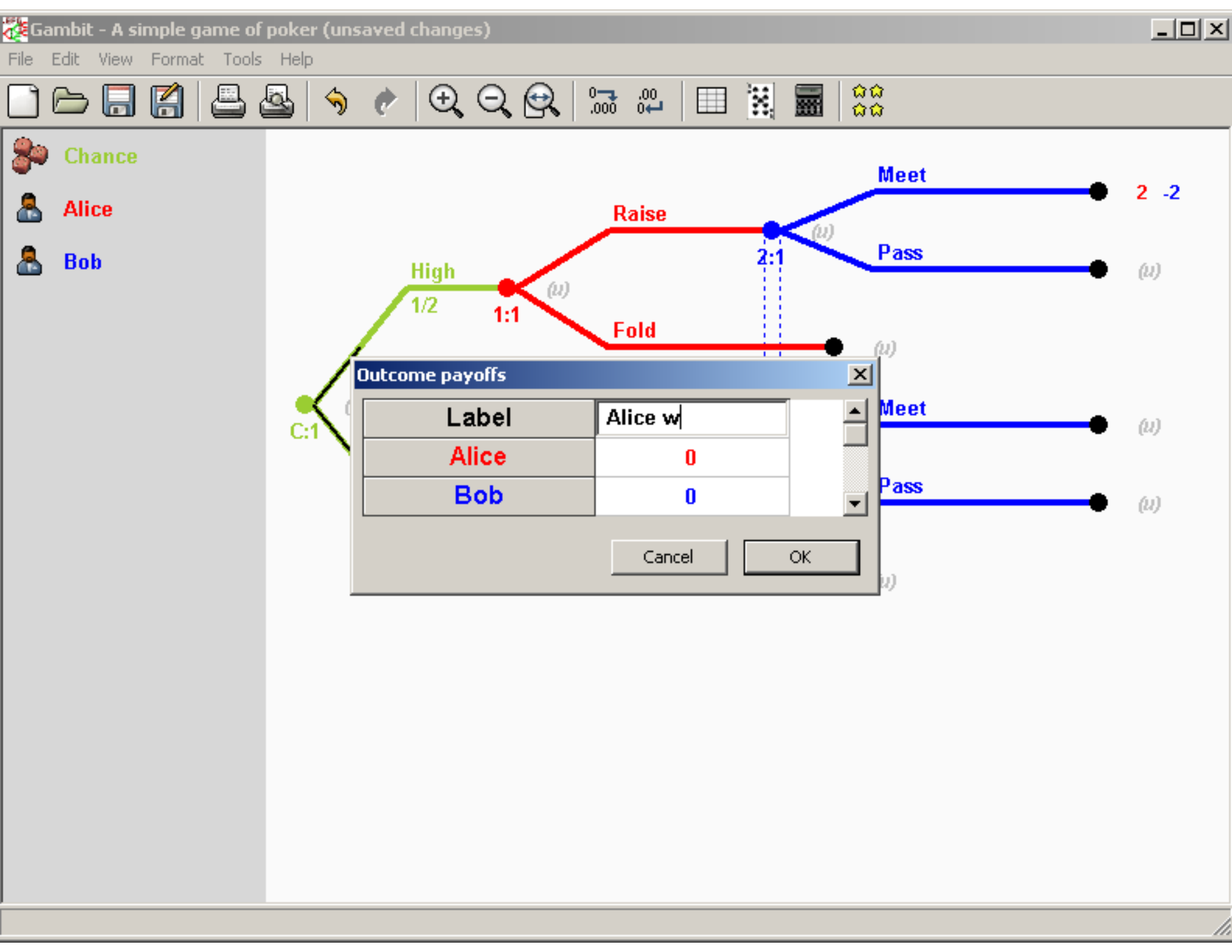

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Al
Alice
0
Bob
0
Cancel
OK

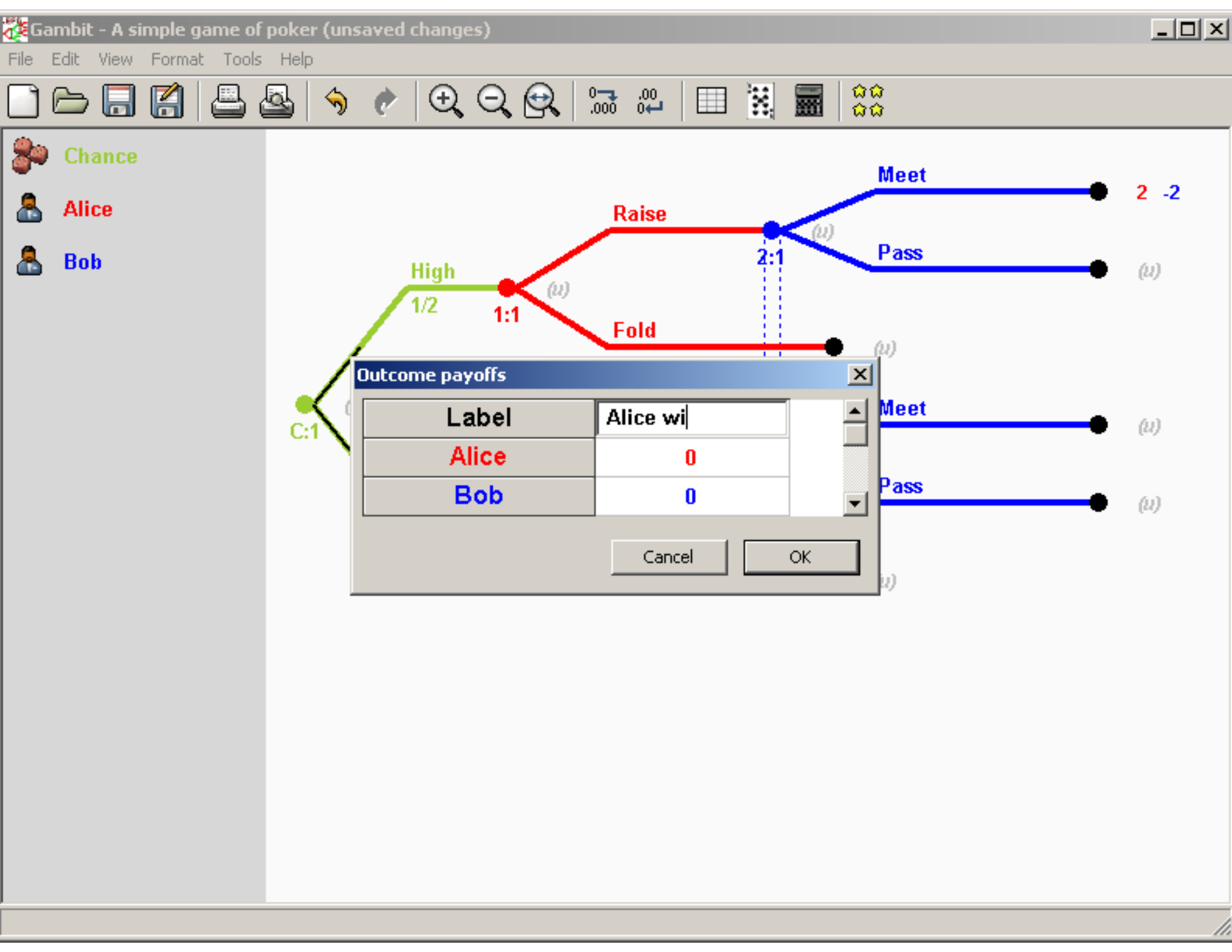

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Ali
Alice
0
Bob
0
Cancel
OK

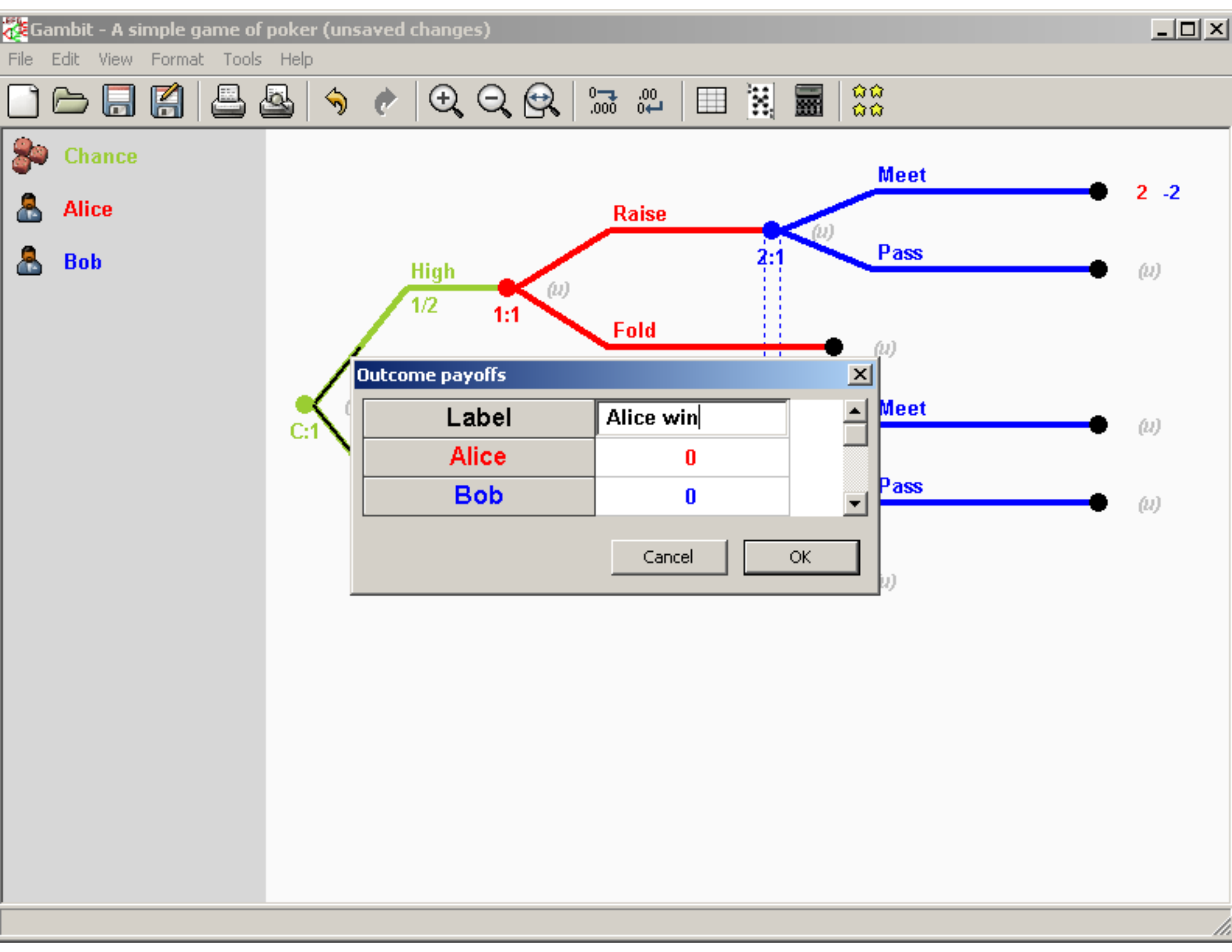

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Alic
Alice
0
Bob
0
Cancel
OK

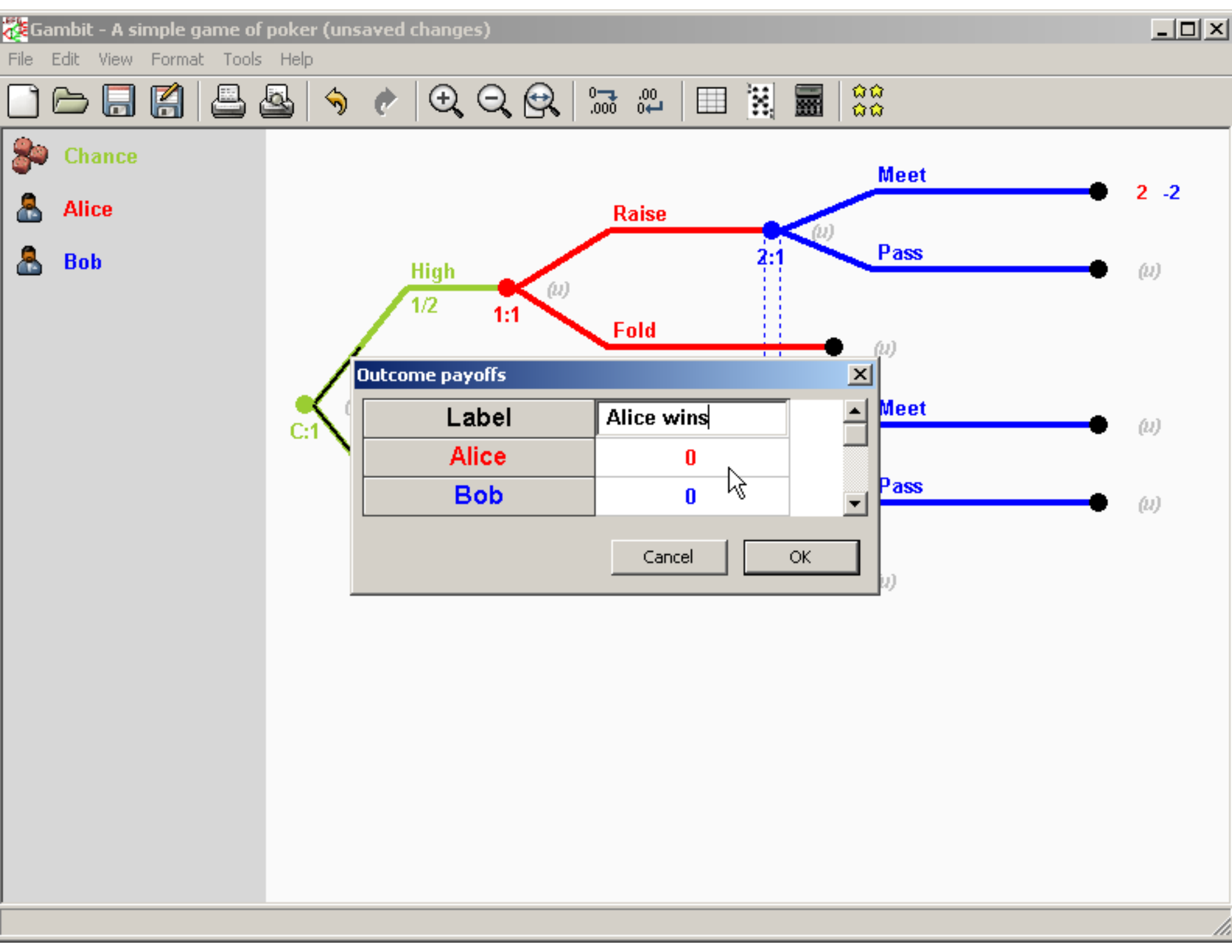

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Alice
Alice
0
Bob
0
Cancel
OK

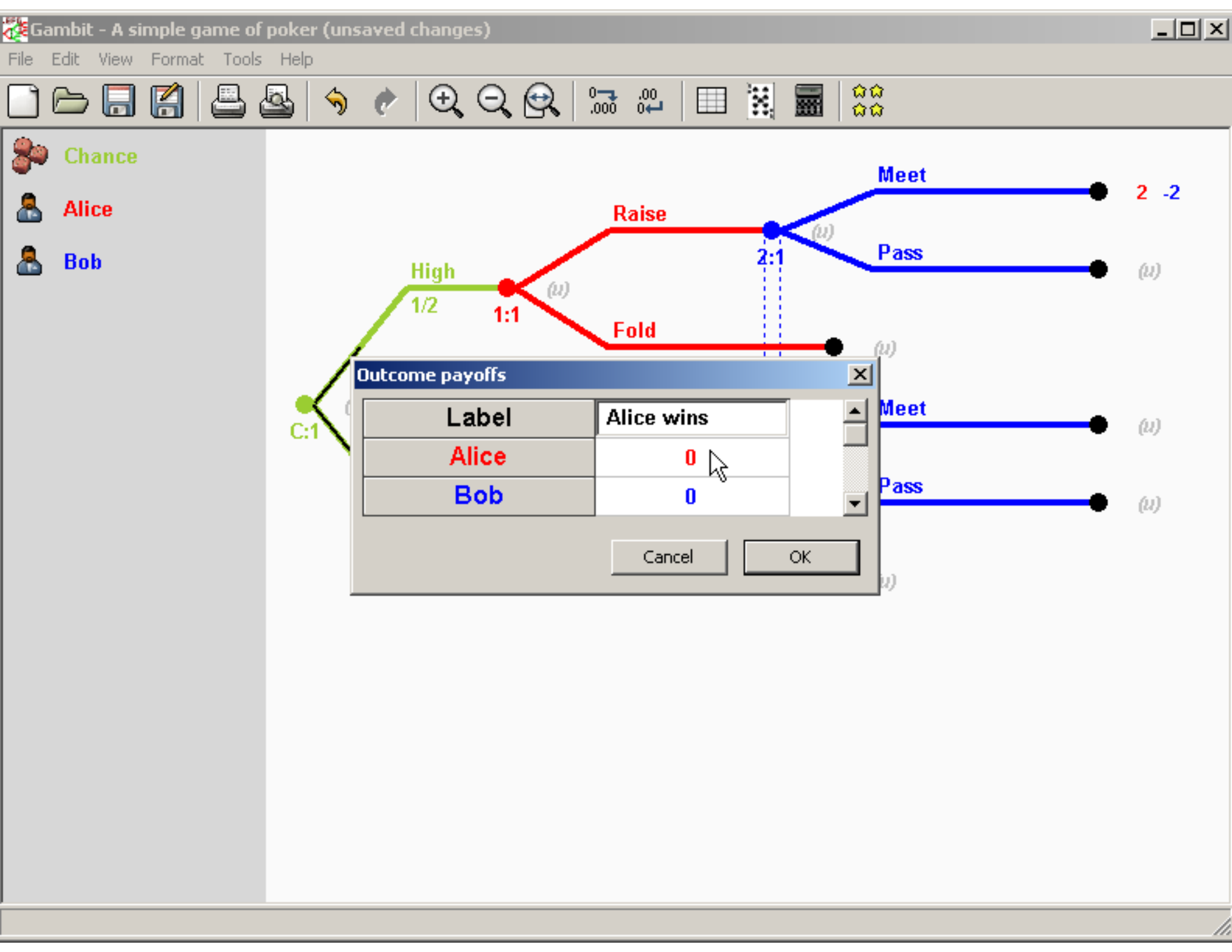

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Alice
Alice
0
Bob
0
Cancel
OK

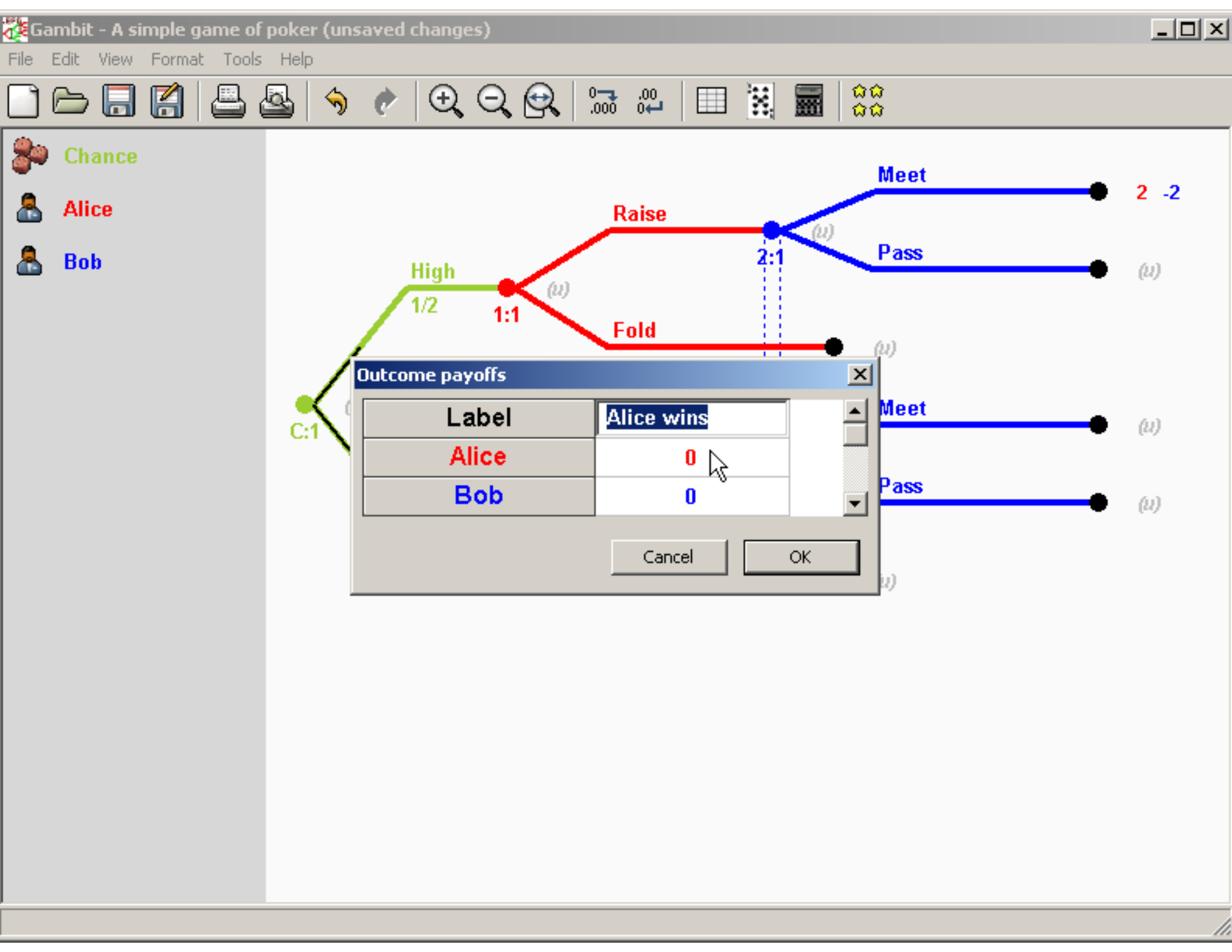

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Alice w
Alice
0
Bob
0
Cancel
OK

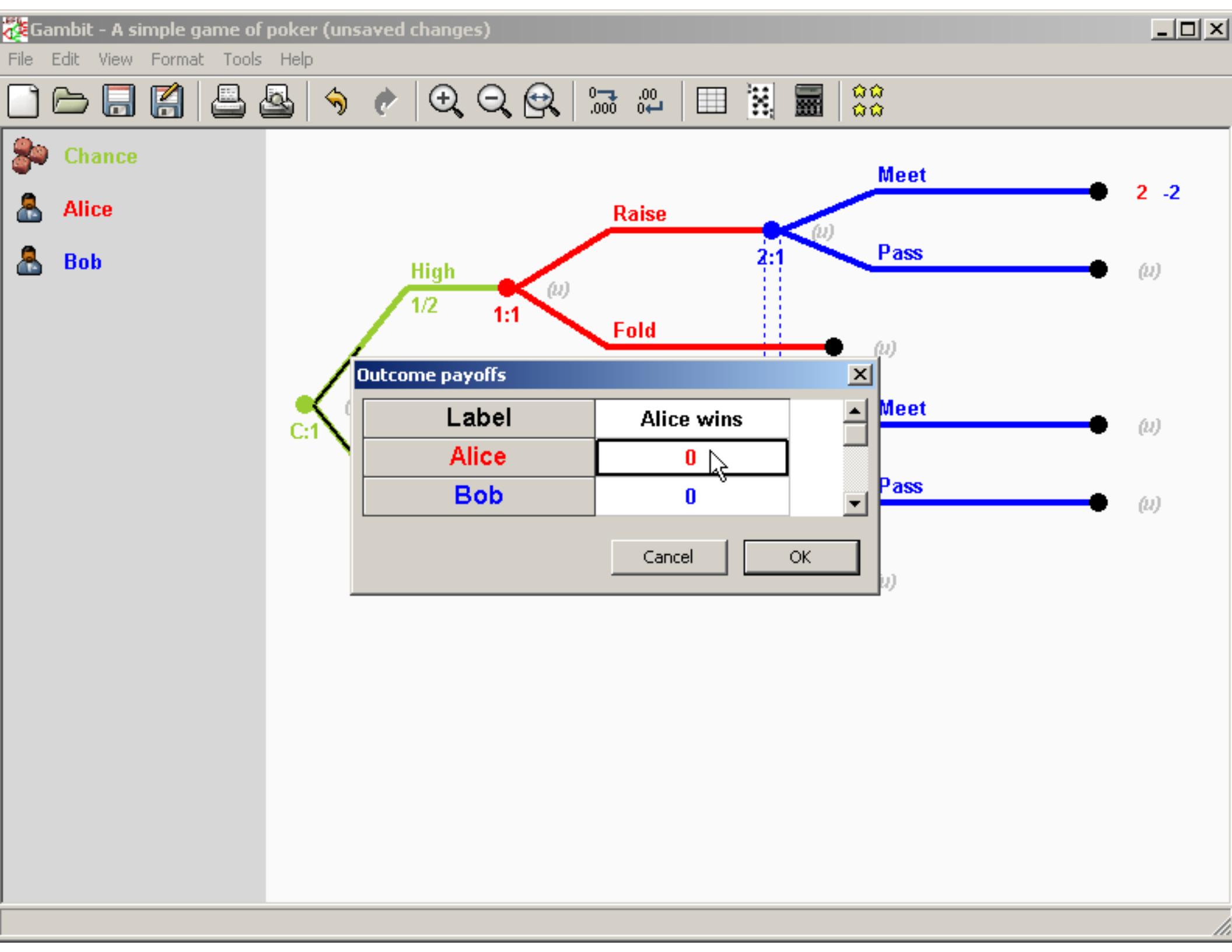

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Alice wi
Alice
0
Bob
0
Cancel
OK

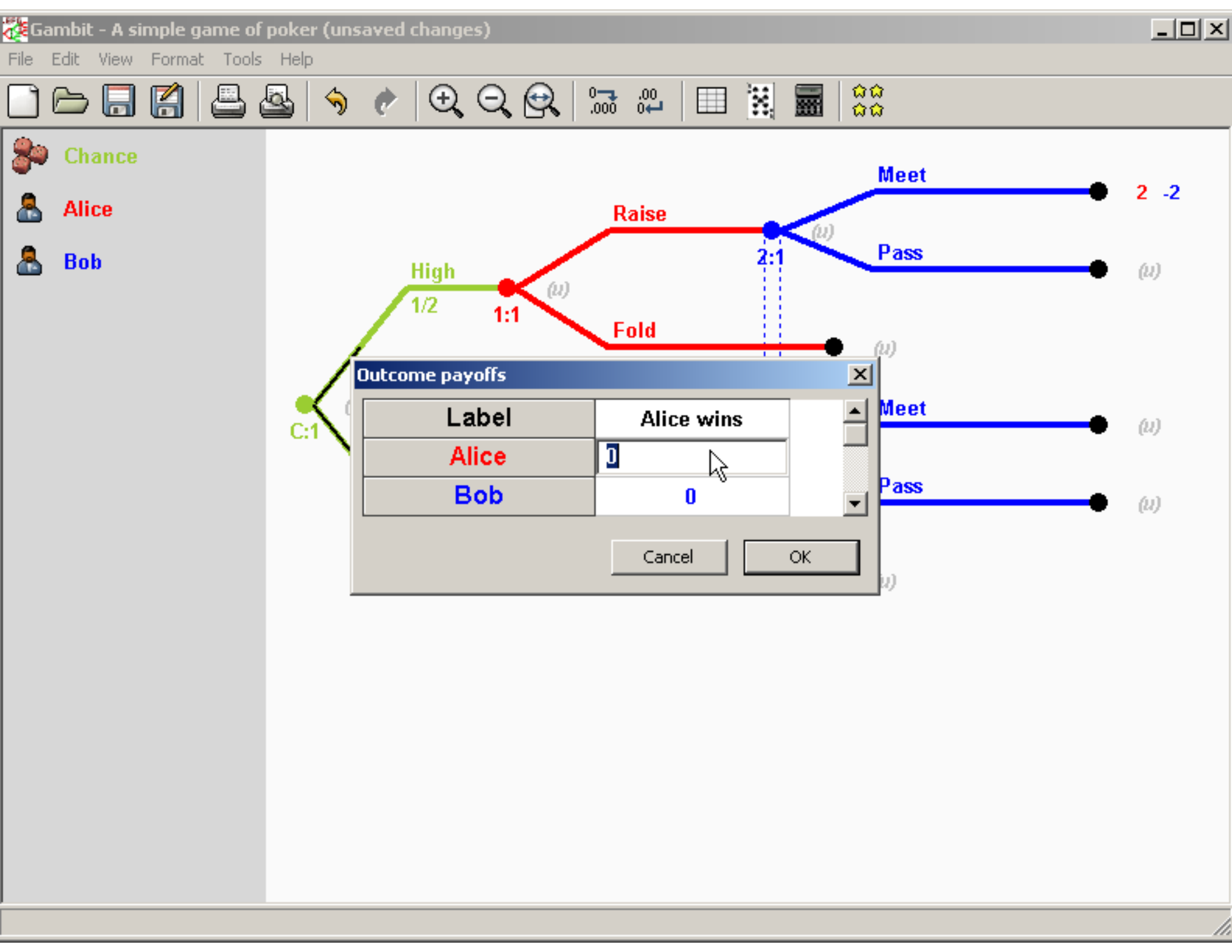

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Alice win
Alice
0
Bob
0
Cancel
OK

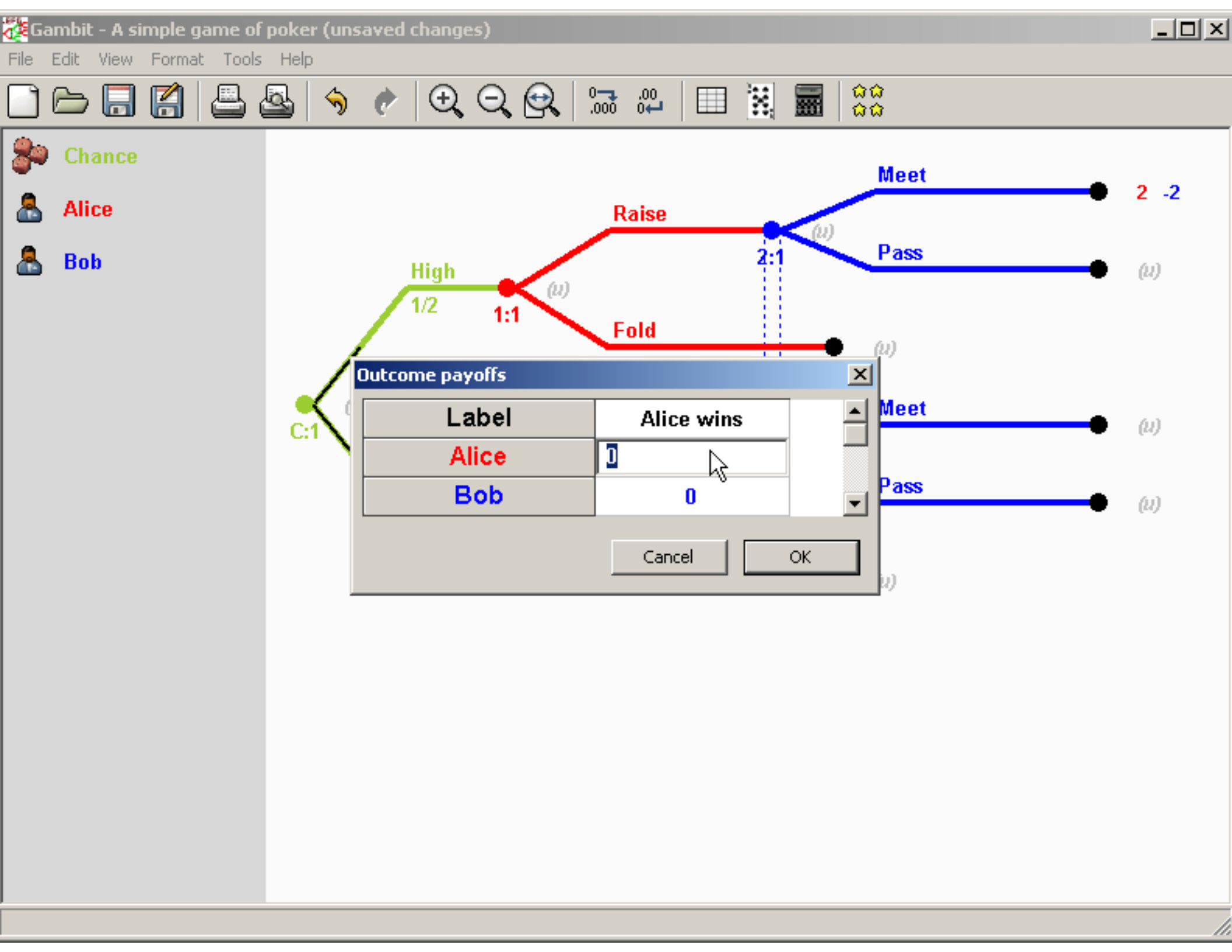

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
1:1
Raise
Fold
2:1
Meet
Pass
2 -2
Meet
Pass
Outcome payoffs
Label
Alice wins
Alice
0
Bob
0
Cancel
OK

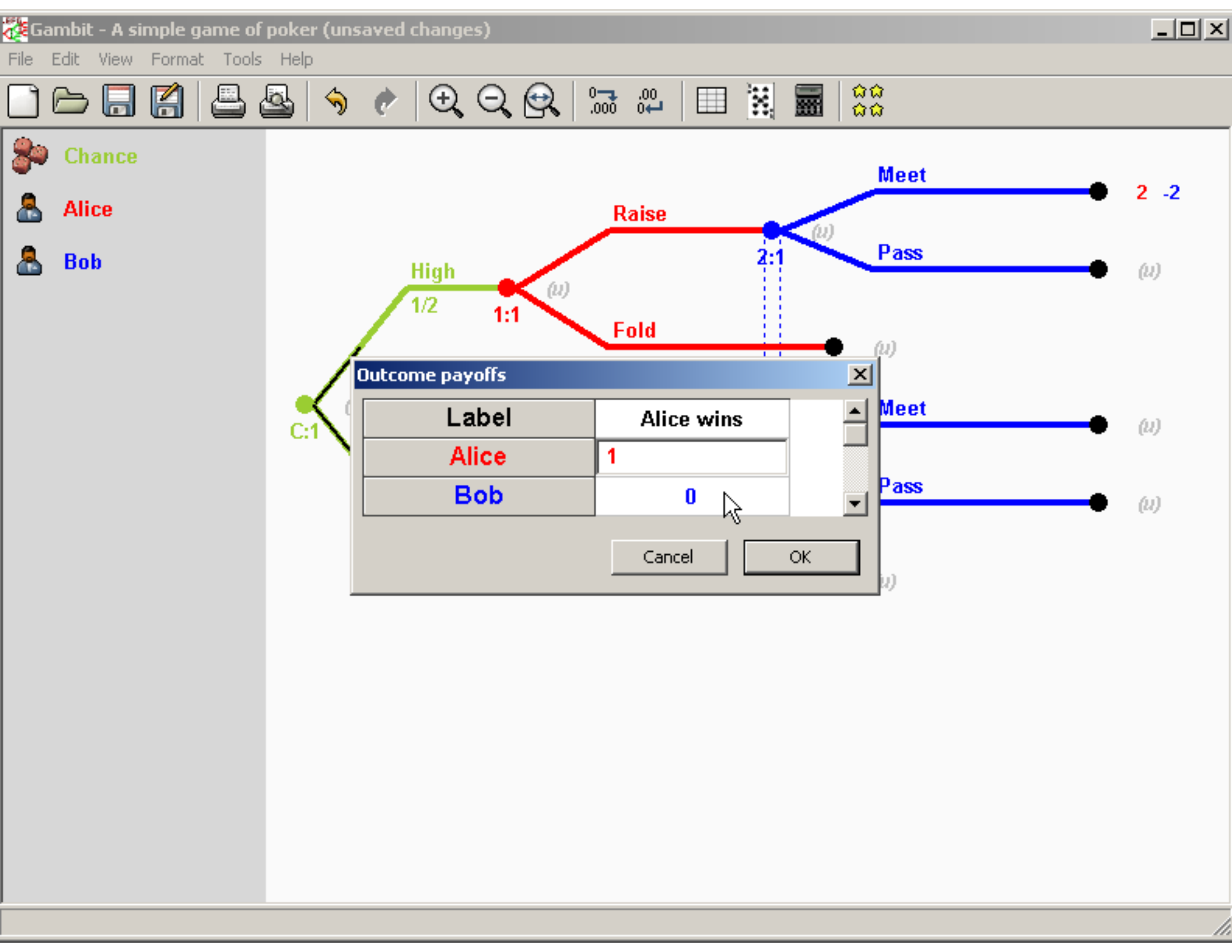

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Alice wins
Alice
0
Bob
0
Cancel
OK

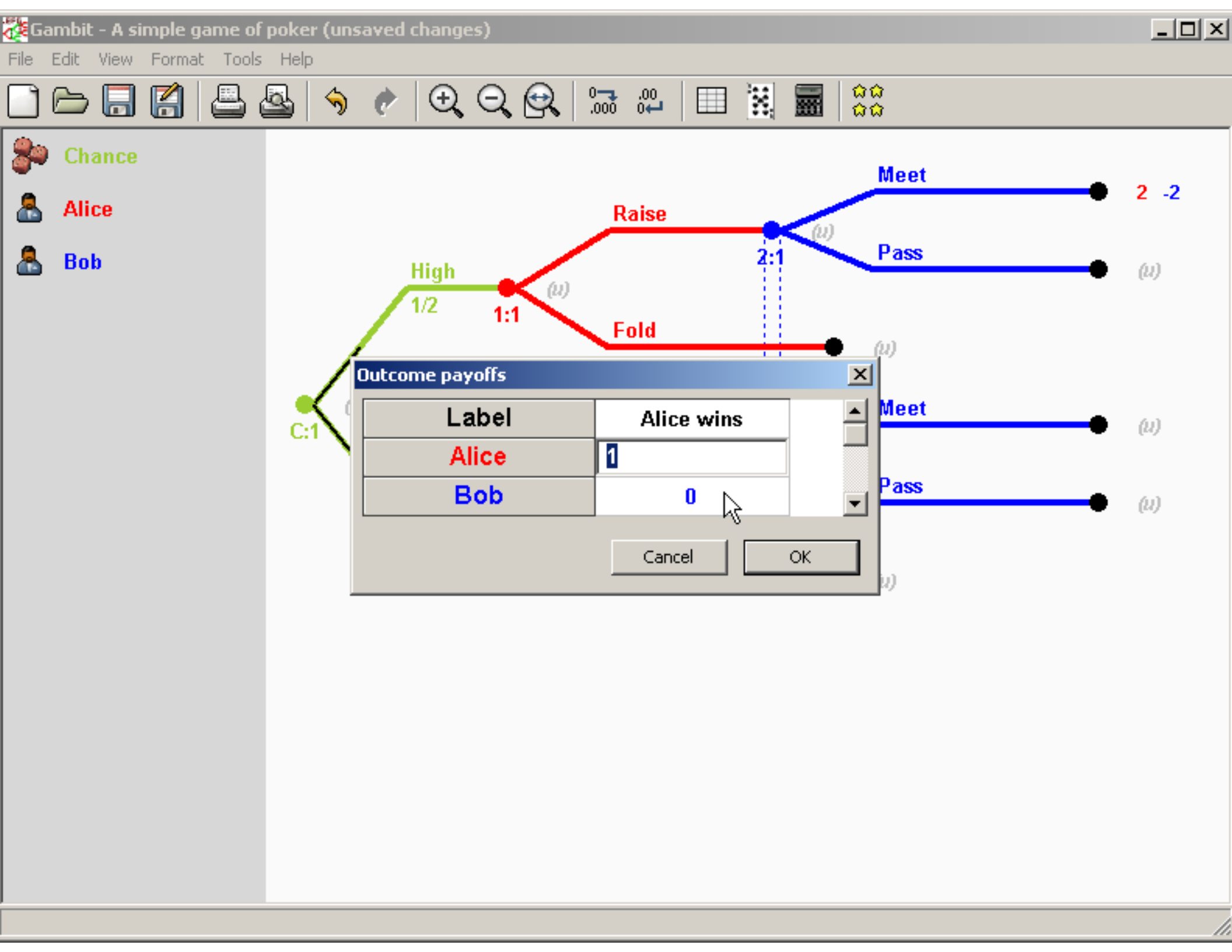

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Alice wins
Alice
0
Bob
0
Cancel
OK

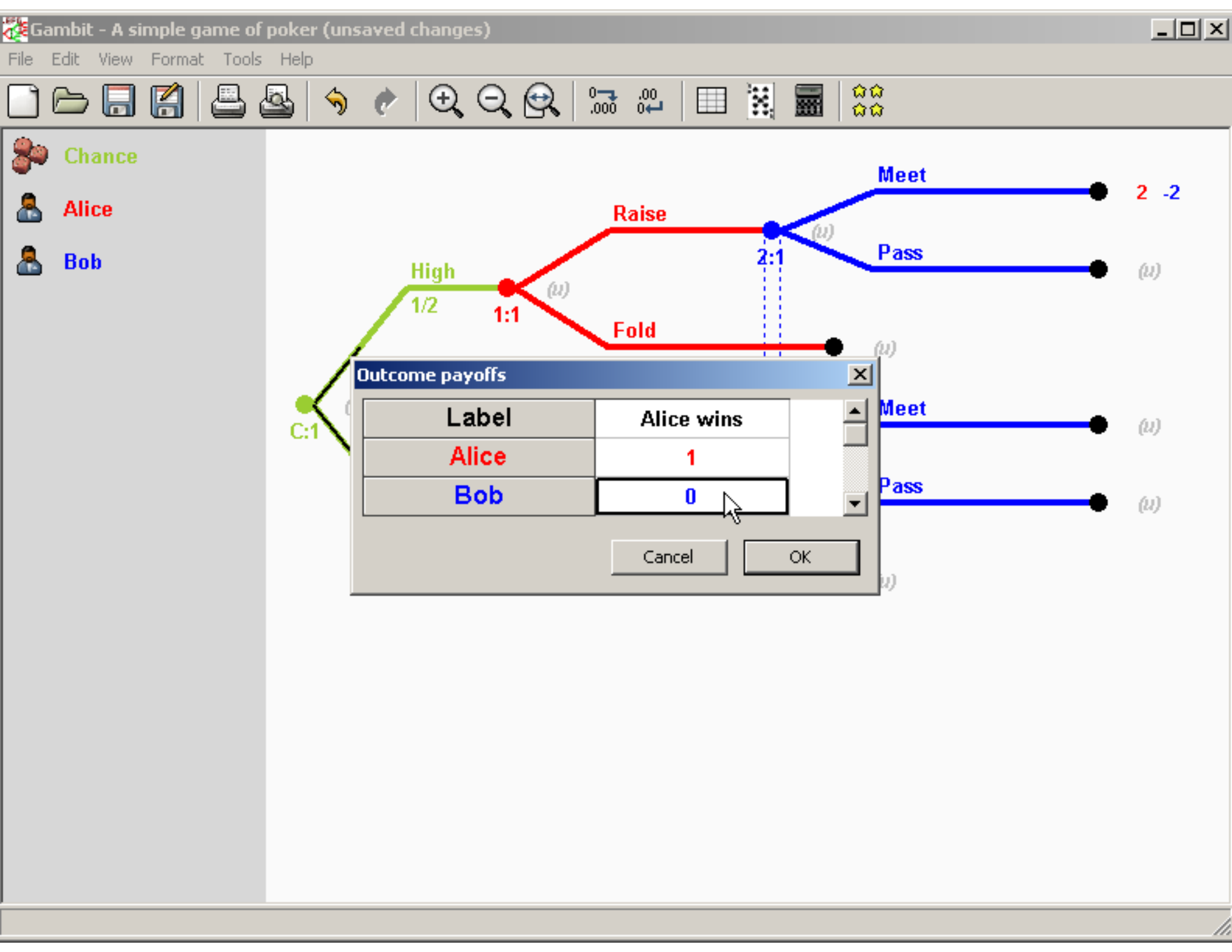

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Alice wins
Alice
0
Bob
0
Cancel
OK

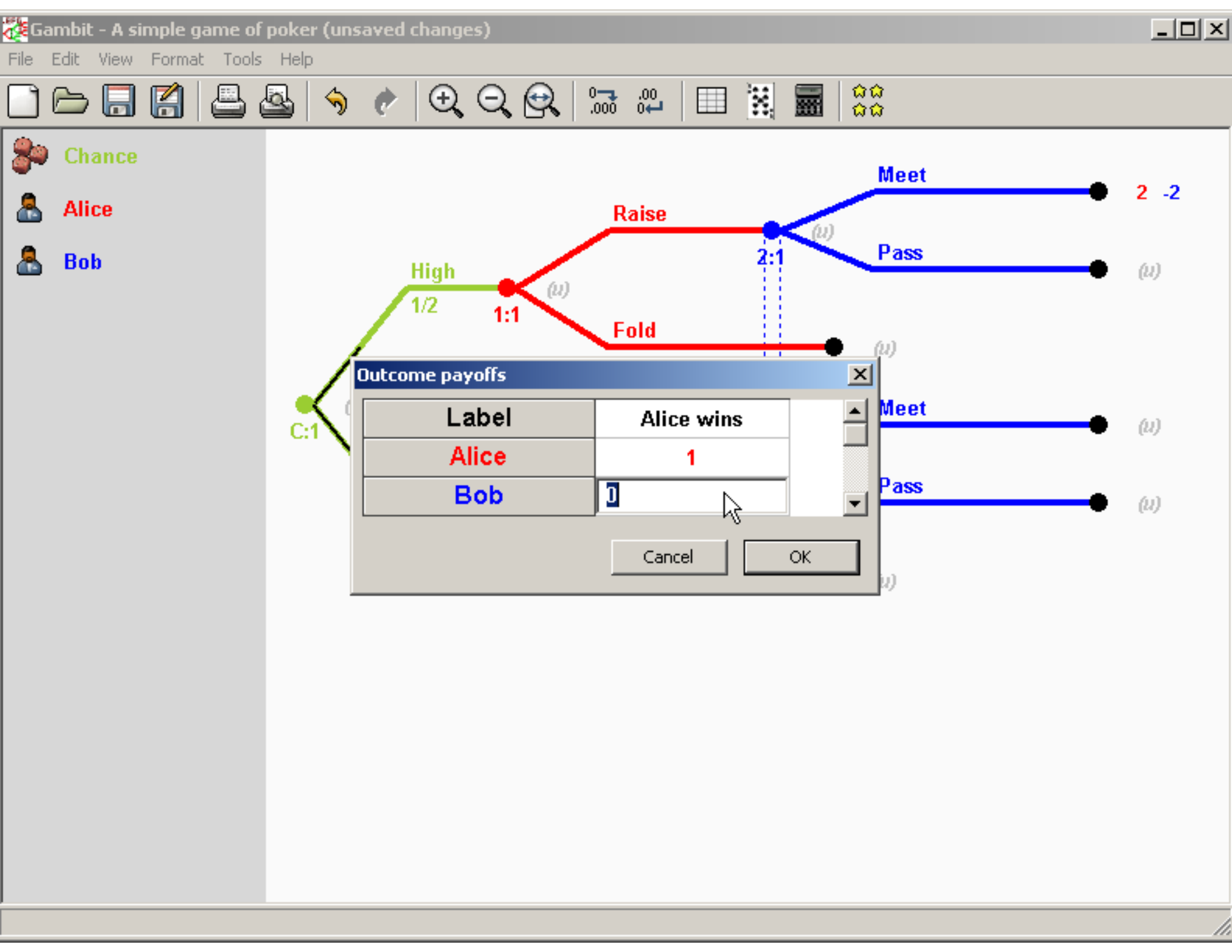

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
(u)
2:1
Pass
(u)
High
1/2
1:1
(u)
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins
Alice
1
Bob
0
Cancel
OK
Meet
(u)
Pass
(u)
(u)

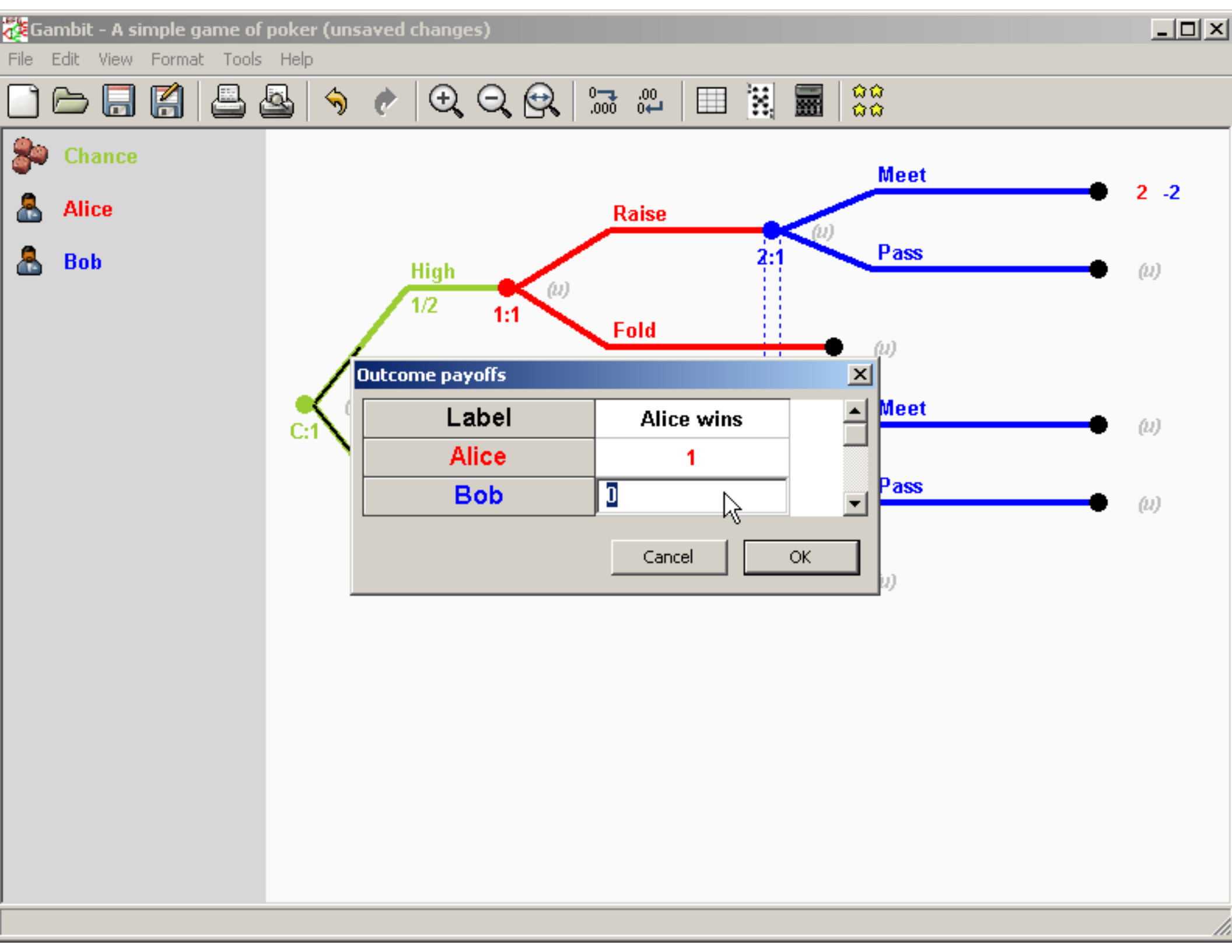

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
(u)
2:1
Pass
(u)
High
1/2
1:1
(u)
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins
Alice
1
Bob
0
Cancel
OK
Meet
(u)
Pass
(u)
(u)

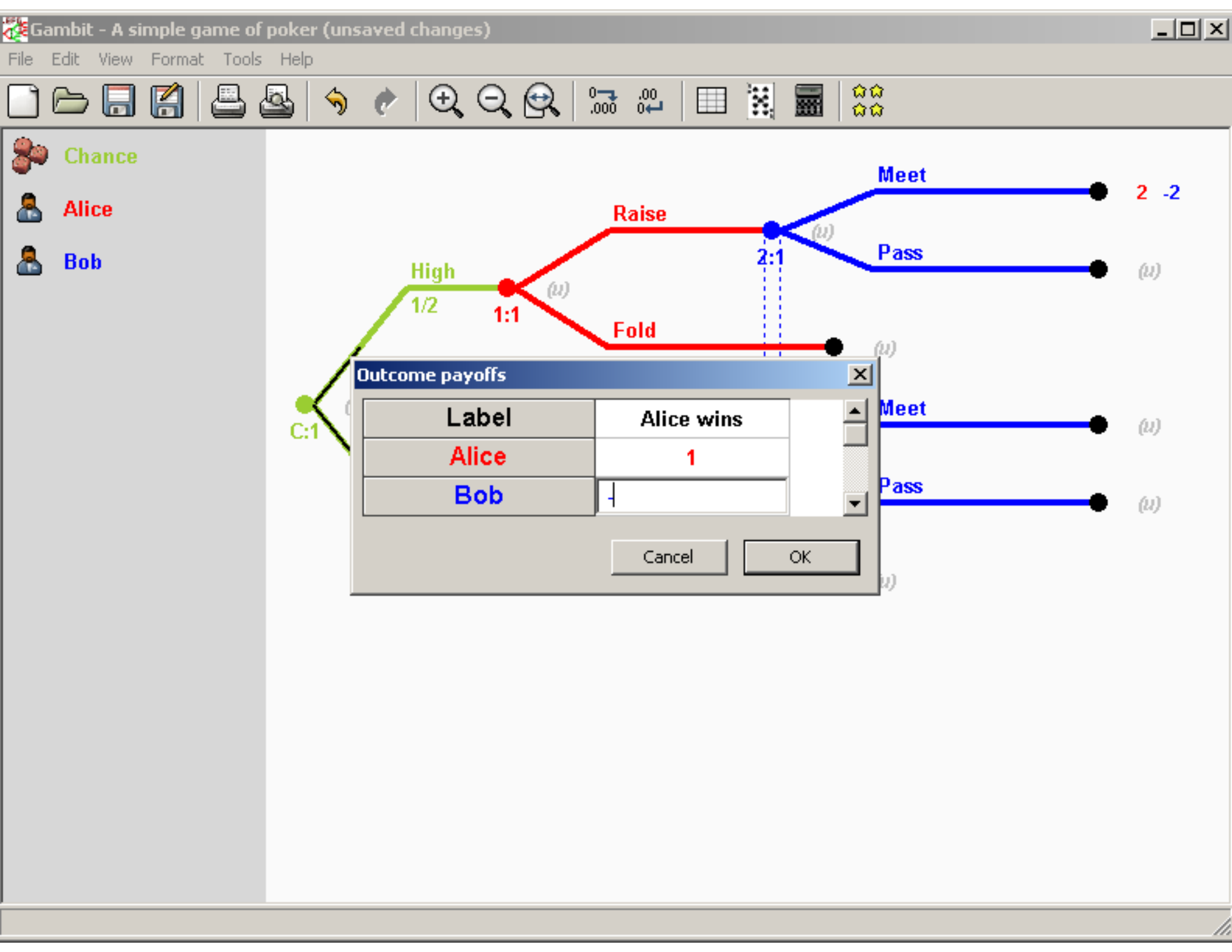

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Alice wins
Alice
1
Bob
0
Cancel
OK

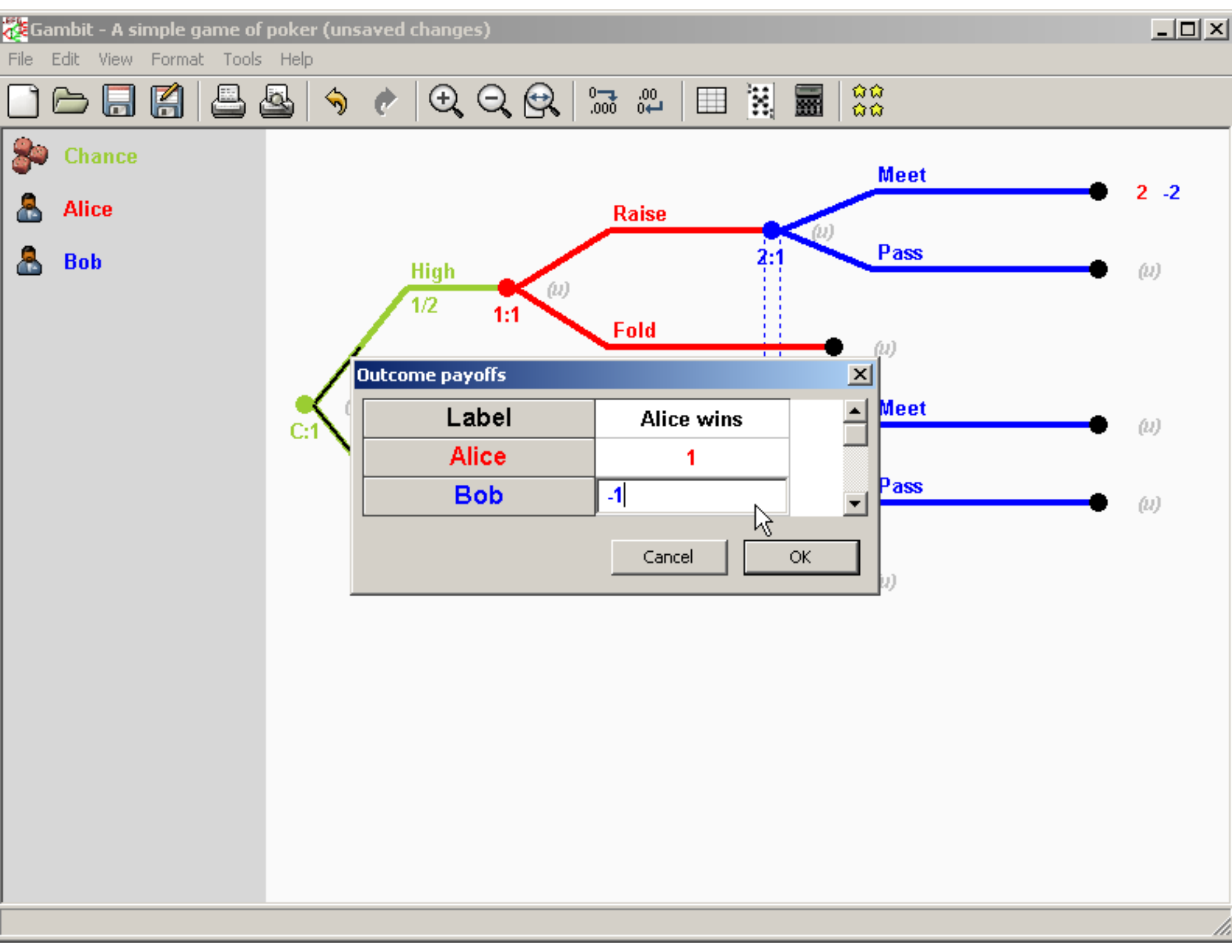

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
(u)
2:1
Pass
(u)
High
1/2
1:1
(u)
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins
Alice
1
Bob
0
Cancel
OK
Meet
(u)
Pass
(u)
(u)

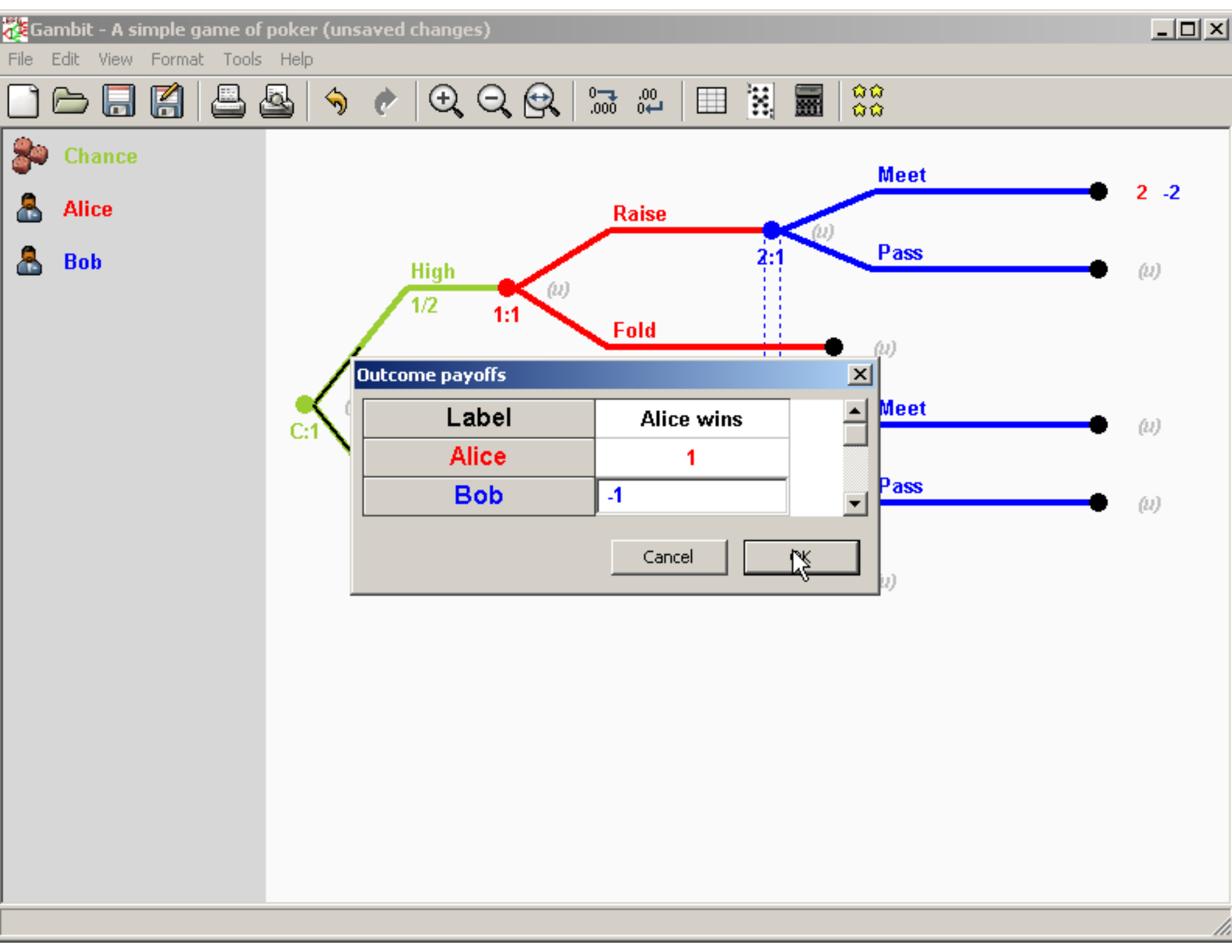

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Alice wins
Alice
1
Bob
0
Cancel
OK

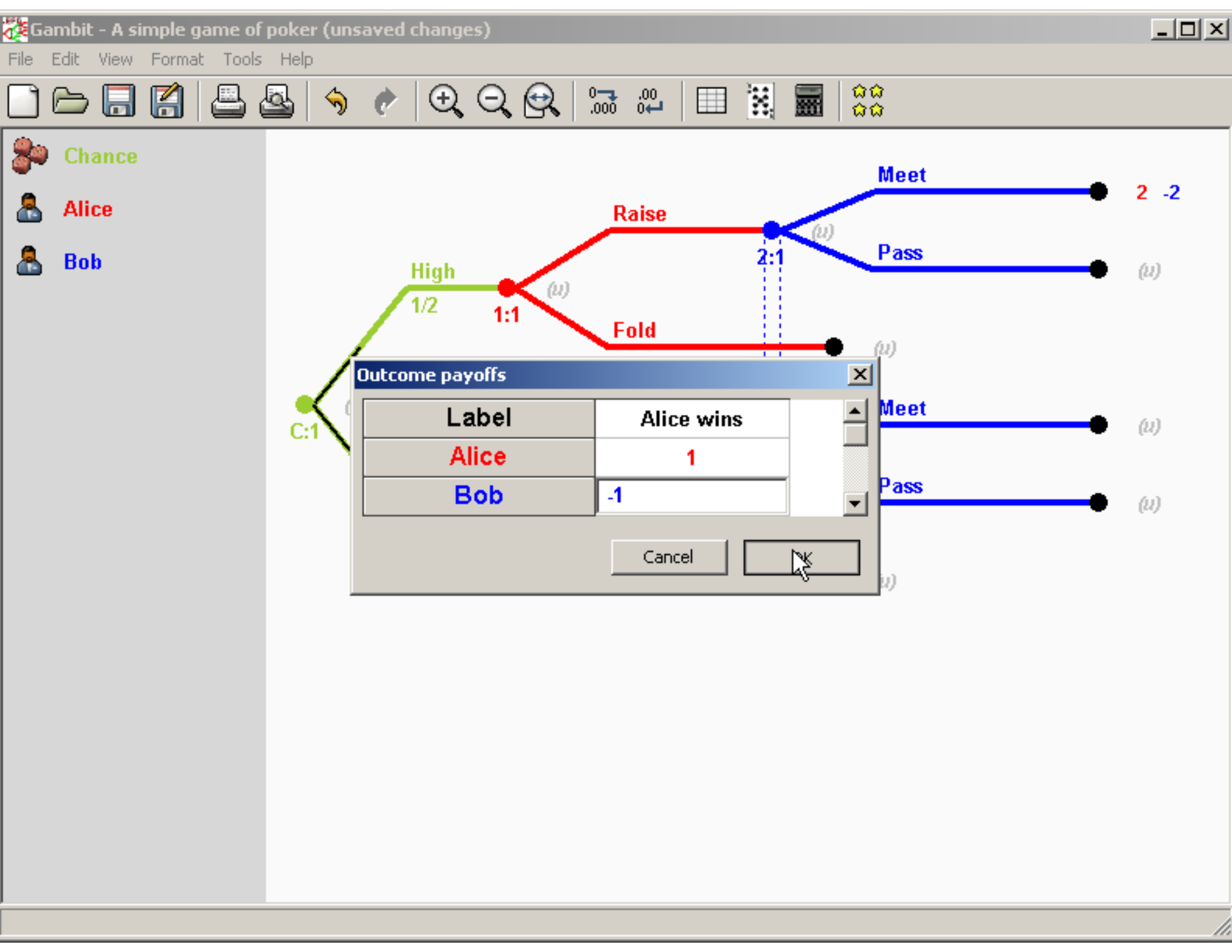

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
Pass
2:1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Alice wins
Alice
1
Bob
0
Cancel
OK

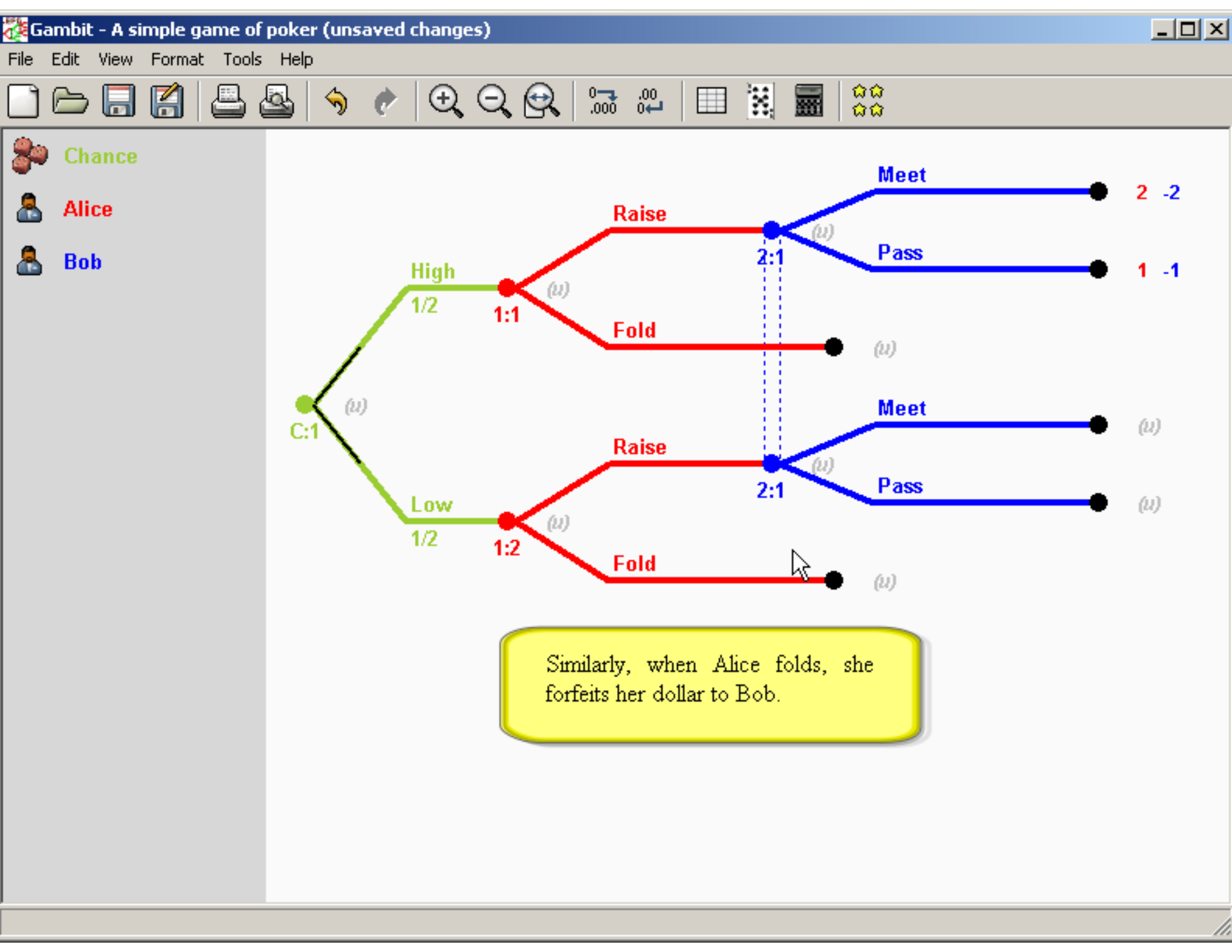

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Alice wins
Alice
1
Bob
0
Cancel
OK

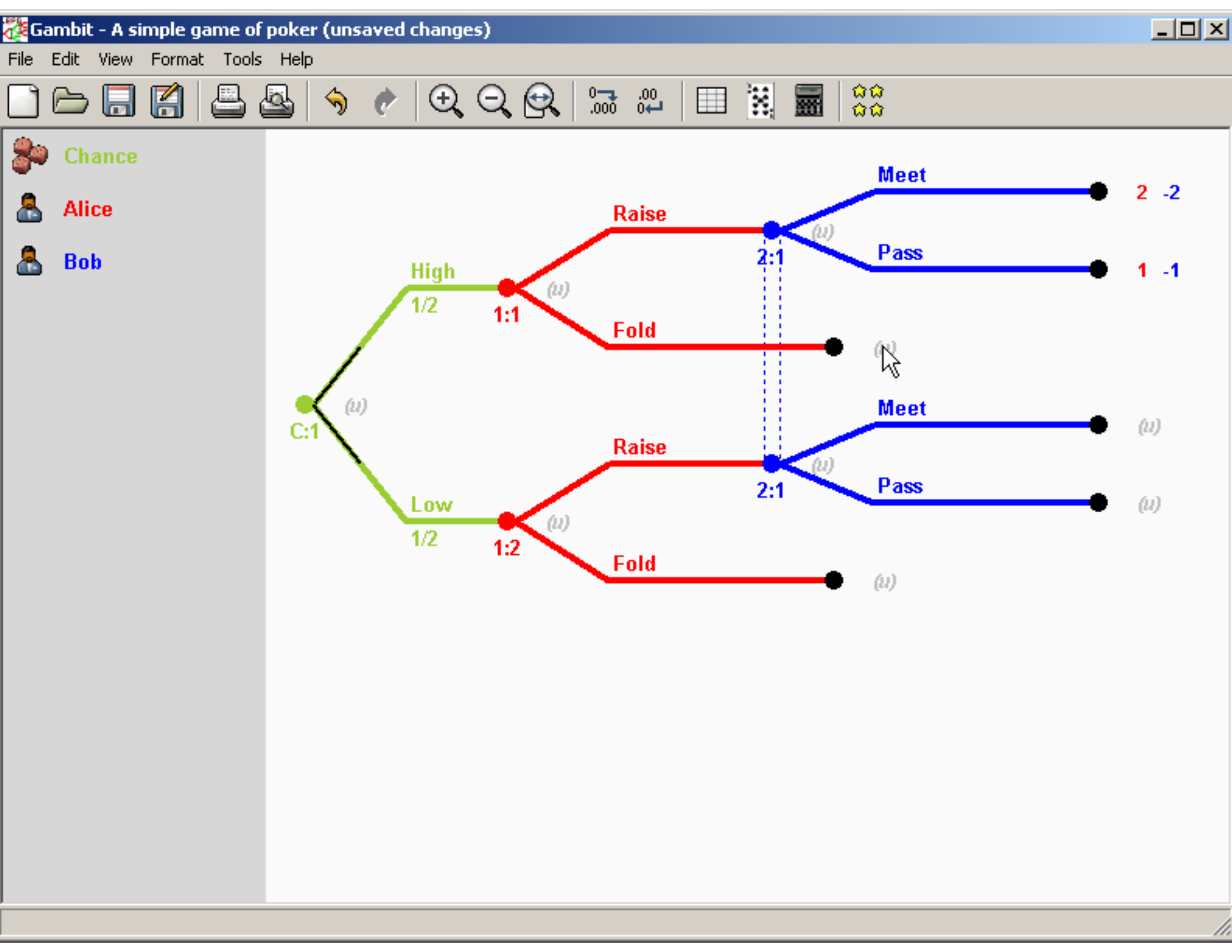

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
(u)
2:1
Pass
(u)
High
1/2
1:1
(u)
Fold
(u)
C:1
Outcome payoffs
Label
Alice wins
Alice
1
Bob
Cancel
OK
Meet
(u)
Pass
(u)
(u)

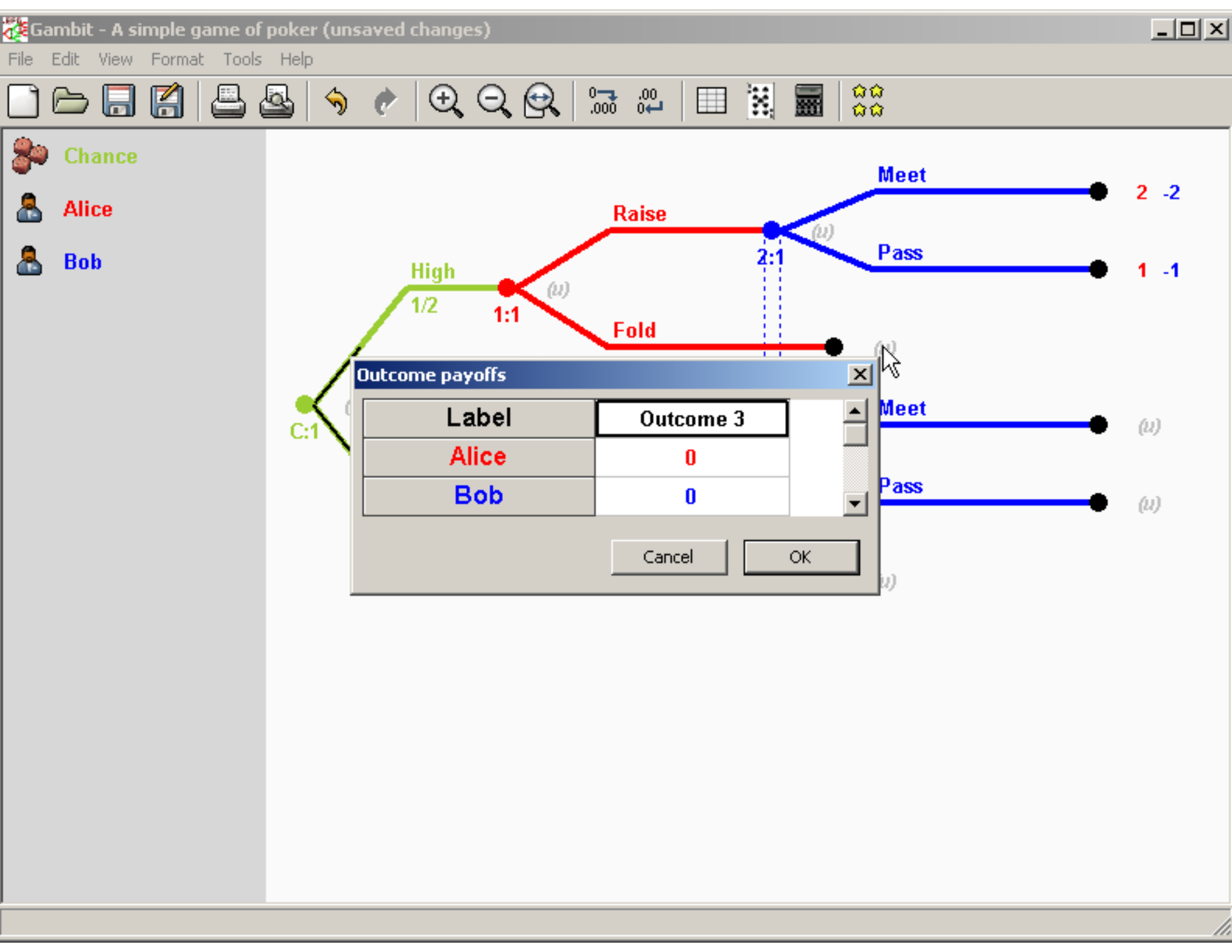

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Alice wins
Alice
1
Bob
-1
Cancel
OK

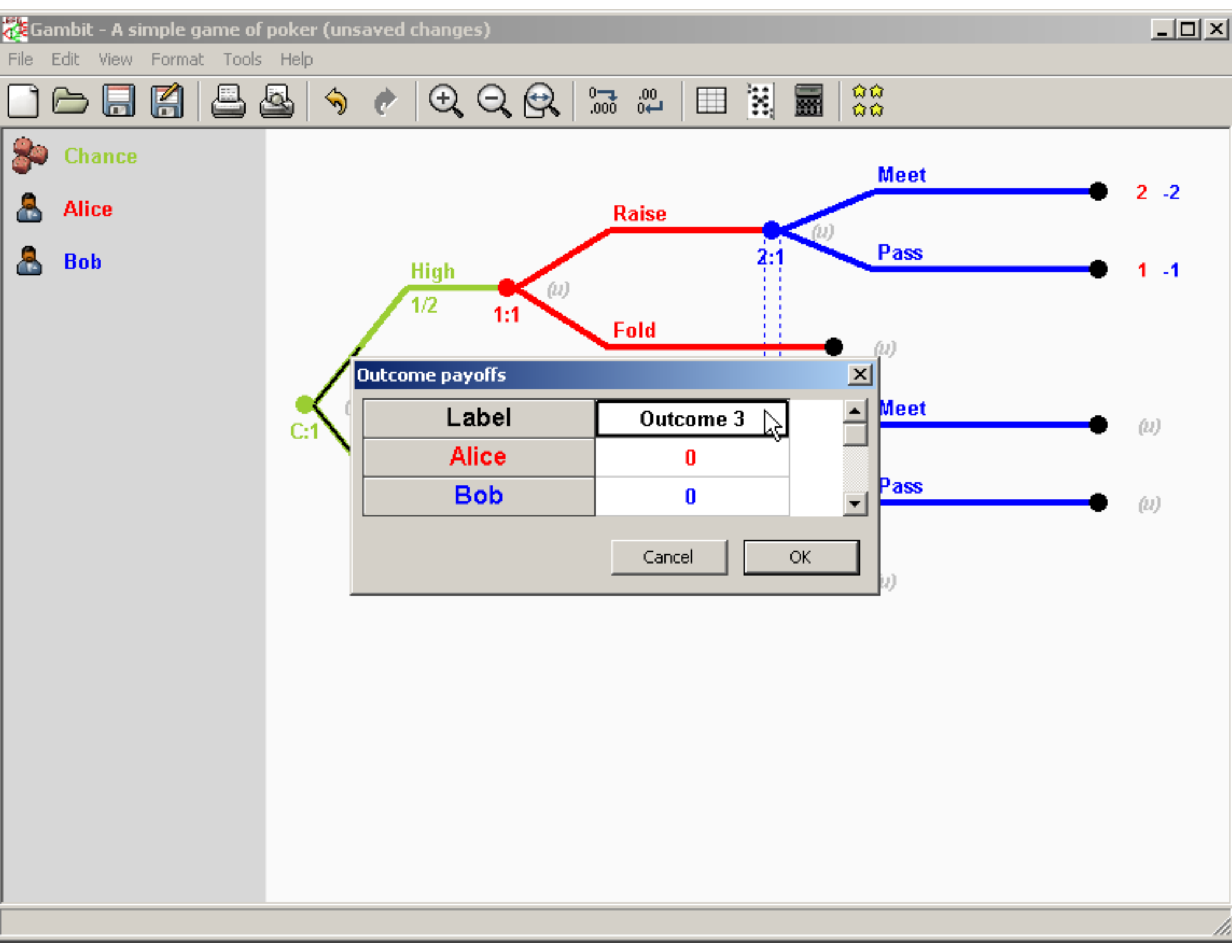

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Alice wins
Alice
1
Bob
-1
Cancel
OK

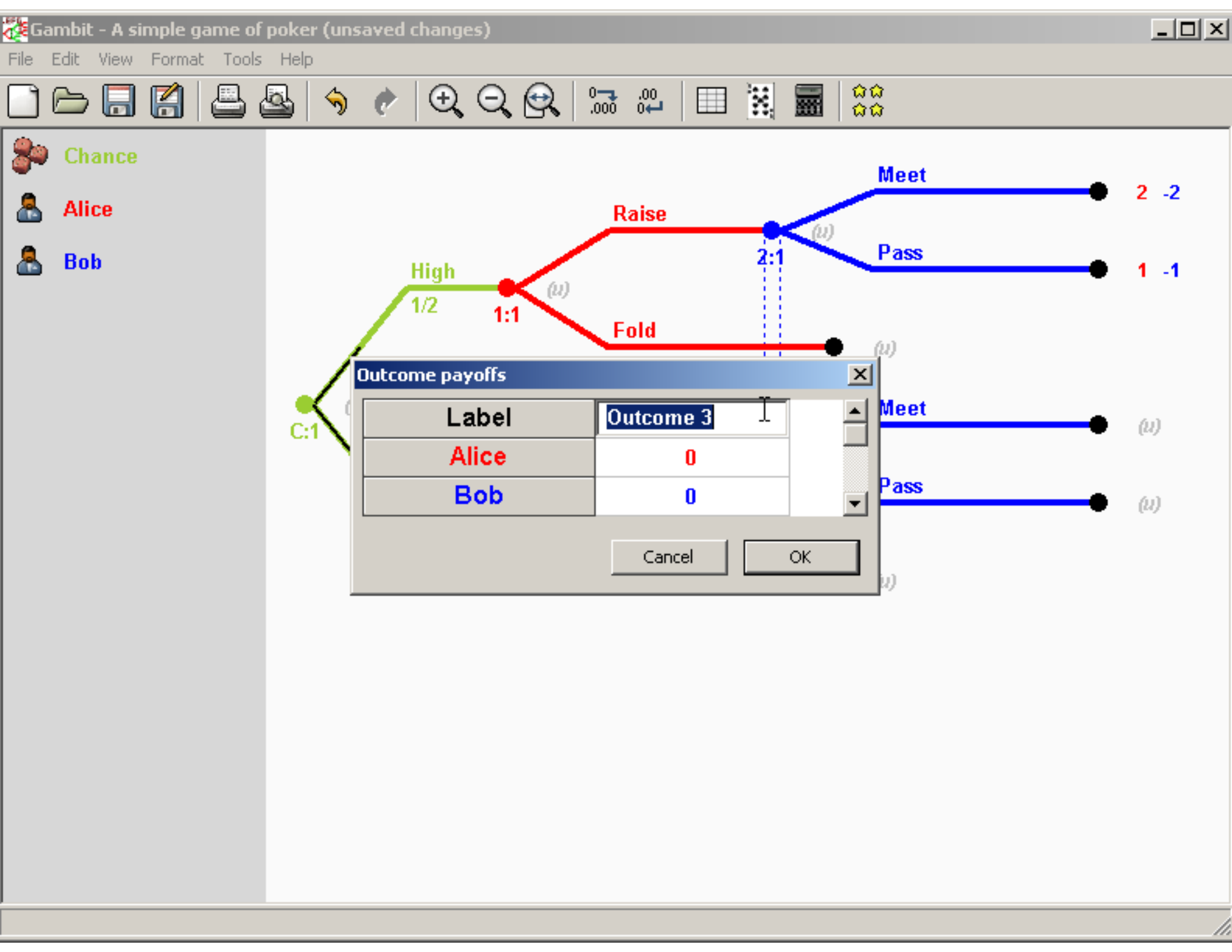

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Alice wins
Alice
1
Bob
-1
Cancel

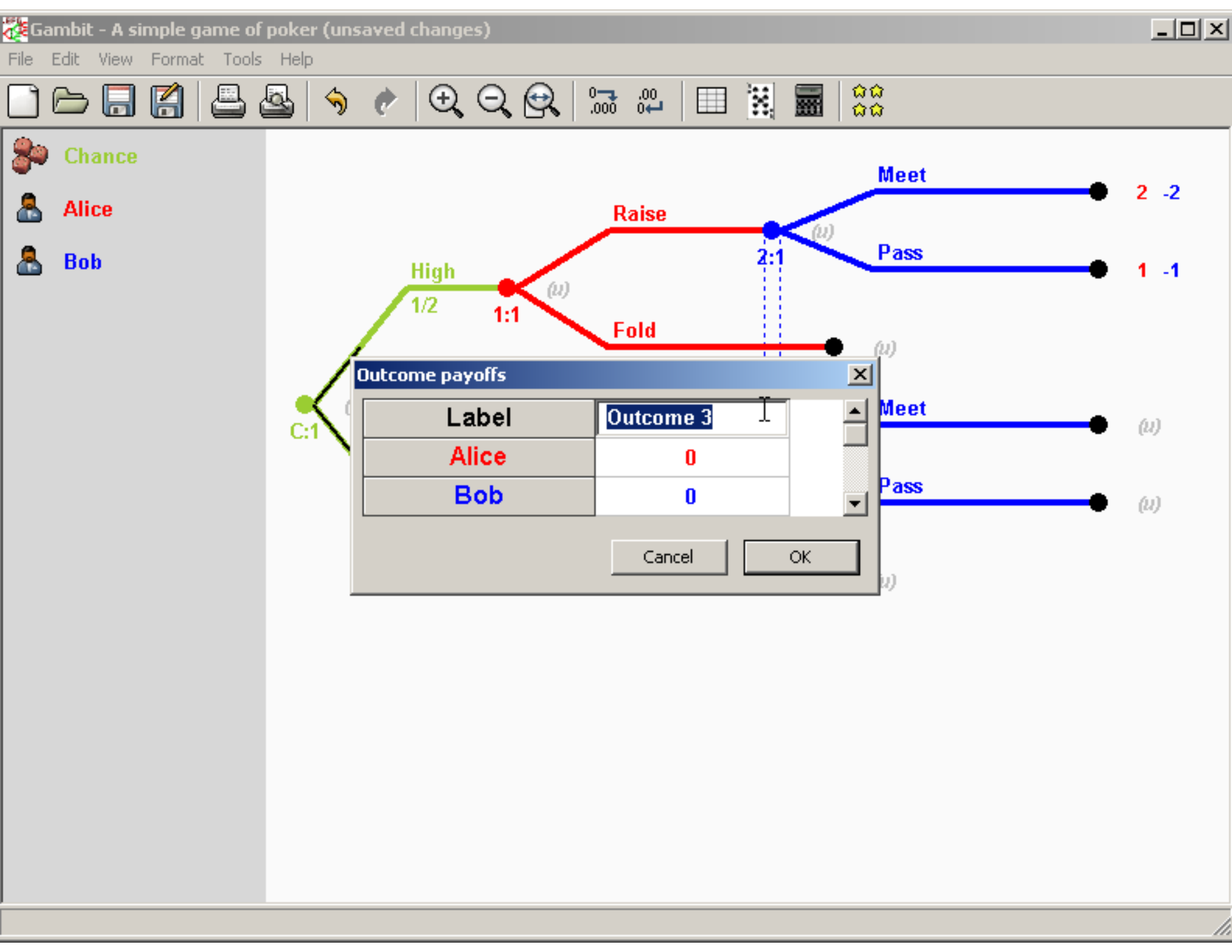

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
(u)
(u)
(u)
(u)
2:1
2:1
Meet
Pass
Meet
Pass
(u)
(u)
(u)
(u)
2 -2
1 -1
Similarly, when Alice folds, she forfeits her dollar to Bob.

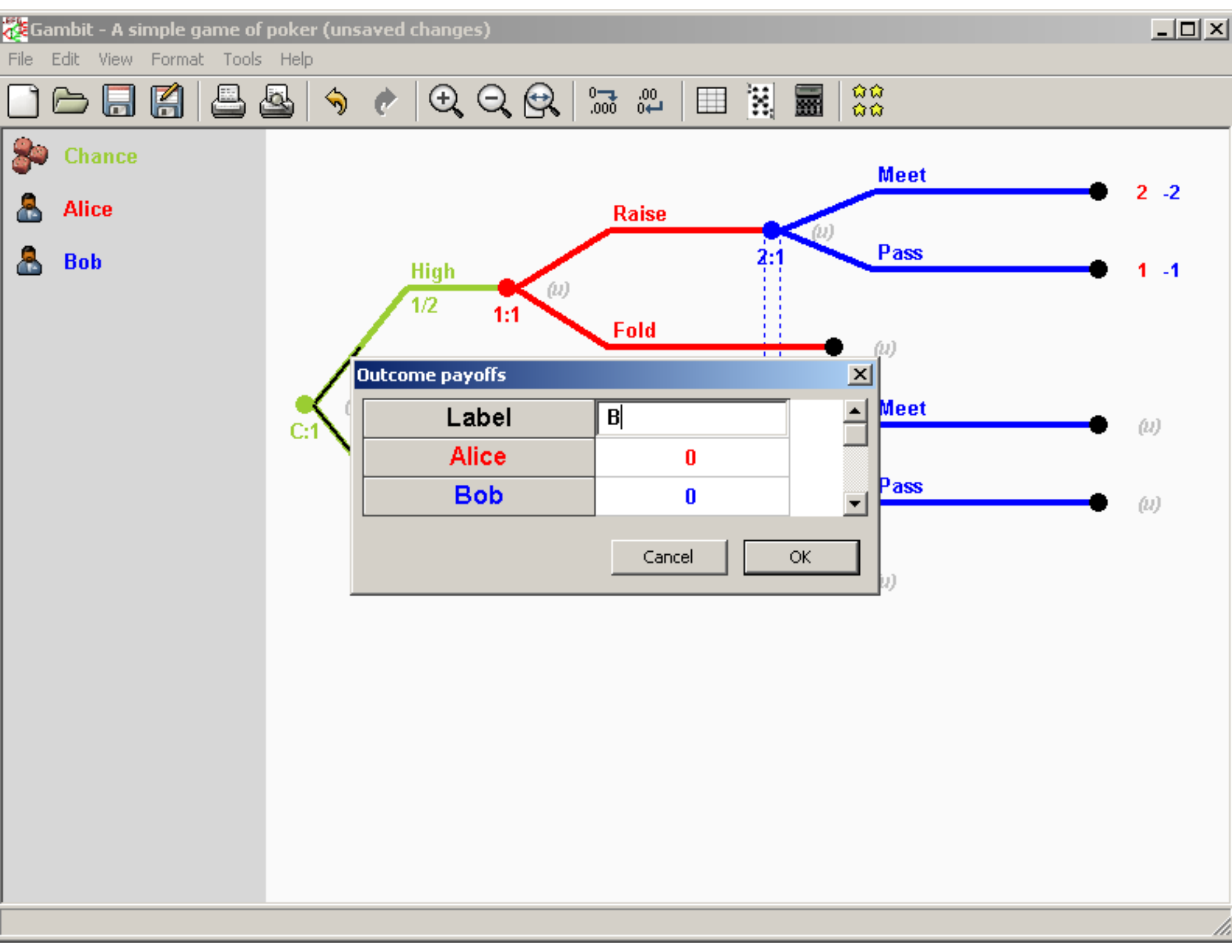

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
(u)
(u)
(u)
(u)
2:1
2:1
Meet
Pass
Meet
Pass
2 -2
1 -1
(u)
(u)
(u)
(u)

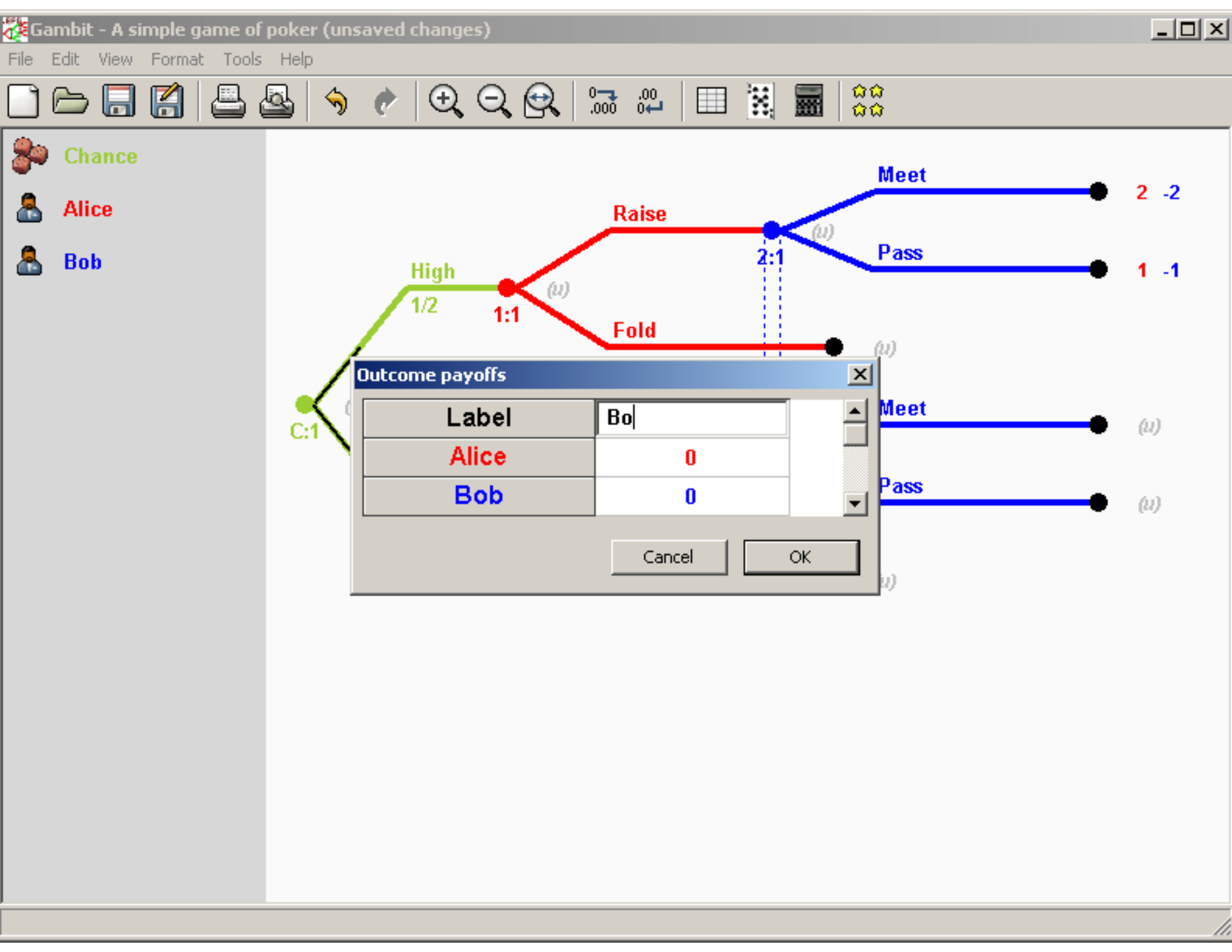

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
2 -2
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Outcome 3
Alice
0
Bob
0
Cancel
OK

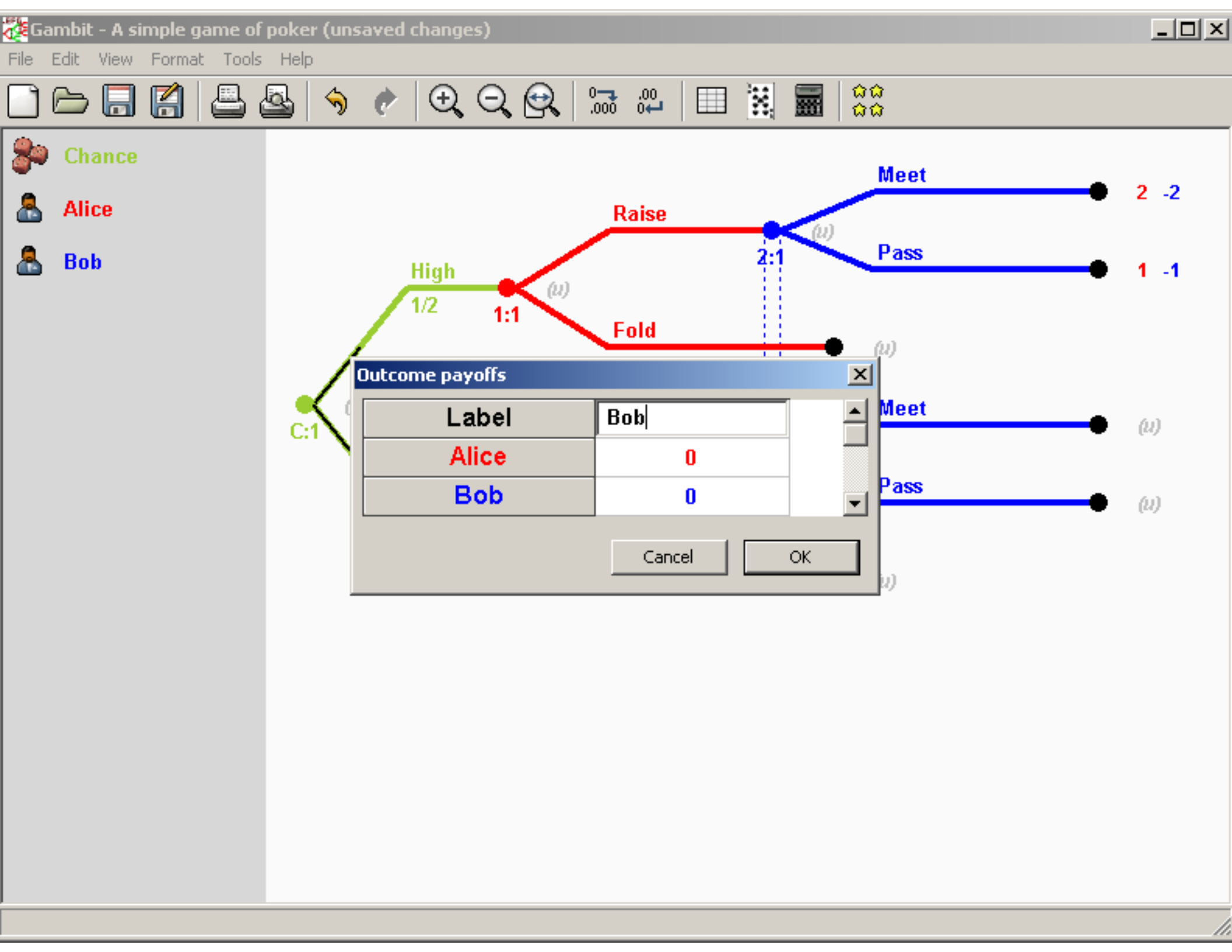

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
2 -2
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Outcome 3
Alice
0
Bob
0
Cancel
OK

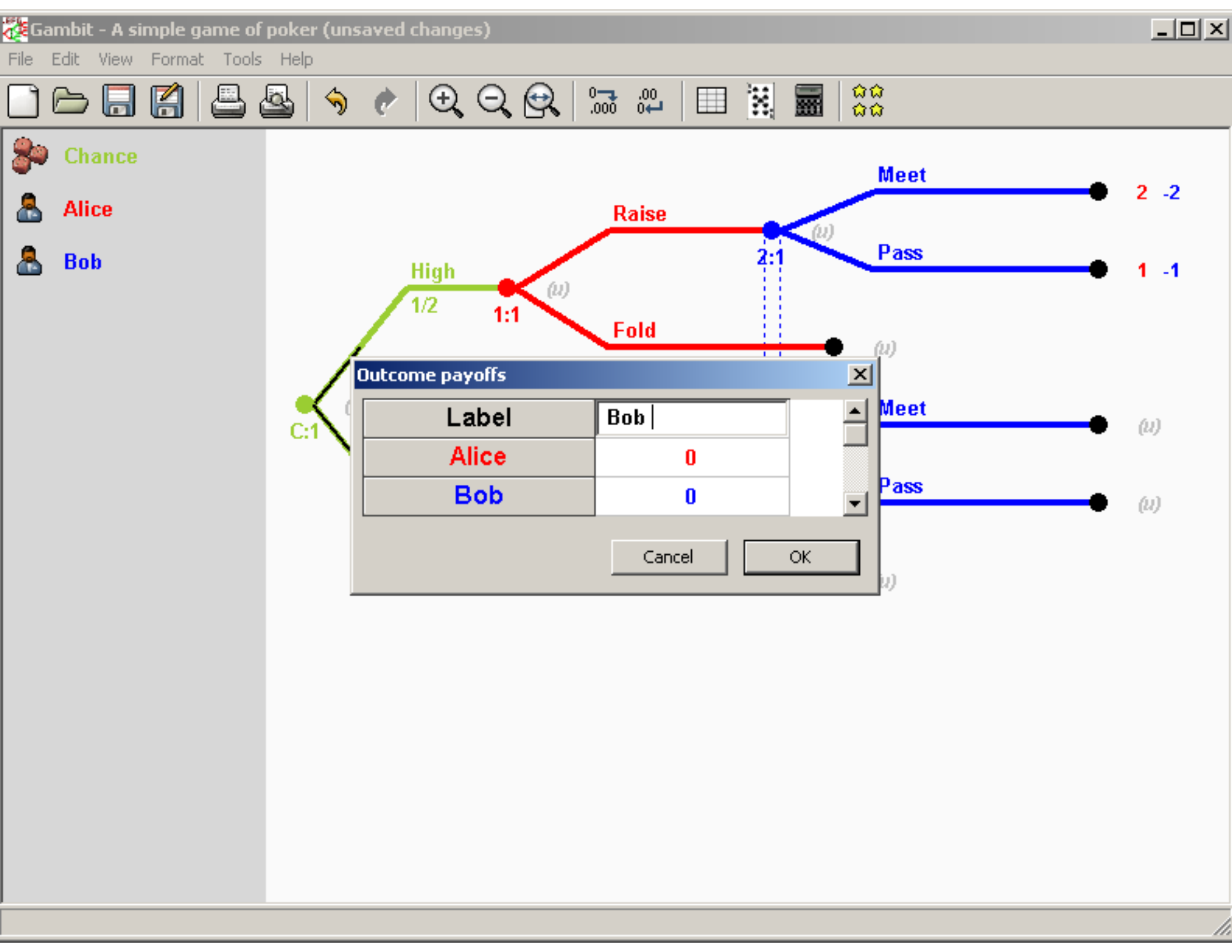

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
1:1
Raise
Fold
2:1
Meet
Pass
2 -2
1 -1
Meet
Pass
Outcome payoffs
Label
Outcome 3
Alice
0
Bob
0
Cancel
OK

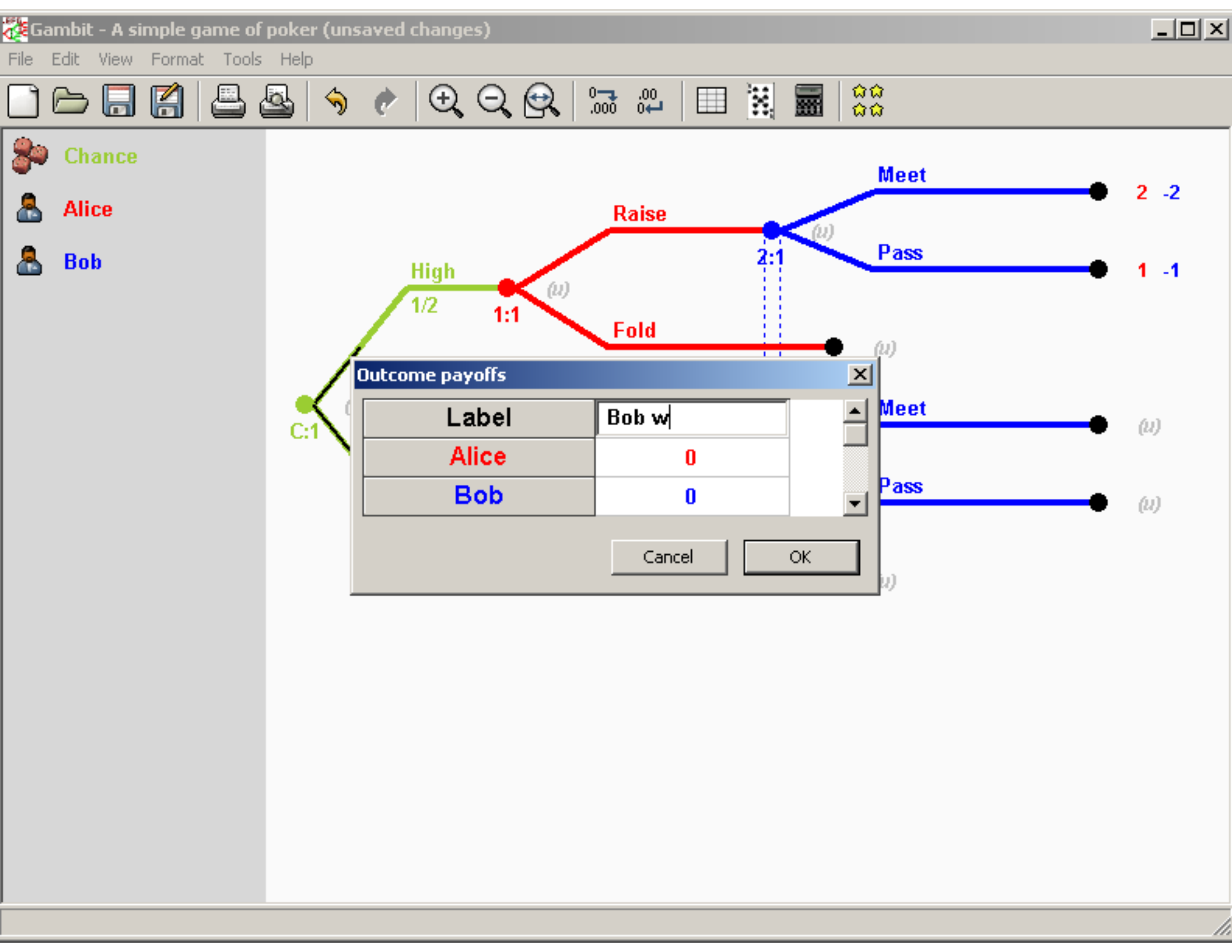

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Outcome 3
Alice
0
Bob
0
Cancel
OK

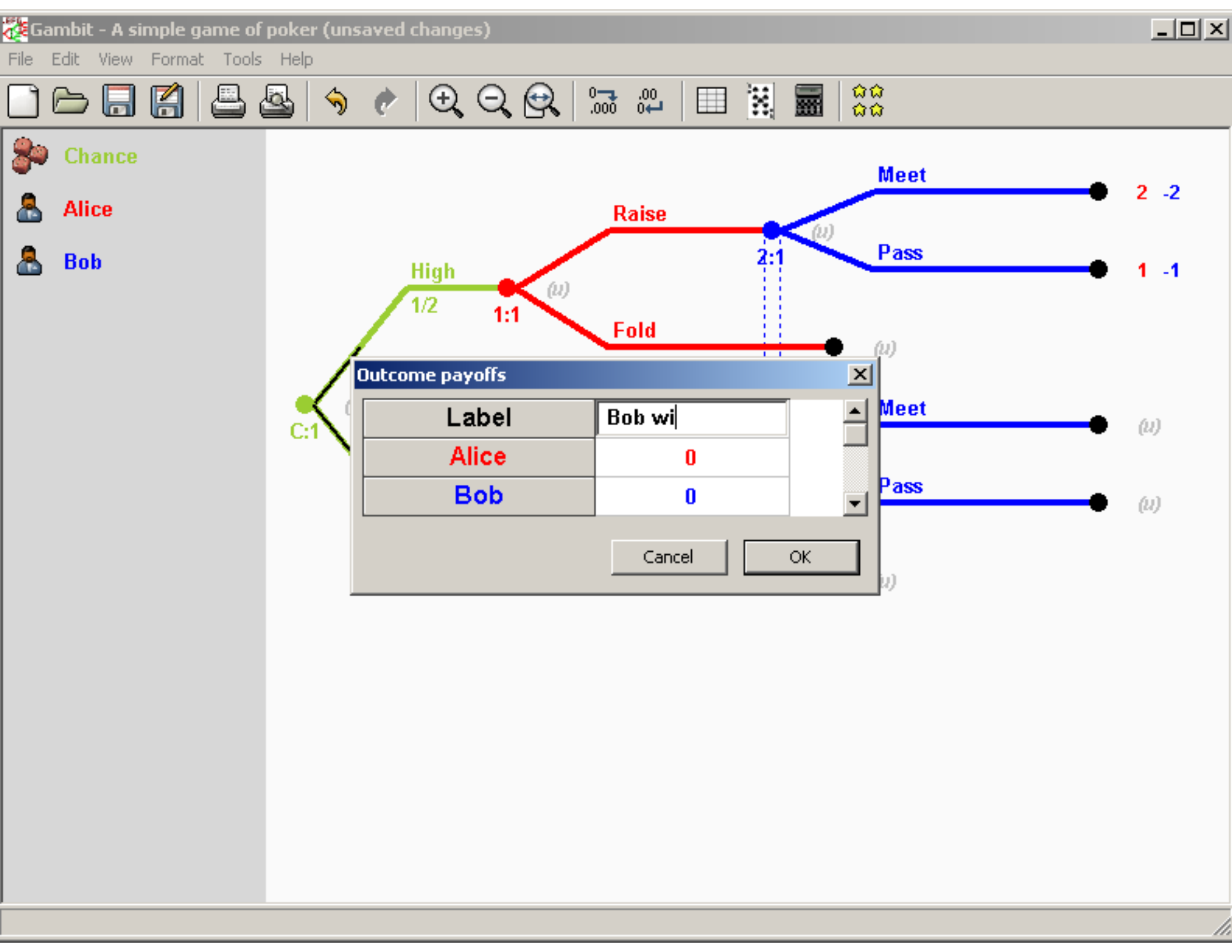

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
B
Alice
0
Bob
0
Cancel
OK

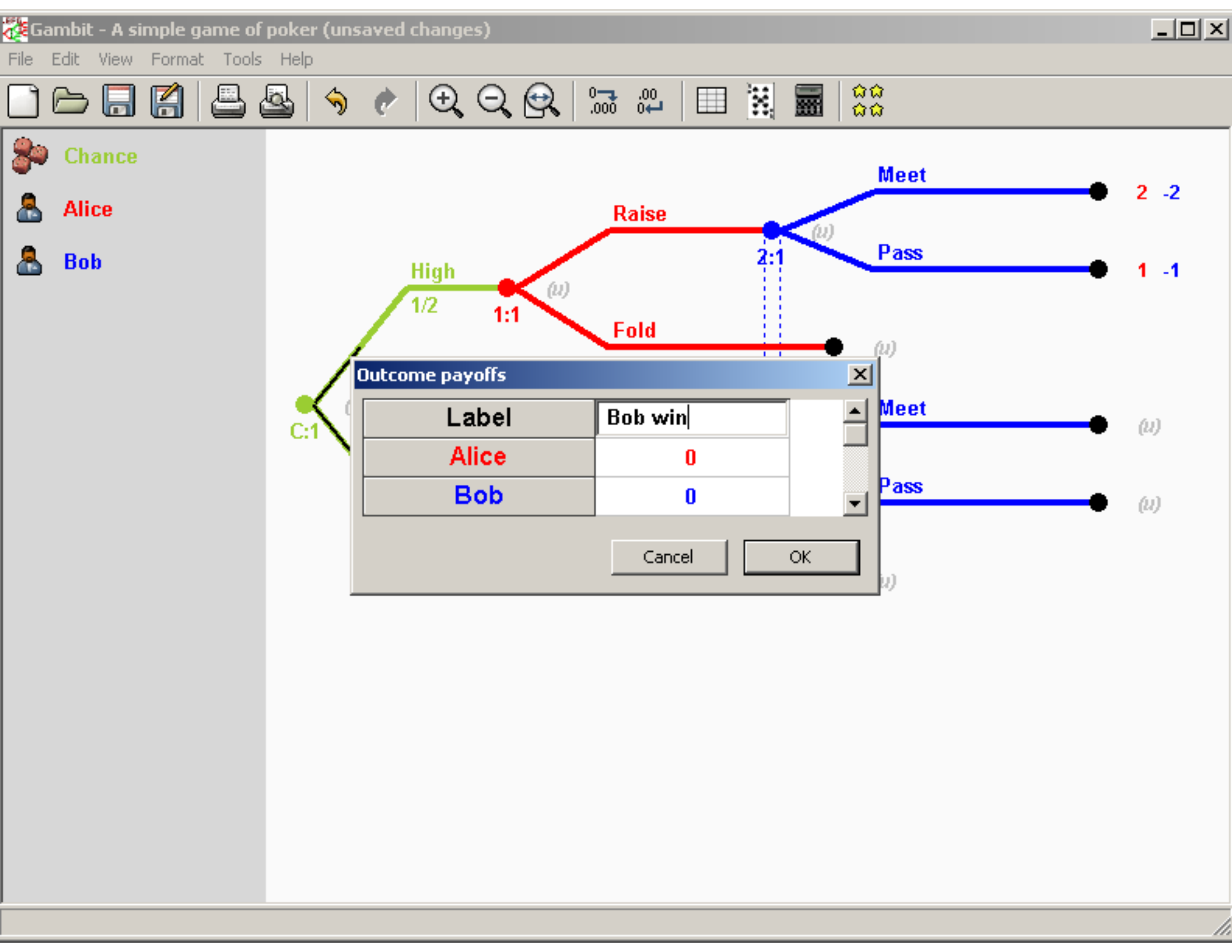

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
2 -2
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bo
Alice
0
Bob
0
Cancel
OK

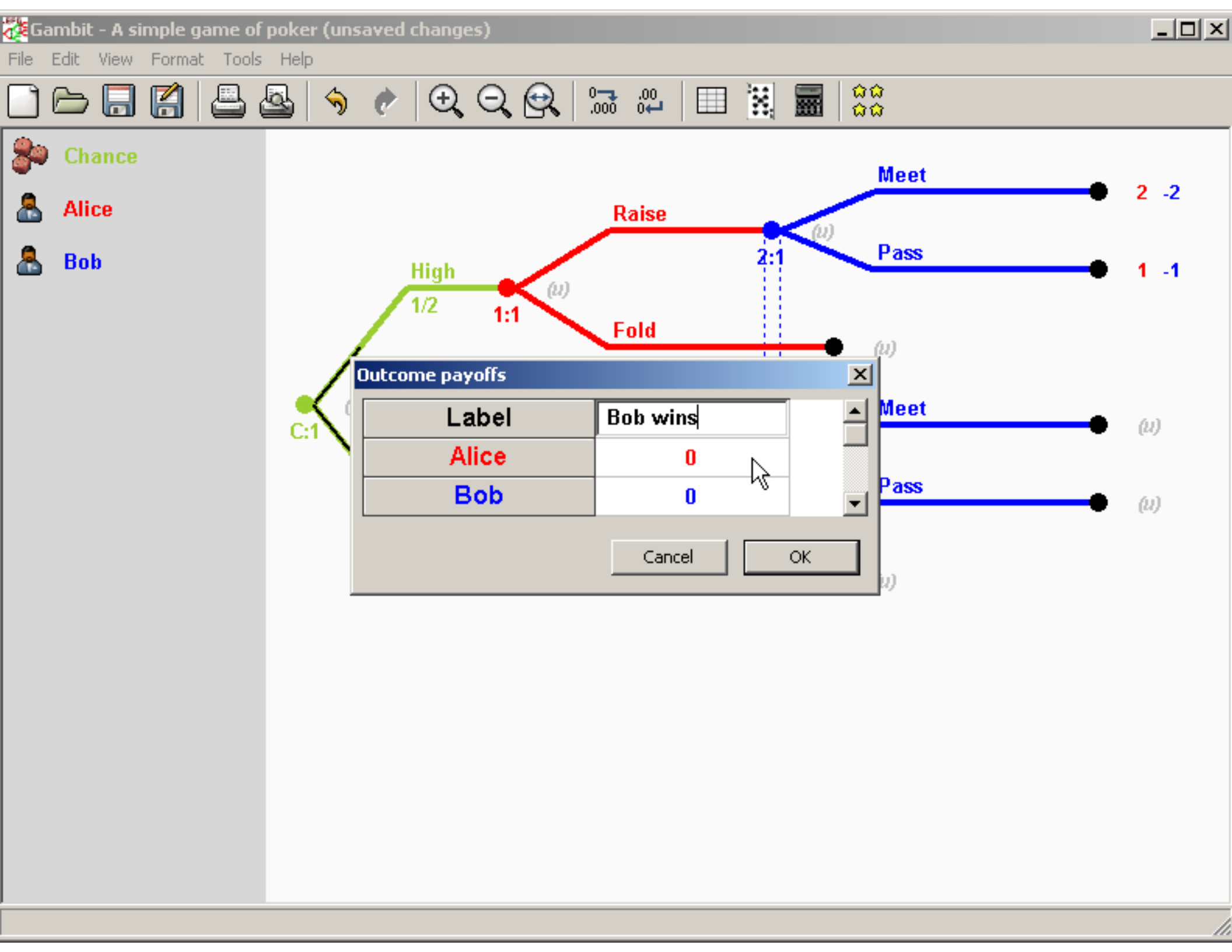

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob
Alice
0
Bob
0
Cancel
OK

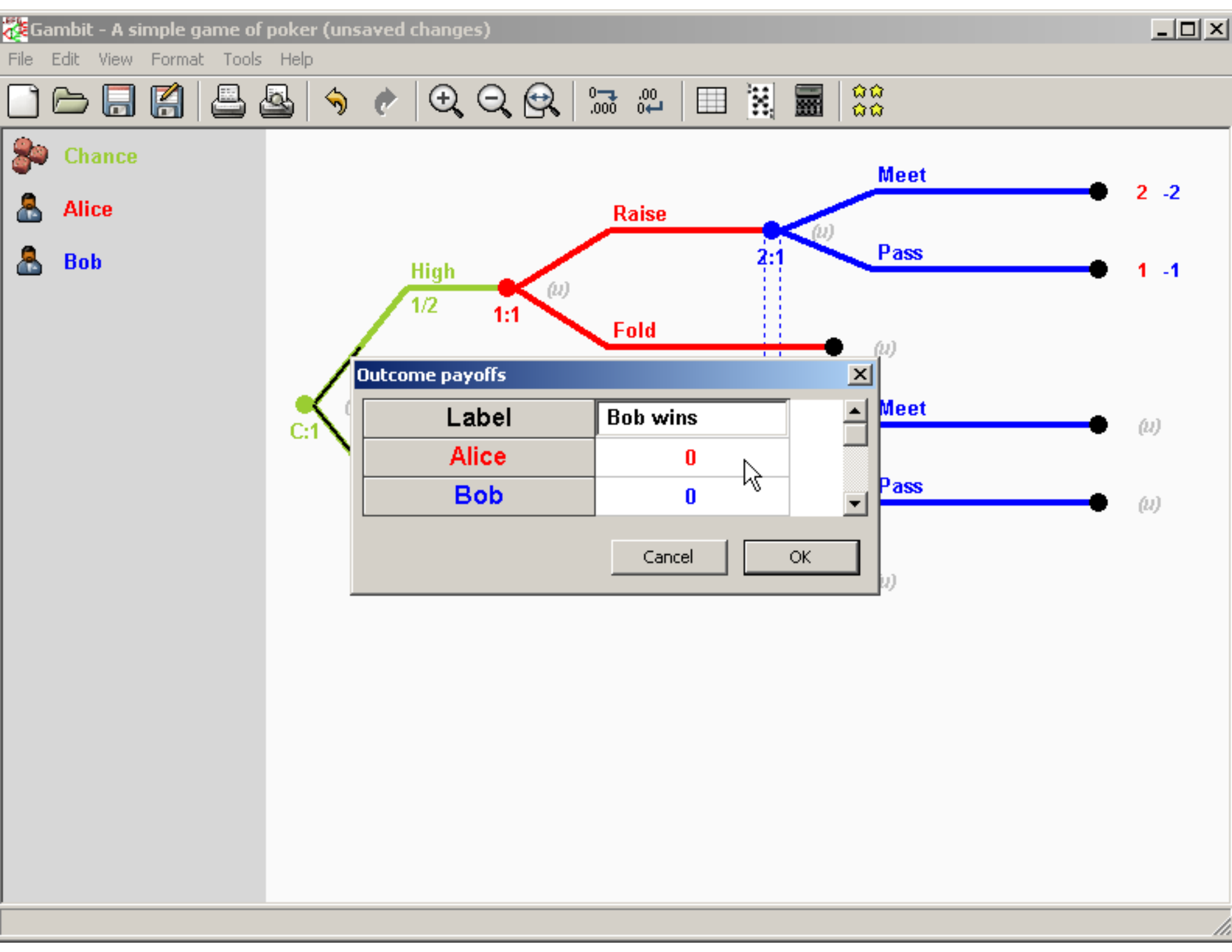

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
2 -2
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob
Alice
0
Bob
0
Cancel
OK

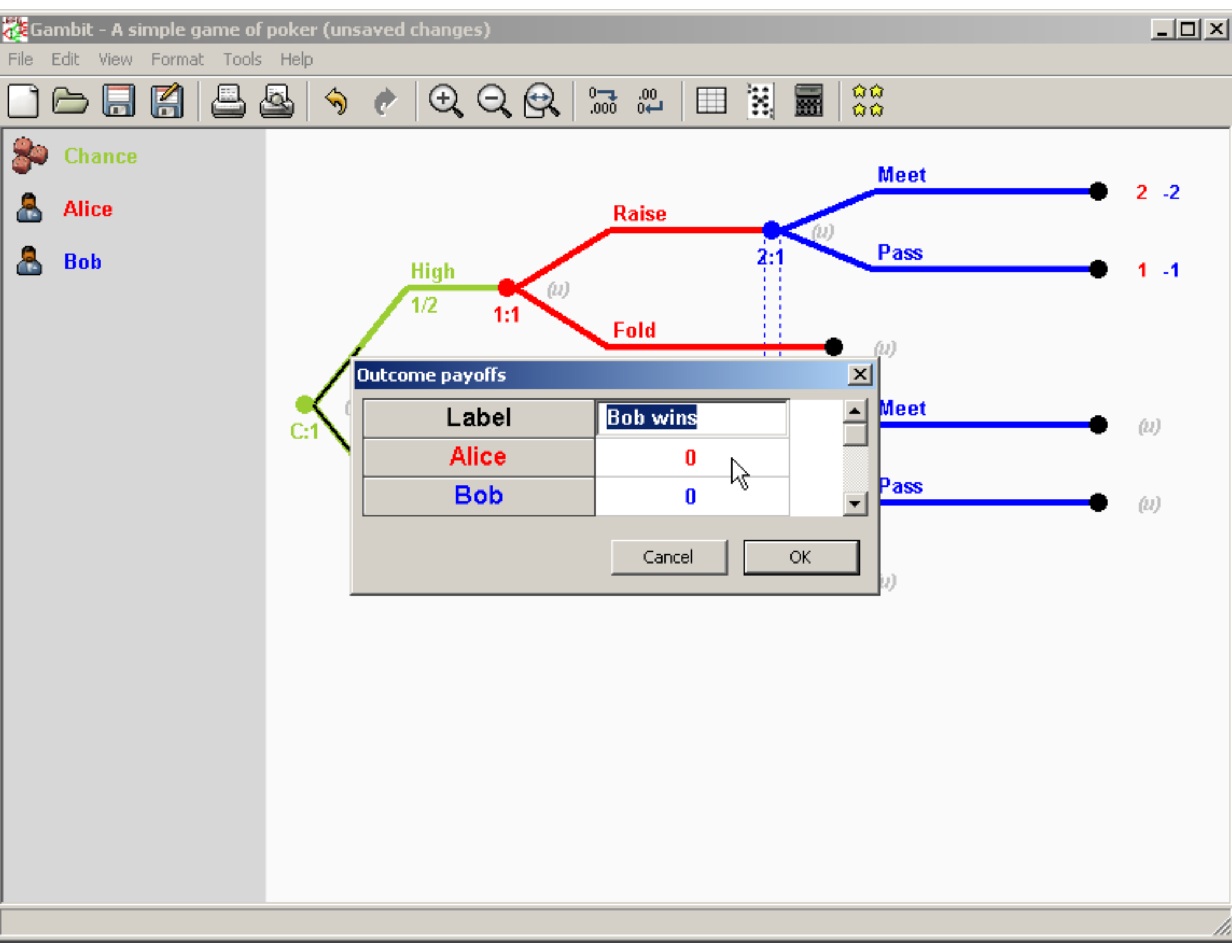

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
2 -2
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob w
Alice
0
Bob
0
Cancel
OK

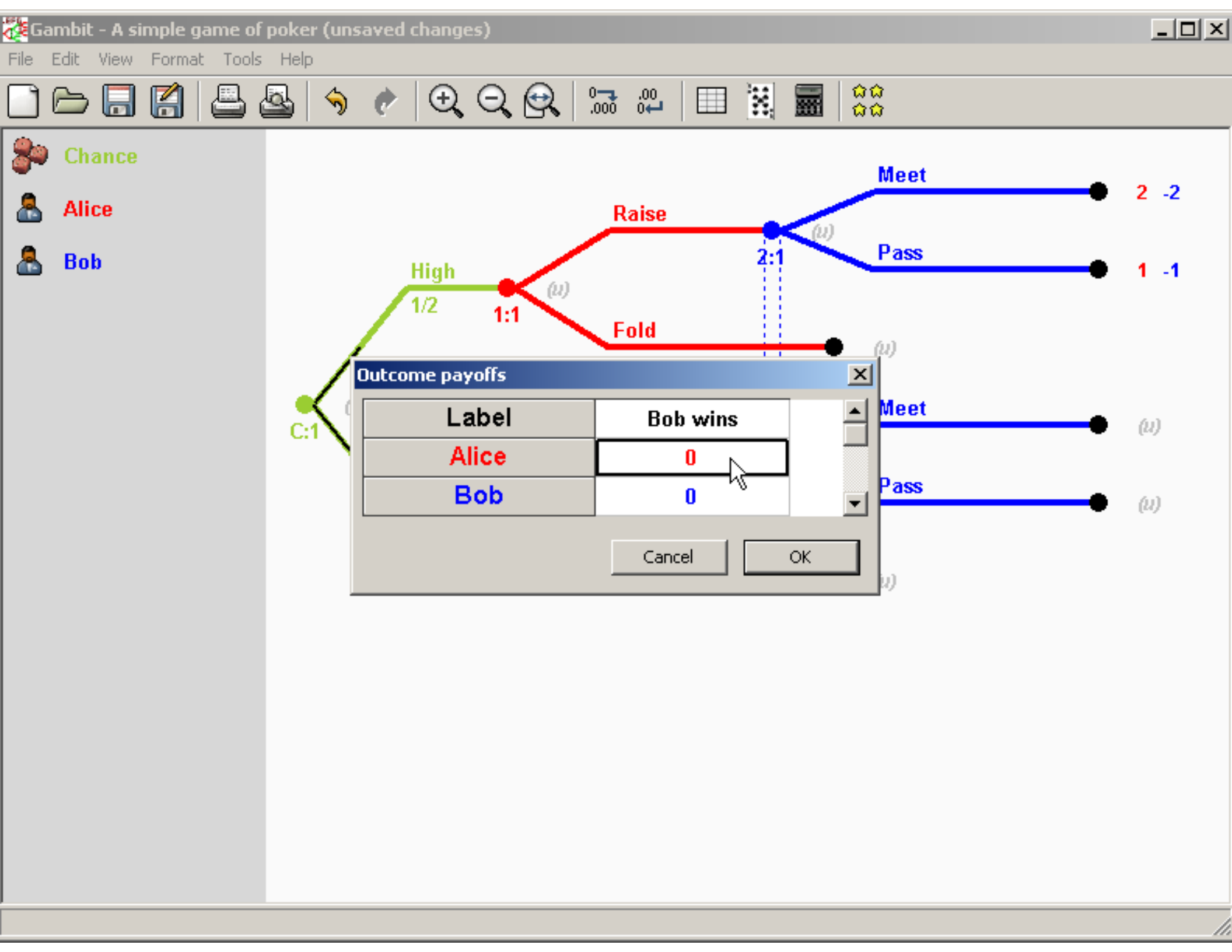

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wi
Alice
0
Bob
0
Cancel
OK

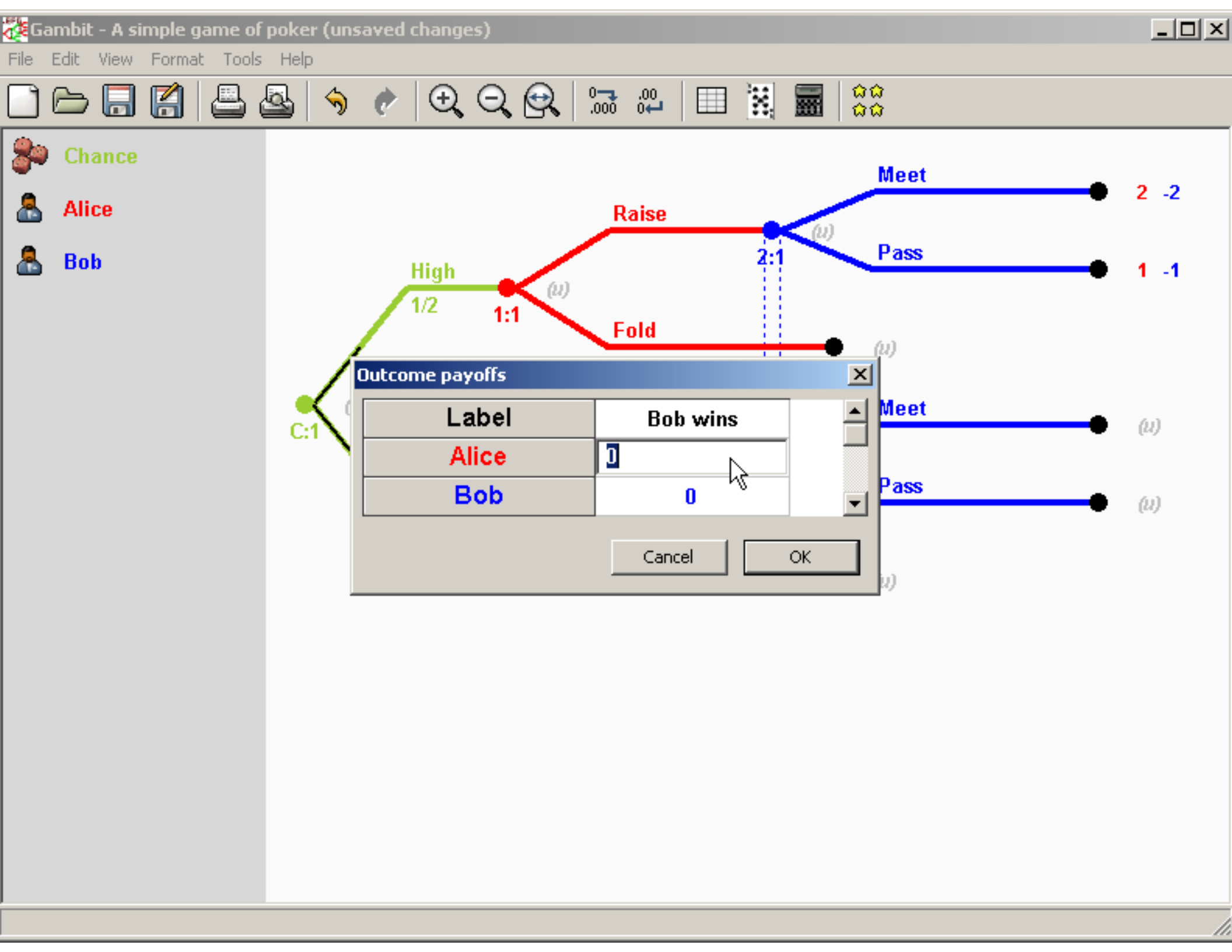

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
2 -2
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob win
Alice
0
Bob
0
Cancel
OK

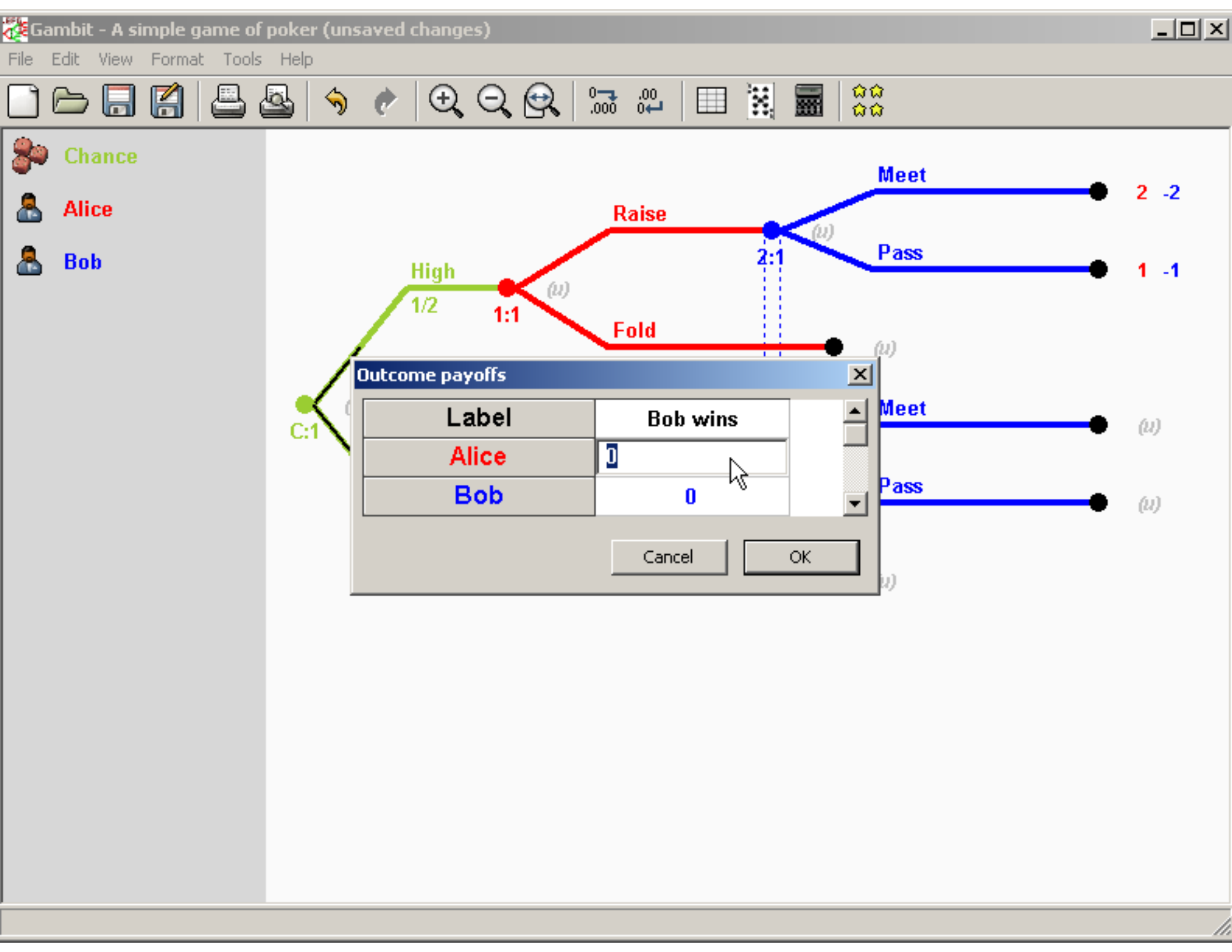

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
2 -2
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
0
Bob
0
Cancel
OK

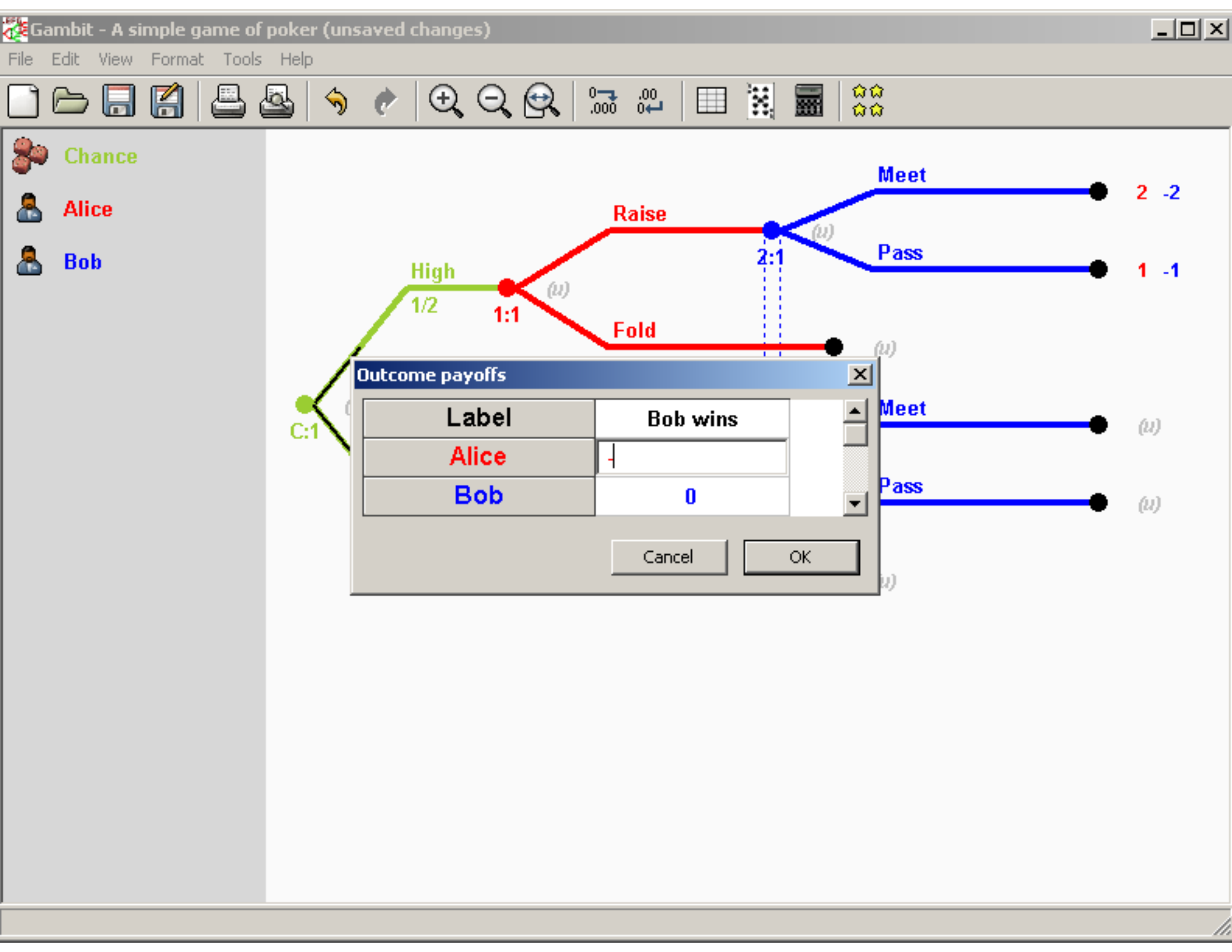

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
0
Bob
0
Cancel
OK

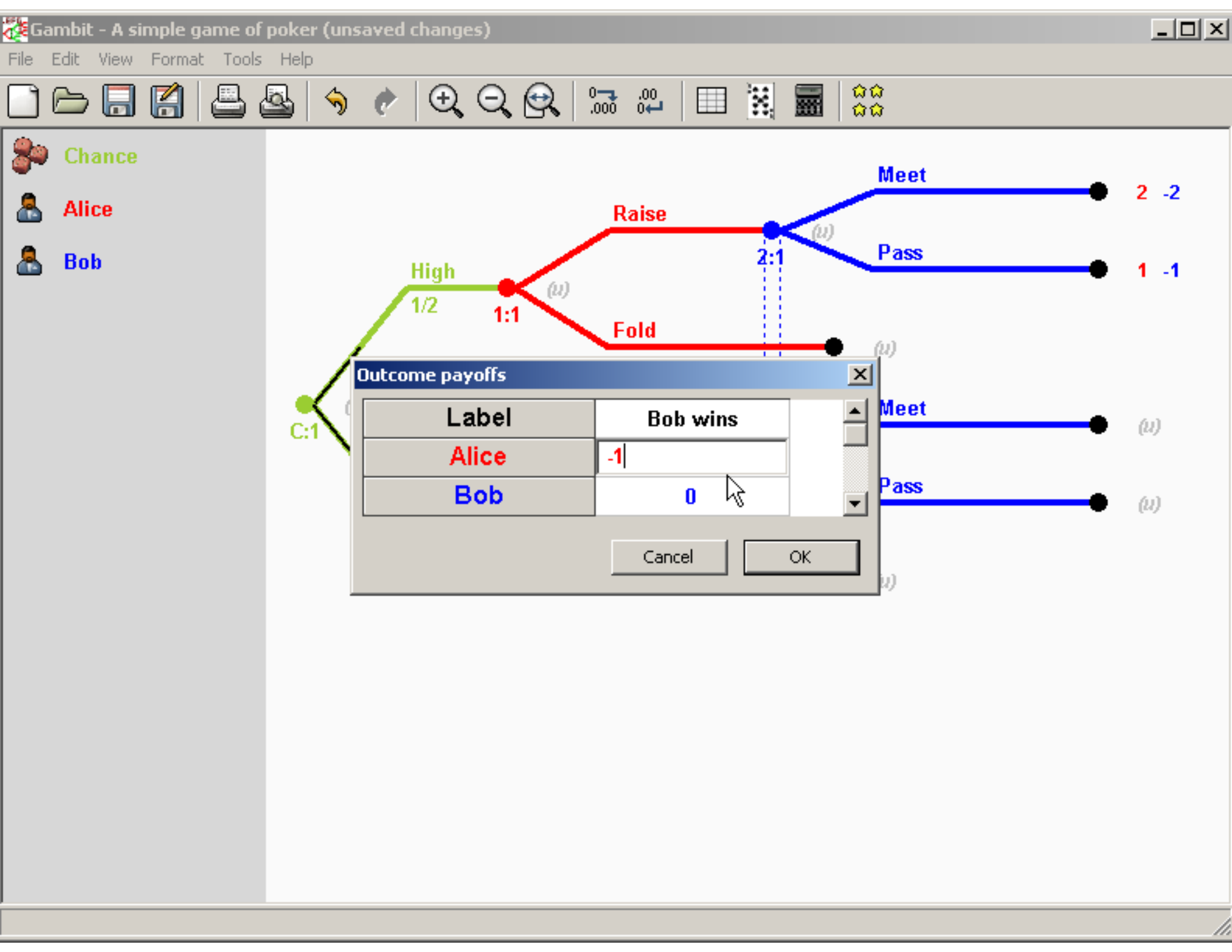

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
0
Bob
0
Cancel
OK

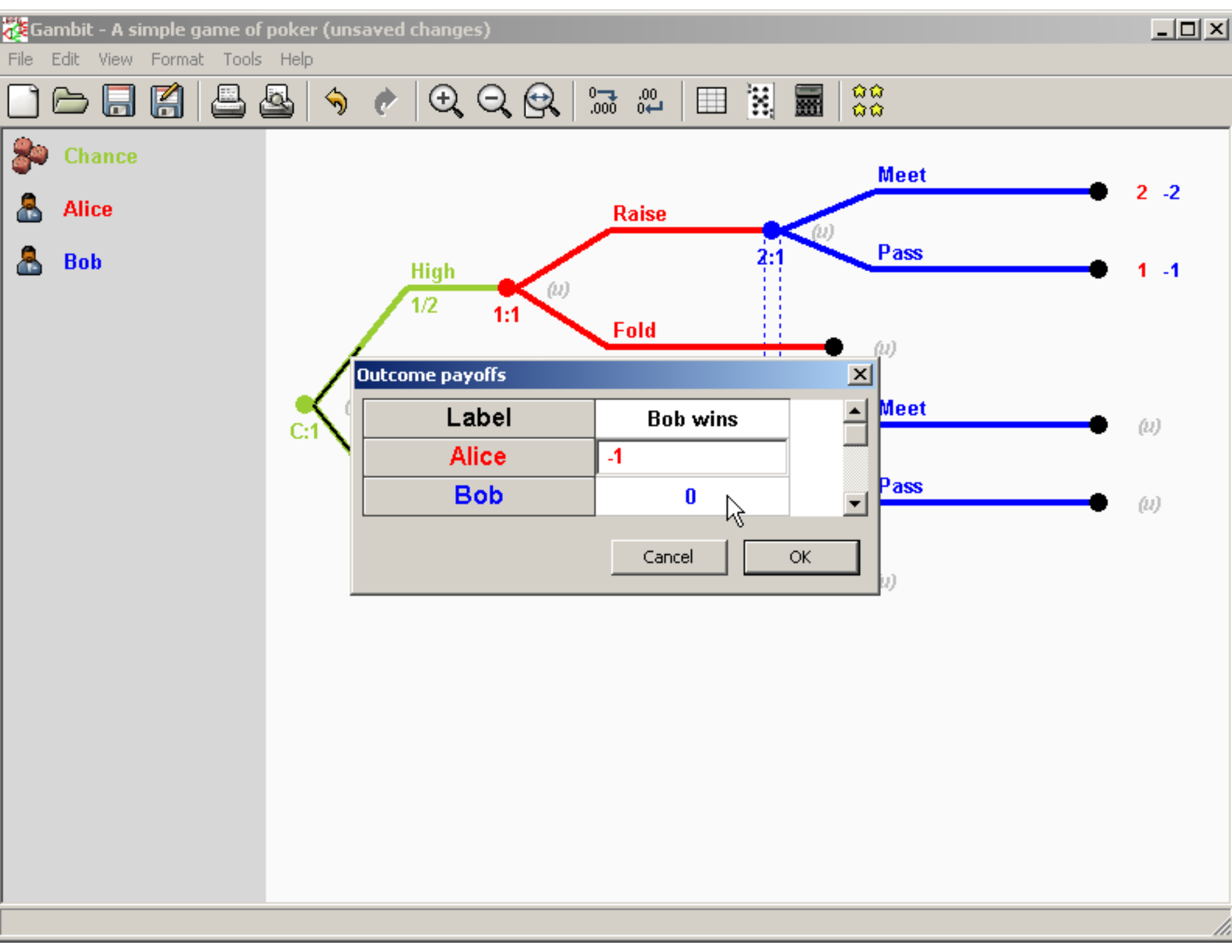

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
0
Bob
0
Cancel
OK

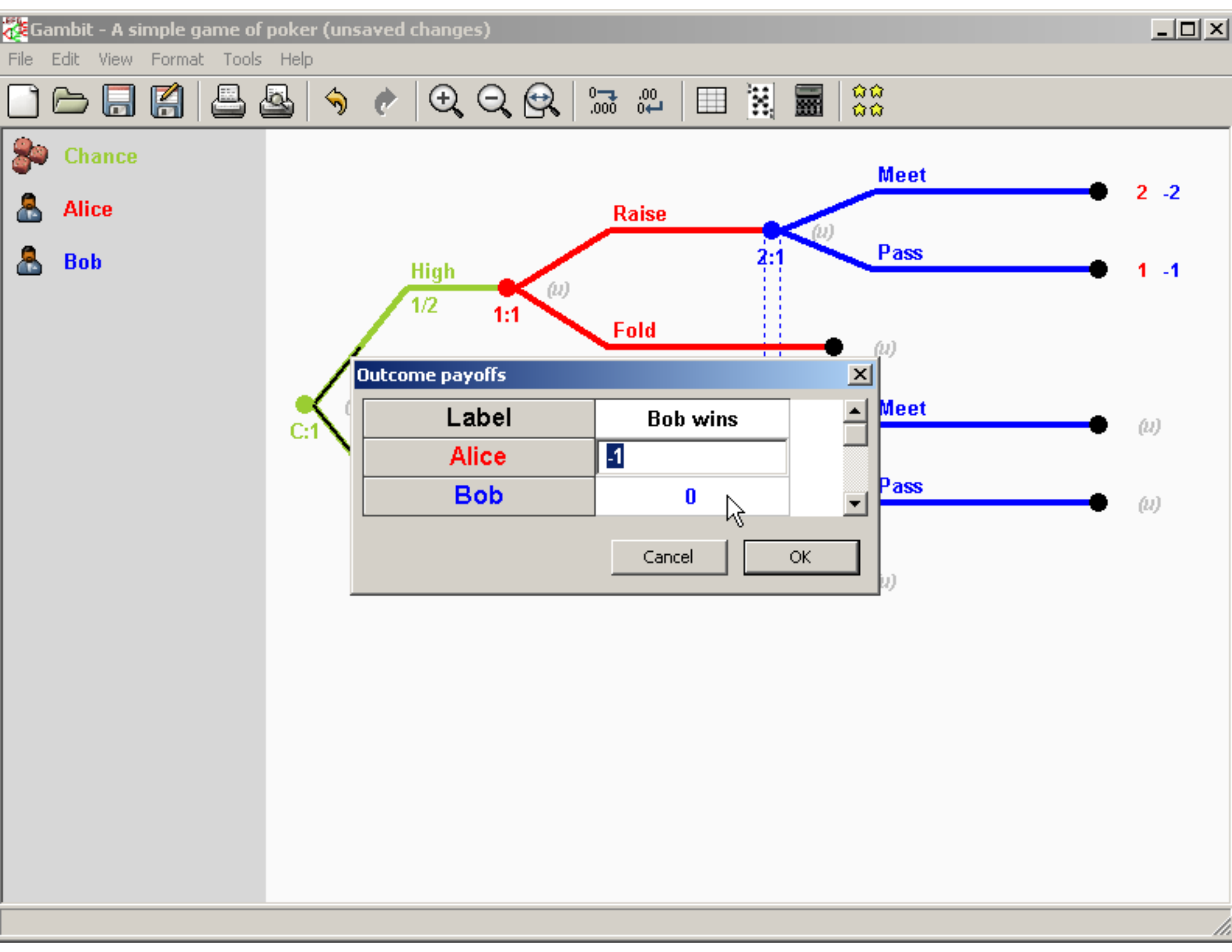

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
0
Bob
Cancel
OK

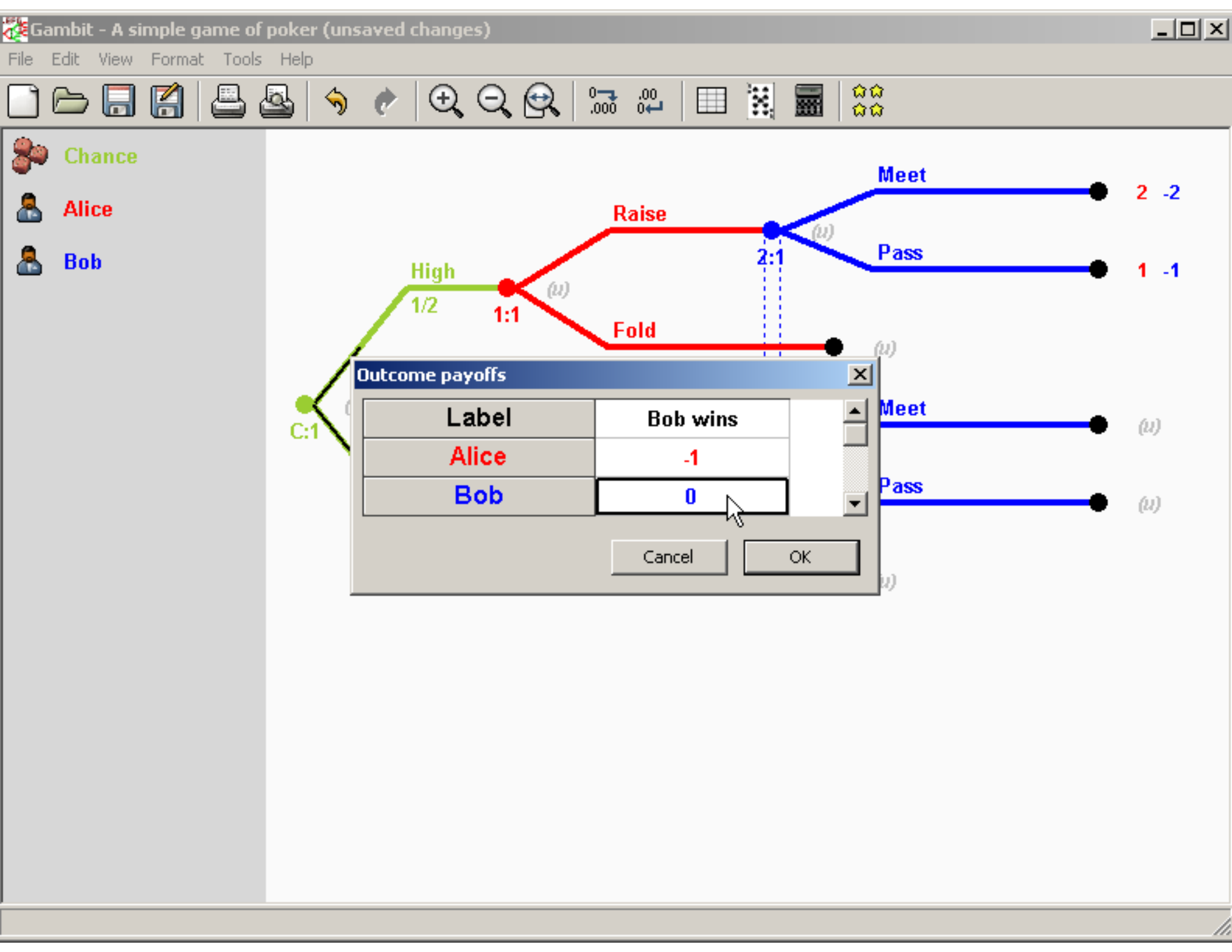

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
2 -2
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
0
Bob
Cancel
OK

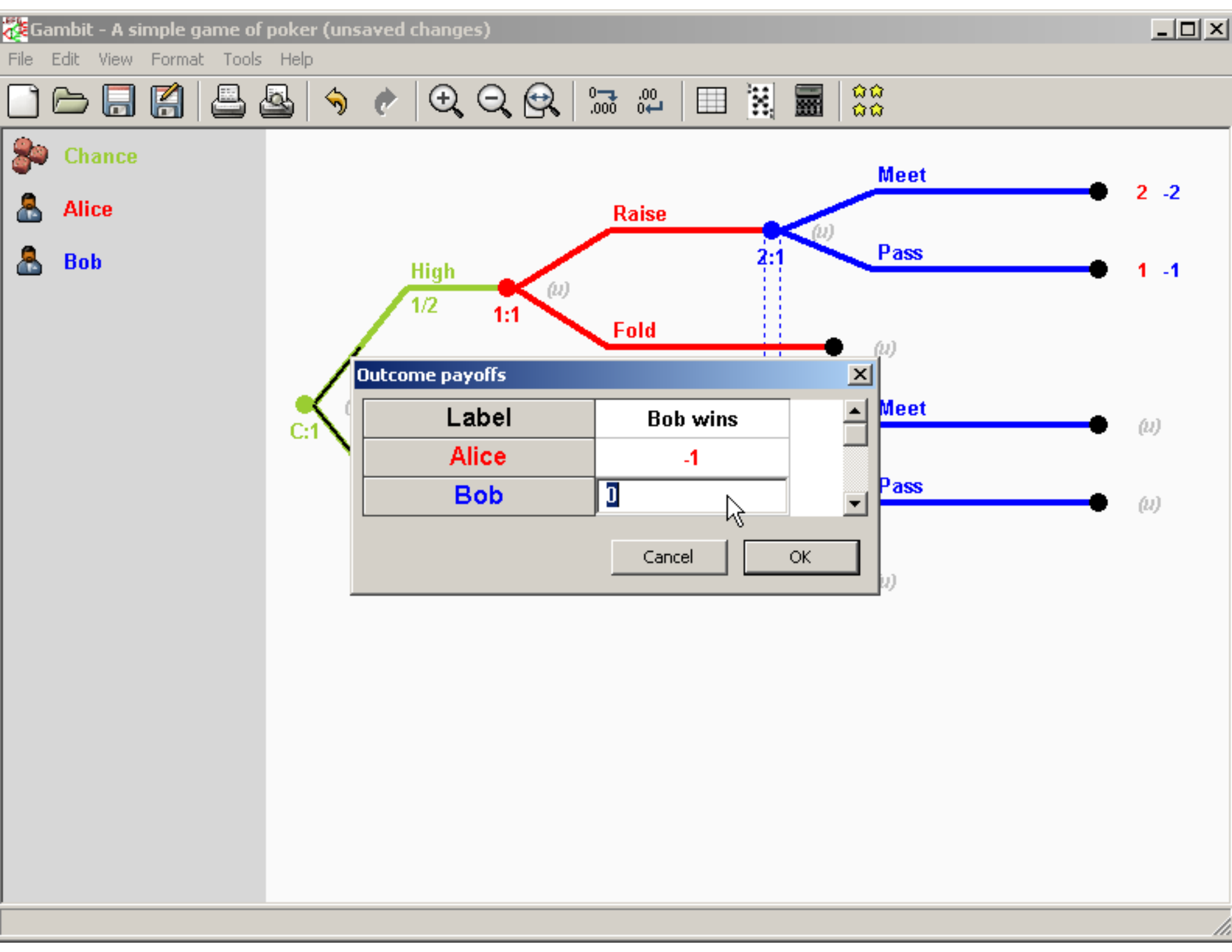

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
Bob
0
Cancel
OK

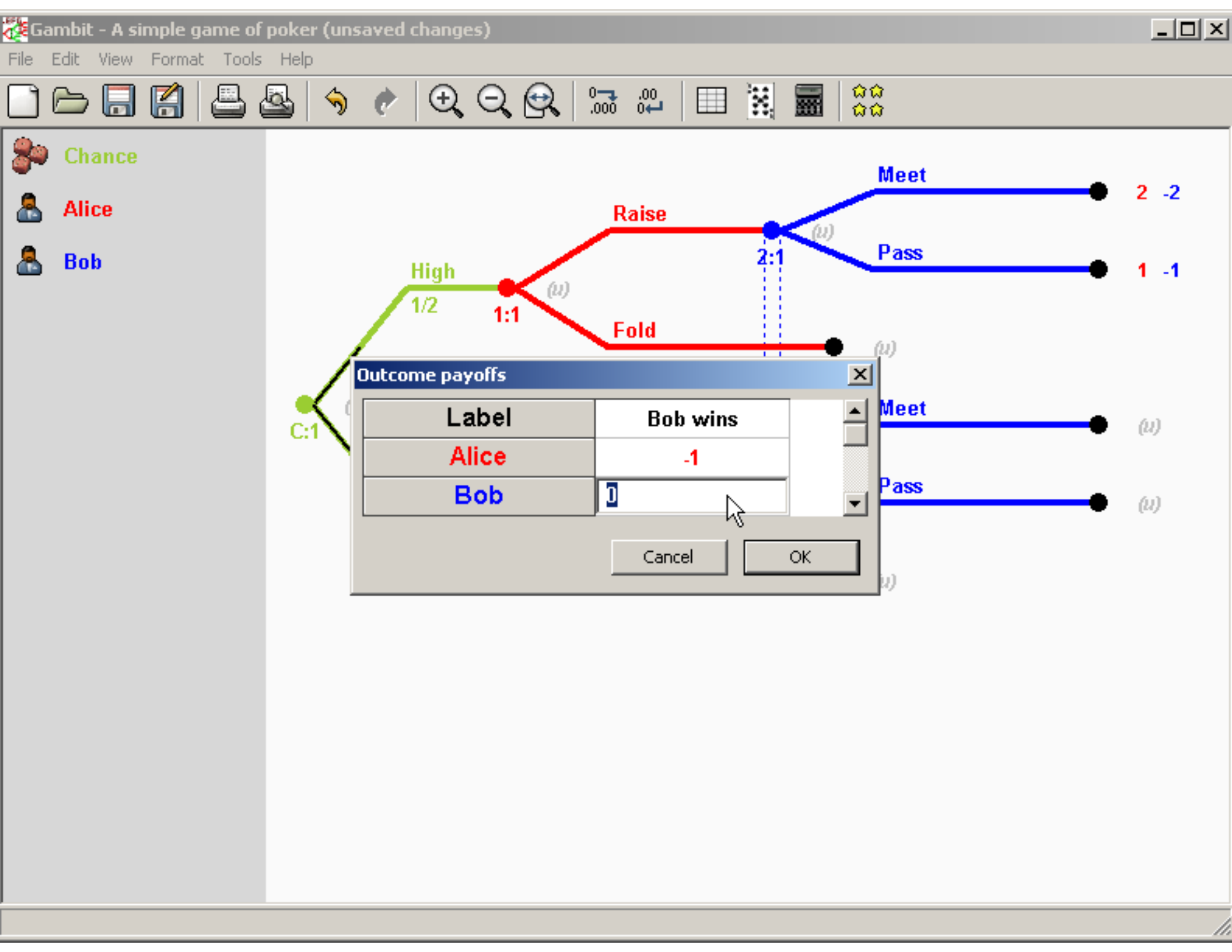

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
2 -2
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
-1
Bob
0
Cancel
OK

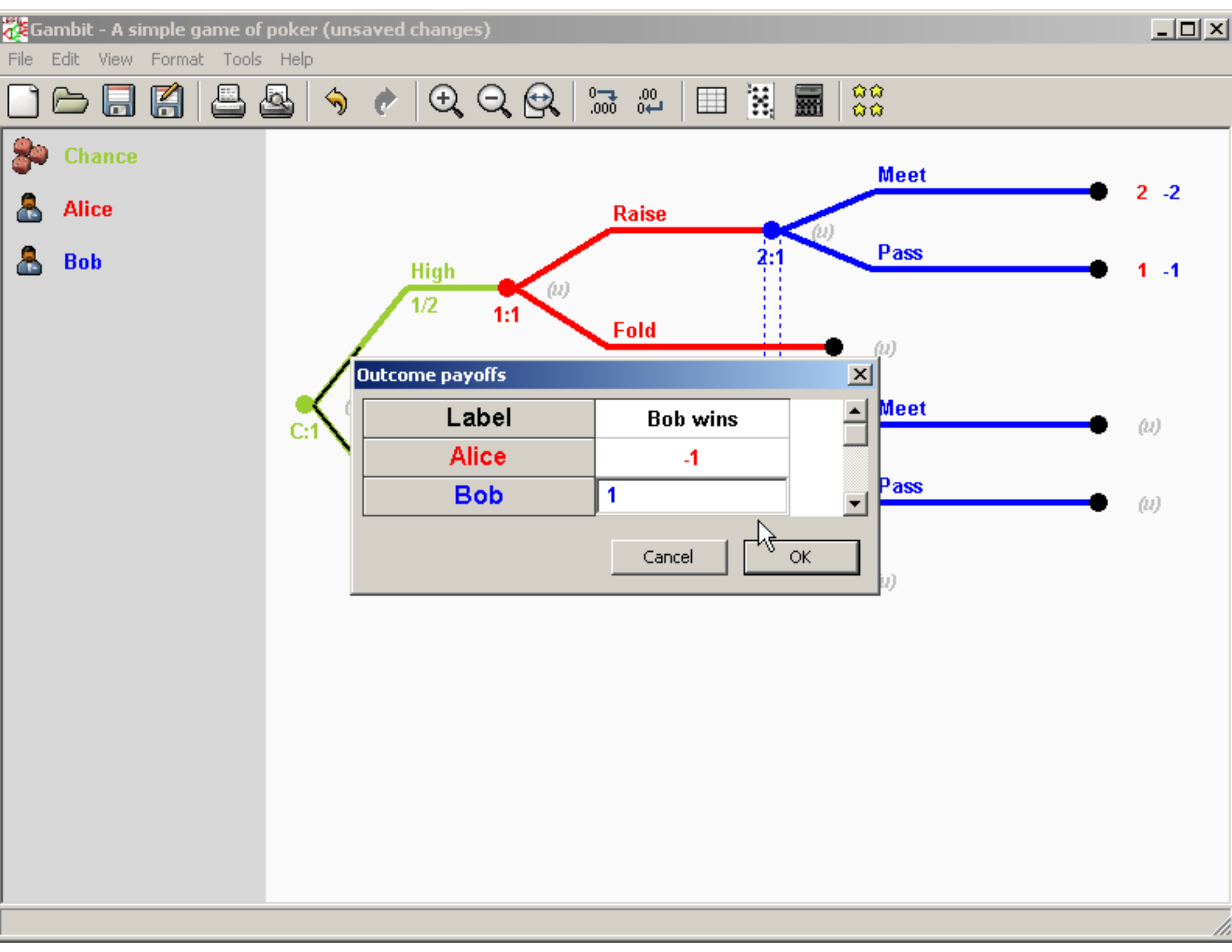

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
2 -2
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
-1
Bob
0
Cancel
OK

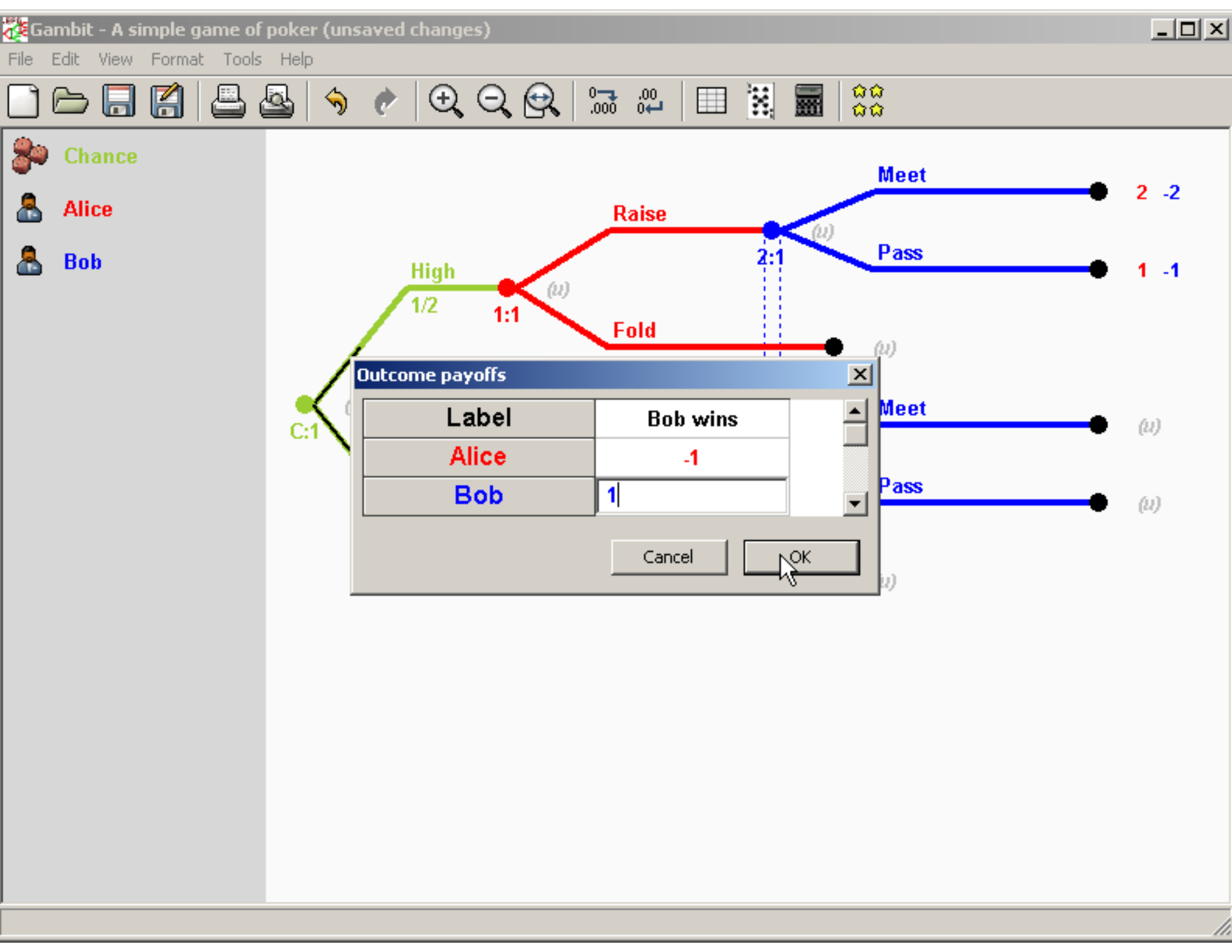

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
2 -2
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
-1
Bob
0
Cancel
OK

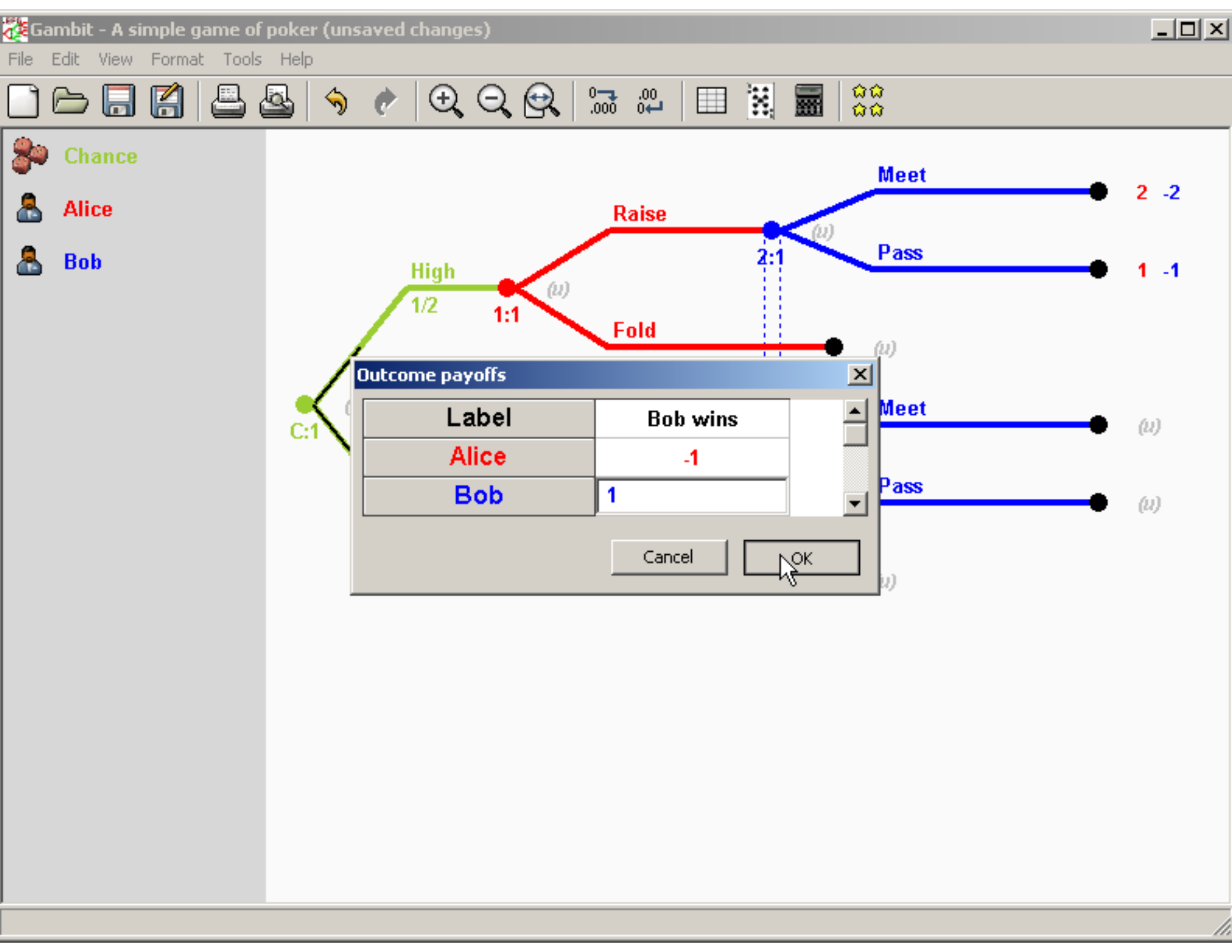

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
2 -2
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
-1
Bob
0
Cancel
OK

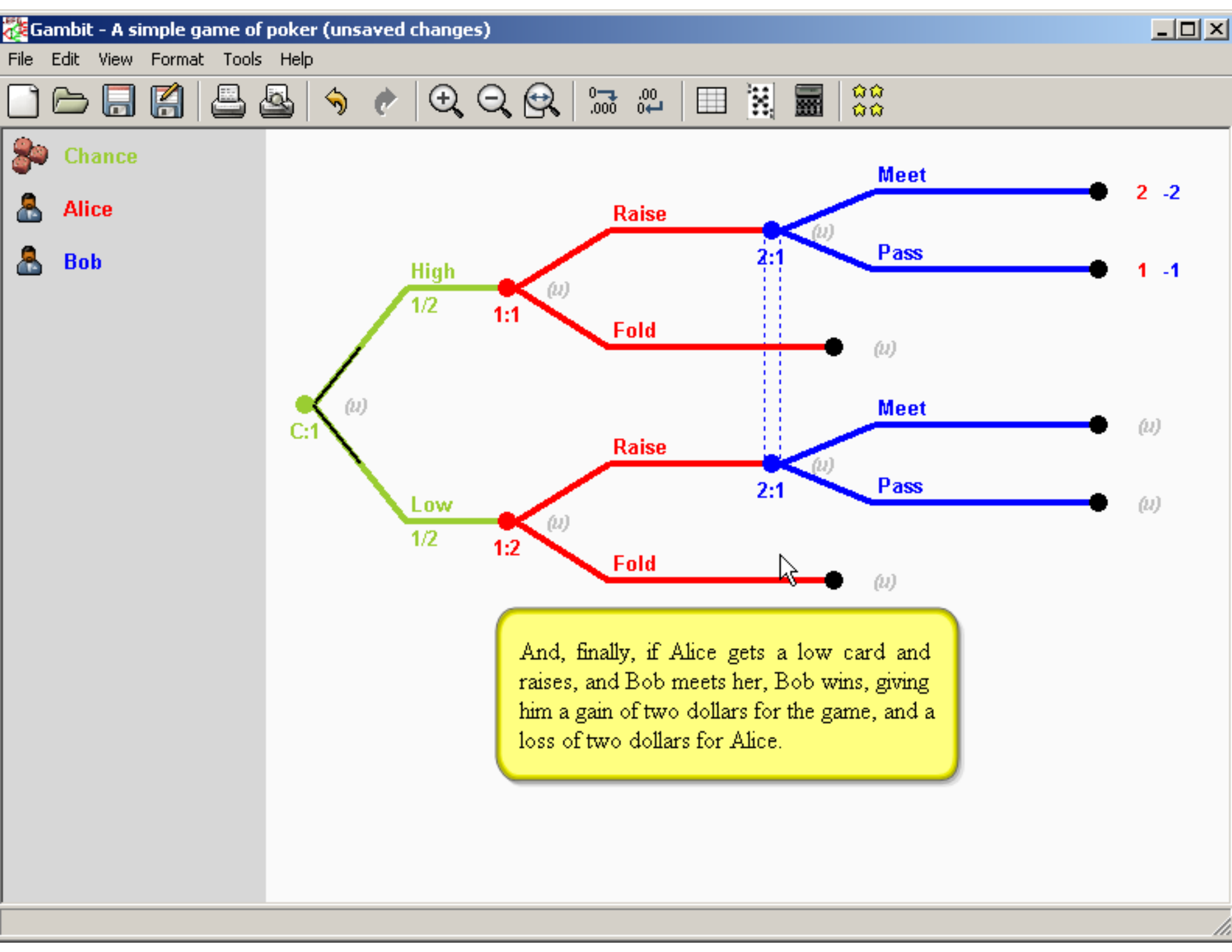

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
2 -2
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
-1
Bob
0
Cancel
OK

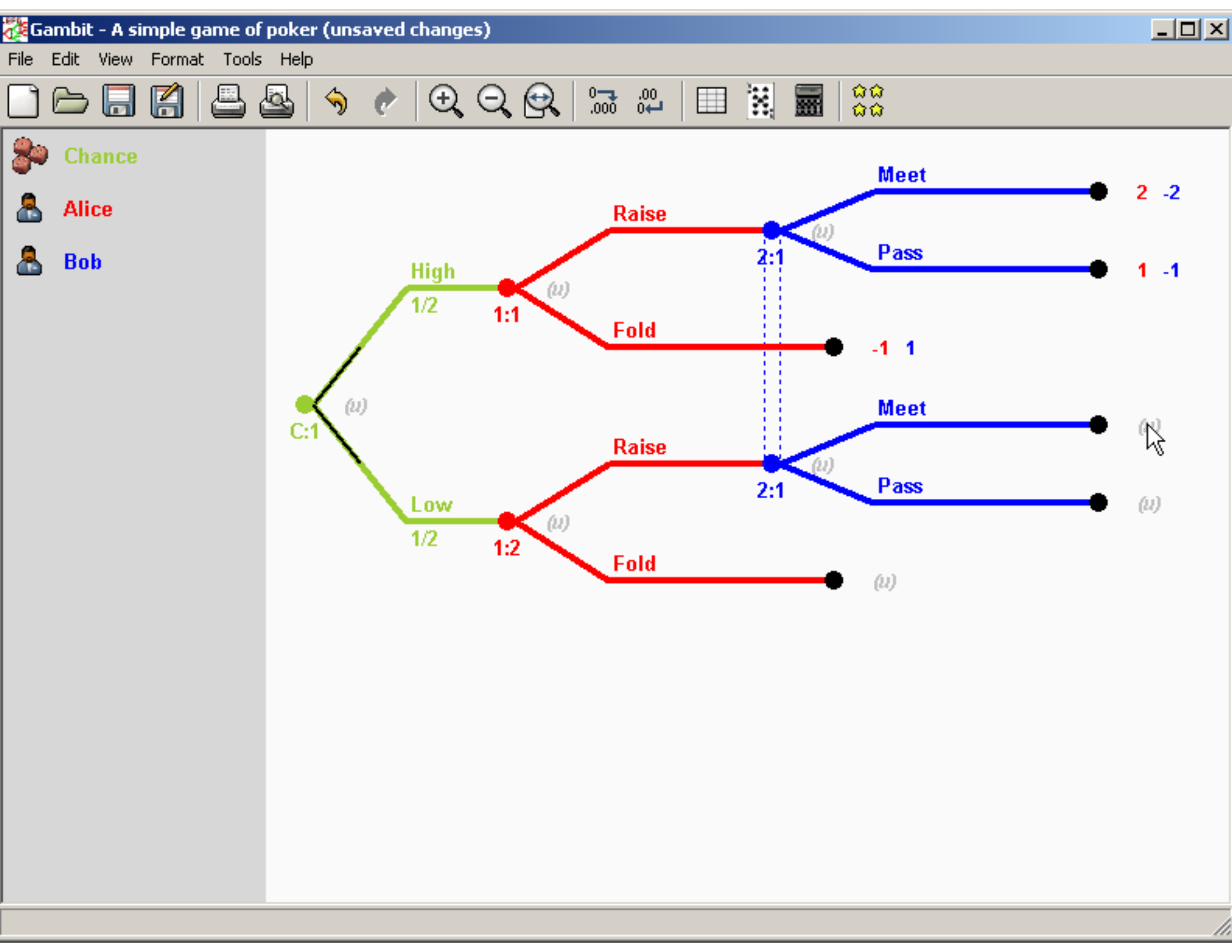

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
2 -2
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
-1
Bob
0
Cancel
OK

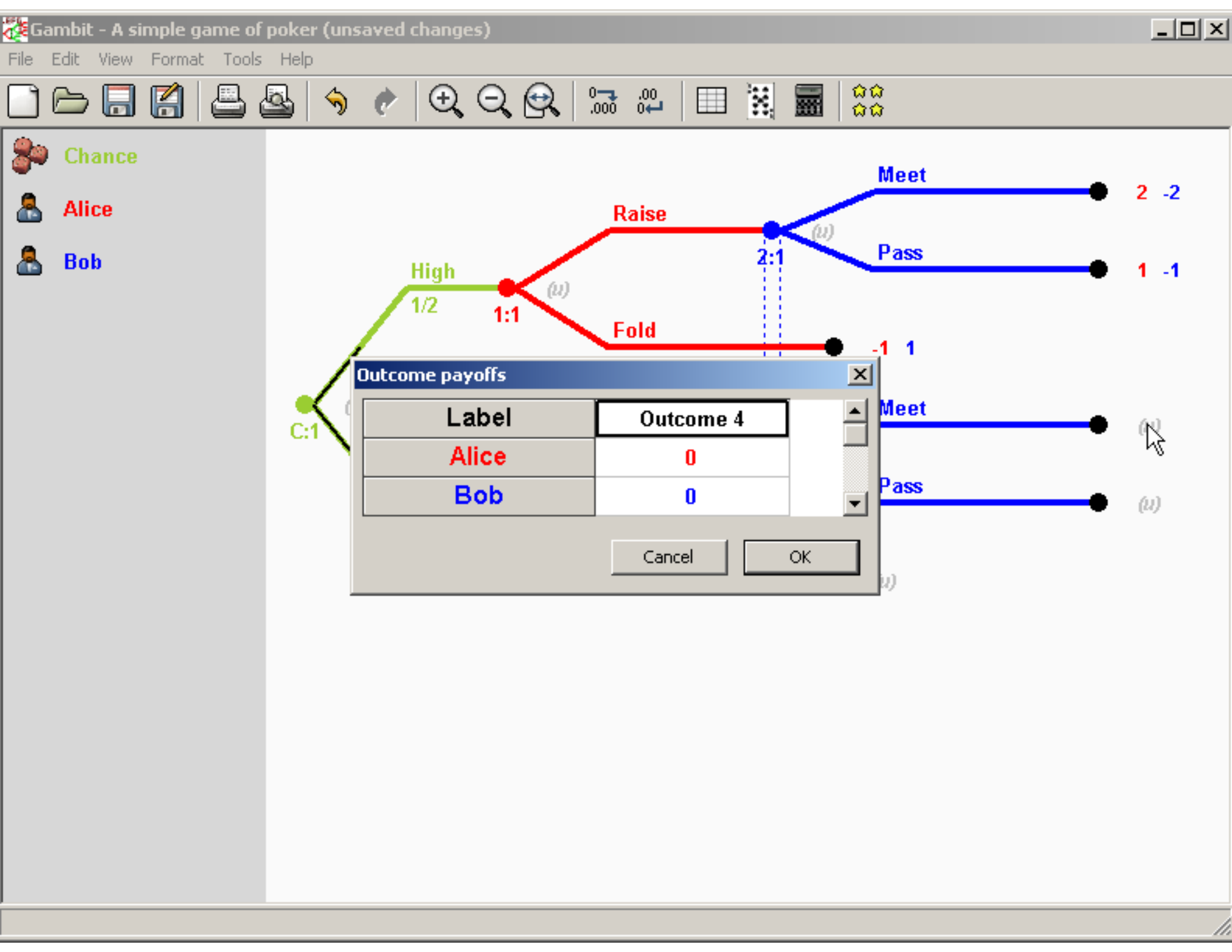

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
-1
Bob
1
Cancel
OK

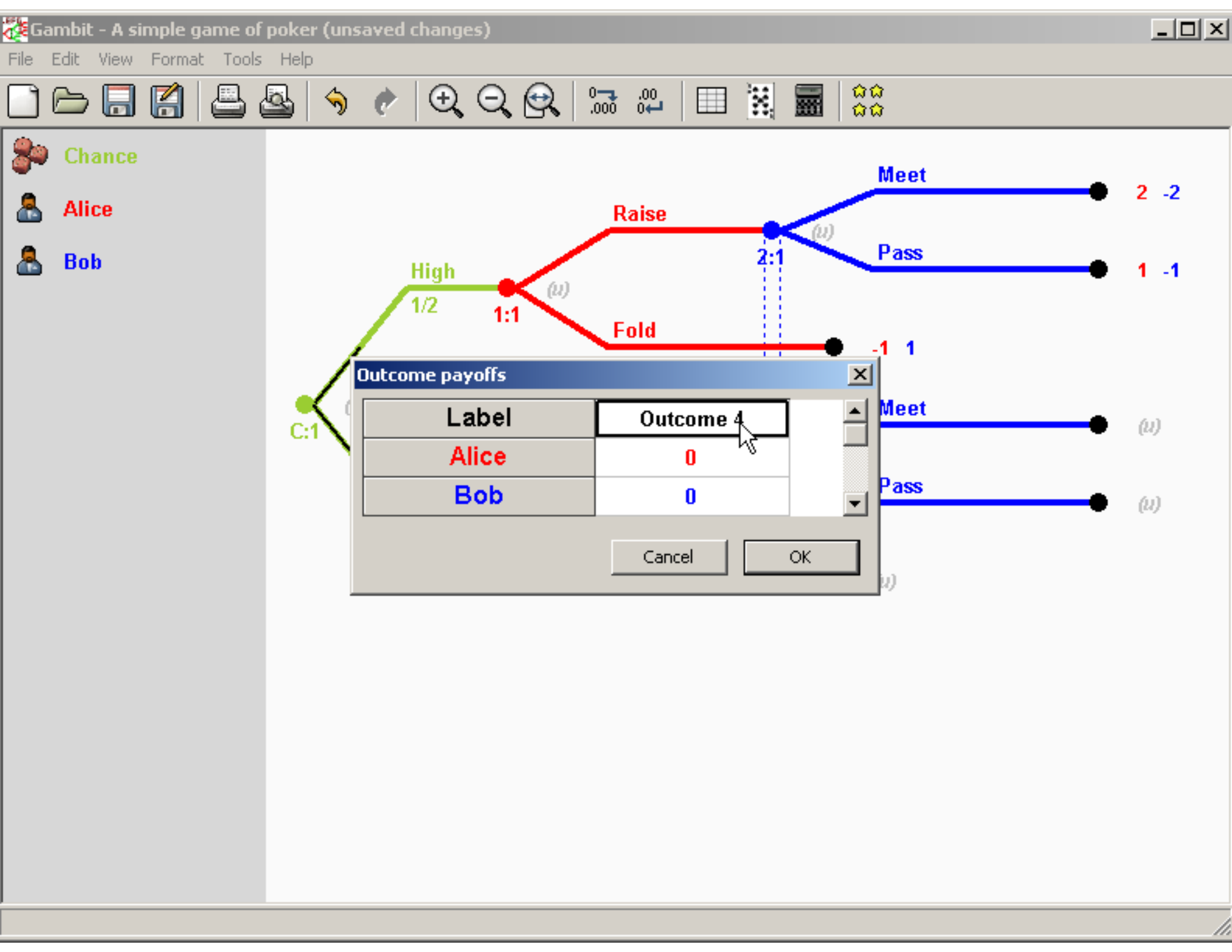

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
2:1
Pass
2 -2
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
-1
Bob
1
Cancel
OK

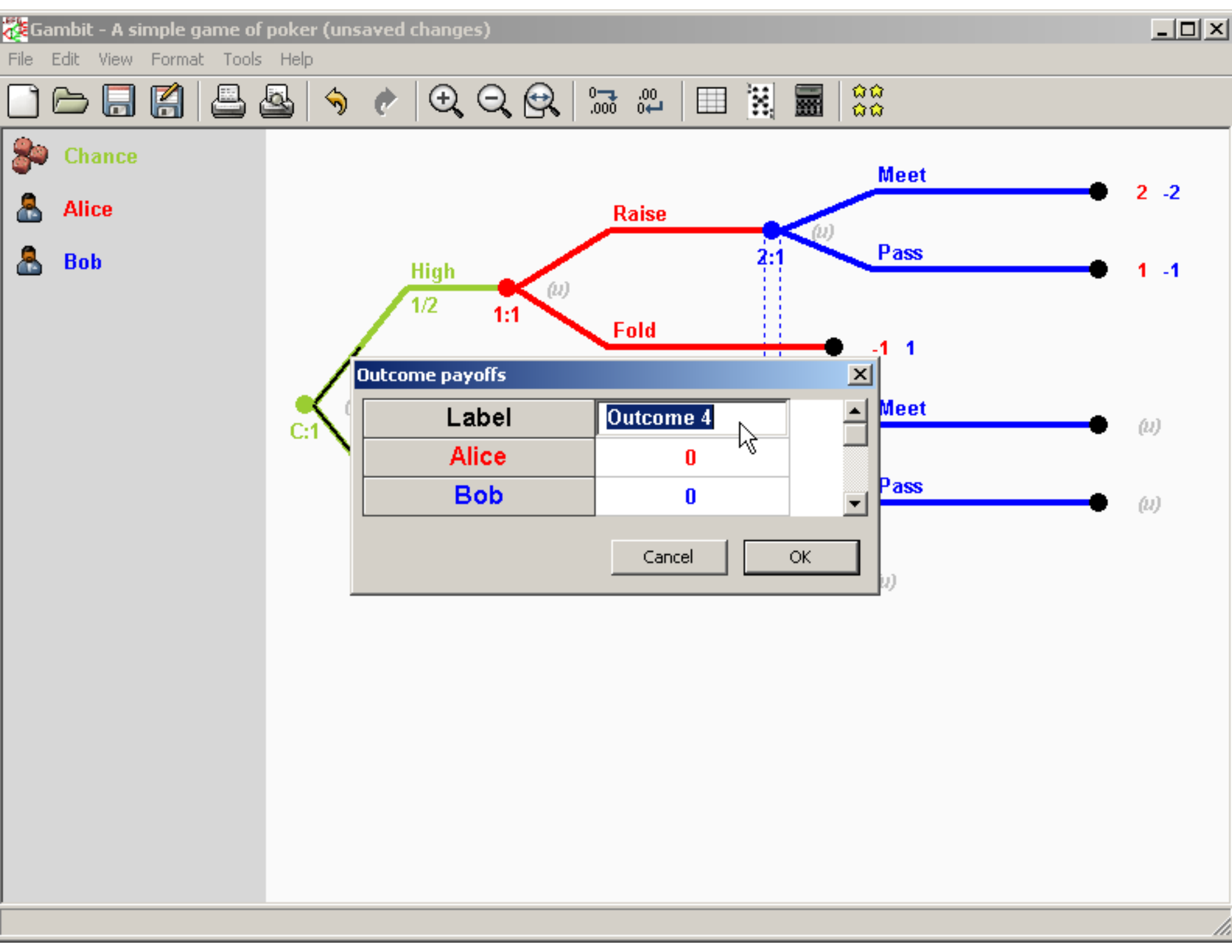

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
-1
Bob
1
Cancel
OK

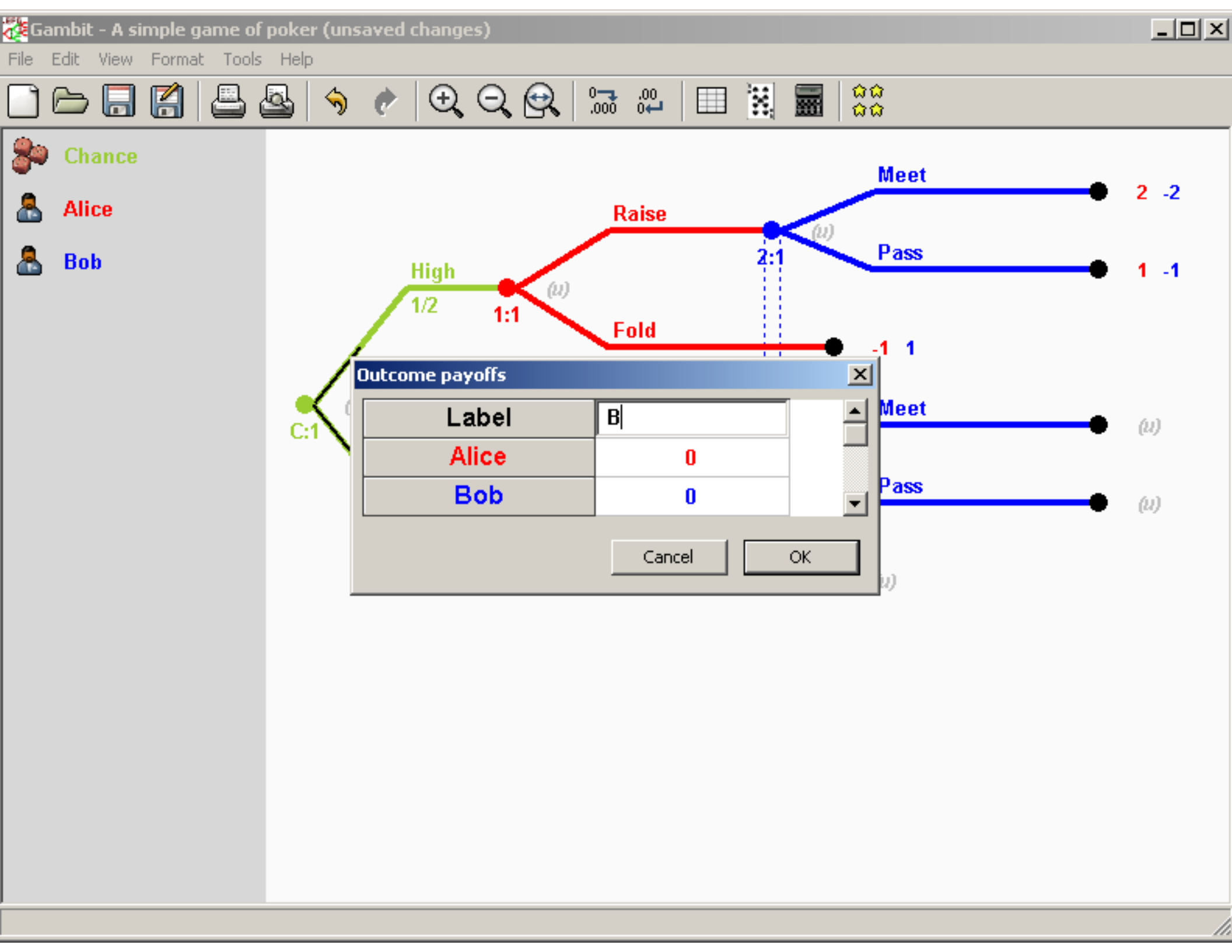

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
2:1
2:1
Meet
Pass
Meet
Pass
2 -2
1 -1
(u)
(u)
(u)
(u)
(u)
(u)
(u)
(u)
And, finally, if Alice gets a low card and raises, and Bob meets her, Bob wins, giving him a gain of two dollars for the game, and a loss of two dollars for Alice.

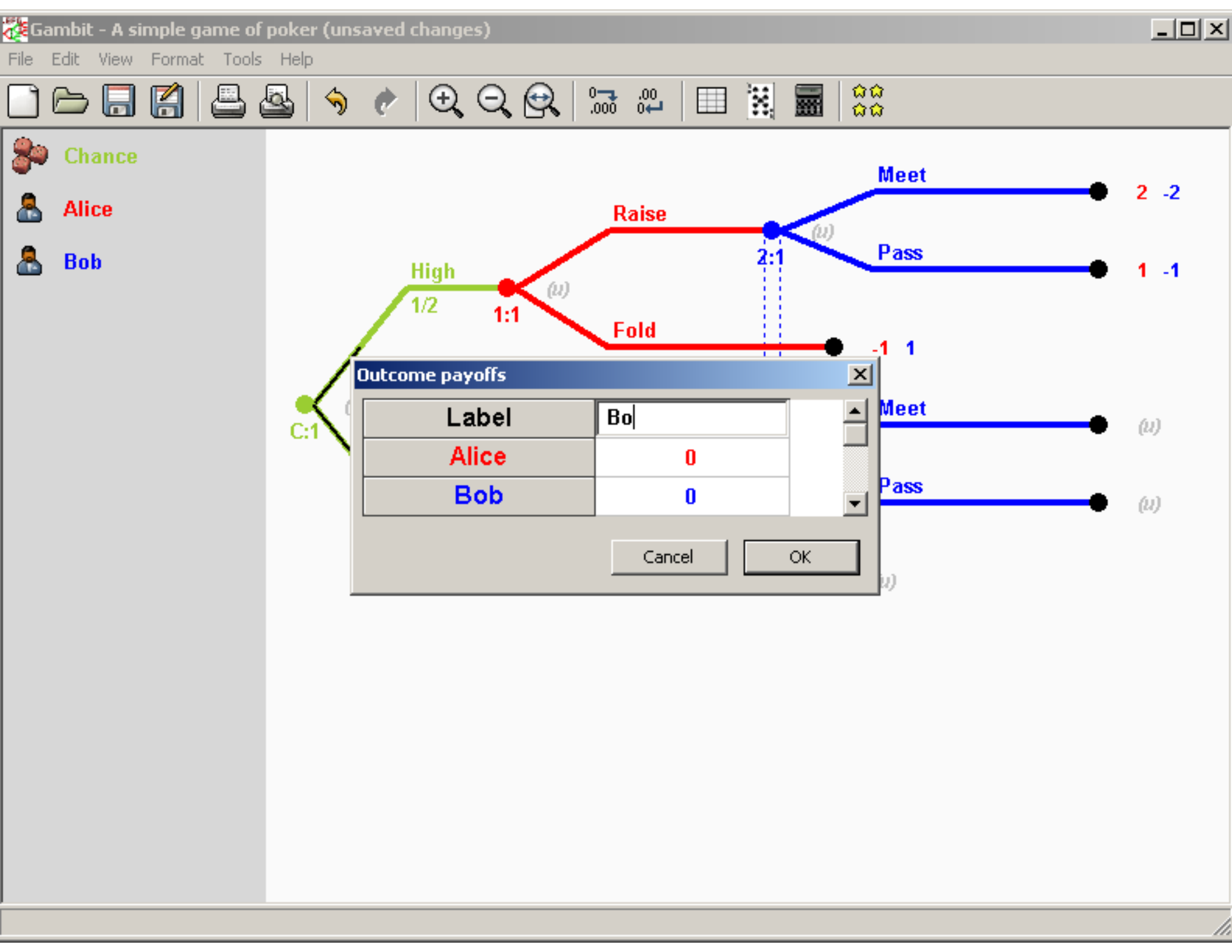

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
(u)
(u)
(u)
(u)
2:1
2:1
Meet
Pass
Meet
Pass
2 -2
1 -1
-1 1
(u)
(u)
(u)

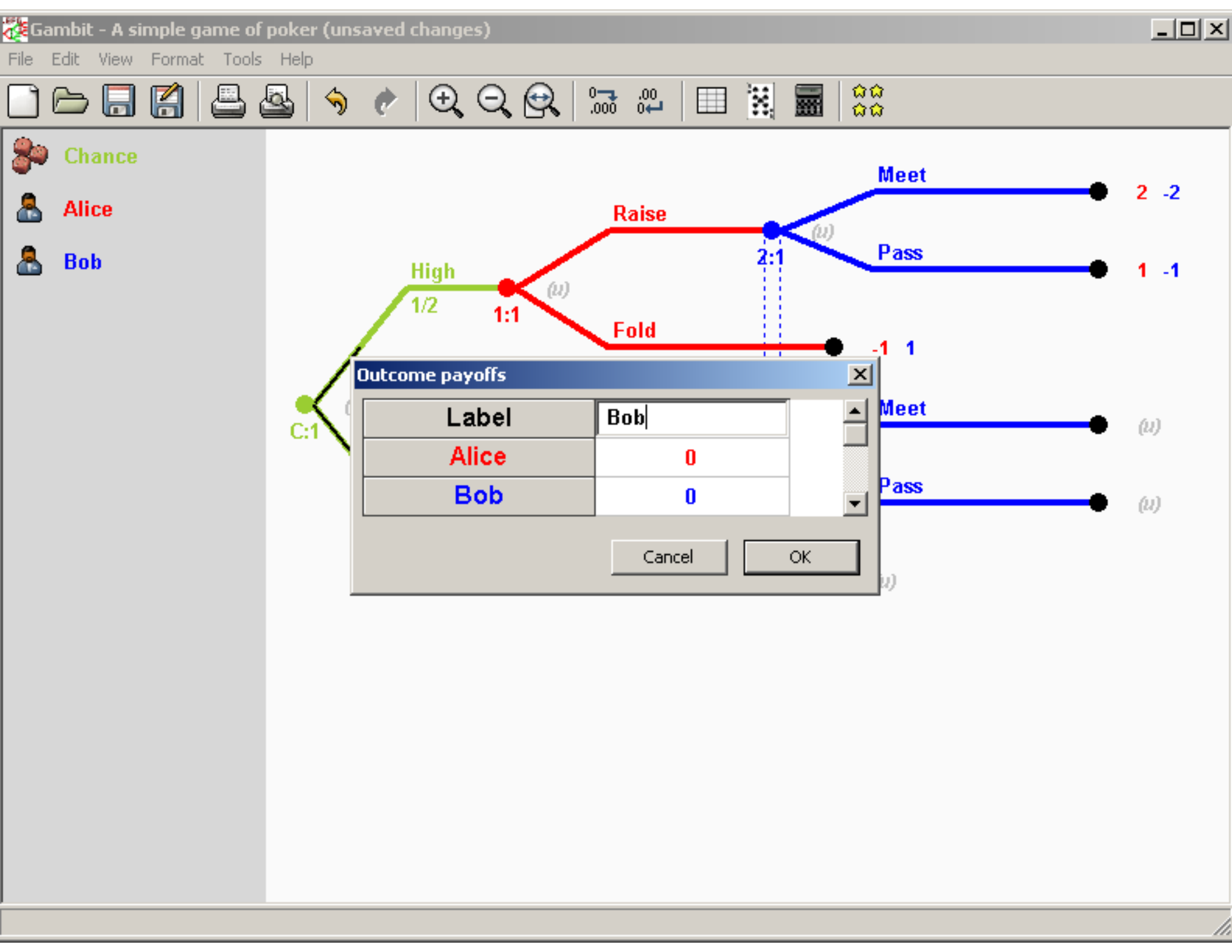

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Outcome 4
Alice
0
Bob
0
Cancel
OK

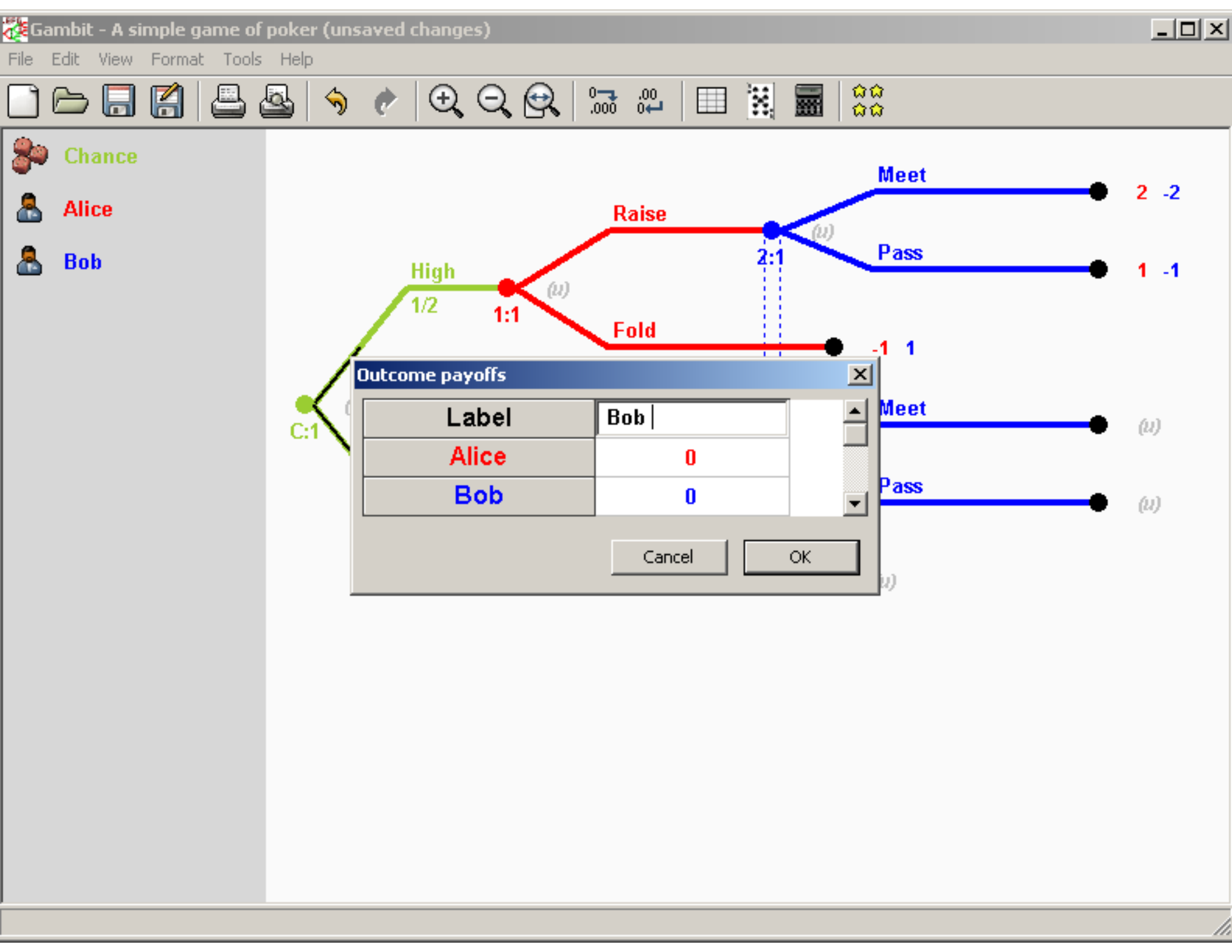

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Outcome 4
Alice
0
Bob
0
Cancel
OK

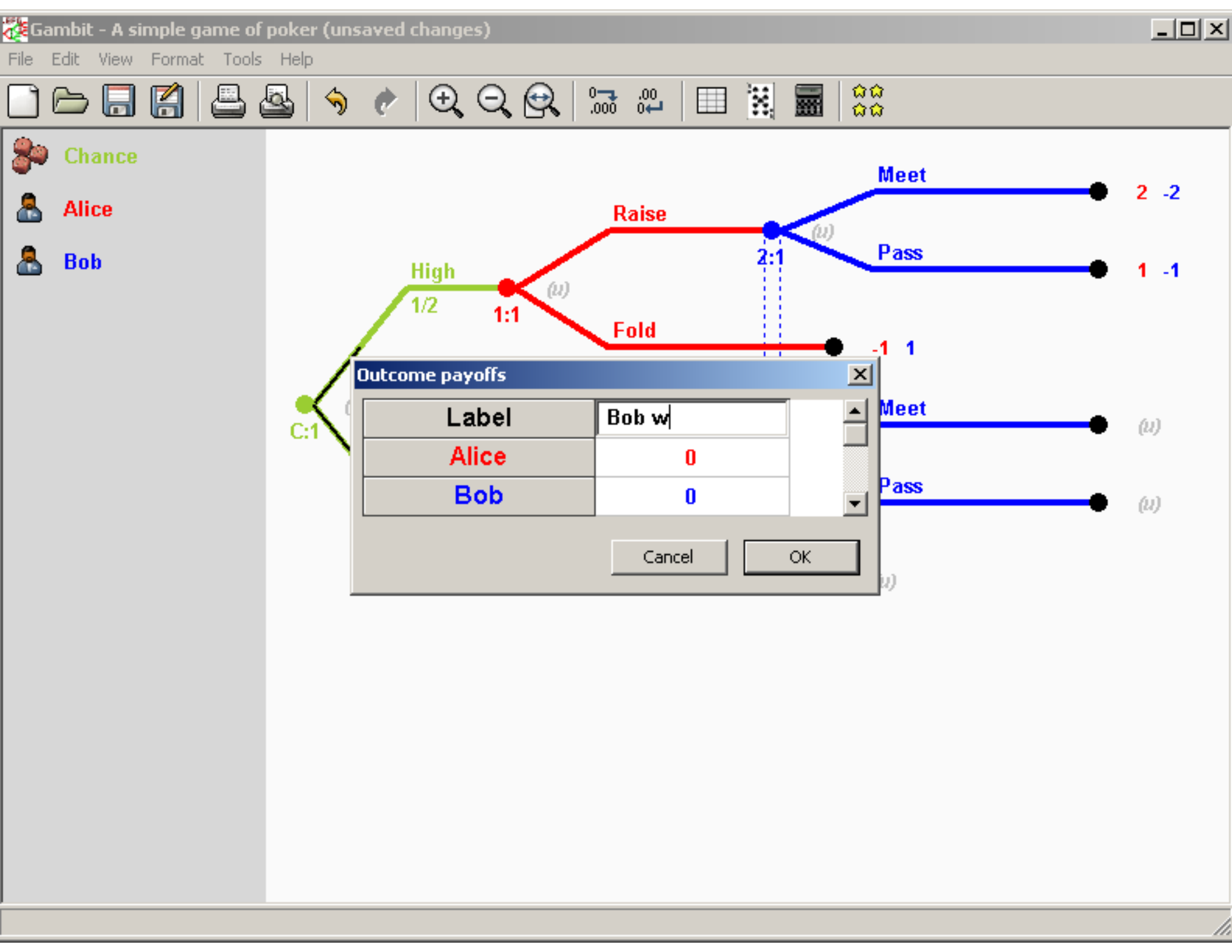

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Outcome 4
Alice
0
Bob
0
Cancel
OK

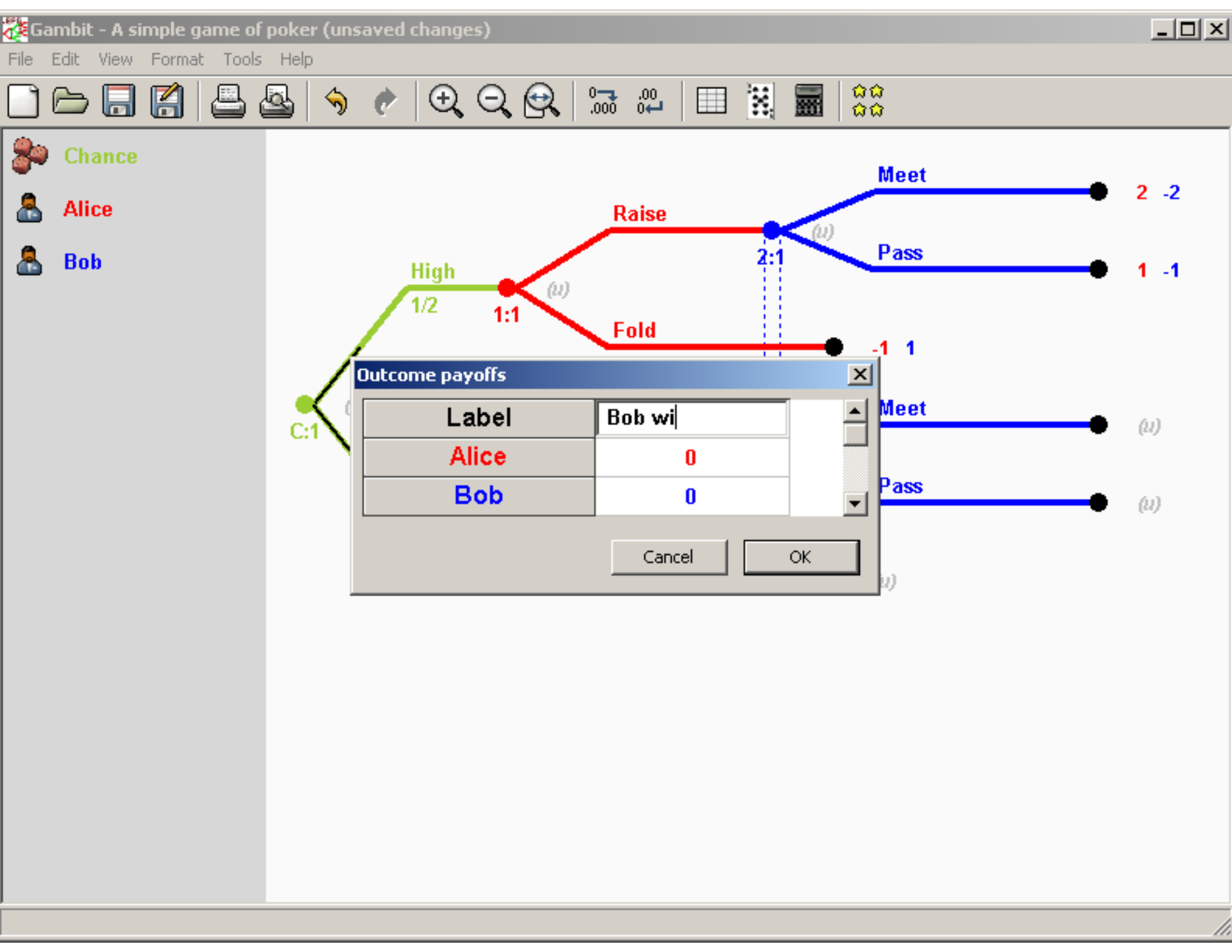

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
High
1/2
1:1
2:1
Fold
C:1
2 -2
1 -1
-1 1
Meet
Pass
Outcome payoffs
Label
B
Alice
0
Bob
0
Cancel
OK

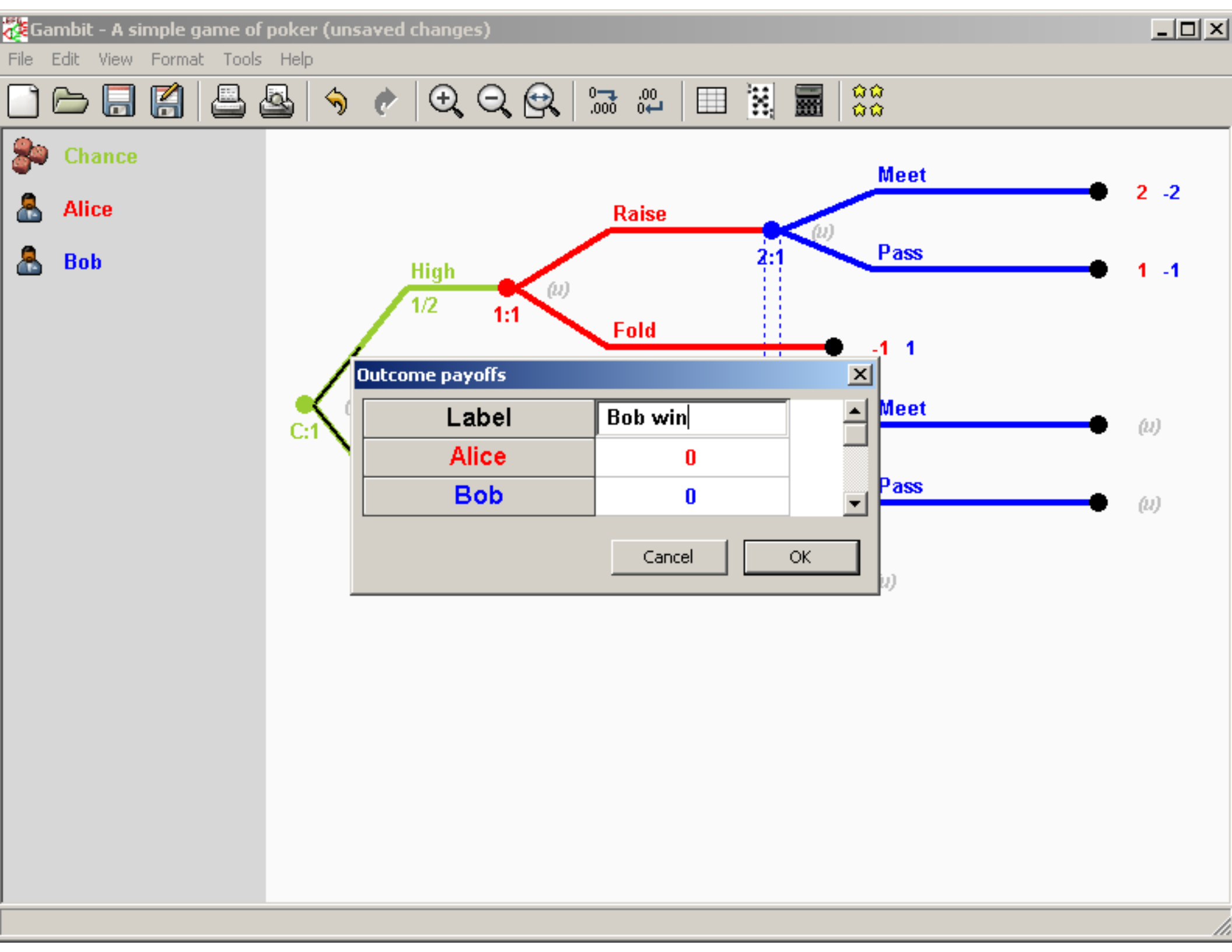

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
High
1/2
1:1
2:1
Fold
2 -2
1 -1
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bo
Alice
0
Bob
0
Cancel
OK

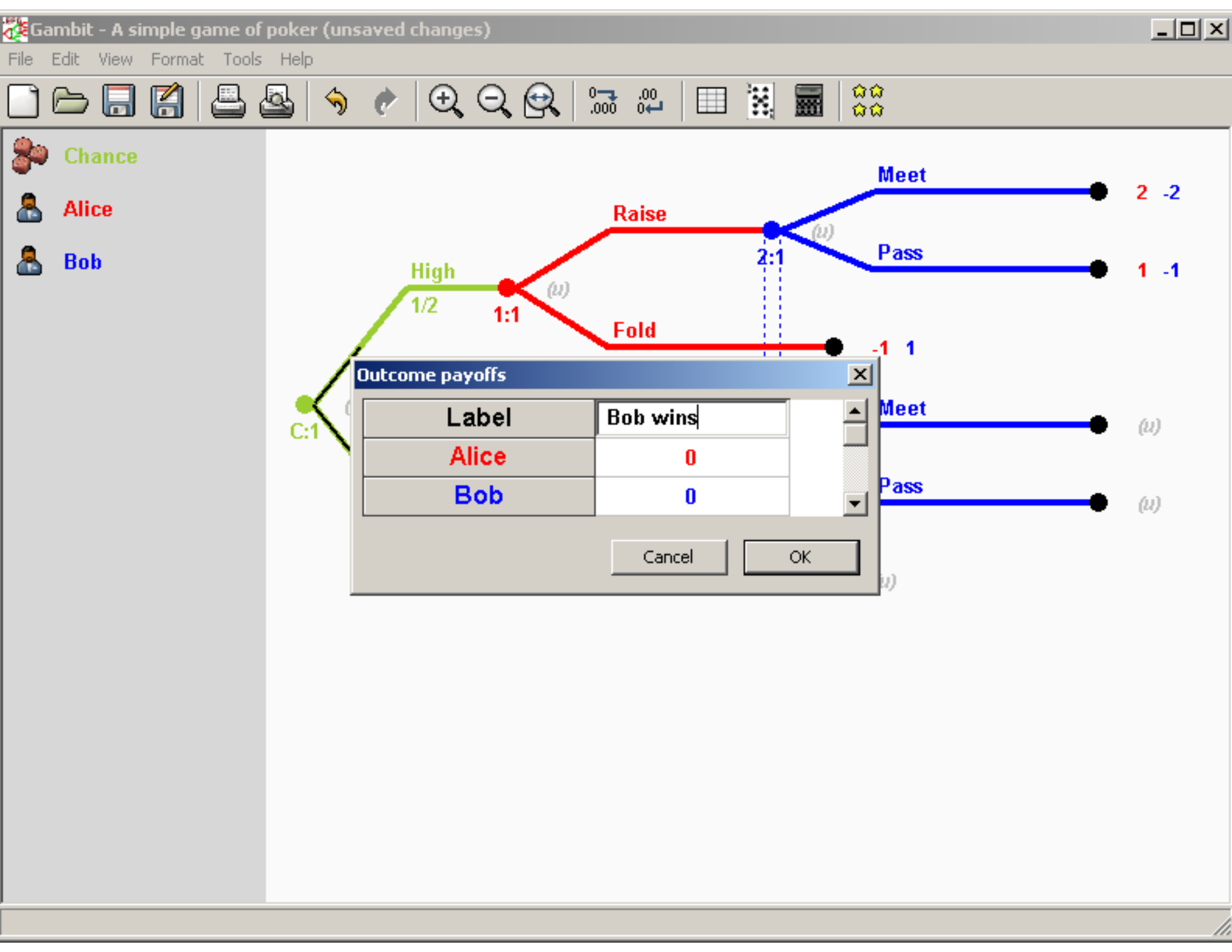

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob
Alice
0
Bob
0
Cancel
OK

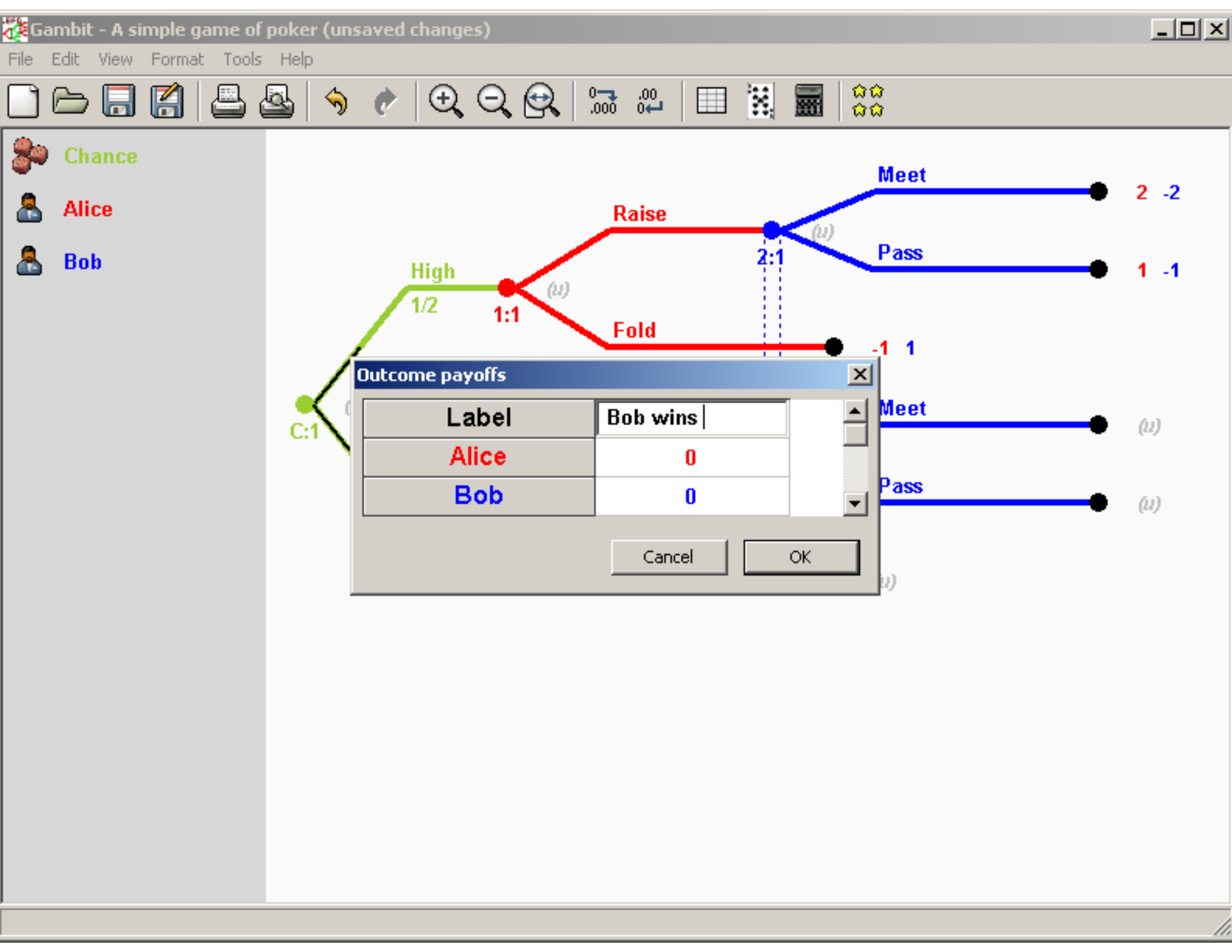

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob
Alice
0
Bob
0
Cancel
OK

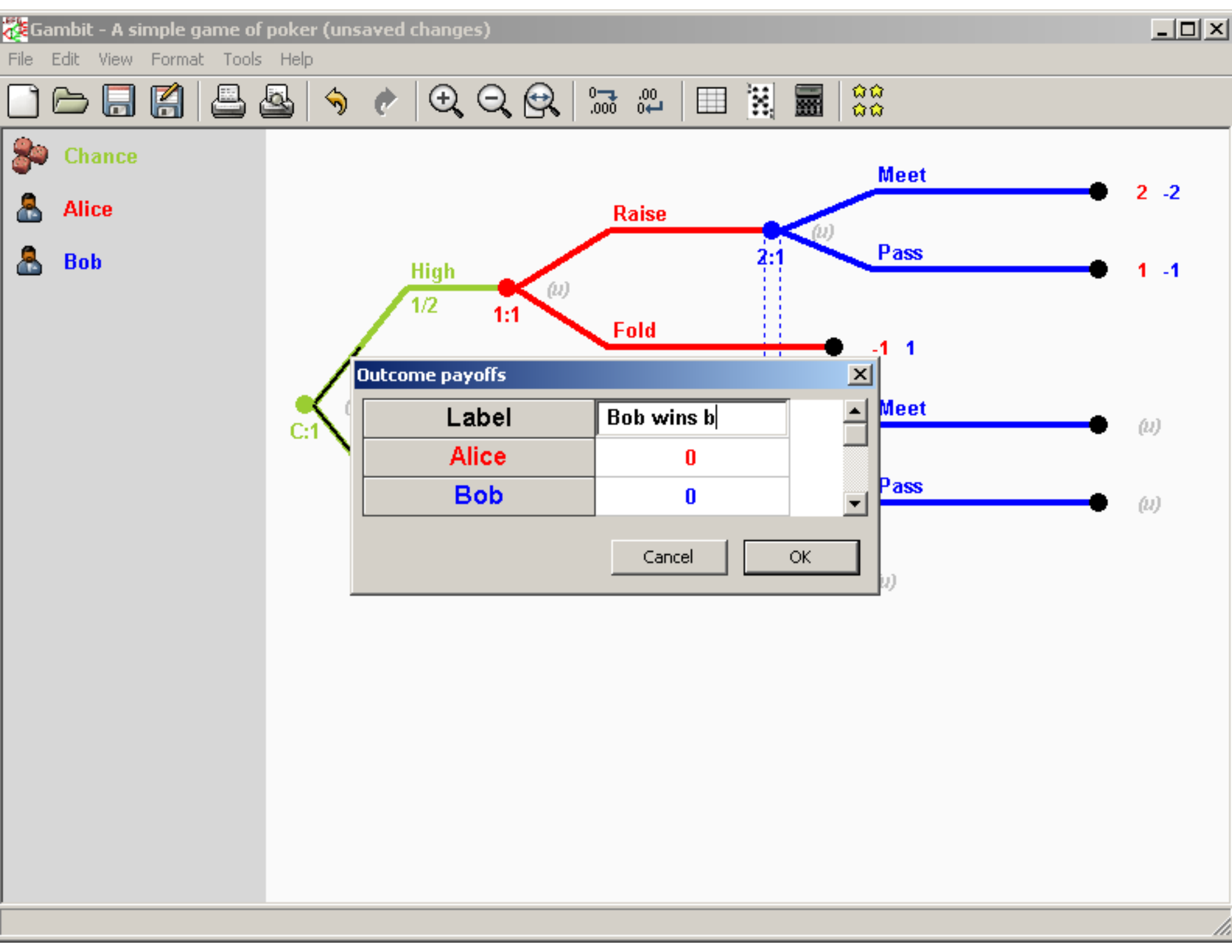

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob w
Alice
0
Bob
0
Cancel
OK

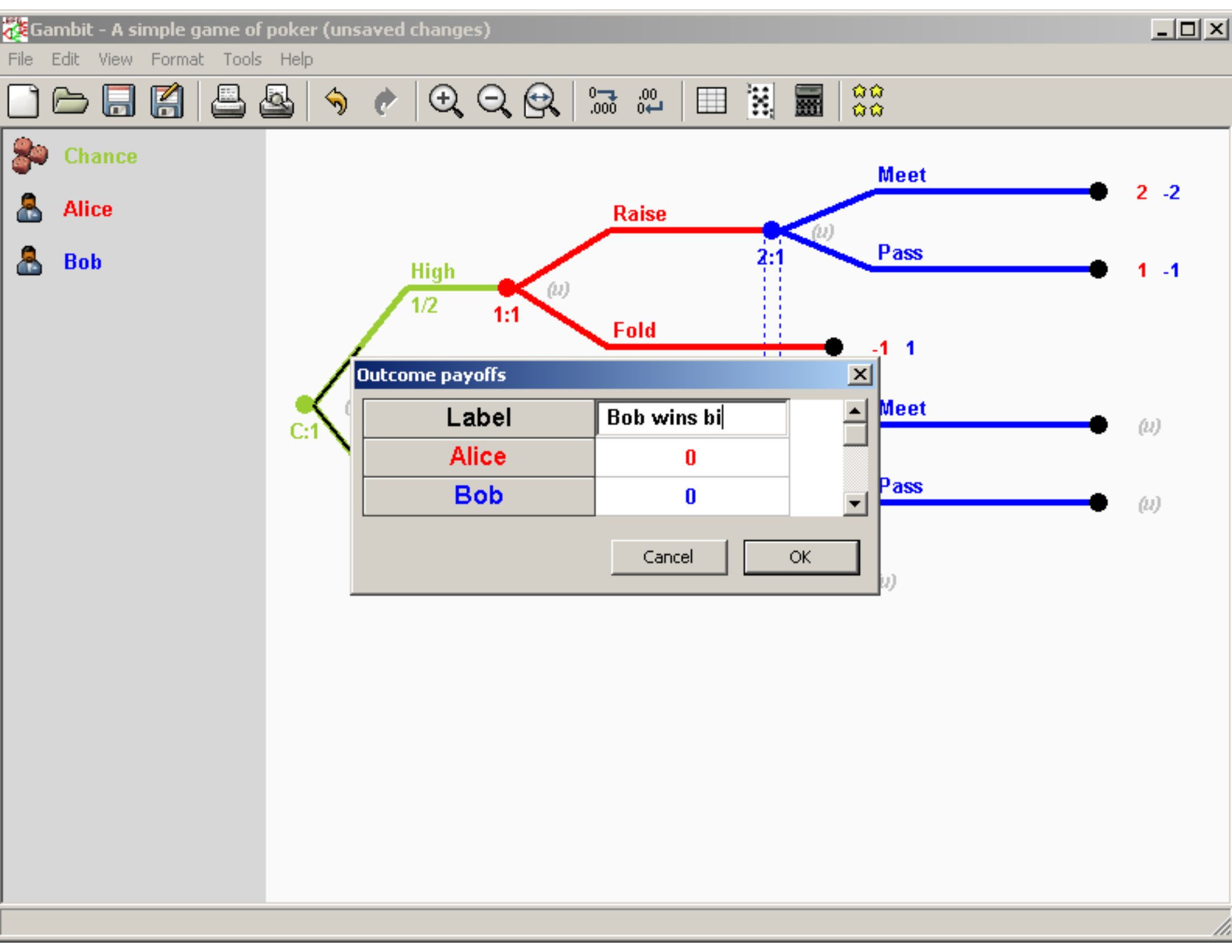

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob wi
Alice
0
Bob
0
Cancel
OK

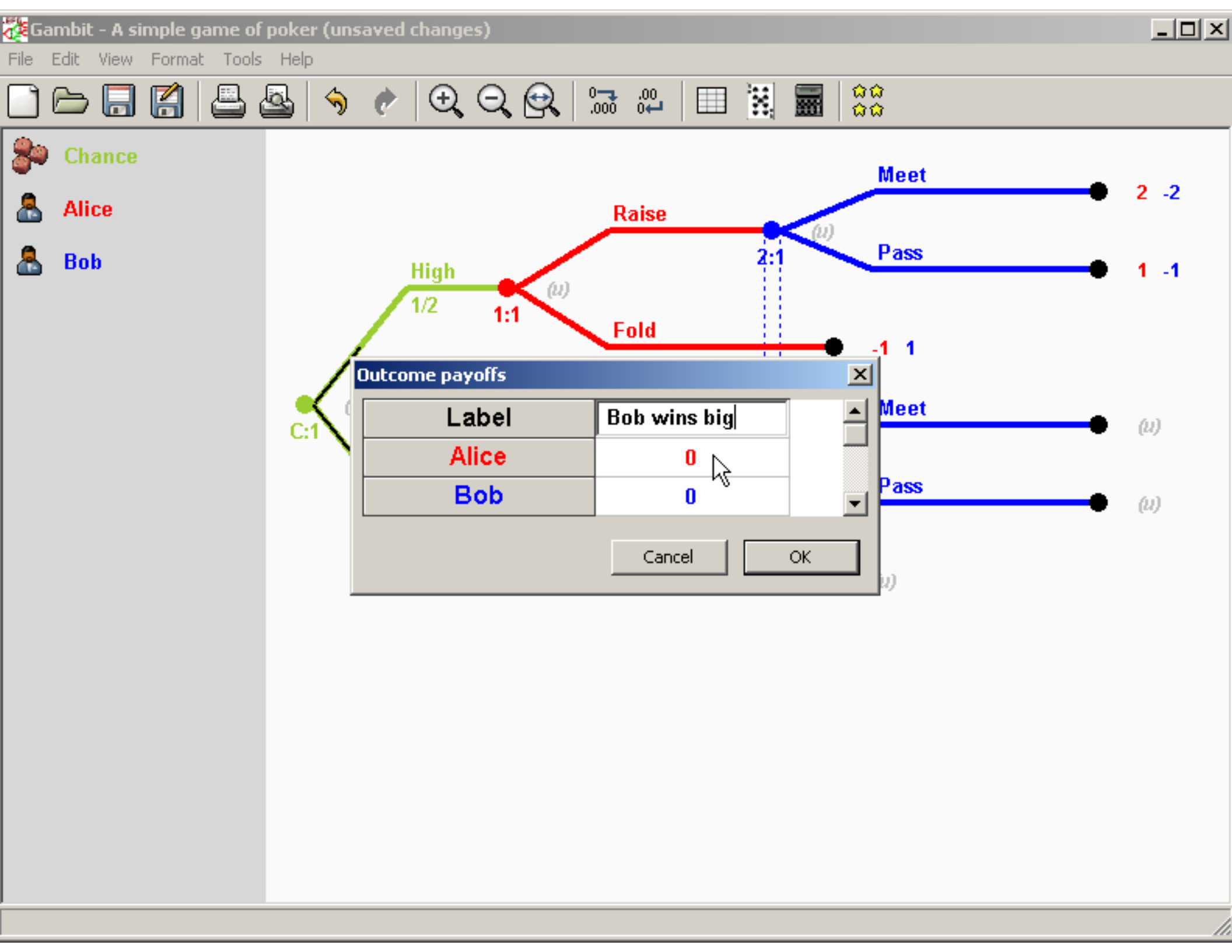

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob win
Alice
0
Bob
0
Cancel
OK

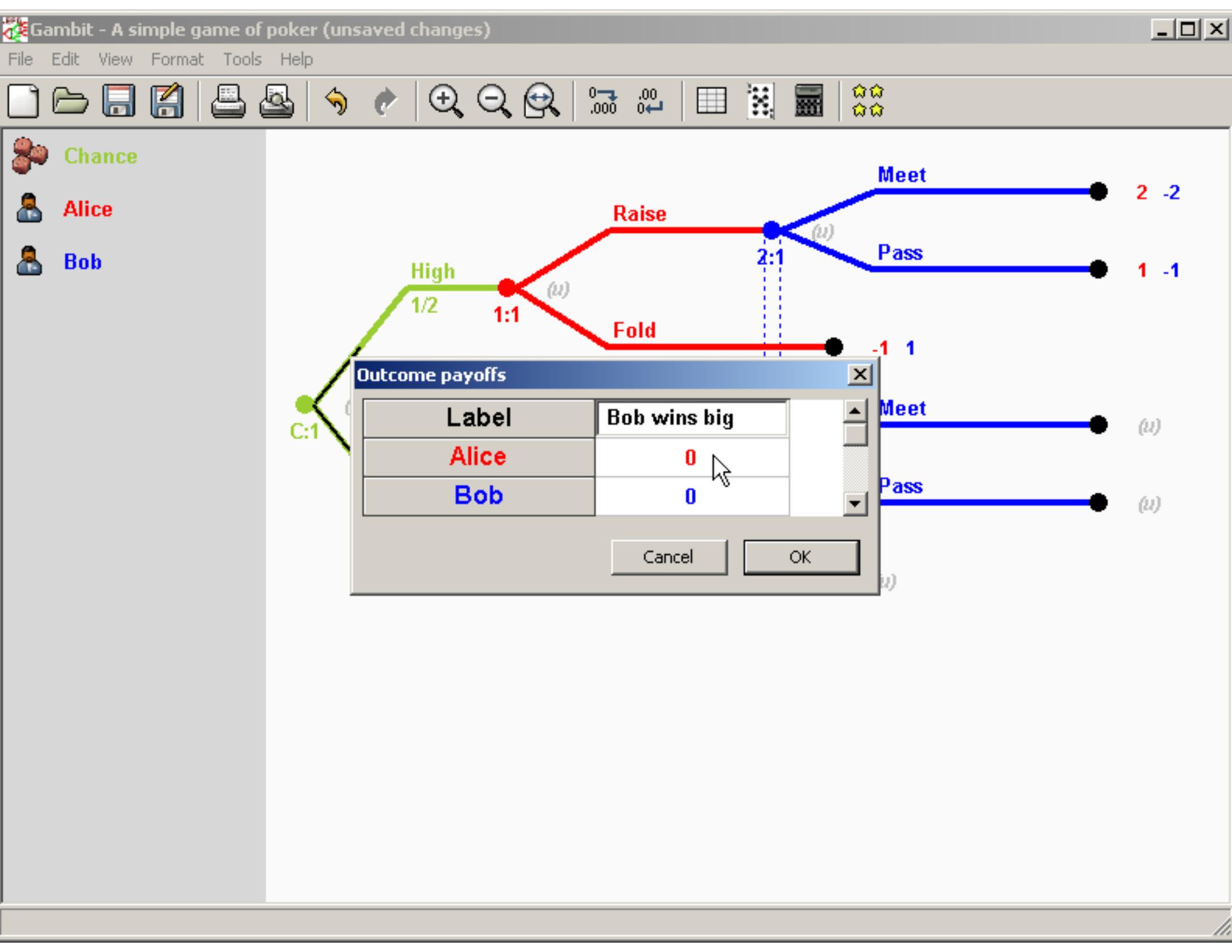

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
0
Bob
0
Cancel
OK

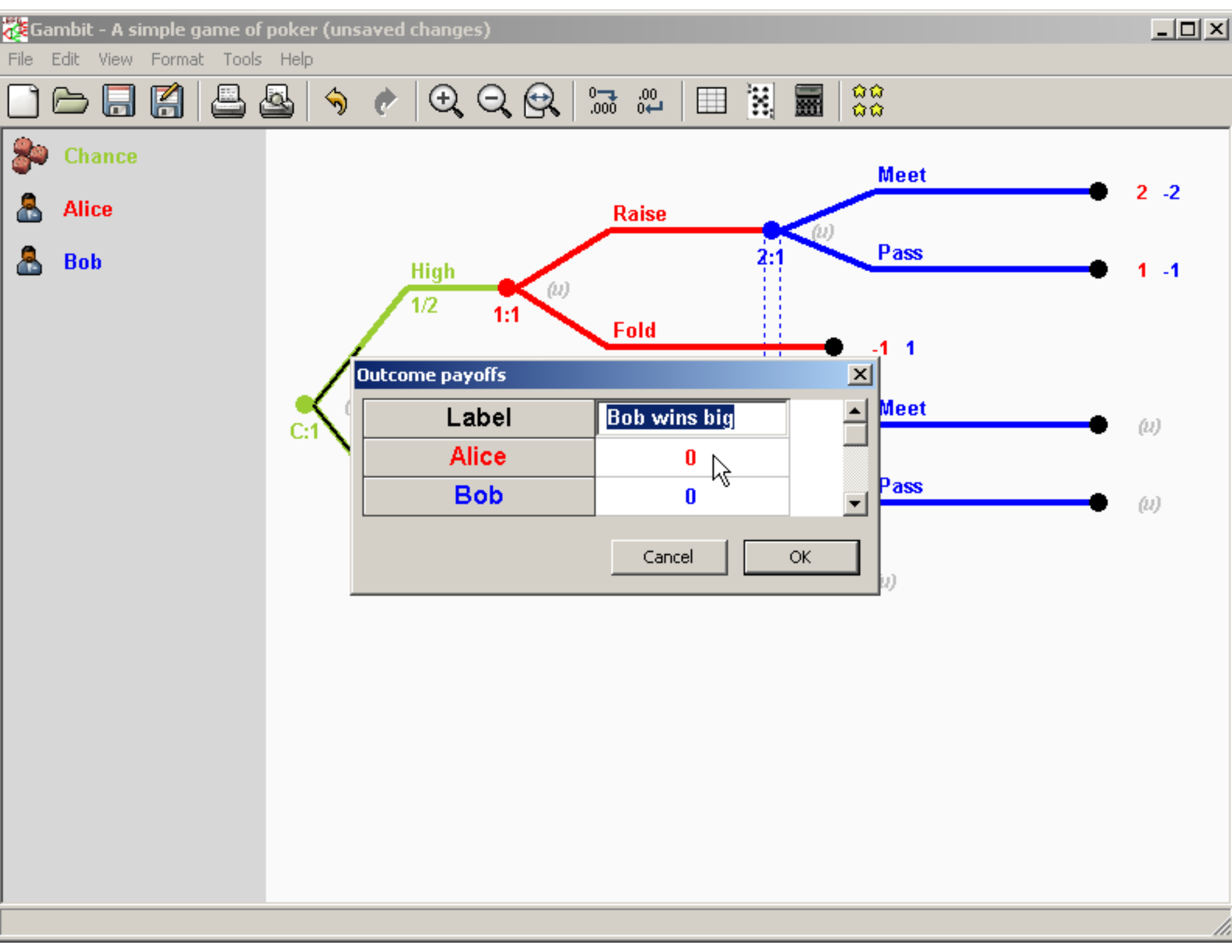

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins
Alice
0
Bob
0
Cancel
OK

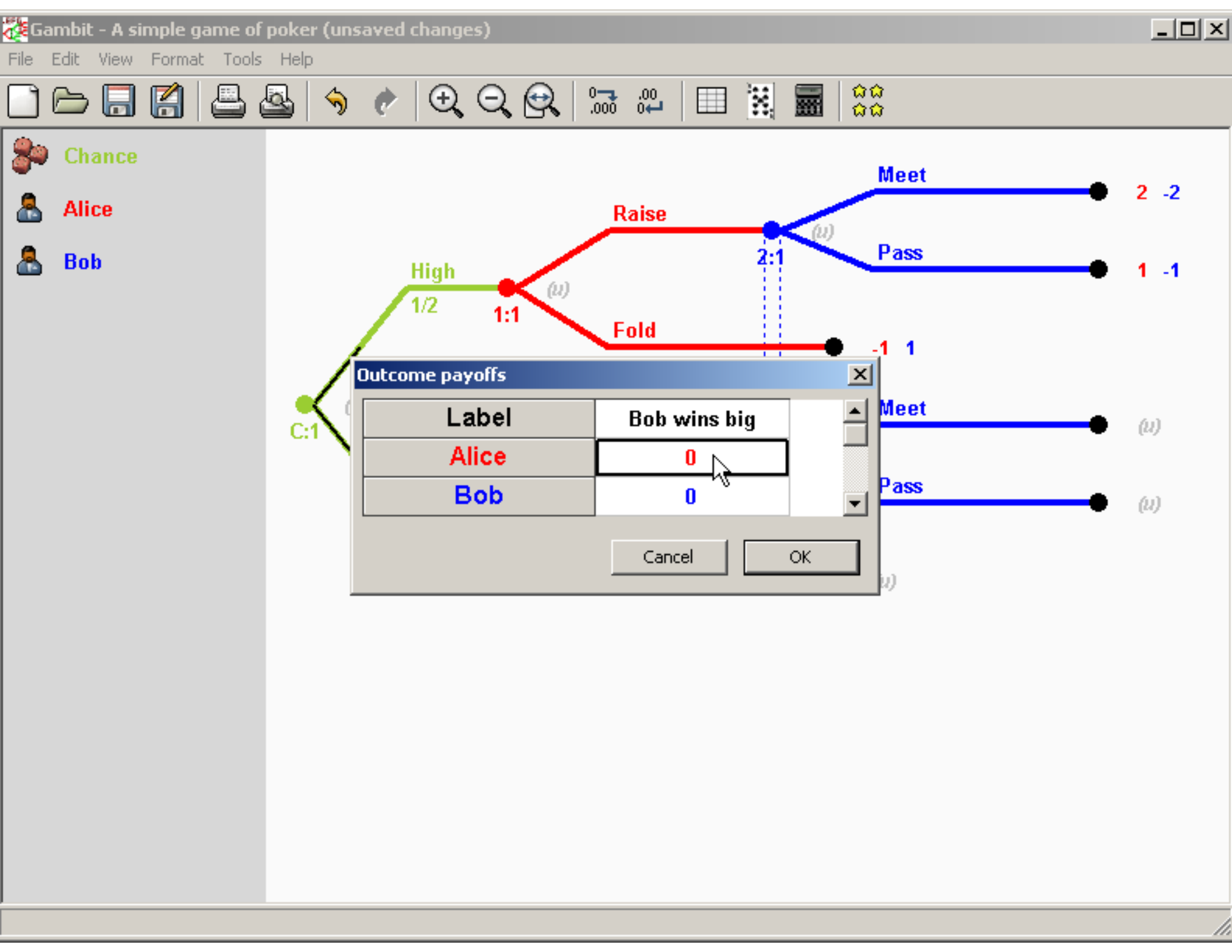

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
1:1
Raise
Fold
2:1
Meet
Pass
2 -2
1 -1
-1 1
Meet
Pass
Outcome payoffs
Label
Bob wins b
Alice
0
Bob
0
Cancel
OK

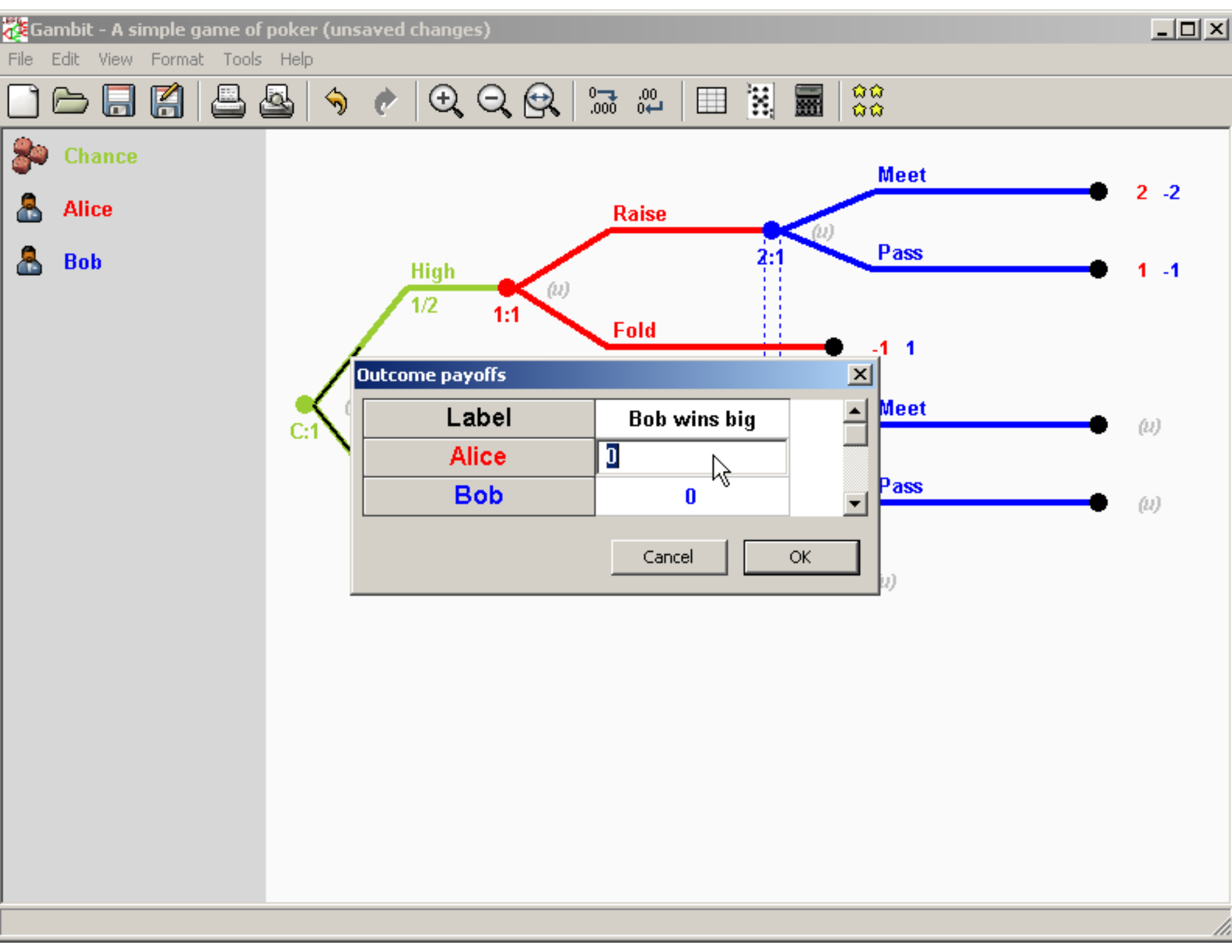

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
1:1
Raise
Fold
2:1
Meet
Pass
2 -2
1 -1
-1 1
Meet
Pass
Outcome payoffs
Label
Bob wins bi
Alice
0
Bob
0
Cancel
OK

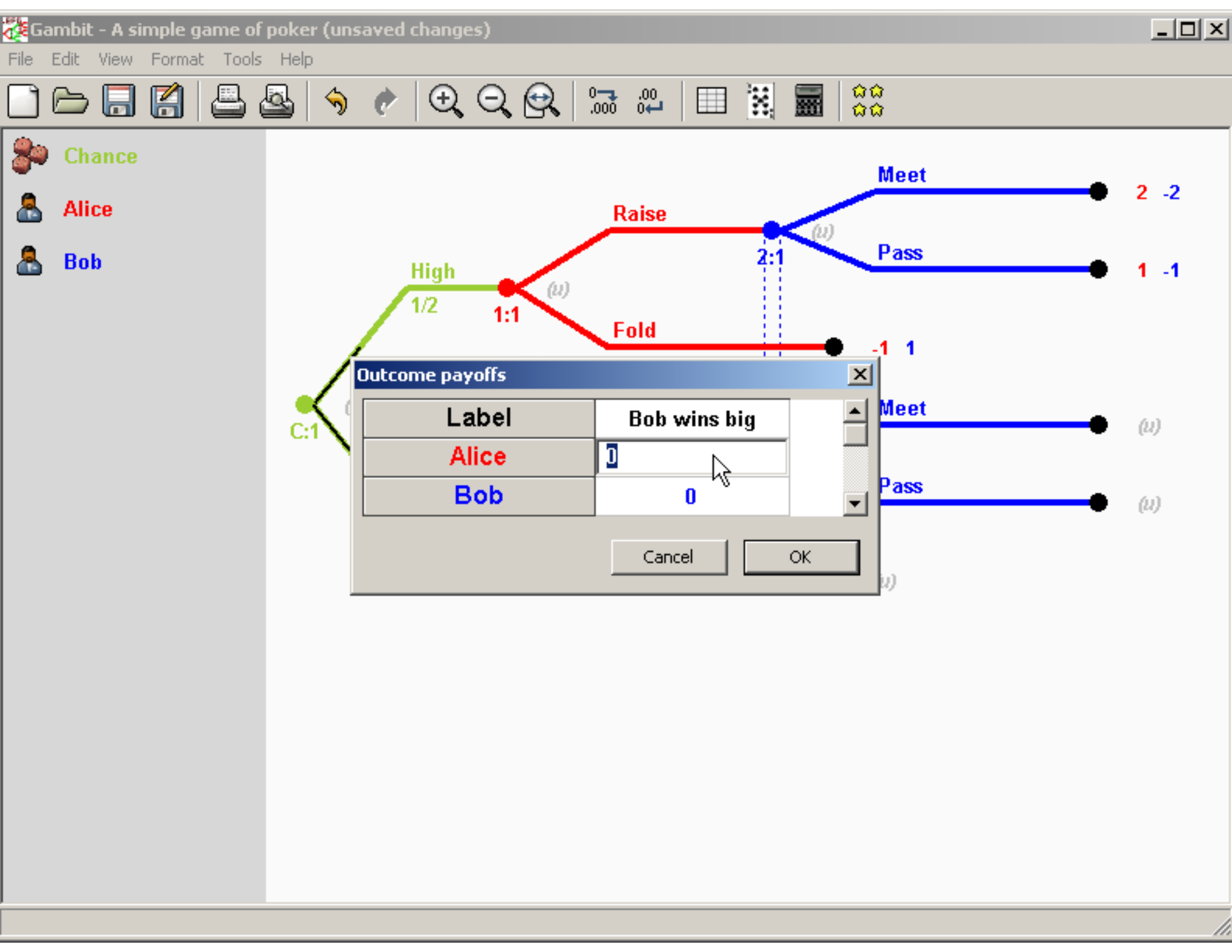

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins big
Alice
0
Bob
0
Cancel
OK

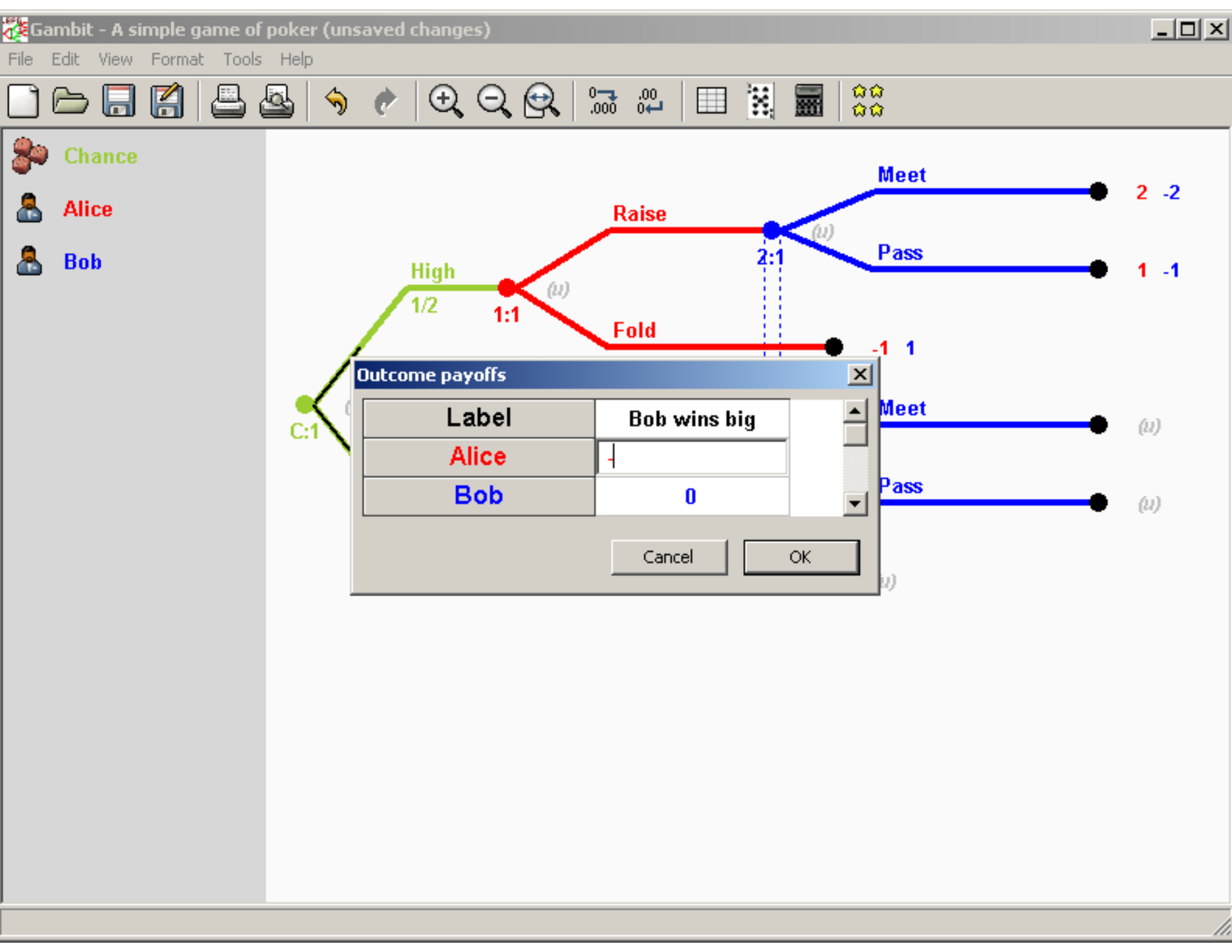

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
(u)
Pass
1 -1
High
1/2
1:1
(u)
Fold
-1 1
C:1
Outcome payoffs
Label
Bob wins big
Alice
0
Bob
0
Cancel
OK
Meet
(u)
Pass
(u)
(u)

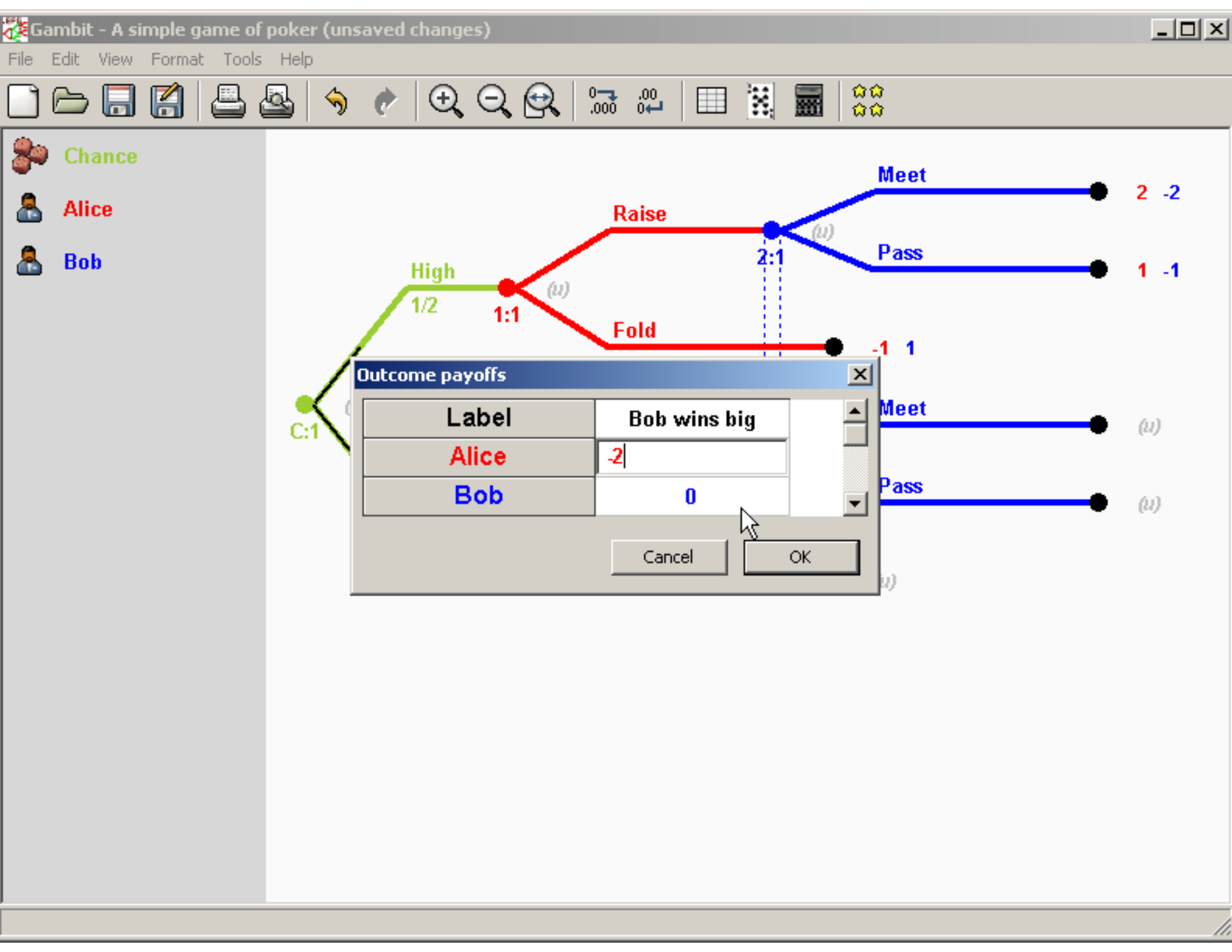

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins big
Alice
0
Bob
0
Cancel
OK

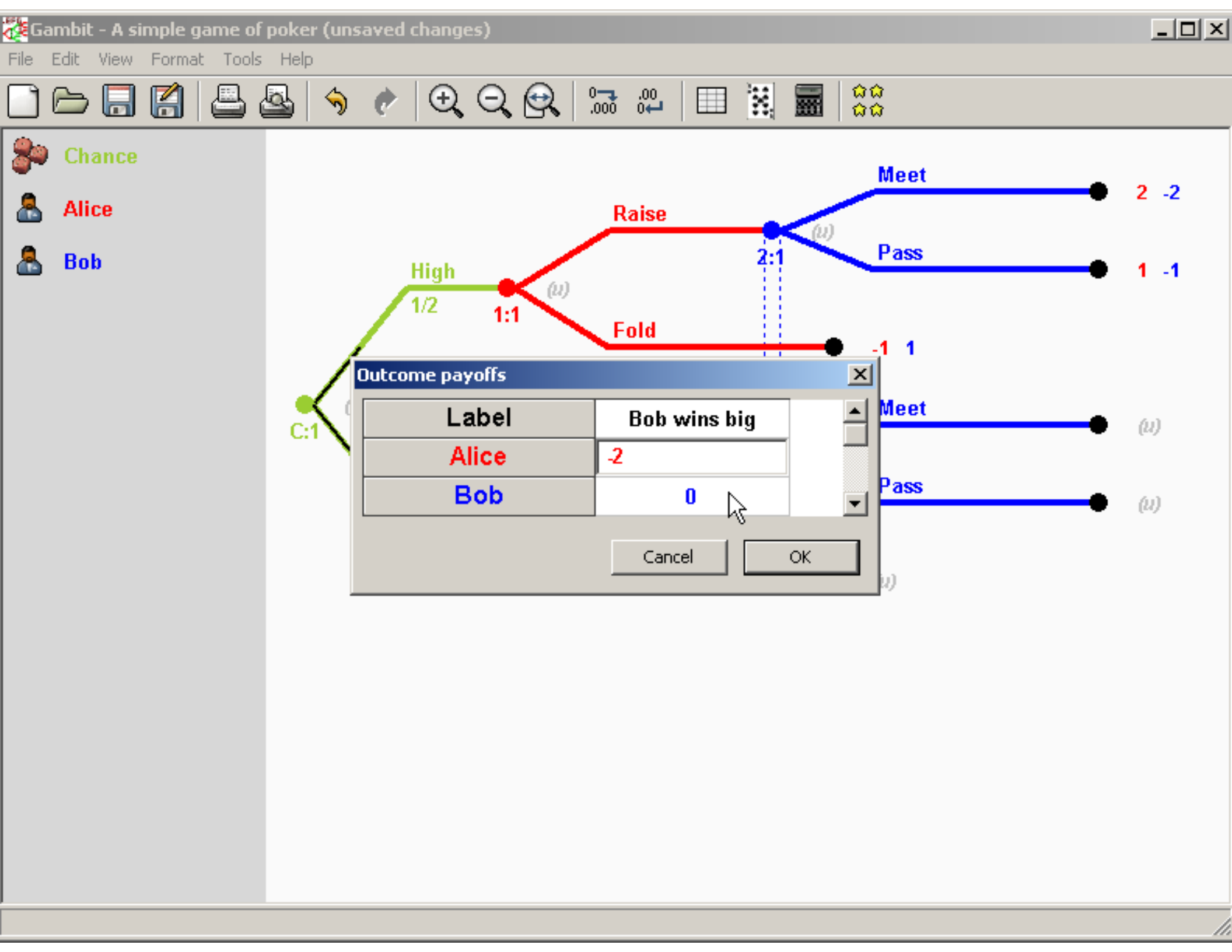

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
(u)
Pass
1 -1
High
1/2
1:1
(u)
Fold
-1 1
C:1
Outcome payoffs
Label
Bob wins big
Alice
0
Bob
0
Cancel
OK
Meet
(u)
Pass
(u)
(u)

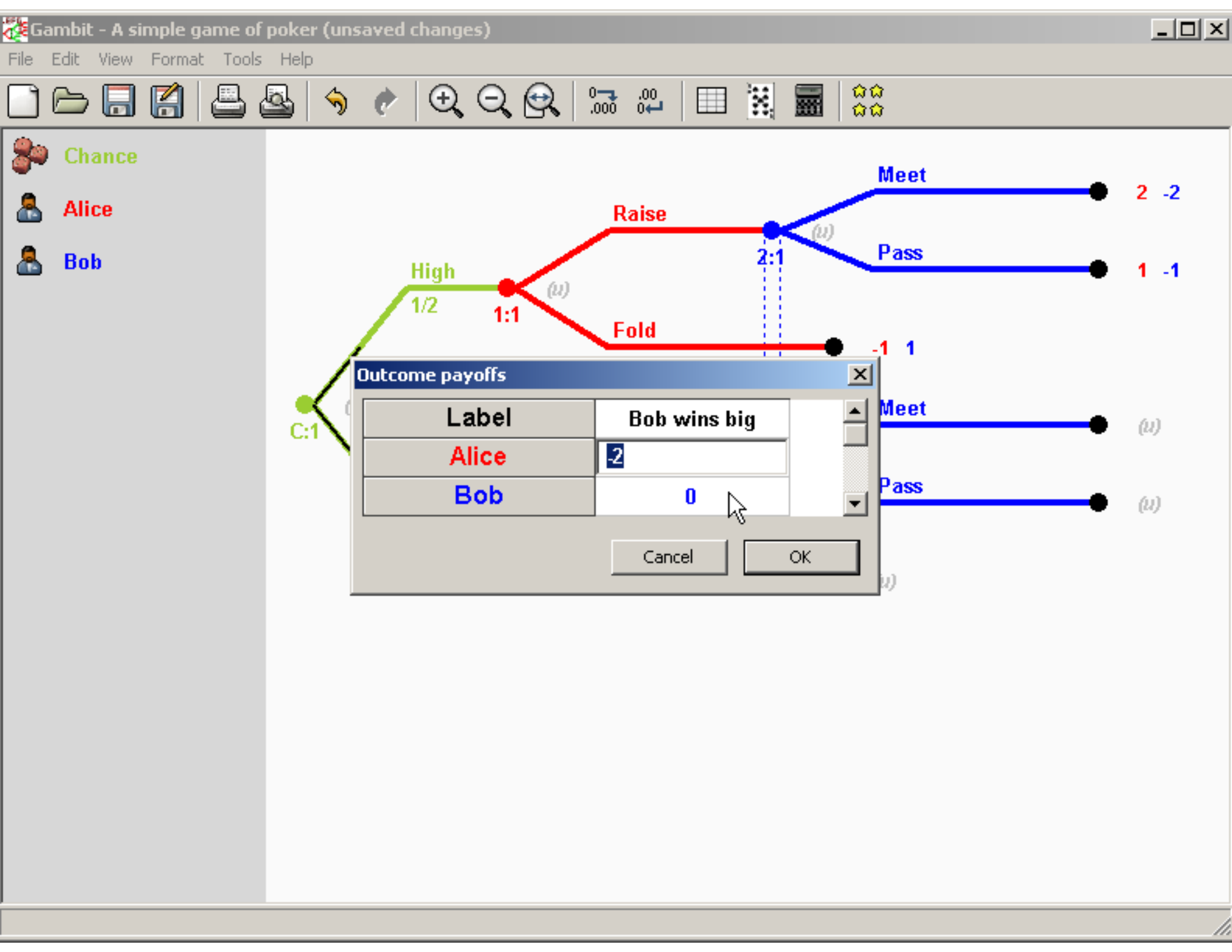

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins big
Alice
0
Bob
Cancel
OK

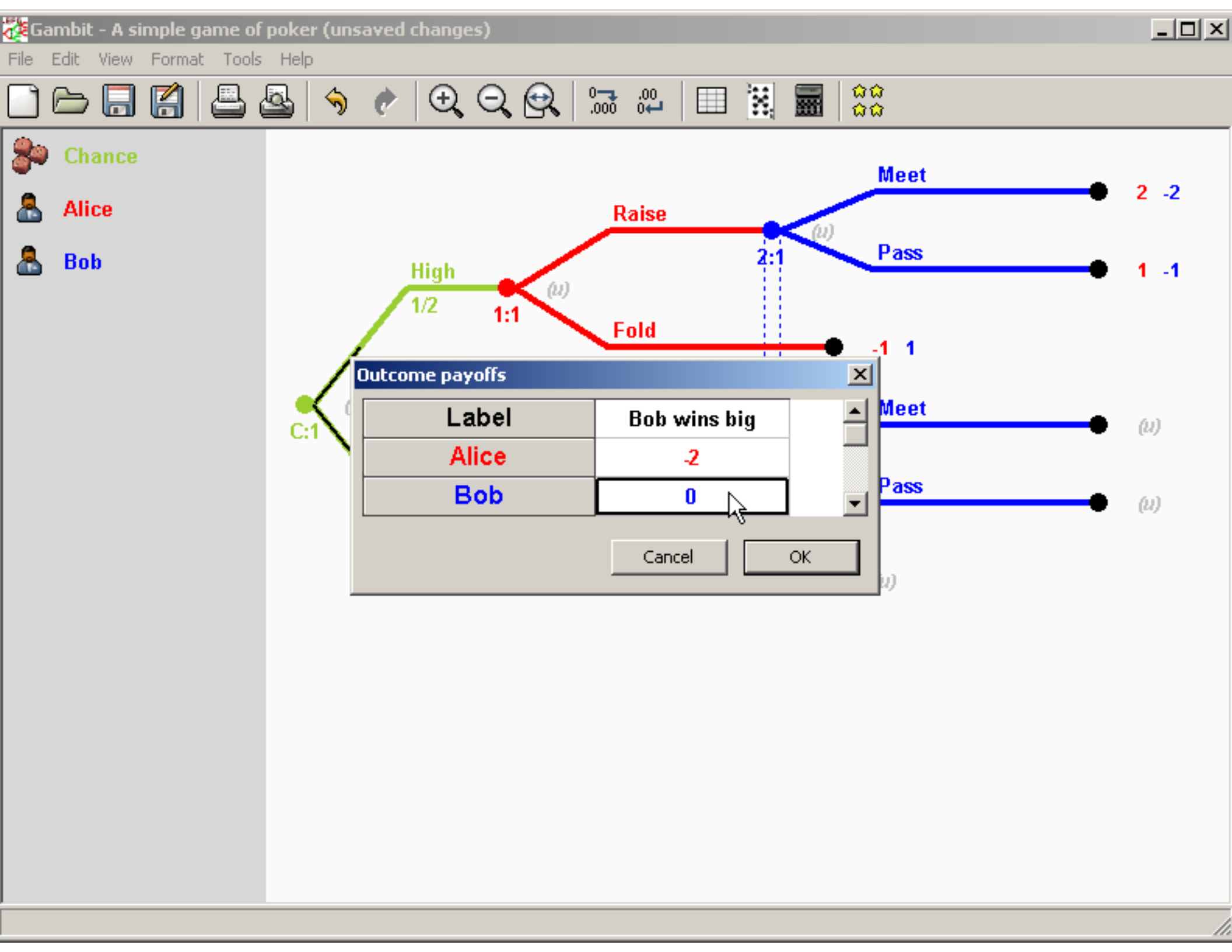

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
1:1
Raise
Fold
2:1
Meet
Pass
2 -2
1 -1
-1 1
Meet
Pass
Outcome payoffs
Label
Bob wins big
Alice
Bob
0
Cancel
OK

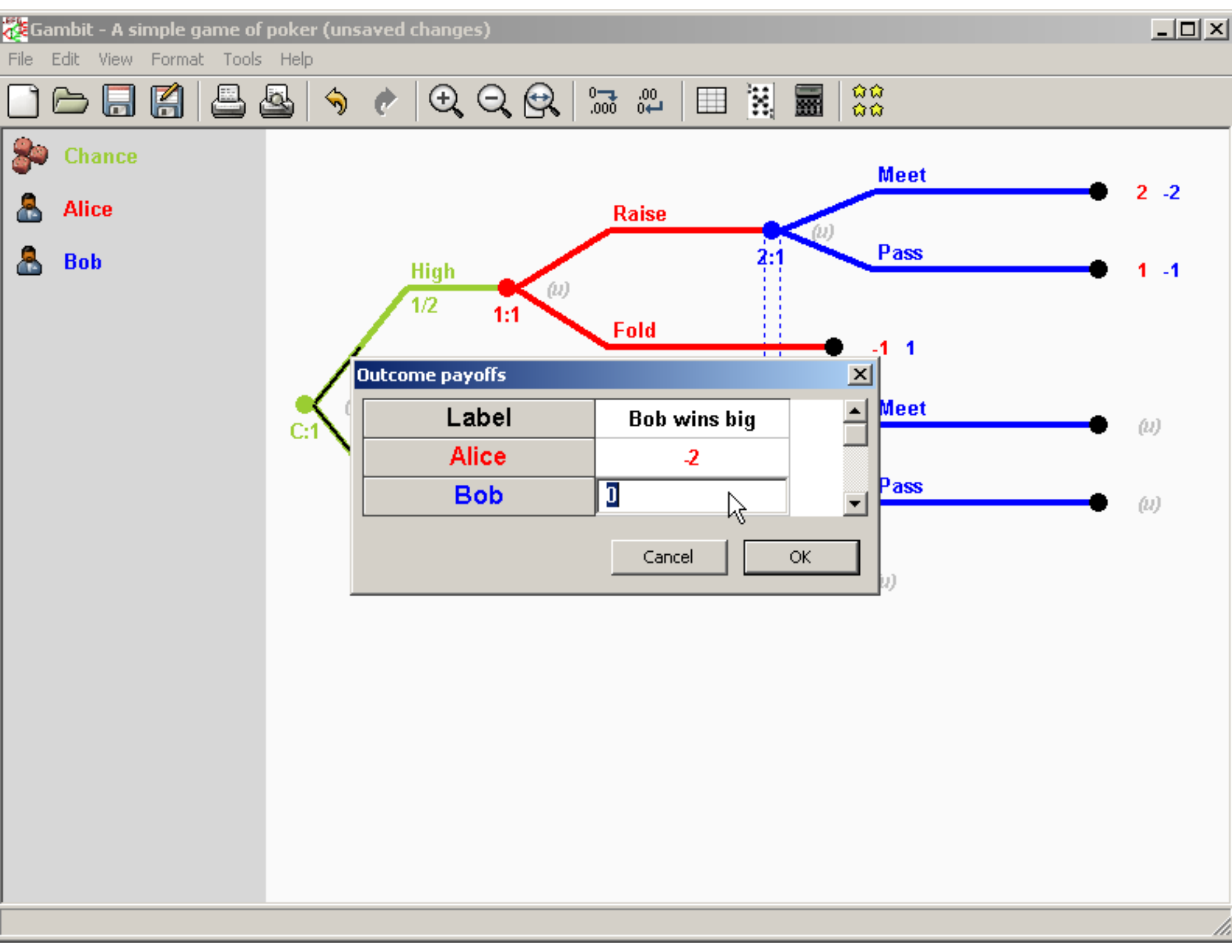

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
Pass
1 -1
2:1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins big
Alice
Bob
0
Cancel
OK

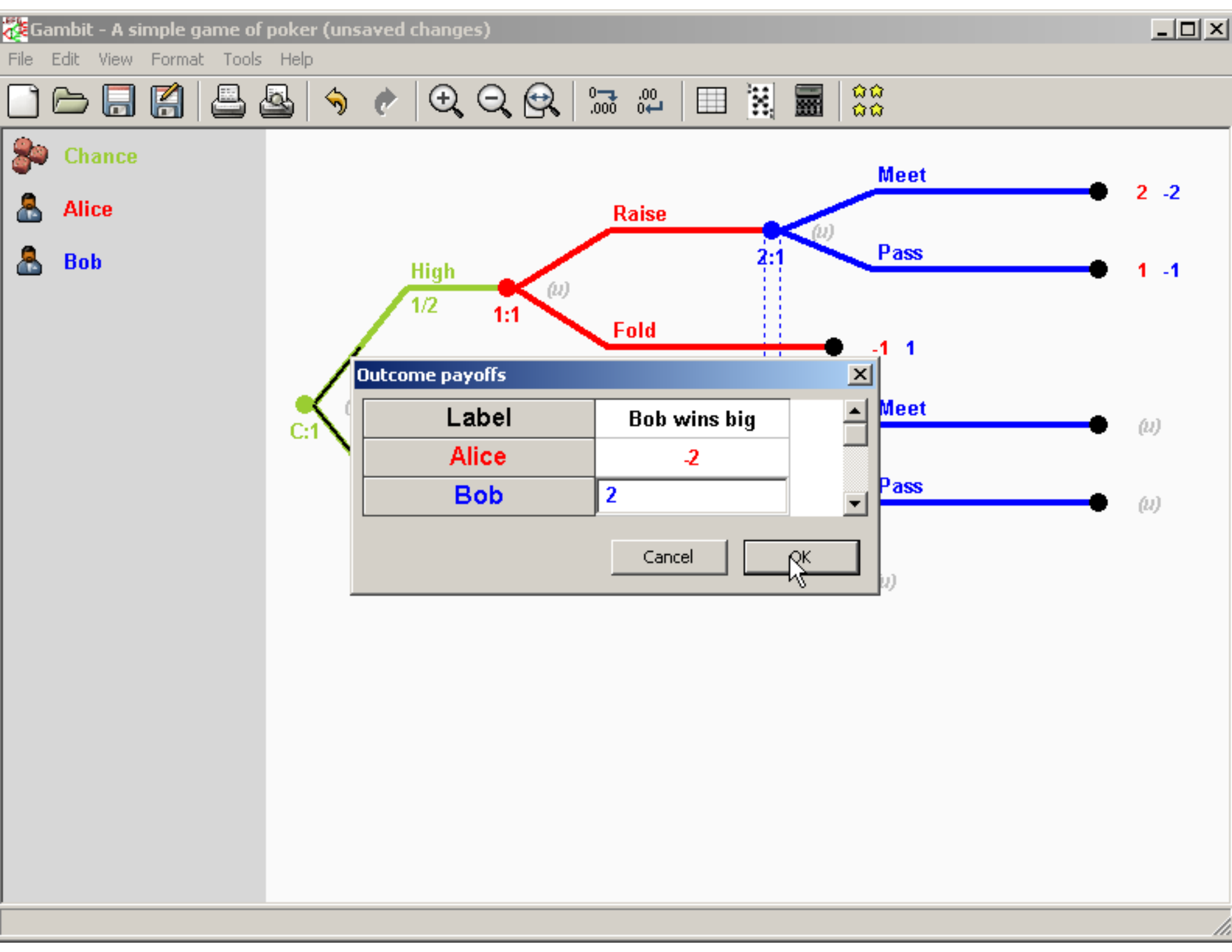

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
1/2
1:1
Raise
Fold
2:1
Meet
Pass
2 -2
1 -1
-1 1
Meet
Pass
Outcome payoffs
Label
Bob wins big
Alice
-2
Bob
0
Cancel
OK

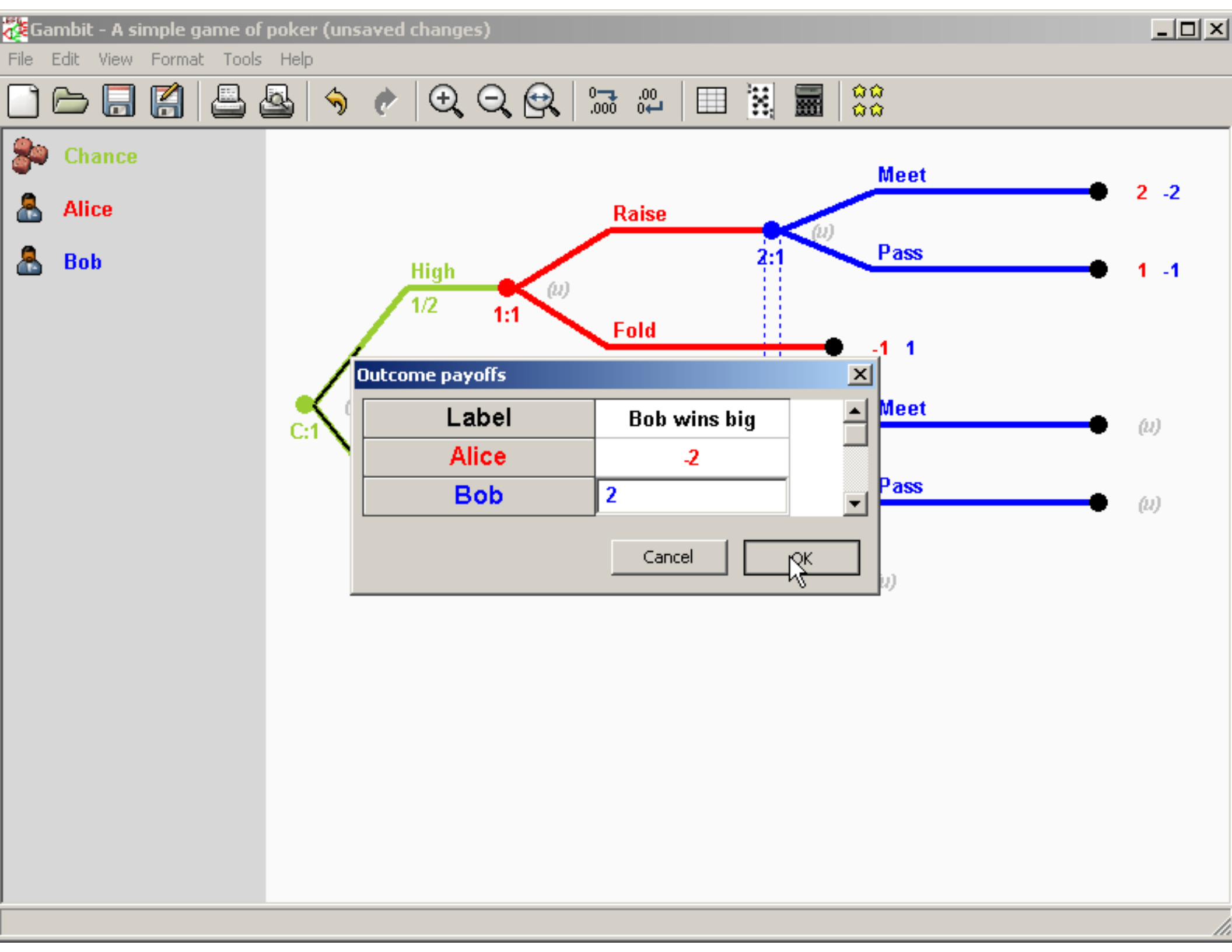

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
2 -2
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins big
Alice
-2
Bob
0
Cancel
OK

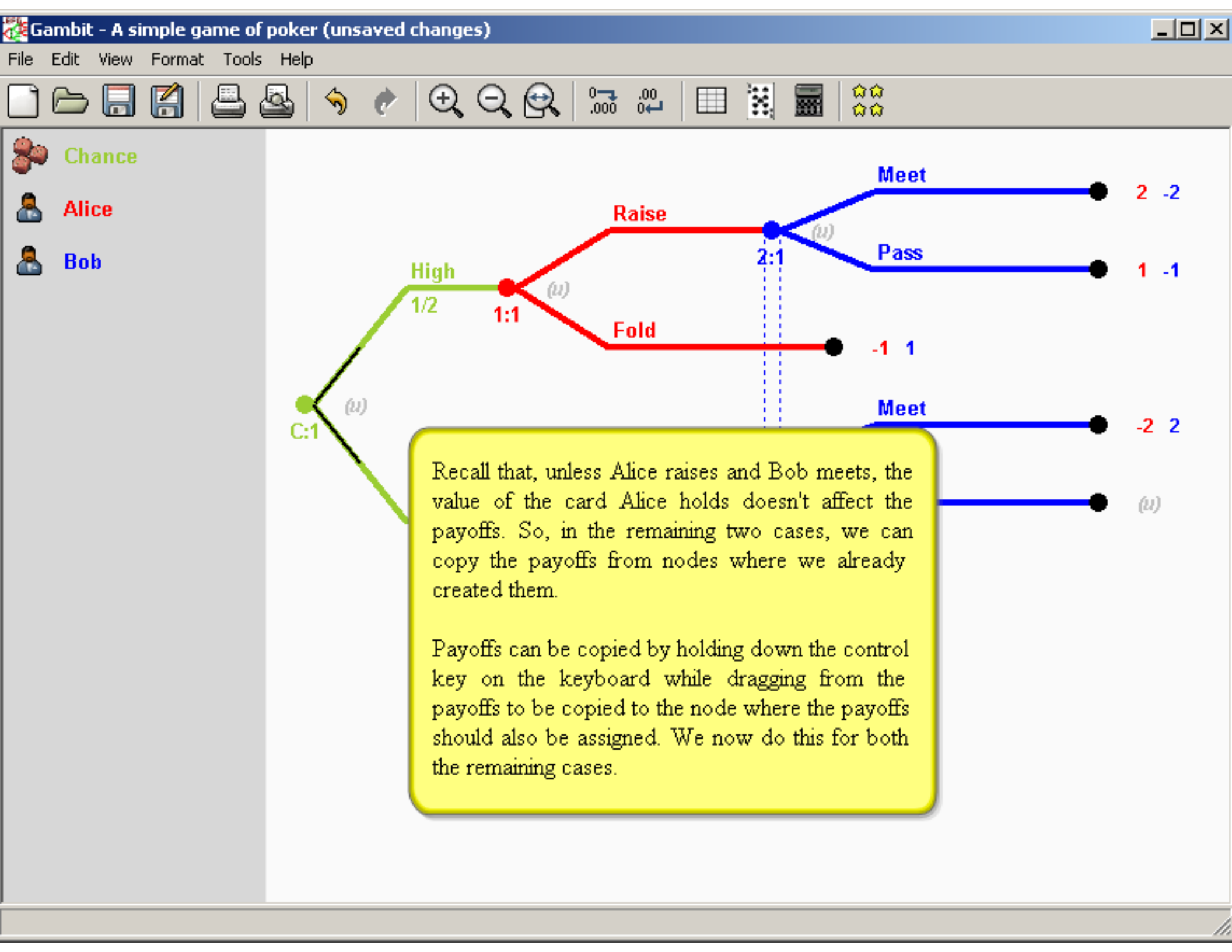

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins big
Alice
-2
Bob
0
Cancel
OK

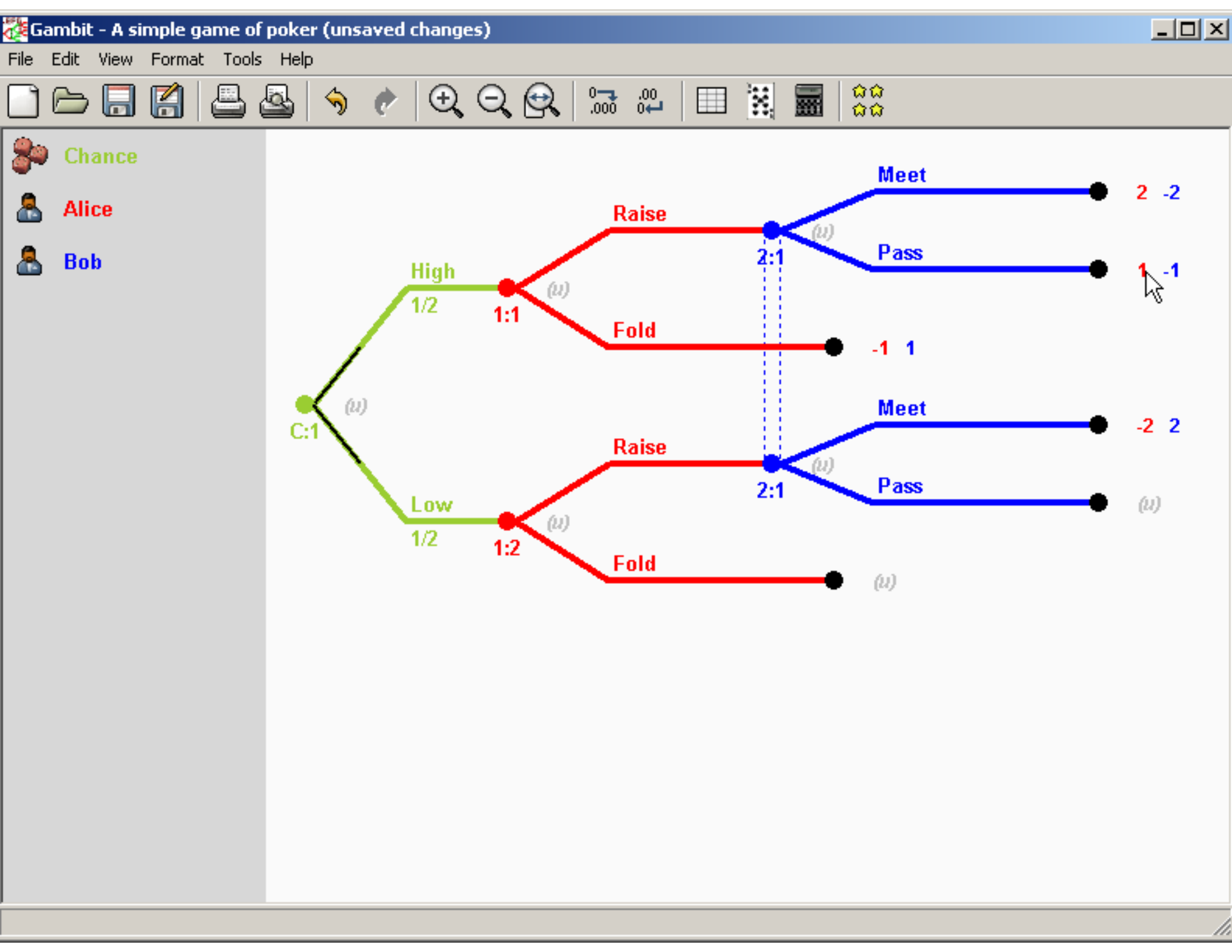

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins big
Alice
-2
Bob
0
Cancel
OK

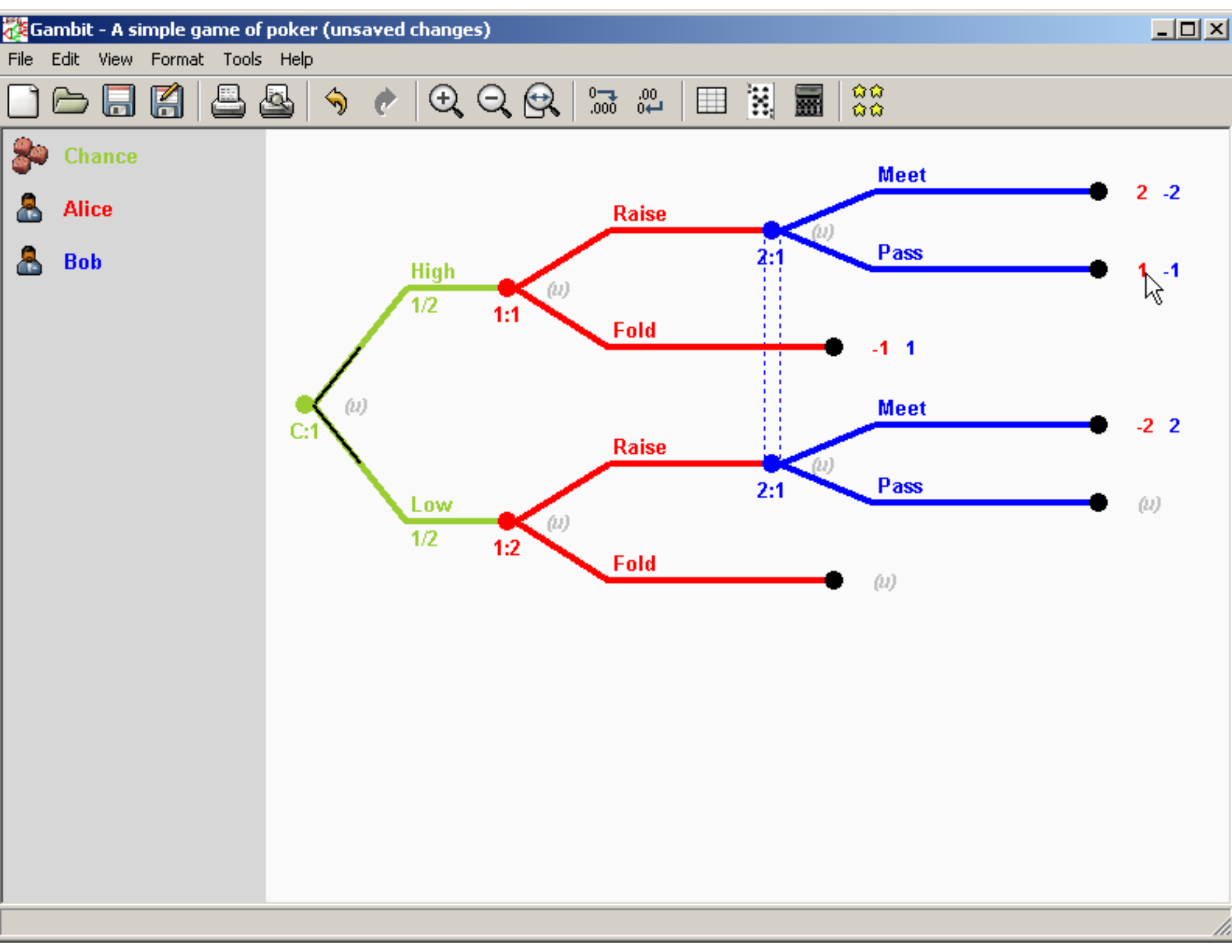

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins big
Alice
-2
Bob
0
Cancel
OK

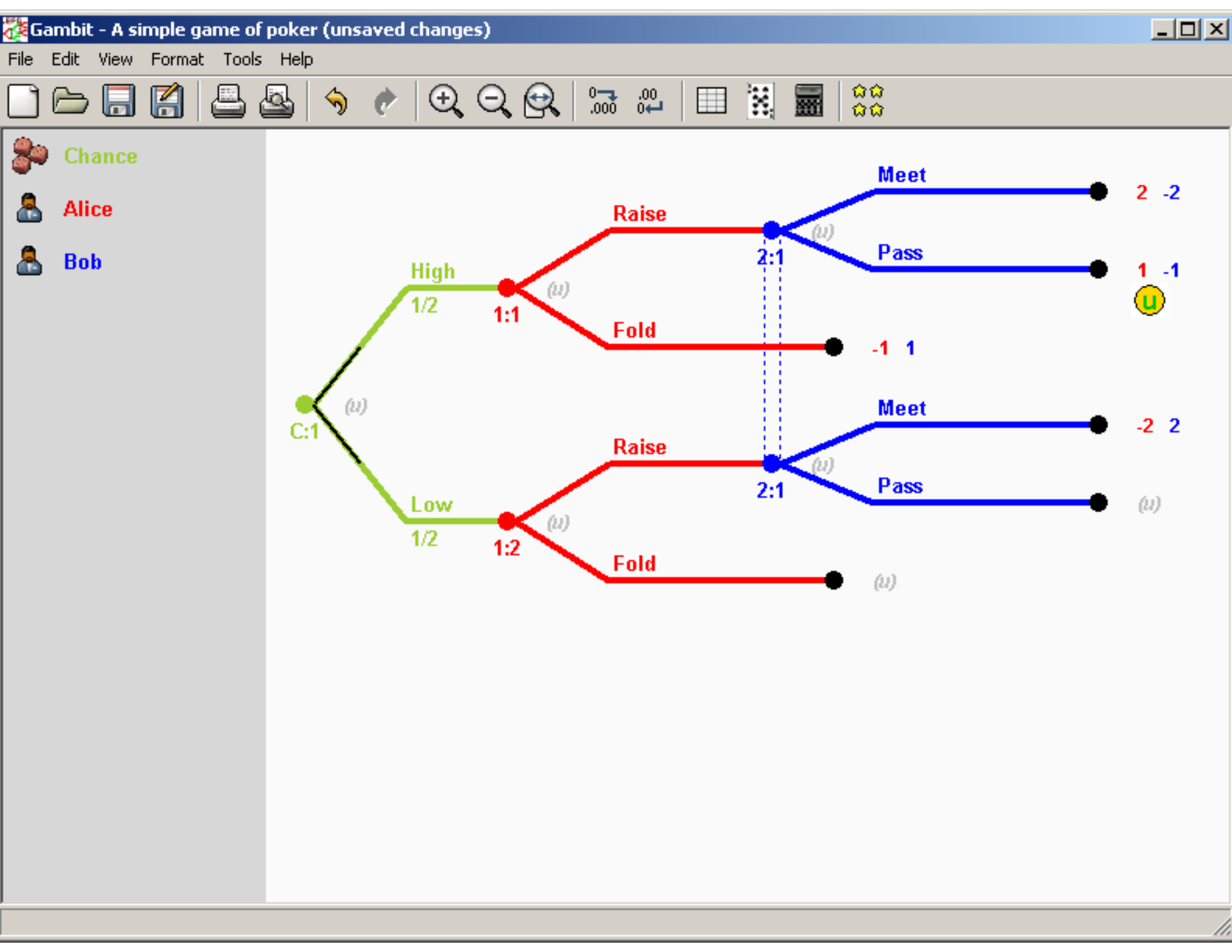

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins big
Alice
-2
Bob
2
Cancel
OK

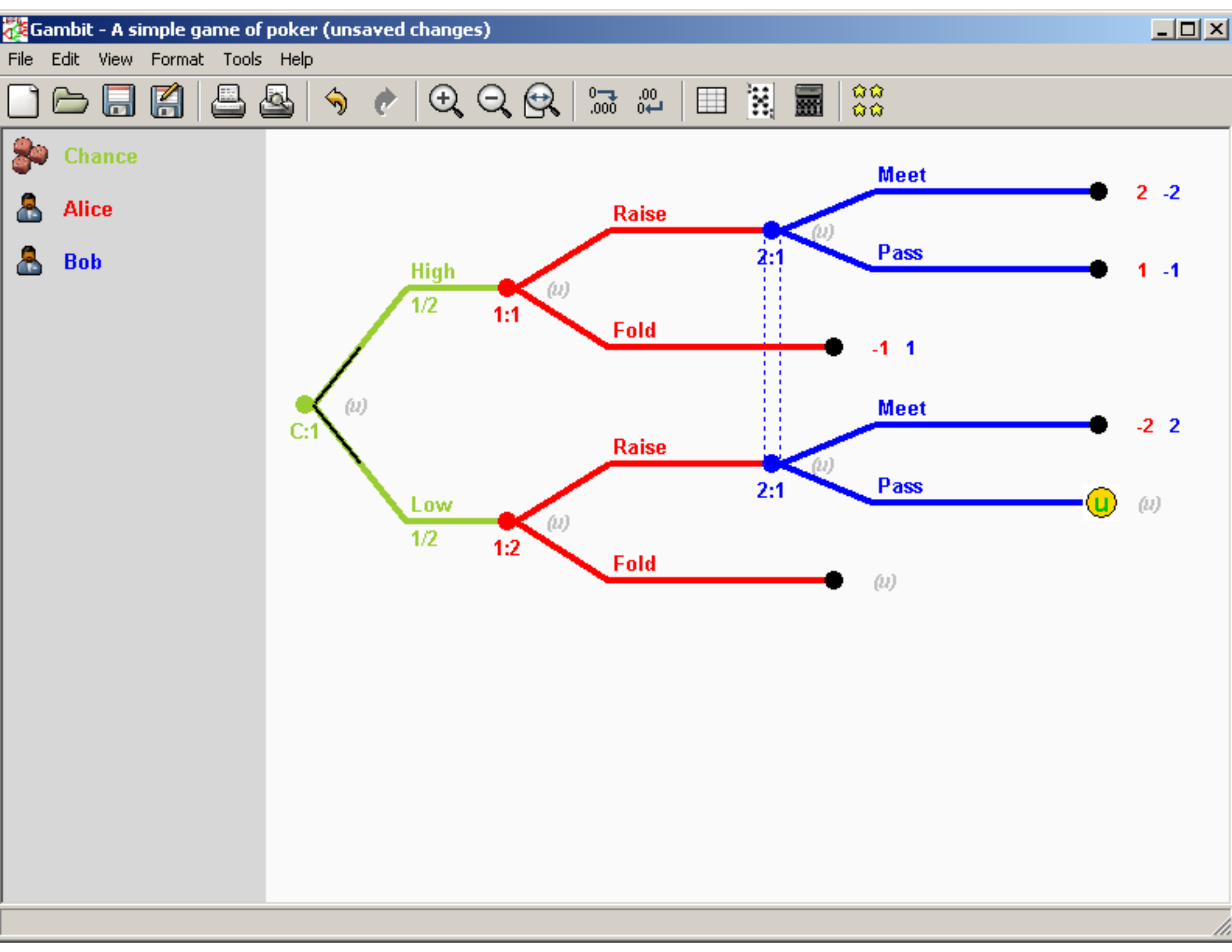

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
2 -2
Raise
2:1
Pass
1 -1
High
1/2
1:1
Fold
-1 1
C:1
Meet
Pass
Outcome payoffs
Label
Bob wins big
Alice
-2
Bob
2
Cancel
OK

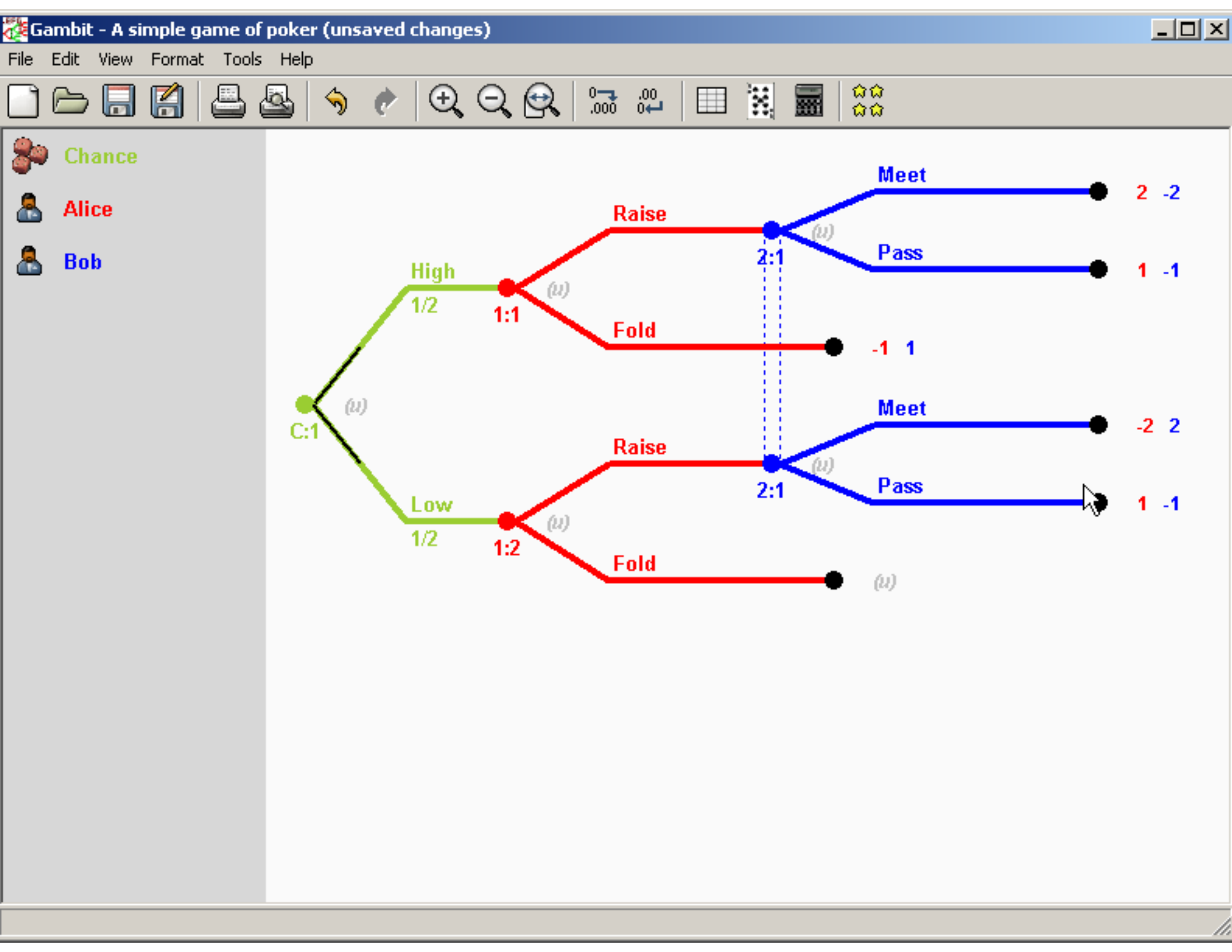

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
(u)
High
1/2
1:1
(u)
Raise
Fold
-1 1
2:1
(u)
Meet
2 -2
Pass
1 -1
Meet
-2 2
(u)
Recall that, unless Alice raises and Bob meets, the value of the card Alice holds doesn't affect the payoffs. So, in the remaining two cases, we can copy the payoffs from nodes where we already created them.
Payoffs can be copied by holding down the control key on the keyboard while dragging from the payoffs to be copied to the node where the payoffs should also be assigned. We now do this for both the remaining cases.

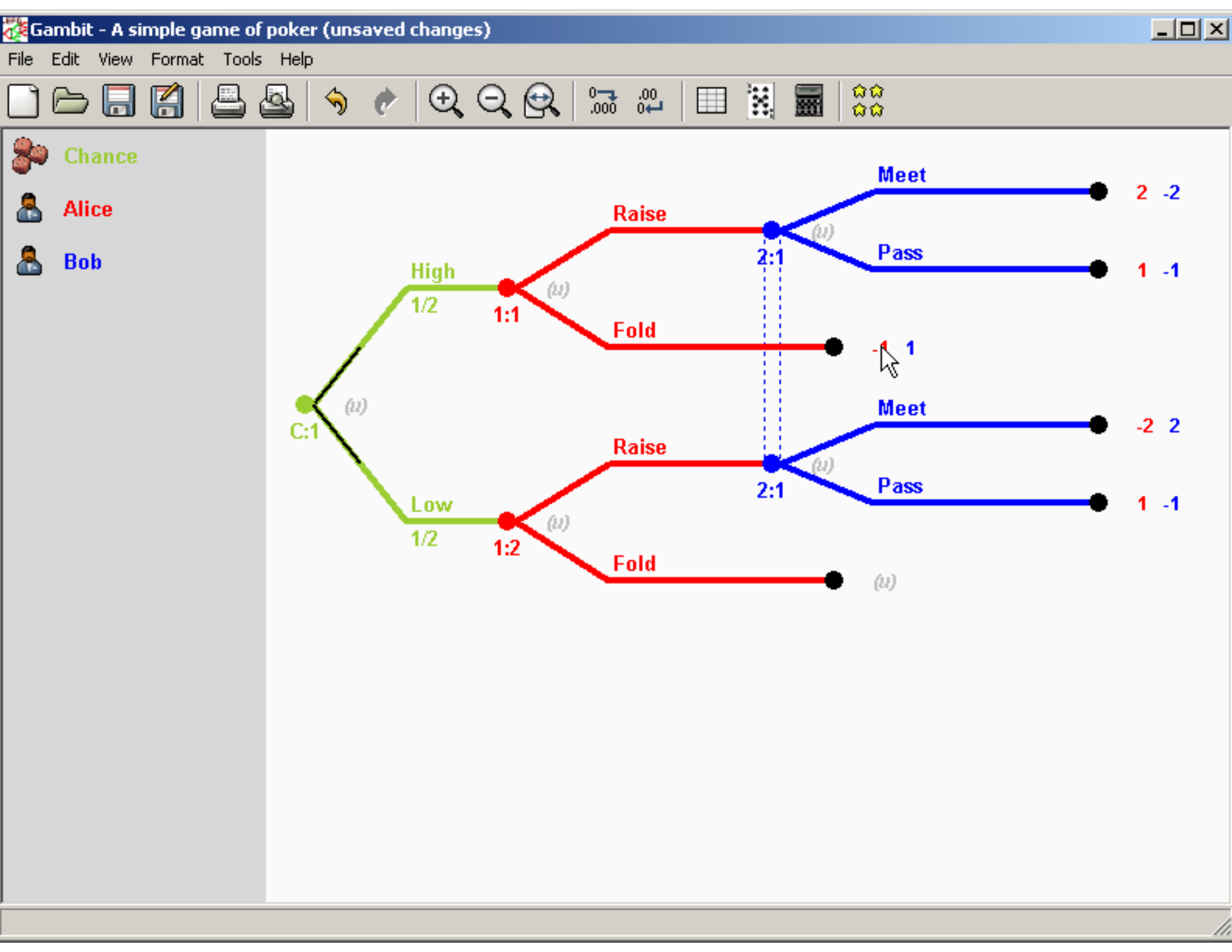

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
(u)
(u)
(u)
(u)
2:1
2:1
Meet
Pass
Meet
Pass
(u)
(u)
2 -2
1 -1
-1 1
-2 2
(u)

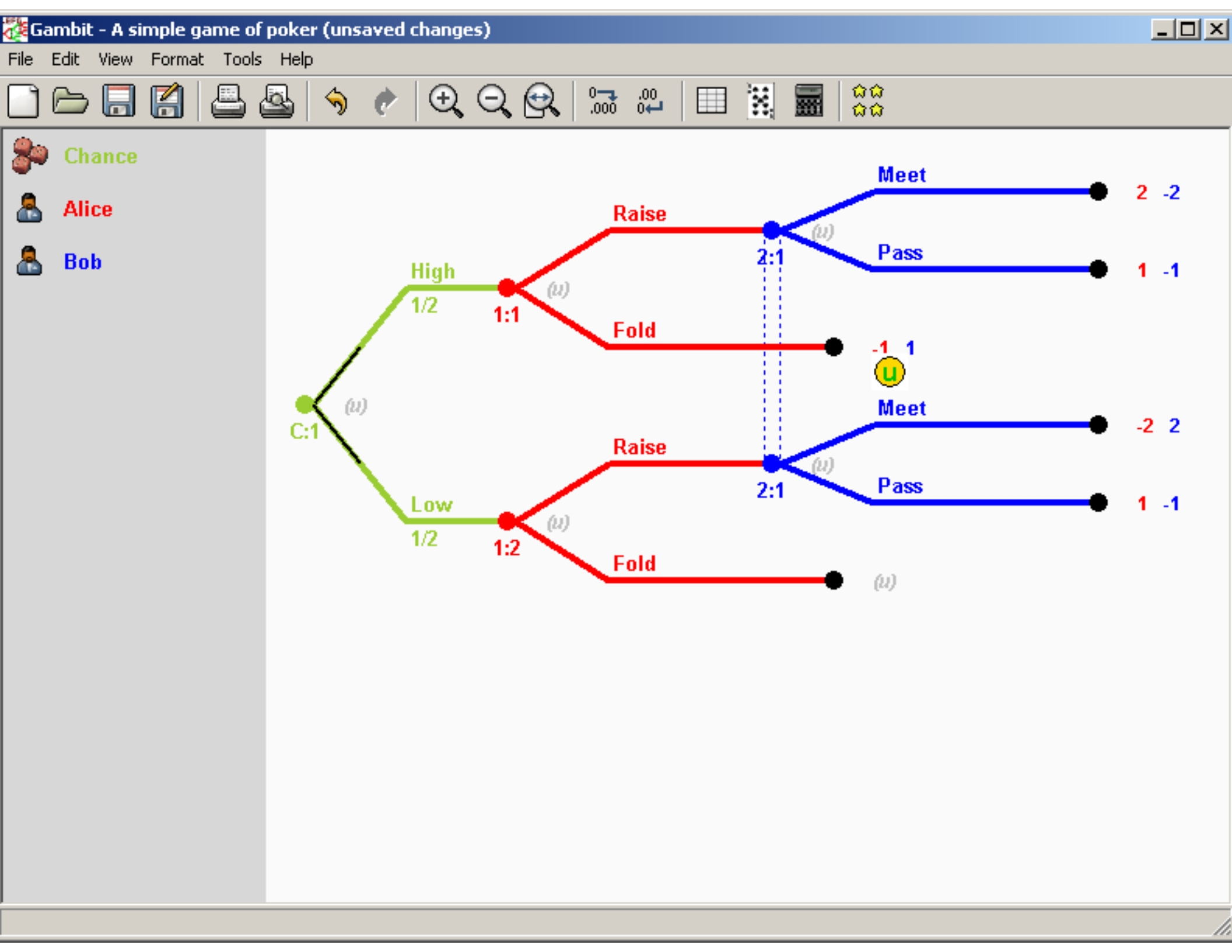

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
(u)
(u)
(u)
(u)
2:1
2:1
Meet
Pass
Meet
Pass
(u)
(u)
2 -2
1 -1
-1 1
-2 2
(u)

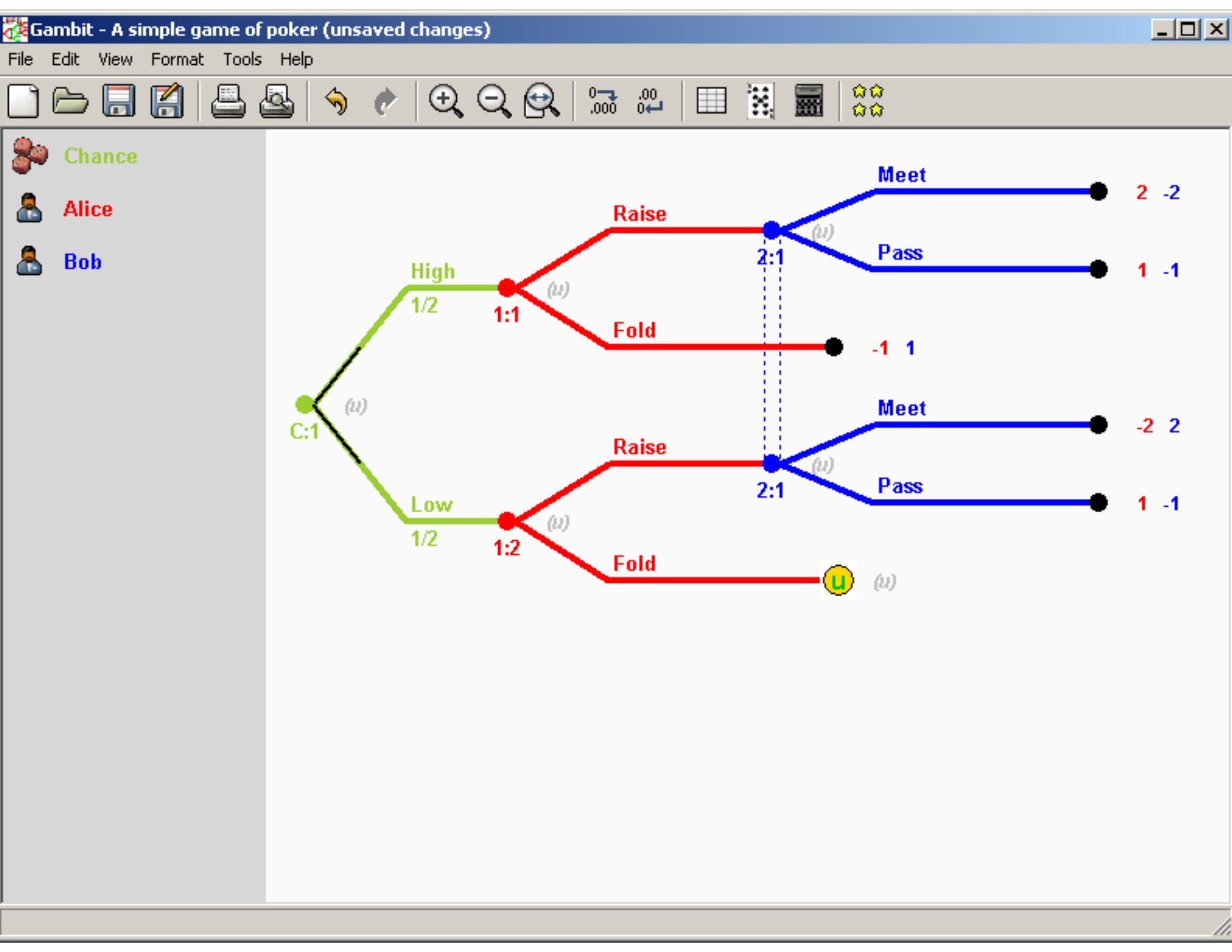

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
(u)
(u)
(u)
(u)
2:1
2:1
Meet
Pass
Meet
Pass
(u)
(u)
2 -2
1 -1
U
-1 1
-2 2
(u)
(u)

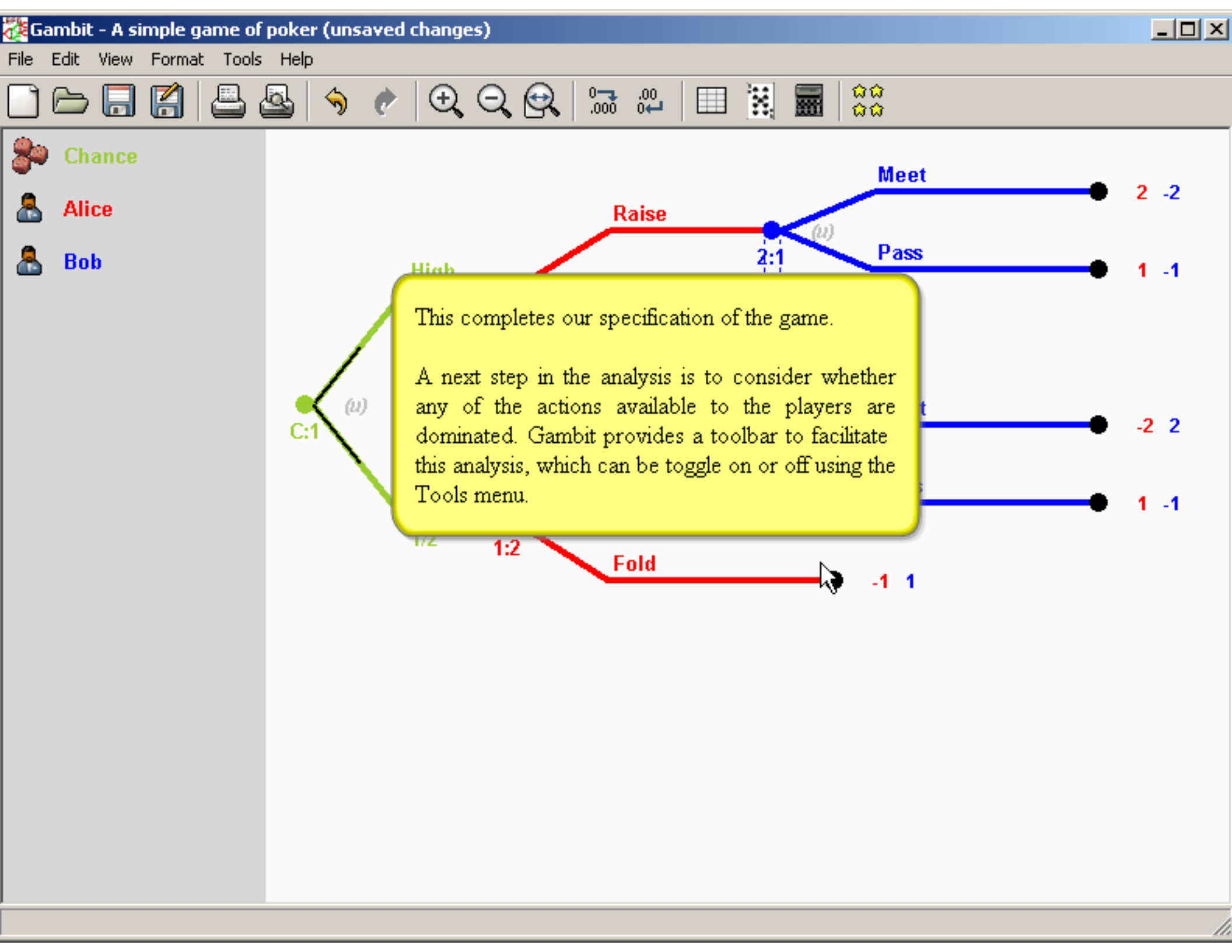

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
(u)
(u)
(u)
(u)
2:1
2:1
Meet
Pass
Meet
Pass
u
2 -2
1 -1
-1 1
-2 2
(u)
(u)

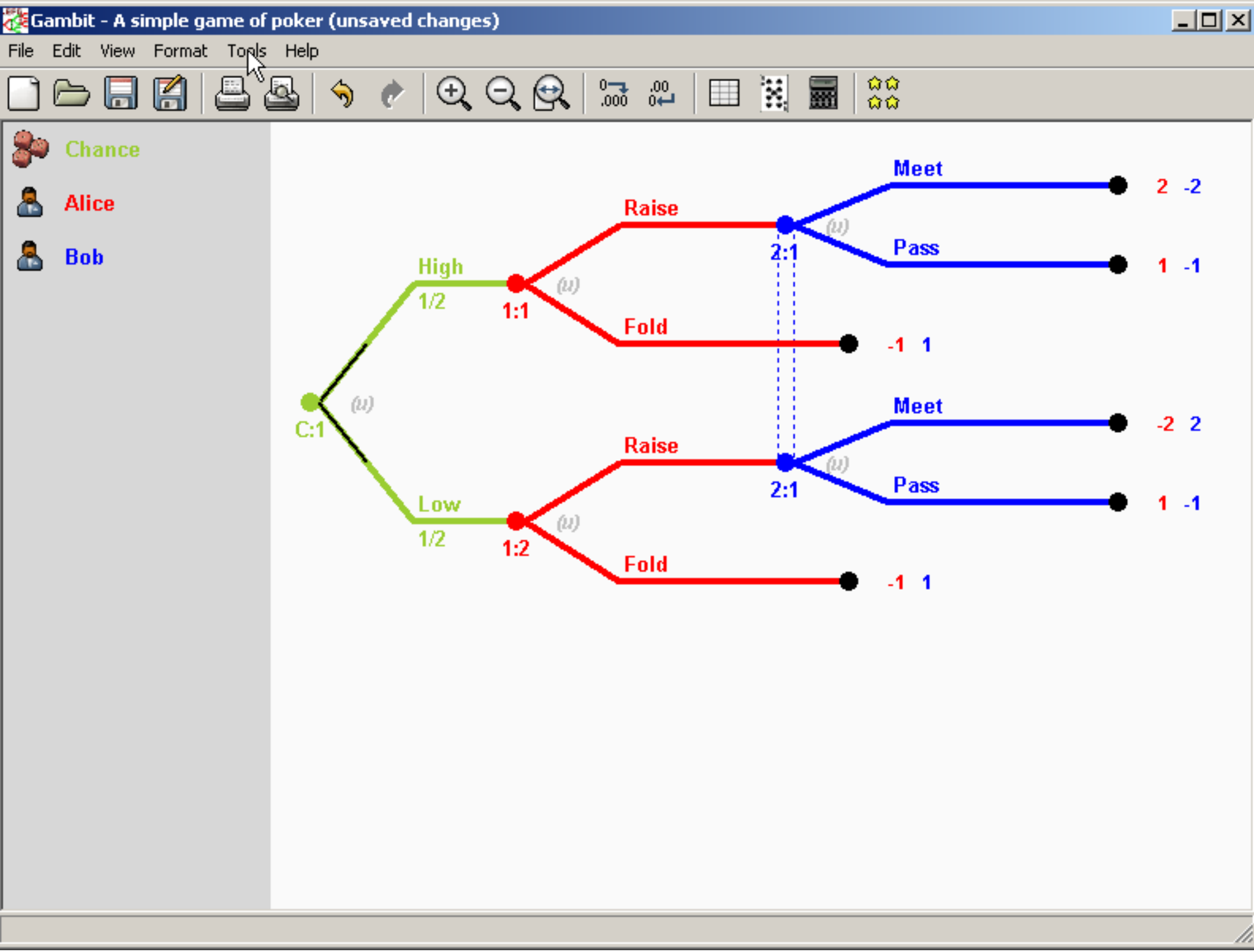

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
(u)
(u)
(u)
(u)
2:1
2:1
Meet
Pass
Meet
Pass
2 -2
1 -1
-1 1
-2 2
1 -1
(u)

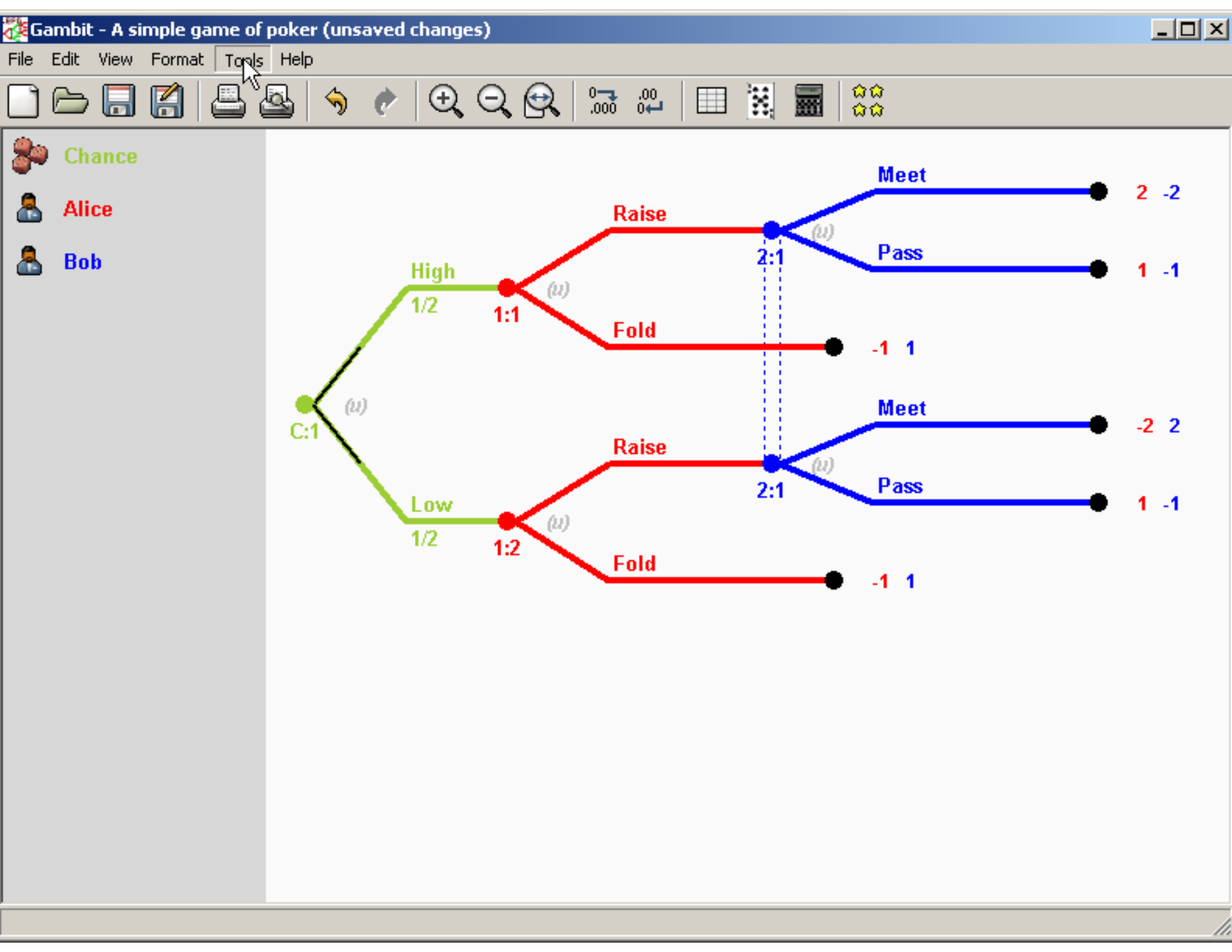

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
(u)
(u)
(u)
(u)
2:1
2:1
Meet
Pass
Meet
Pass
2 -2
1 -1
-2 2
1 -1
-1 1
(u)

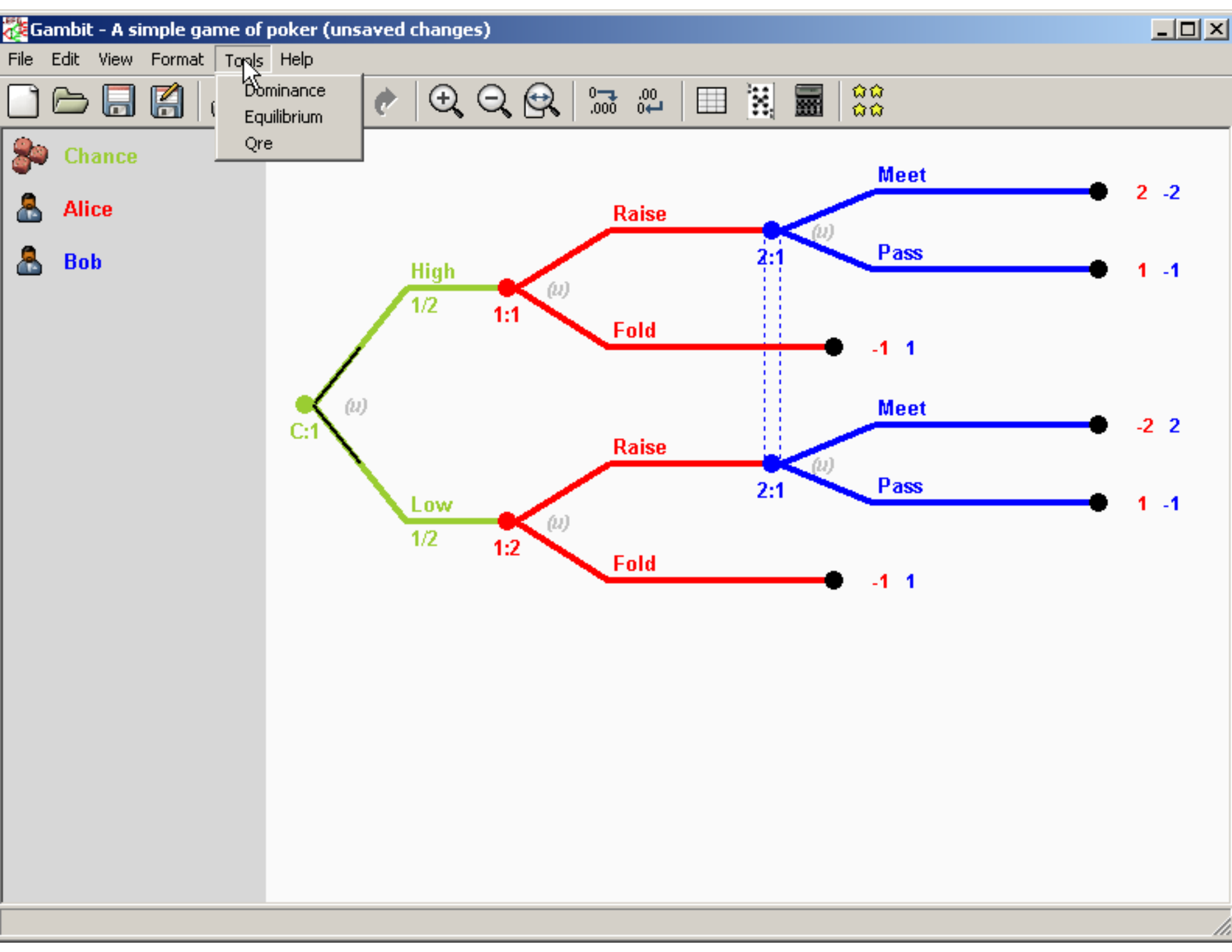

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
(u)
(u)
(u)
(u)
2:1
2:1
Meet
Pass
Meet
Pass
(u)
(u)
2 -2
1 -1
-1 1
u
-2 2
1 -1
(u)

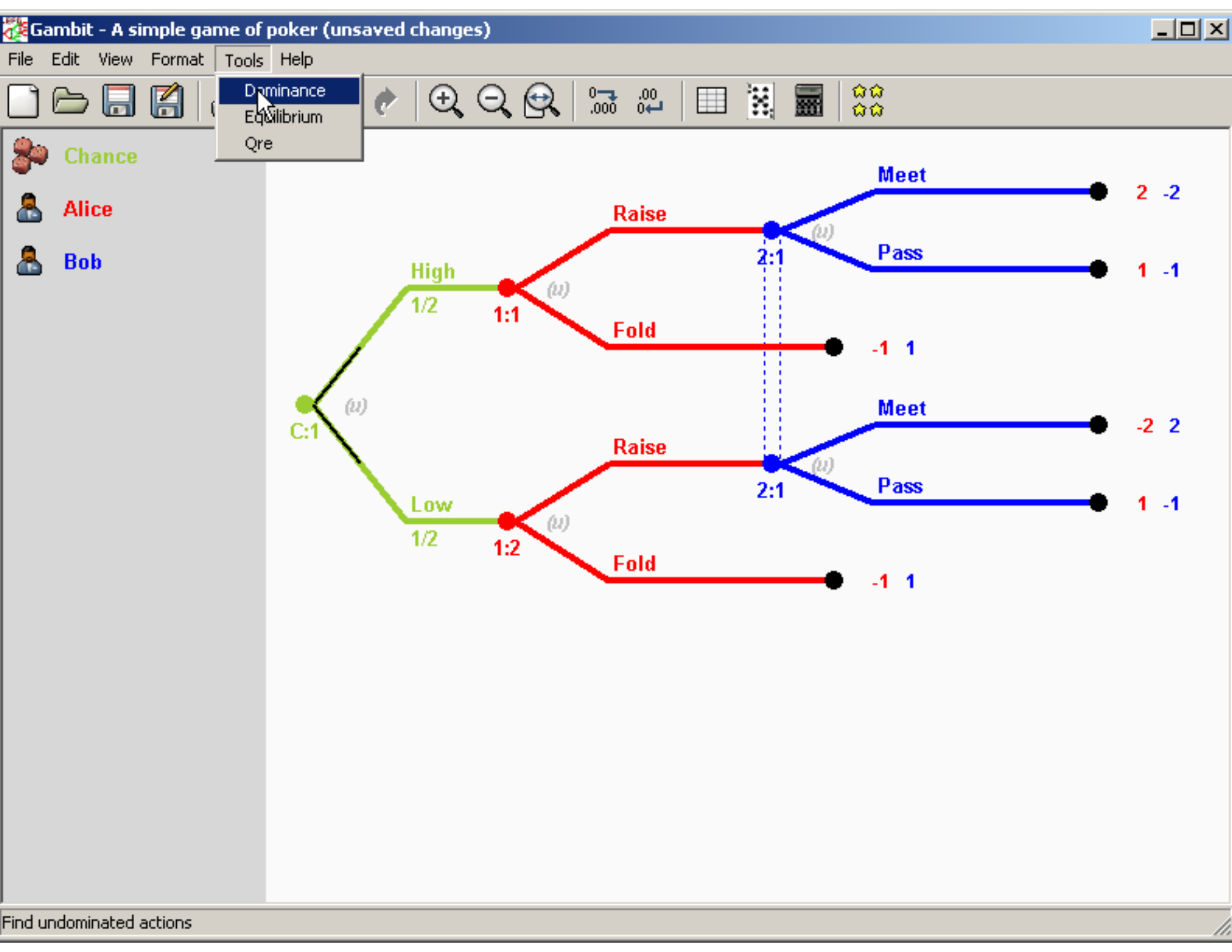

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
(u)
(u)
(u)
(u)
2:1
2:1
Meet
Pass
Meet
Pass
(u)
(u)
2 -2
1 -1
-1 1
-2 2
1 -1
U
(u)

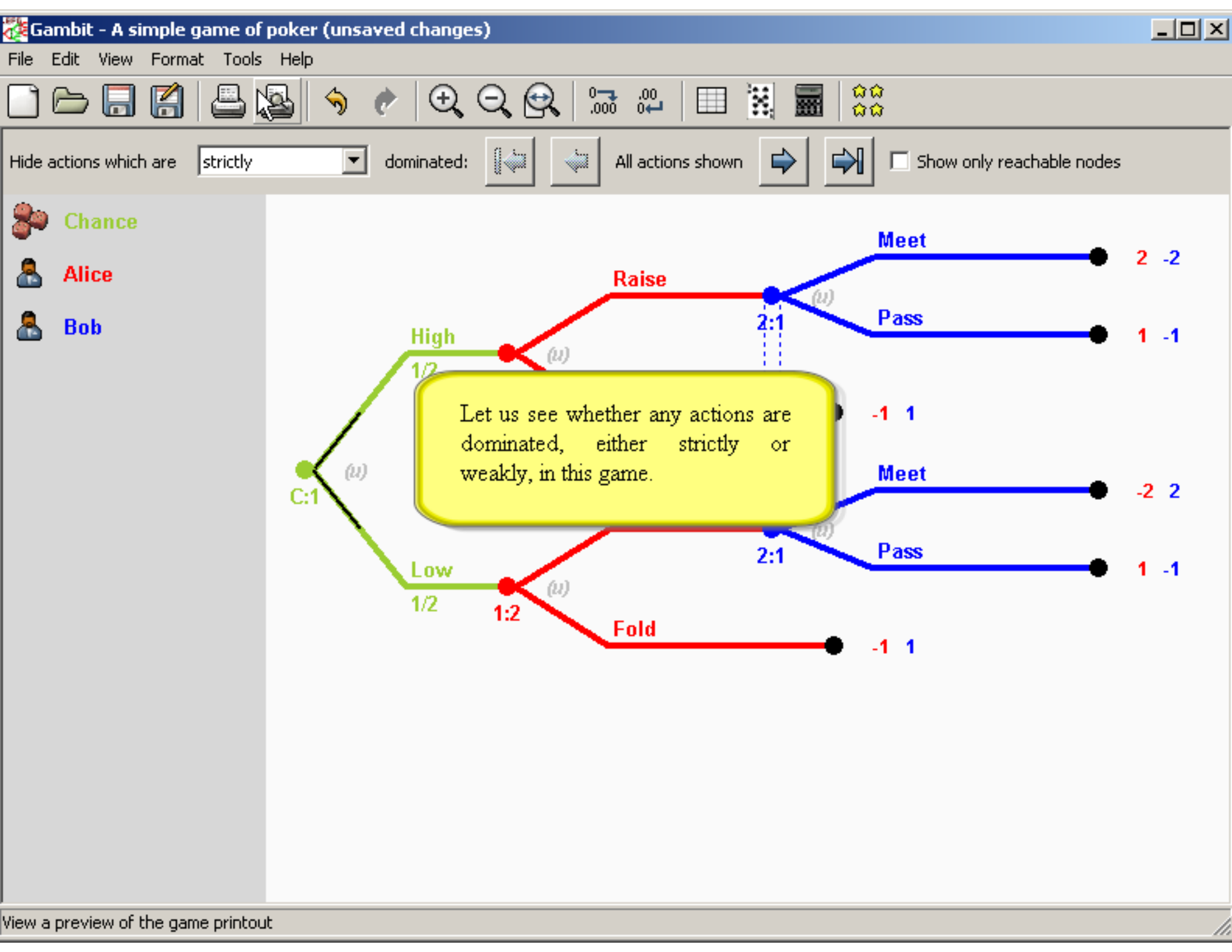

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
2:1
2 -2
1 -1
C:1
(u)
This completes our specification of the game.
A next step in the analysis is to consider whether any of the actions available to the players are dominated. Gambit provides a toolbar to facilitate this analysis, which can be toggle on or off using the Tools menu.
-2 2
1 -1
1:2
Fold
-1 1

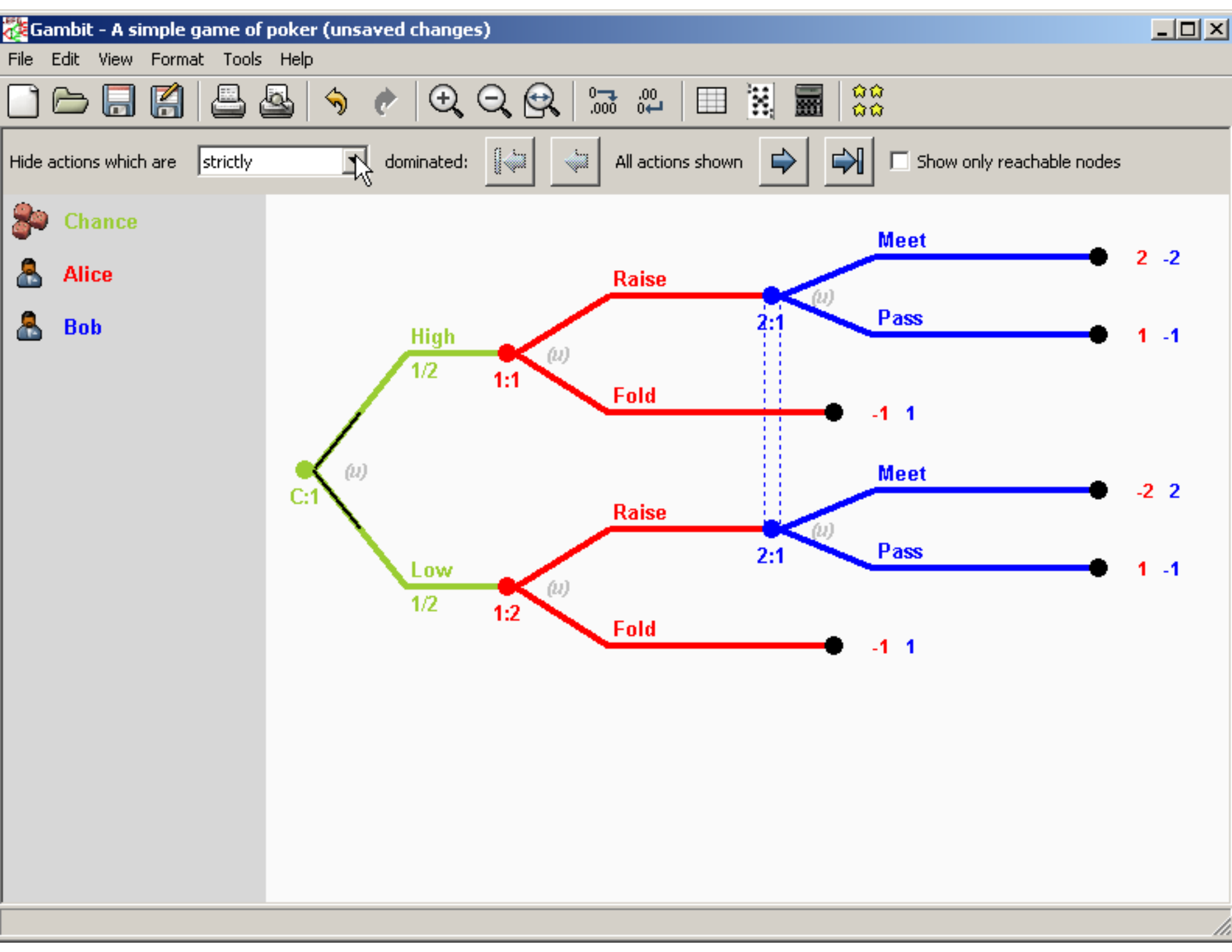

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
(u)
Raise
Fold
Raise
Fold
2:1
2:1
(u)
(u)
Meet
Pass
Meet
Pass
2 -2
1 -1
-1 1
-2 2
1 -1
-1 1

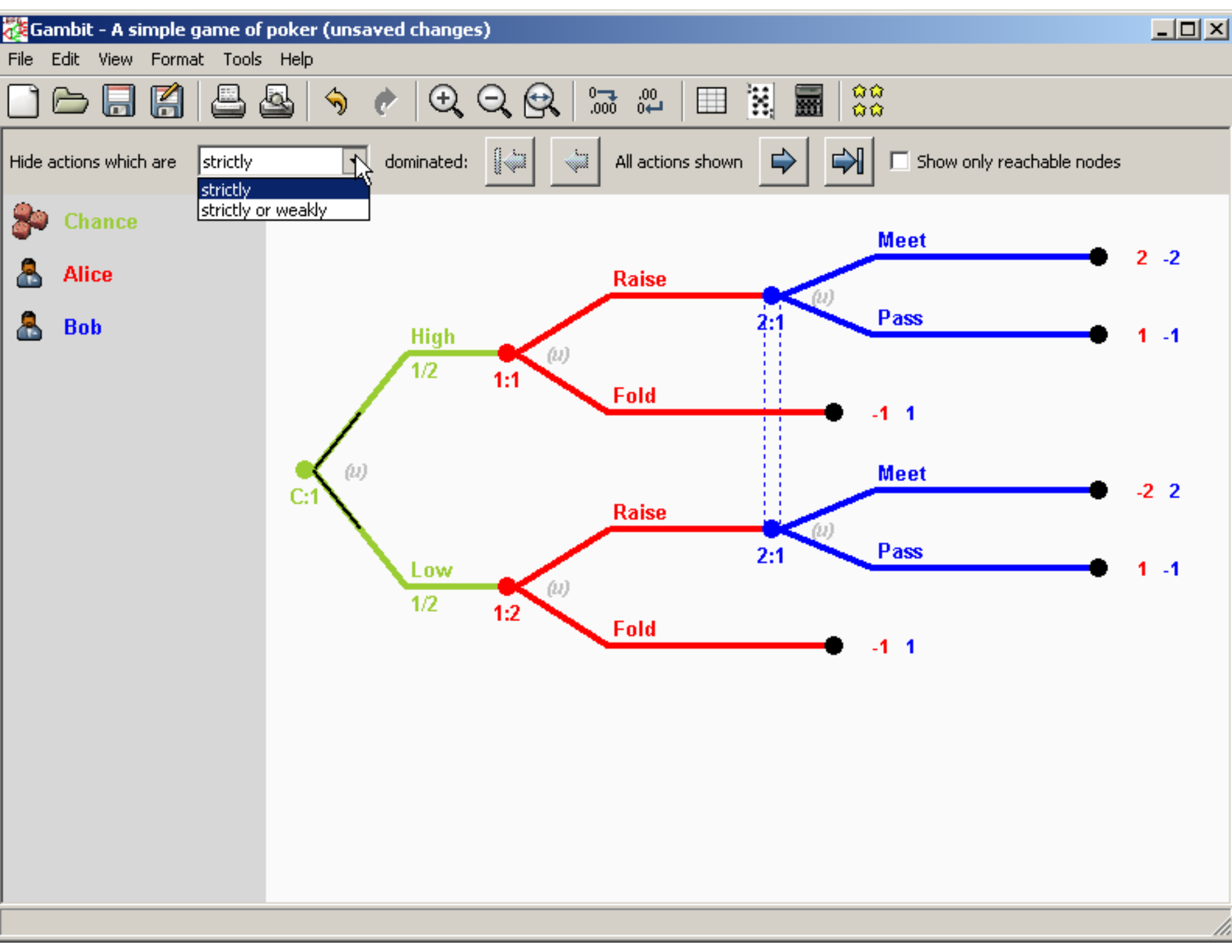

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
(u)
Raise
Fold
Raise
Fold
2:1
2:1
(u)
(u)
Meet
Pass
Meet
Pass
2 -2
1 -1
-1 1
-2 2
1 -1
-1 1

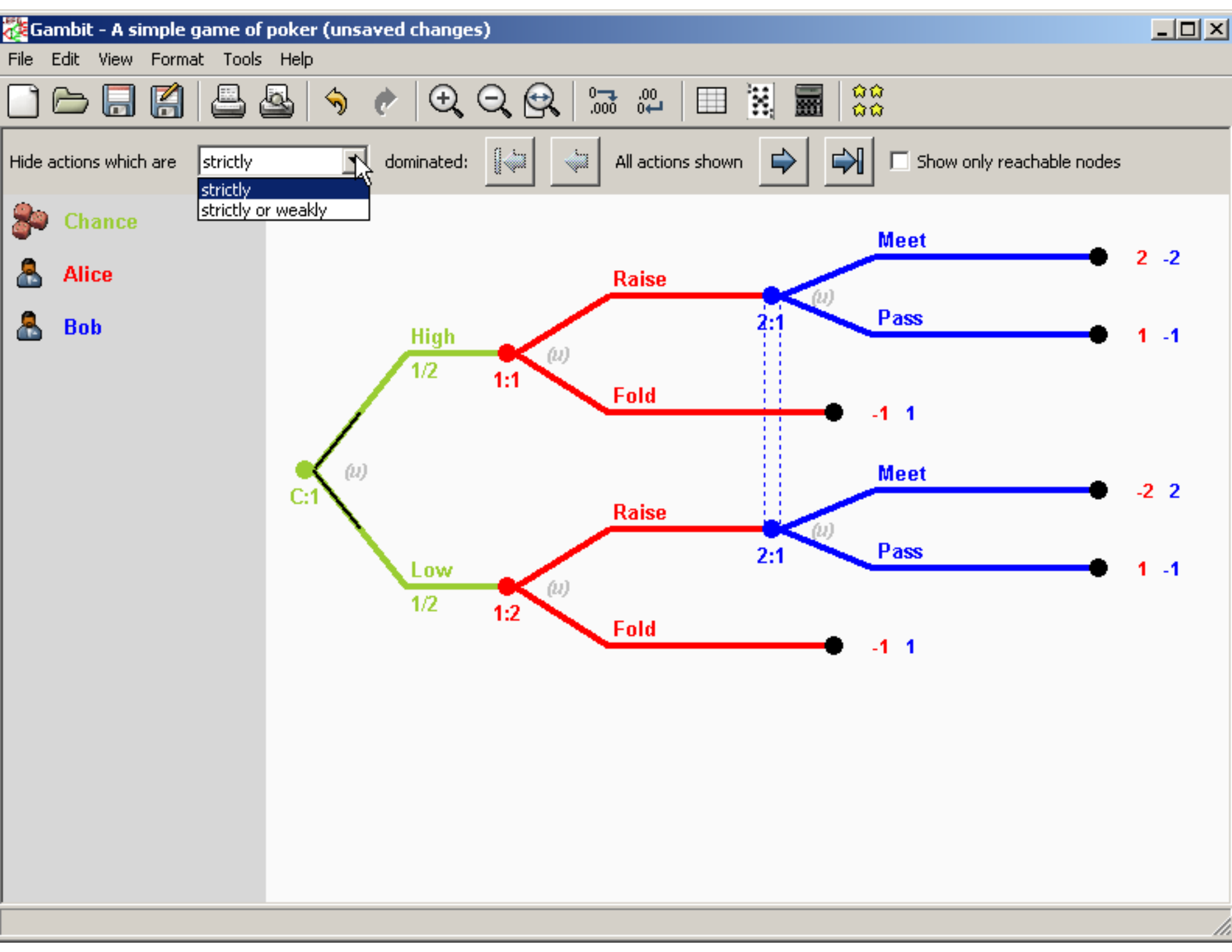

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Dominance
Equilibrium
Qre
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Meet
Pass
2:1
2:1
2 -2
1 -1
-1 1
-2 2
1 -1
-1 1

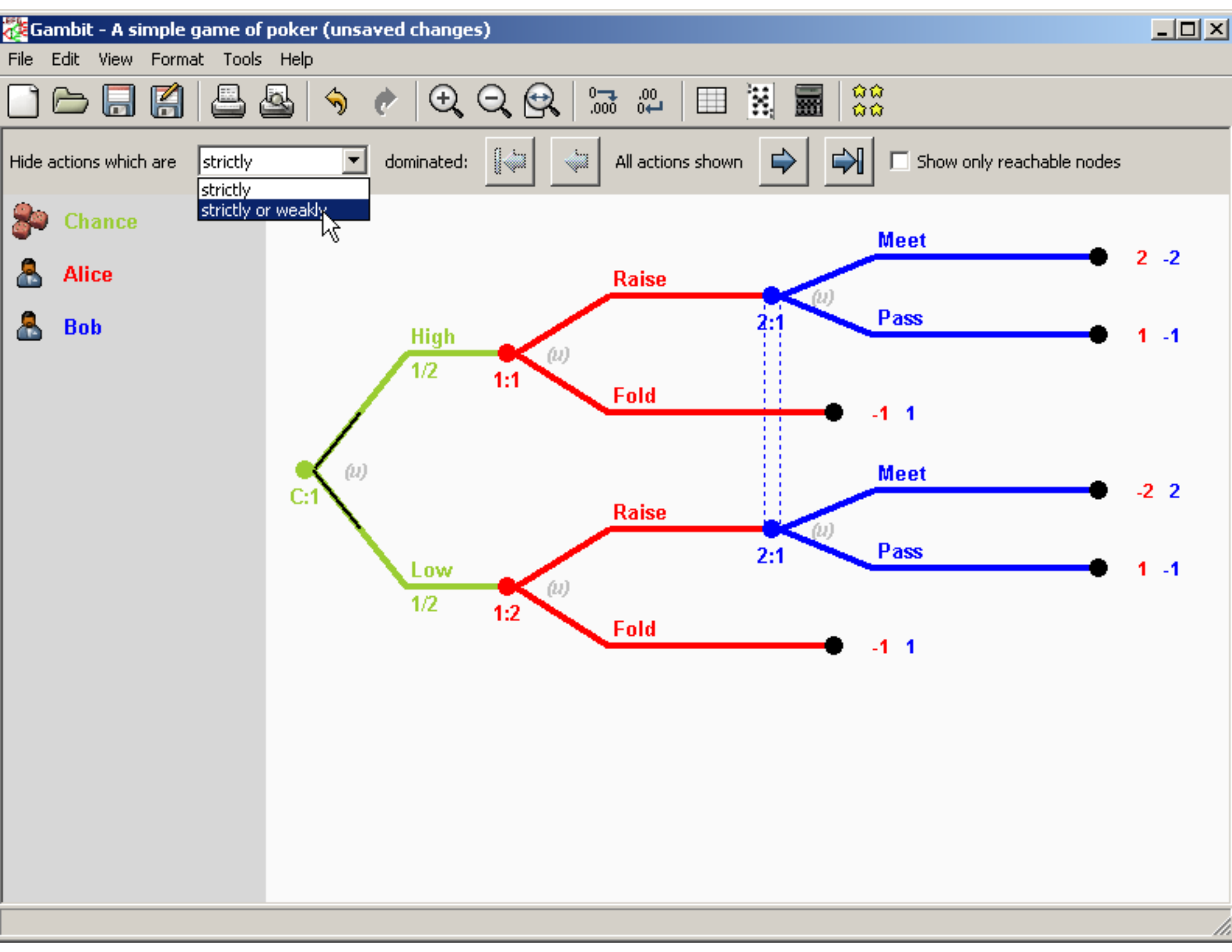

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Dominance
Equilibrium
Qre
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
(u)
(u)
2:1
2:1
Meet
Pass
Meet
Pass
2 -2
1 -1
-1 1
-2 2
1 -1
-1 1
Find undominated actions

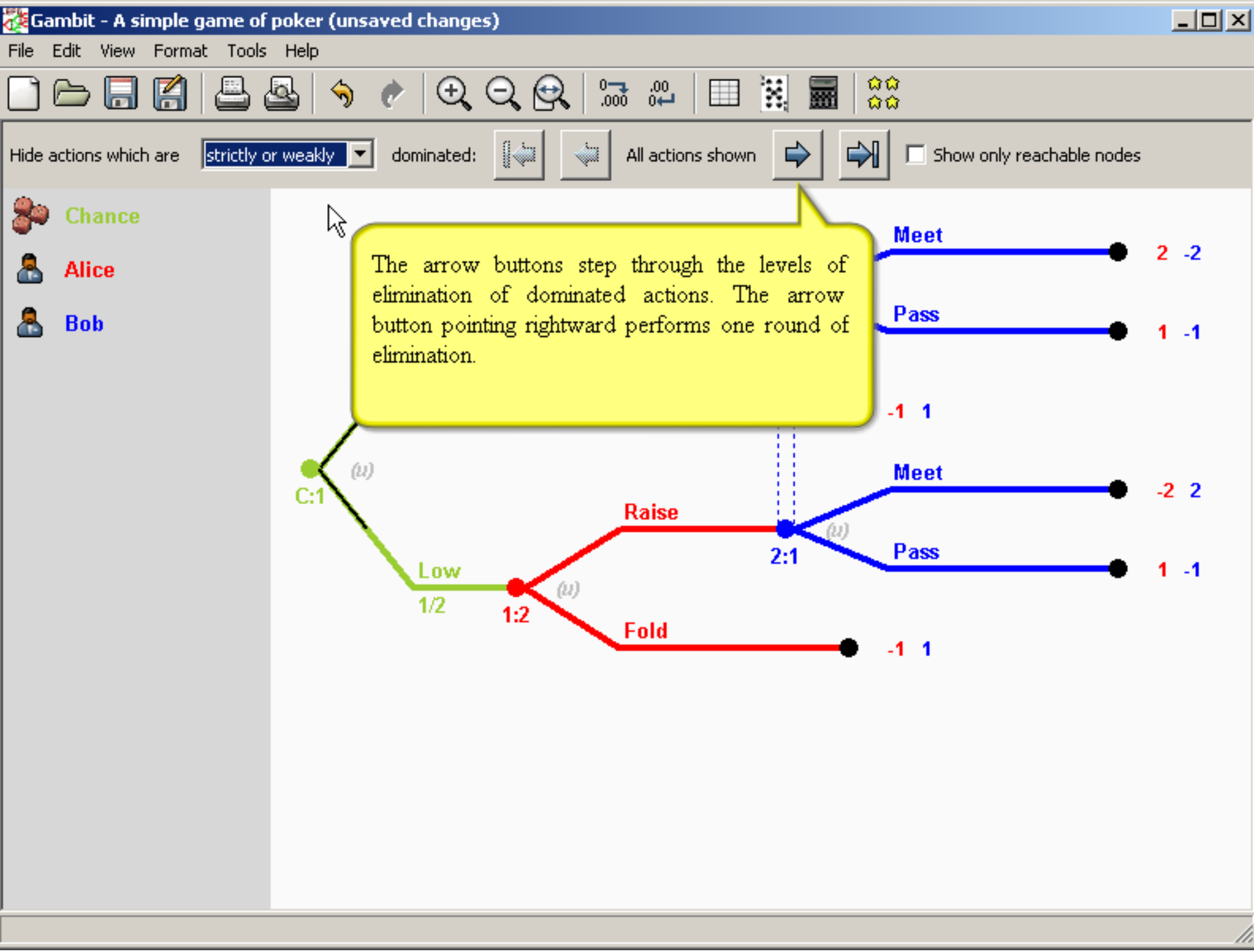

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide actions which are strictly dominated:
All actions shown
Show only reachable nodes
Chance
Alice
Bob
C:1
High
1/2
Low
1/2
Raise
Meet
Pass
2:1
1:2
Meet
Pass
2:1
Fold
2 -2
1 -1
-1 1
-2 2
1 -1
-1 1
Let us see whether any actions are dominated, either strictly or weakly, in this game.
View a preview of the game printout

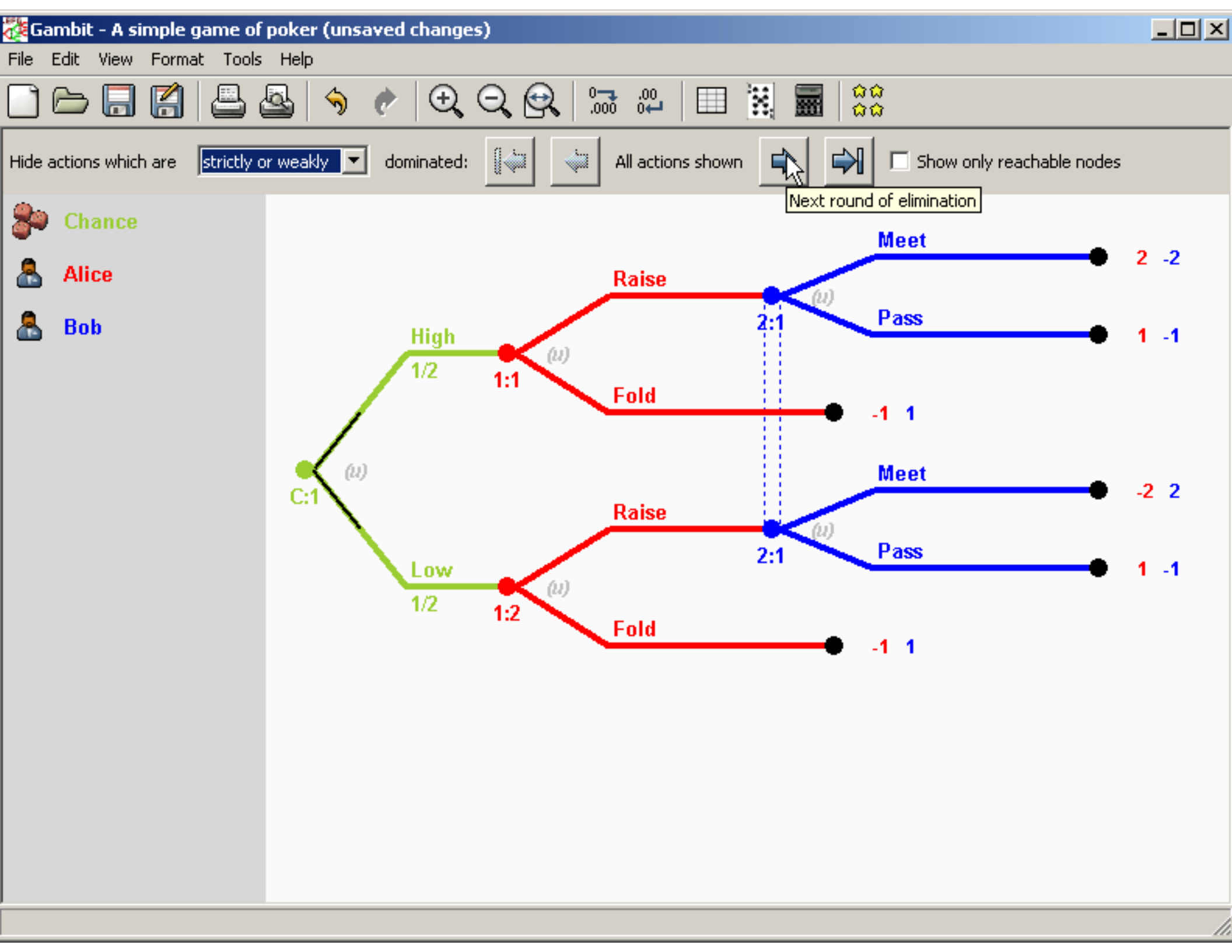

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide actions which are strictly dominated:
All actions shown
Show only reachable nodes
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Raise
Fold
2:1
2:1
Meet
Pass
Meet
Pass
2 -2
1 -1
-1 1
-2 2
1 -1
-1 1

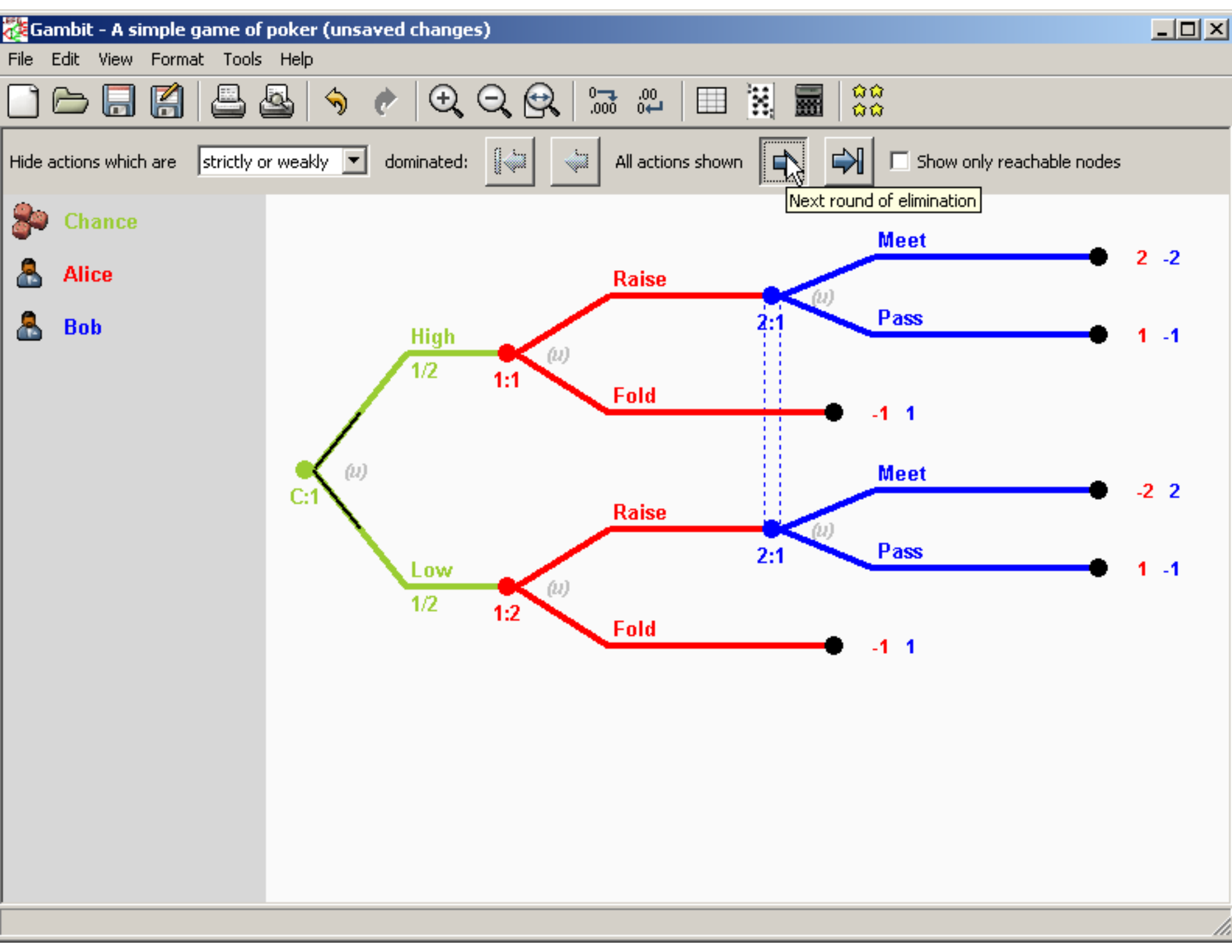

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide actions which are strictly dominated:
strictly
strictly or weakly
All actions shown
Show only reachable nodes
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Meet
Pass
2:1
2:1
2 -2
1 -1
-1 1
-2 2
1 -1
-1 1

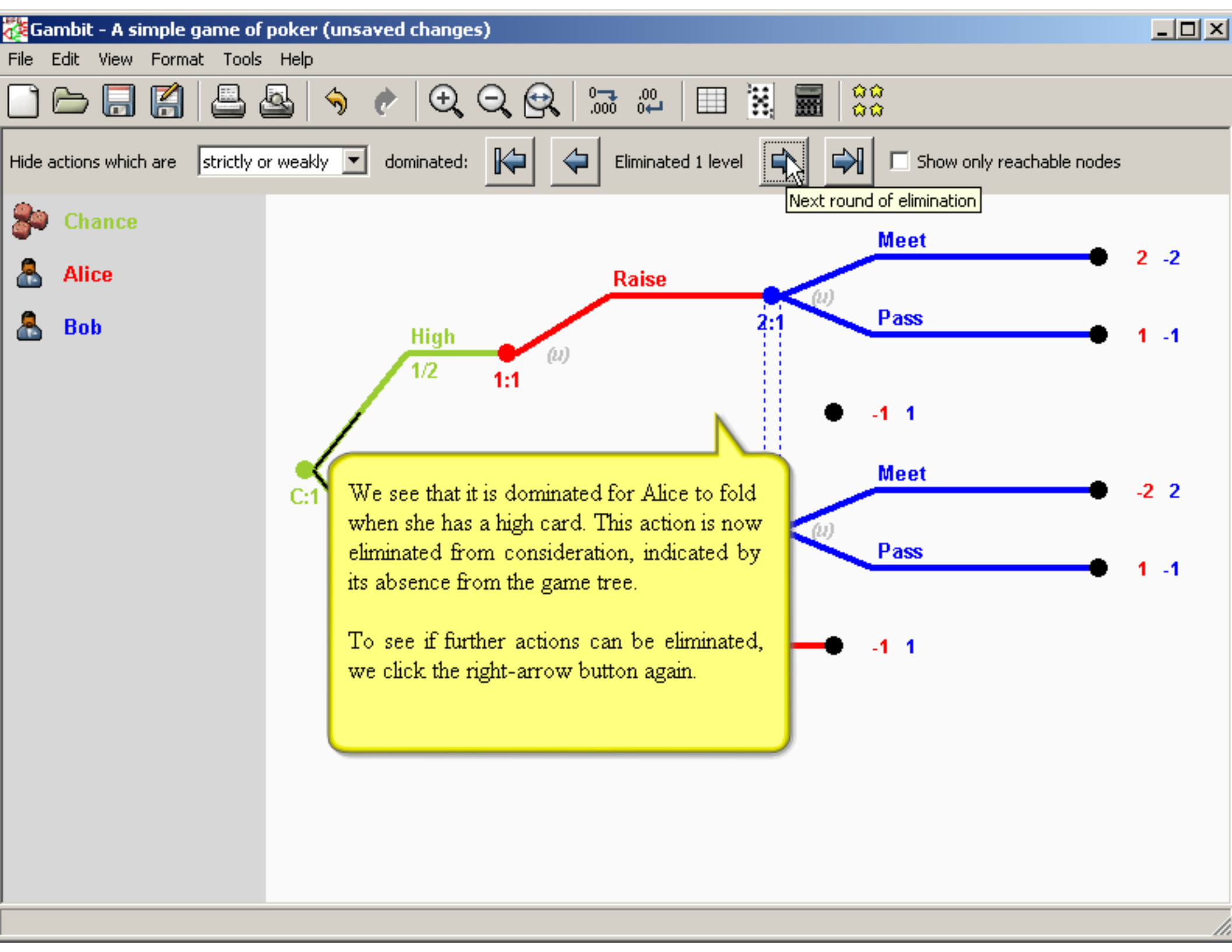

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide actions which are strictly dominated:
strictly
strictly or weakly
All actions shown
Show only reachable nodes
Chance
Alice
Bob
C:1
High
1/2
Low
1/2
1:1
1:2
2:1
2:1
Raise
Fold
Meet
Pass
Raise
Fold
Meet
Pass
2 -2
1 -1
-1 1
-2 2
1 -1
-1 1

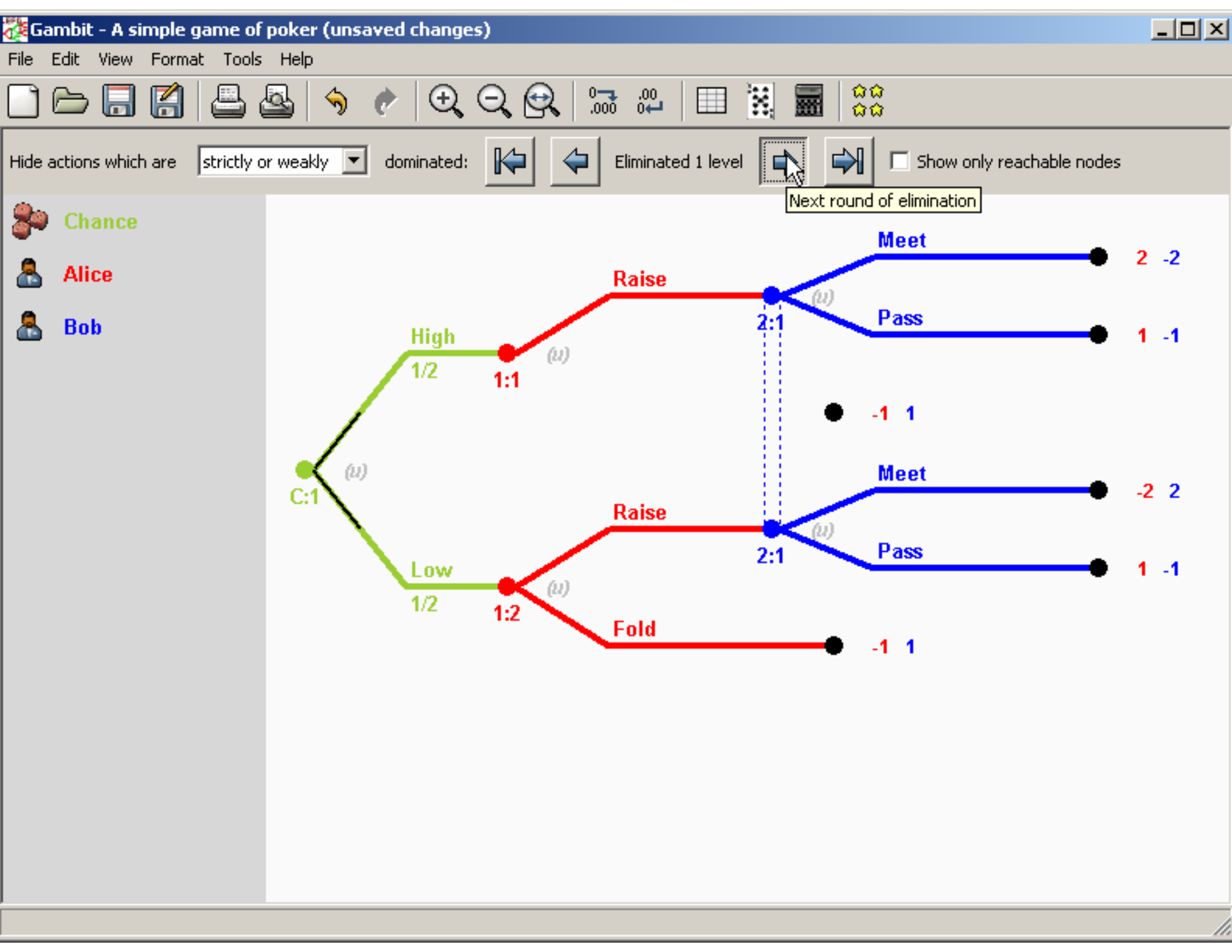

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide actions which are strictly dominated:
strictly
strictly or weakly
All actions shown
Show only reachable nodes
Chance
Alice
Bob
C:1
High
1/2
Low
1/2
1:1
1:2
2:1
2:1
Raise
Fold
Raise
Fold
Meet
Pass
Meet
Pass
2 -2
1 -1
-1 1
-2 2
1 -1
-1 1

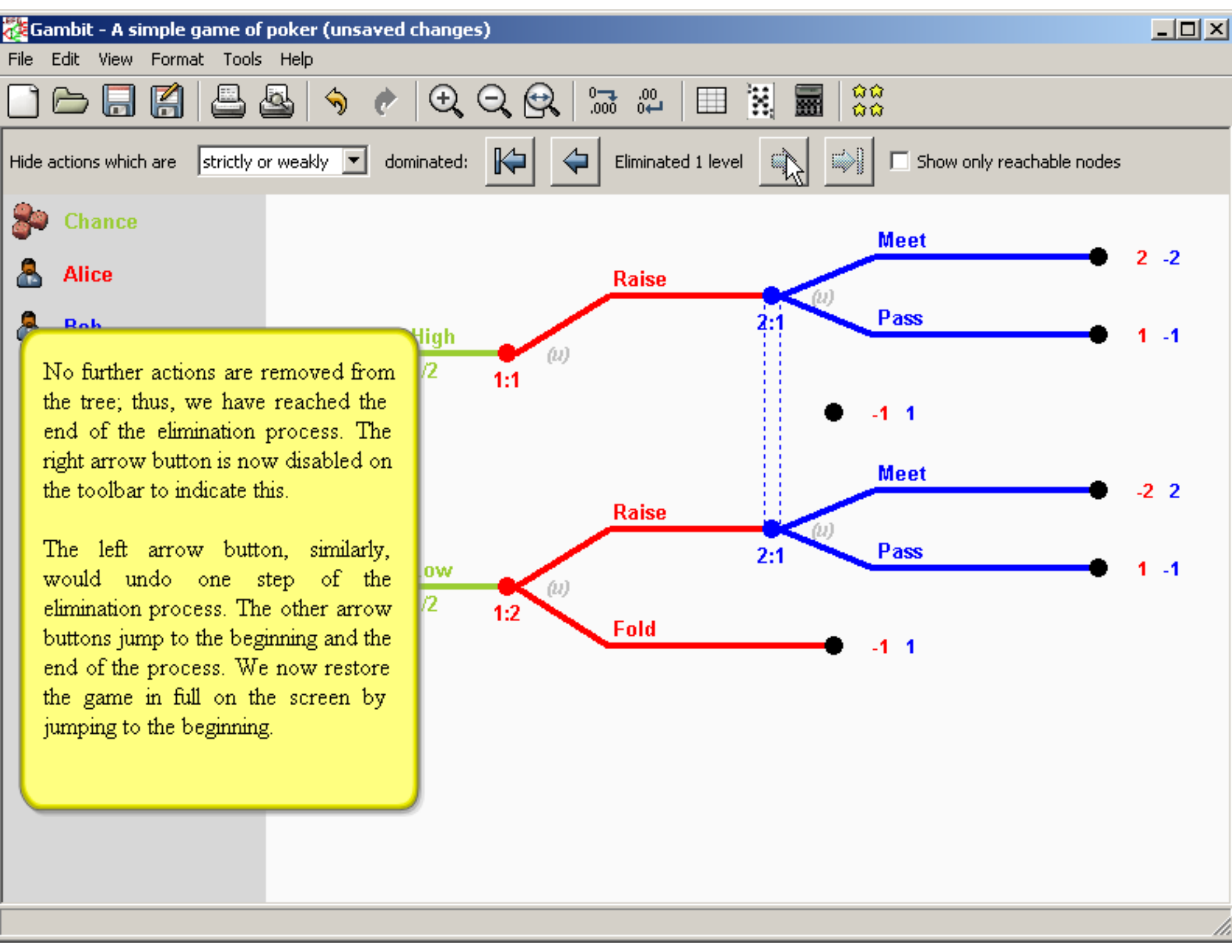

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide actions which are strictly or weakly dominated:
All actions shown
Show only reachable nodes
Chance
Alice
Bob
The arrow buttons step through the levels of elimination of dominated actions. The arrow button pointing rightward performs one round of elimination.
C:1
(u)
Low
1/2
1:2
(u)
Raise
2:1
(u)
Meet
2 -2
Pass
1 -1
-1 1
Meet
-2 2
Pass
1 -1
Fold
-1 1

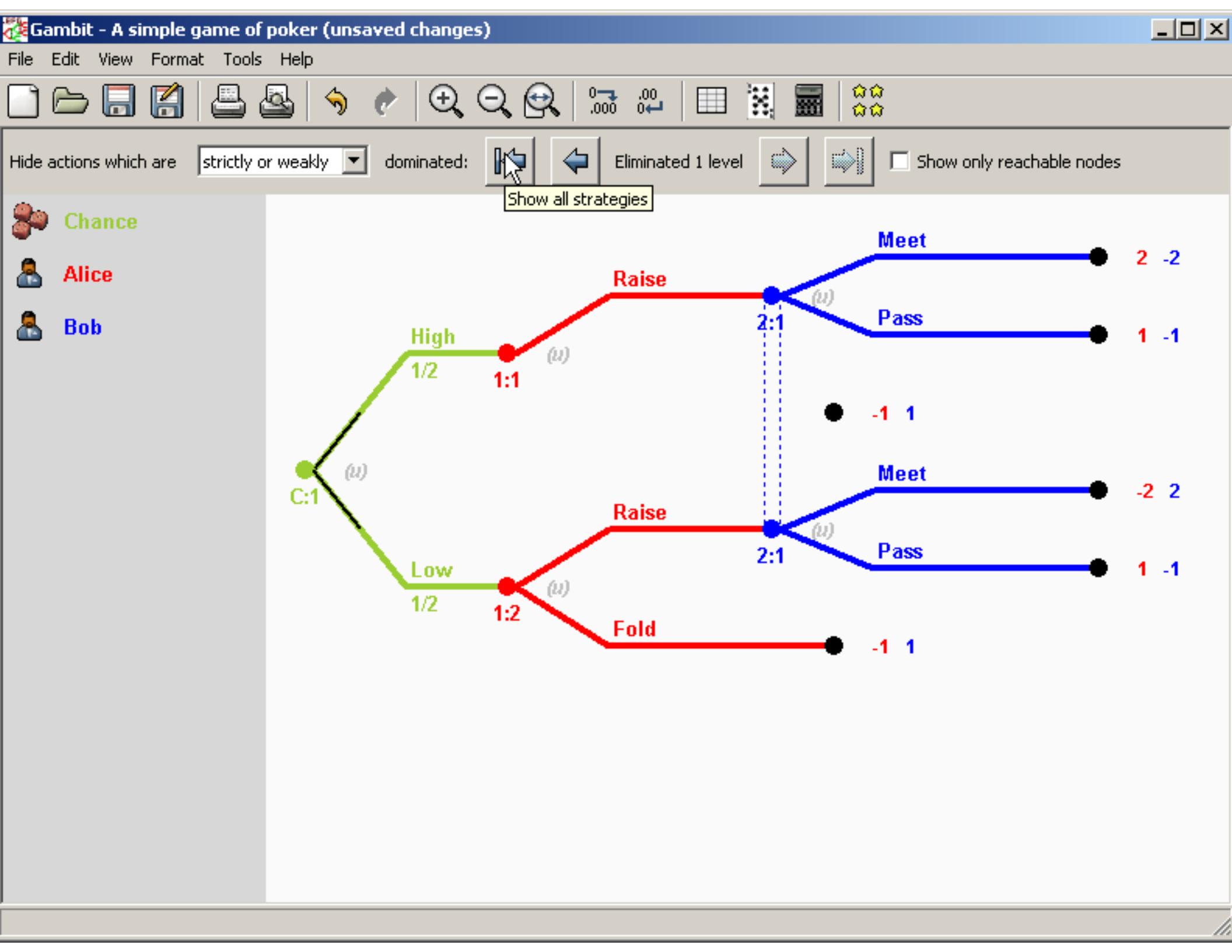

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide actions which are strictly or weakly dominated:
All actions shown
Show only reachable nodes
Next round of elimination
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Meet
Pass
2:1
2:1
2 -2
1 -1
-1 1
-2 2
1 -1
-1 1

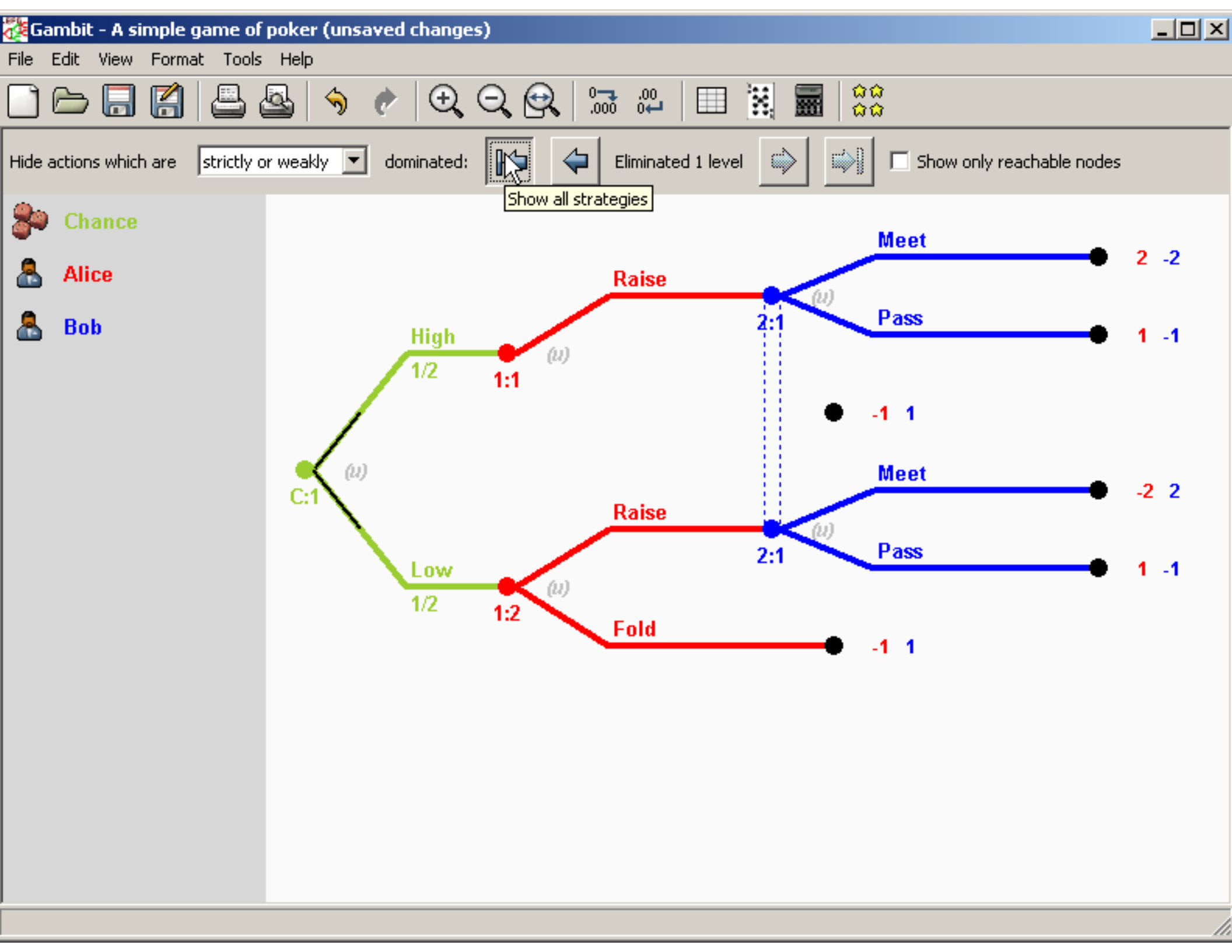

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide actions which are strictly or weakly dominated:
All actions shown
Show only reachable nodes
Next round of elimination
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Meet
Pass
2:1
2:1
2 -2
1 -1
-1 1
-2 2
1 -1
-1 1

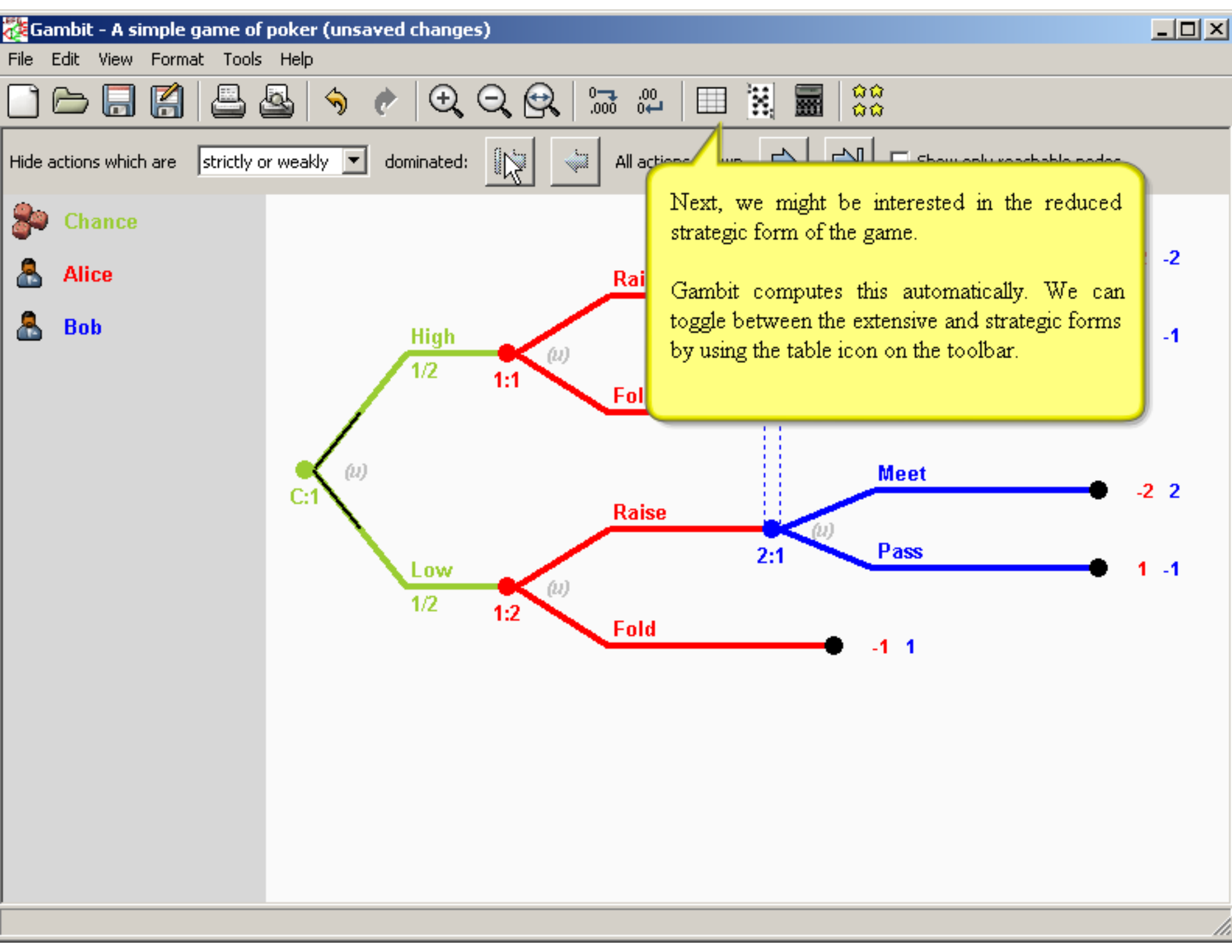

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide actions which are strictly or weakly dominated:
Eliminated 1 level
Show only reachable nodes
Next round of elimination
Chance
Alice
Bob
C:1
High
1/2
1:1
Raise
2:1
Meet
2 -2
Pass
1 -1
-1 1
Meet
-2 2
Pass
1 -1
-1 1
We see that it is dominated for Alice to fold when she has a high card. This action is now eliminated from consideration, indicated by its absence from the game tree.
To see if further actions can be eliminated, we click the right-arrow button again.

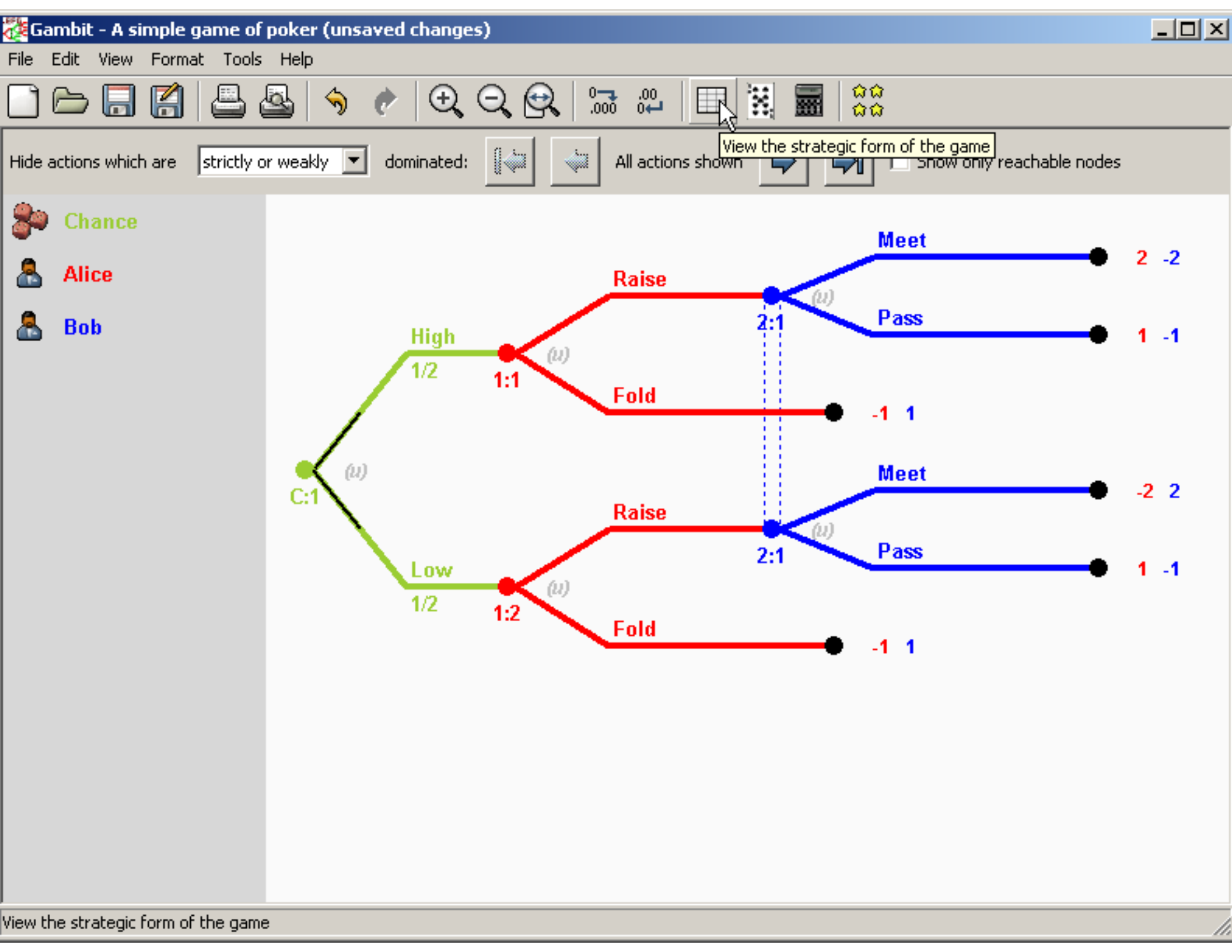

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide actions which are strictly or weakly dominated:
Eliminated 1 level
Show only reachable nodes
Next round of elimination
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
2:1
Meet
Pass
2 -2
1 -1
-1 1
-2 2

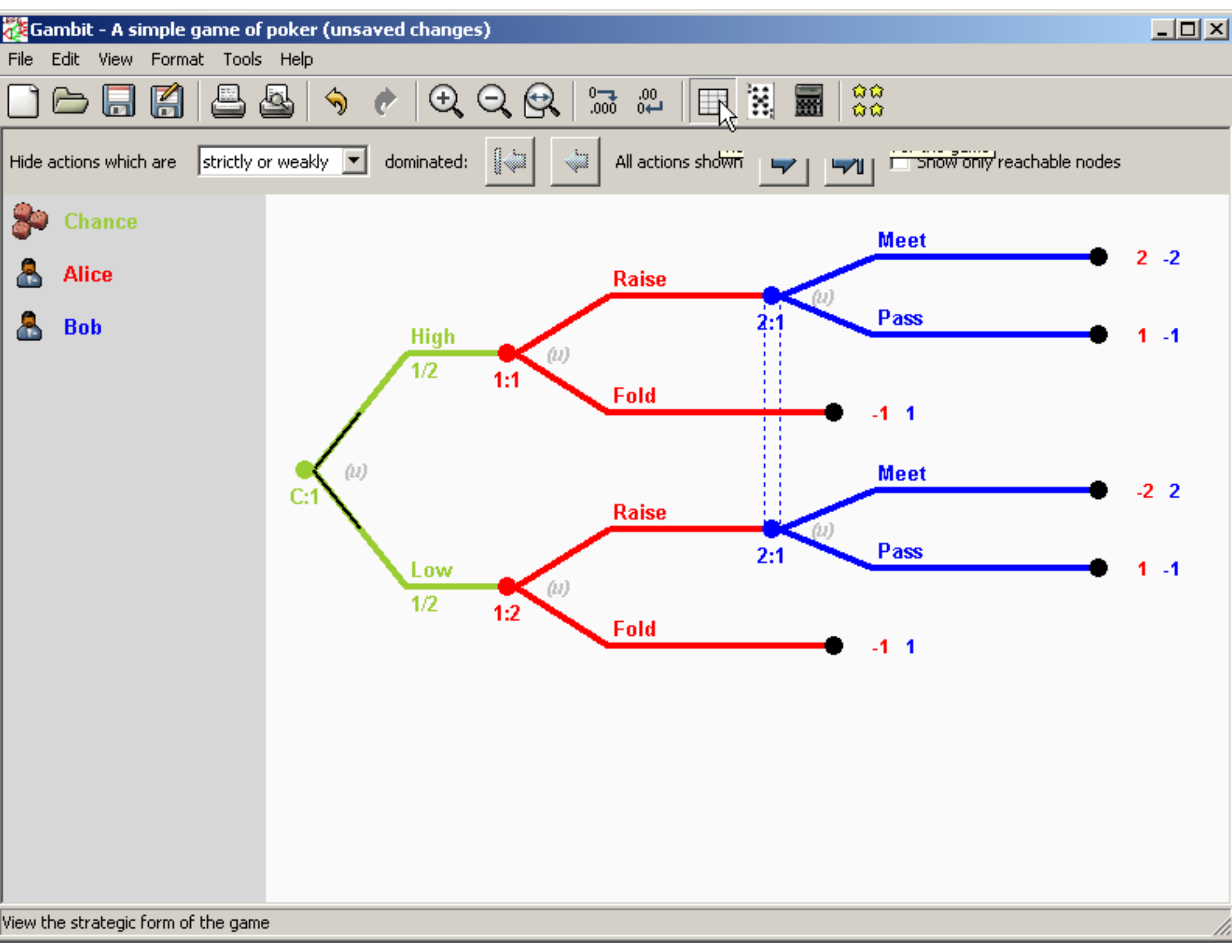

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide actions which are strictly or weakly dominated:
Eliminated 1 level
Show only reachable nodes
Chance
Alice
Bob
No further actions are removed from the tree; thus, we have reached the end of the elimination process. The right arrow button is now disabled on the toolbar to indicate this.
The left arrow button, similarly, would undo one step of the elimination process. The other arrow buttons jump to the beginning and the end of the process. We now restore the game in full on the screen by jumping to the beginning.
High
/2
1:1
Raise
(u)
2:1
Meet
2 -2
Pass
1 -1
-1 1
ow
/2
1:2
Raise
(u)
2:1
Meet
-2 2
Pass
1 -1
Fold
-1 1

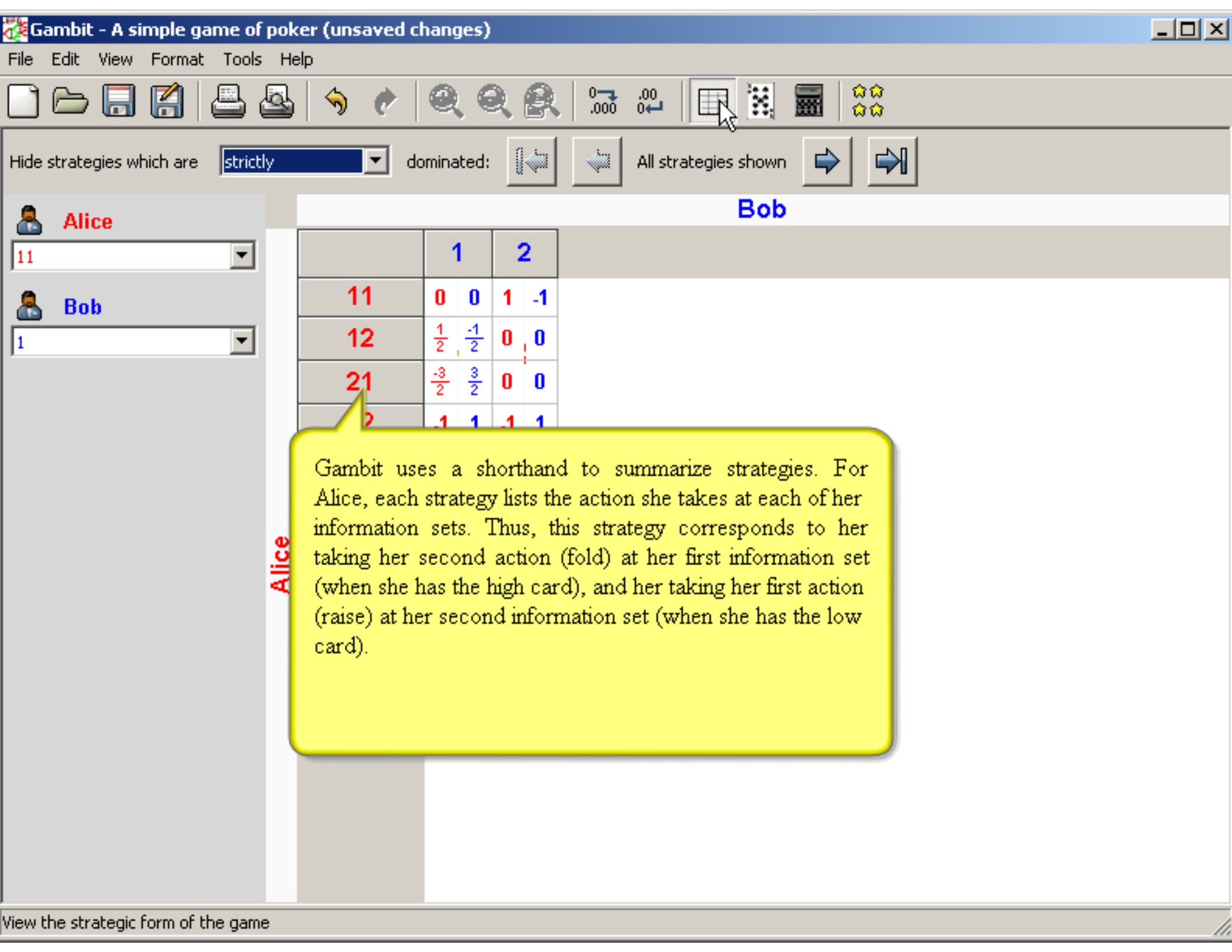

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide actions which are strictly or weakly dominated:
Eliminated 1 level
Show only reachable nodes
Show all strategies
Chance
Alice
Bob
C:1
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
2:1
Meet
Pass
2 -2
1 -1
-1 1
-2 2

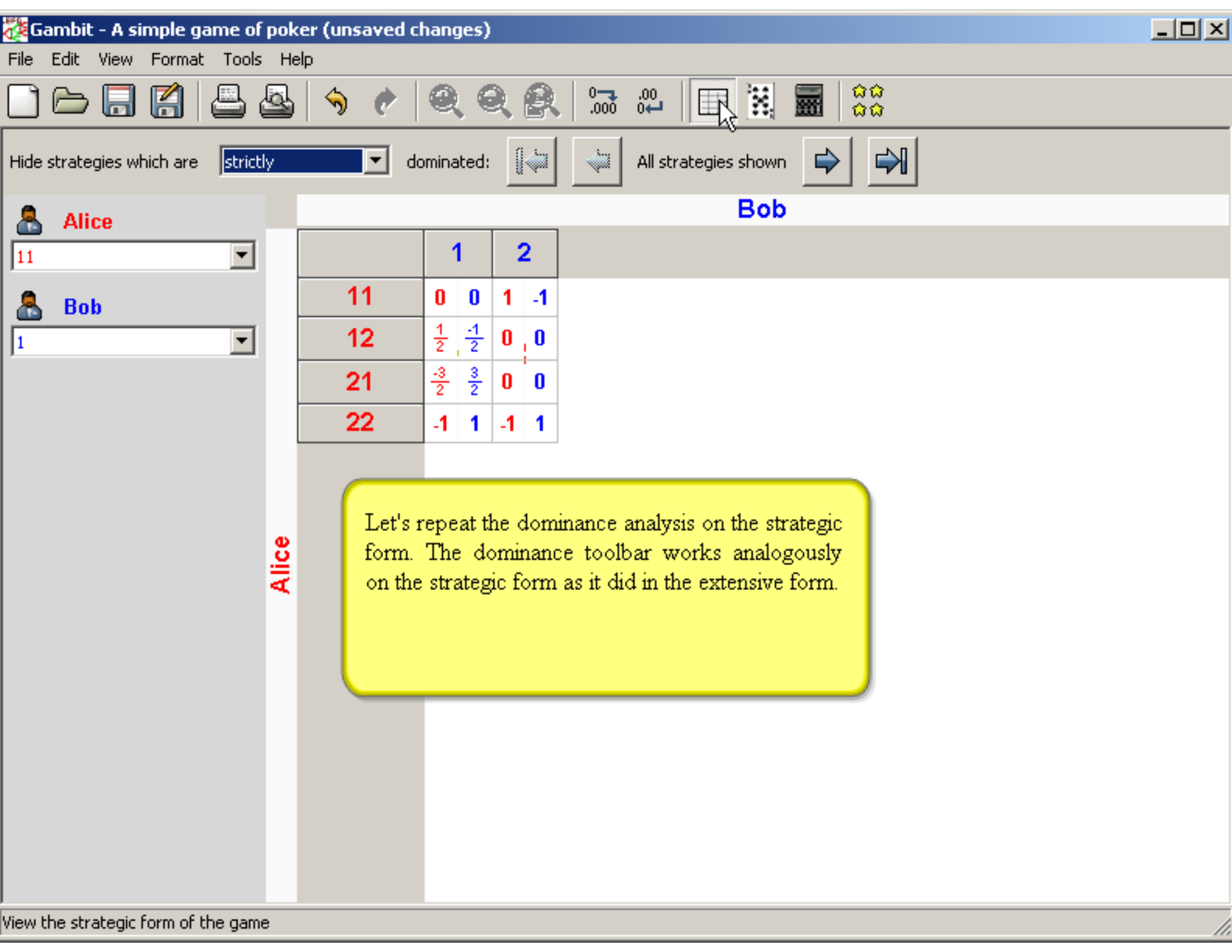

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide actions which are strictly or weakly dominated:
Show all strategies
Eliminated 1 level
Show only reachable nodes
Chance
Alice
Bob
C:1
High
1/2
Low
1/2
1:1
1:2
2:1
2:1
Raise
Raise
Meet
Pass
Meet
Pass
Fold
2 -2
1 -1
-1 1
-2 2
1 -1
-1 1

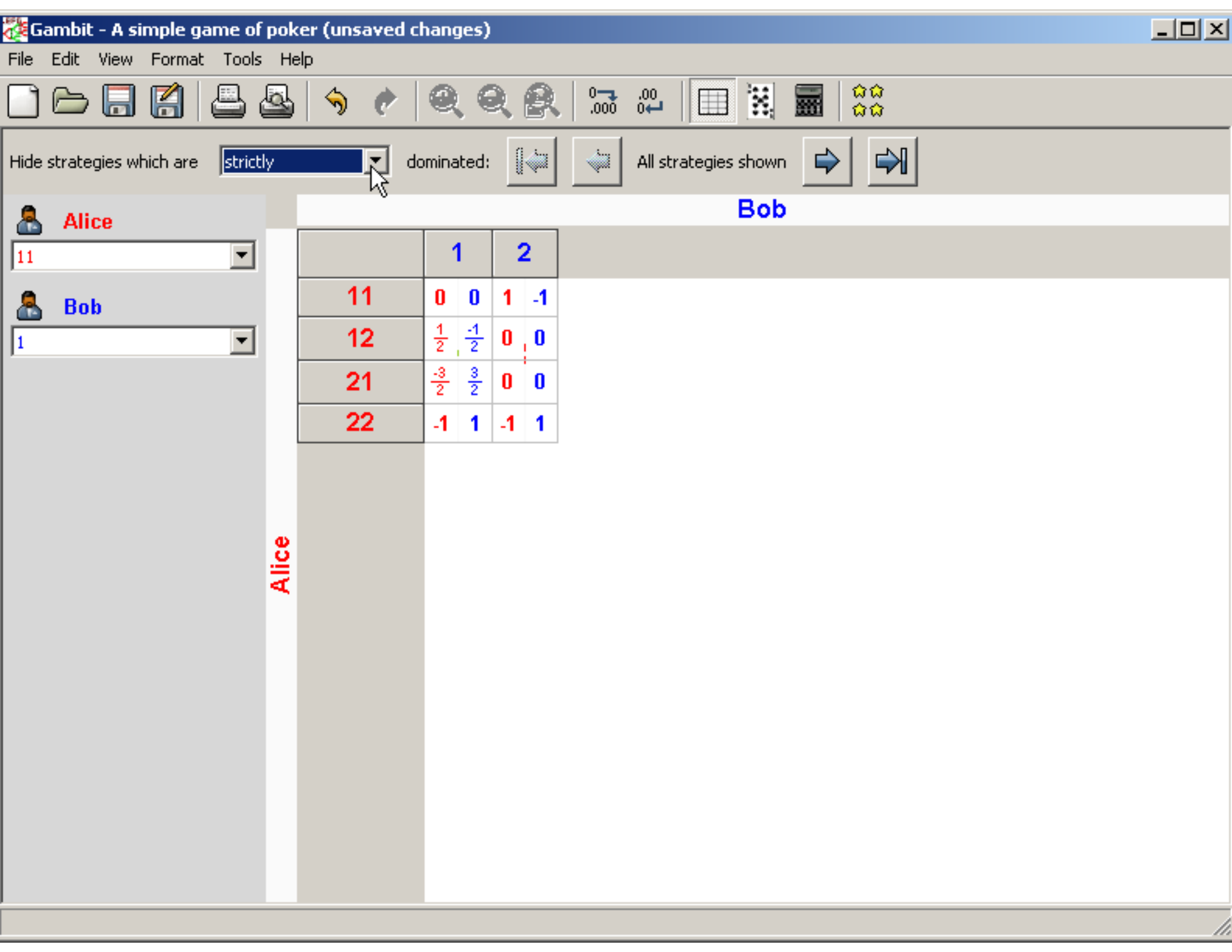

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide actions which are strictly or weakly dominated:
Chance
Alice
Bob
Next, we might be interested in the reduced strategic form of the game.
Gambit computes this automatically. We can toggle between the extensive and strategic forms by using the table icon on the toolbar.
C:1
High
1/2
Low
1/2
1:1
1:2
2:1
Raise
Fold
Meet
Pass
-2 2
1 -1
-1 1
-2
-1

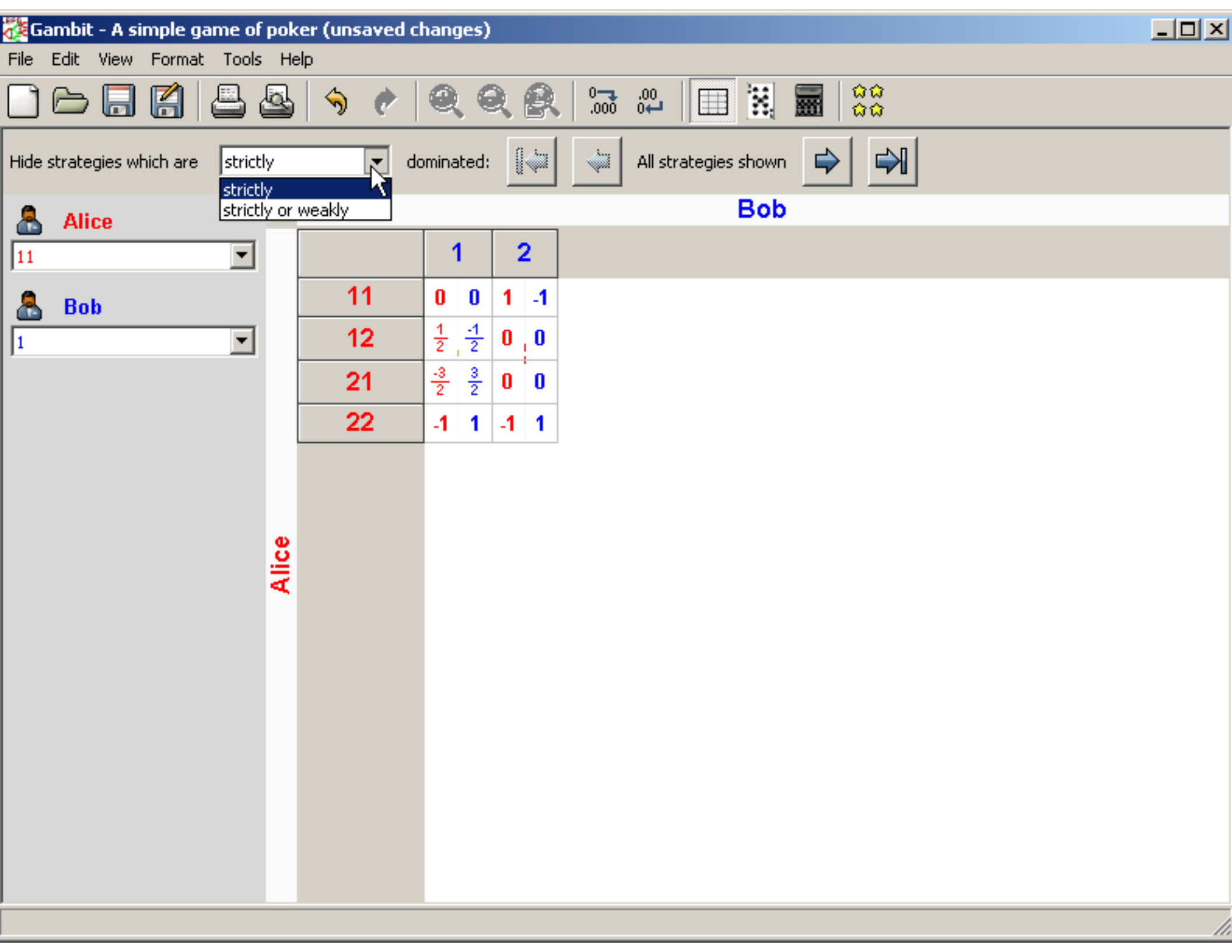

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
View the strategic form of the game
Hide actions which are strictly or weakly dominated:
All actions shown
Show only reachable nodes
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Meet
Pass
2:1
2:1
2 -2
1 -1
-1 1
-2 2
1 -1
-1 1
View the strategic form of the game

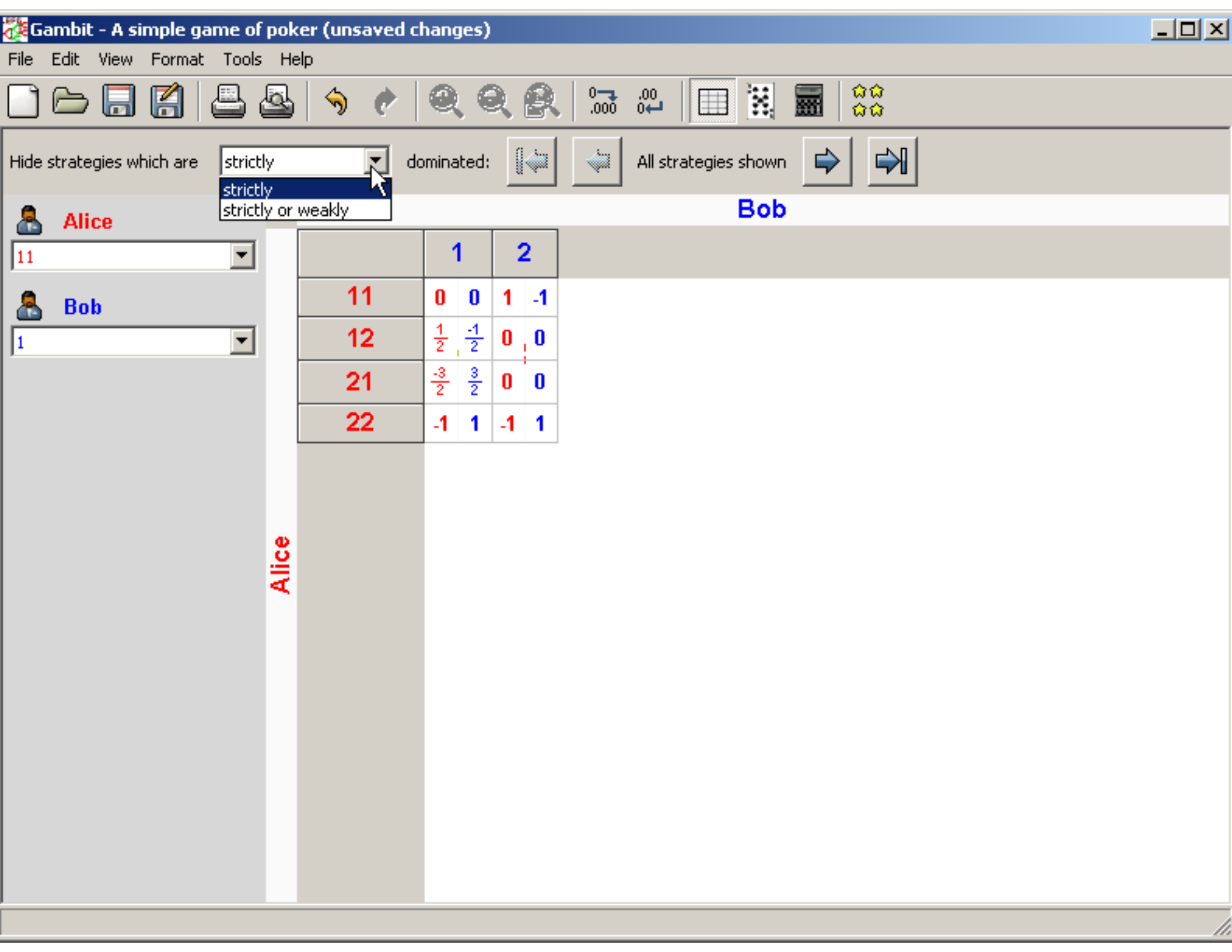

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide actions which are strictly or weakly dominated:
All actions shown
Show only reachable nodes
Chance
Alice
Bob
C:1
(u)
High
1/2
Low
1/2
1:1
1:2
Raise
Fold
Meet
Pass
2:1
2:1
2 -2
1 -1
-1 1
-2 2
1 -1
-1 1
View the strategic form of the game

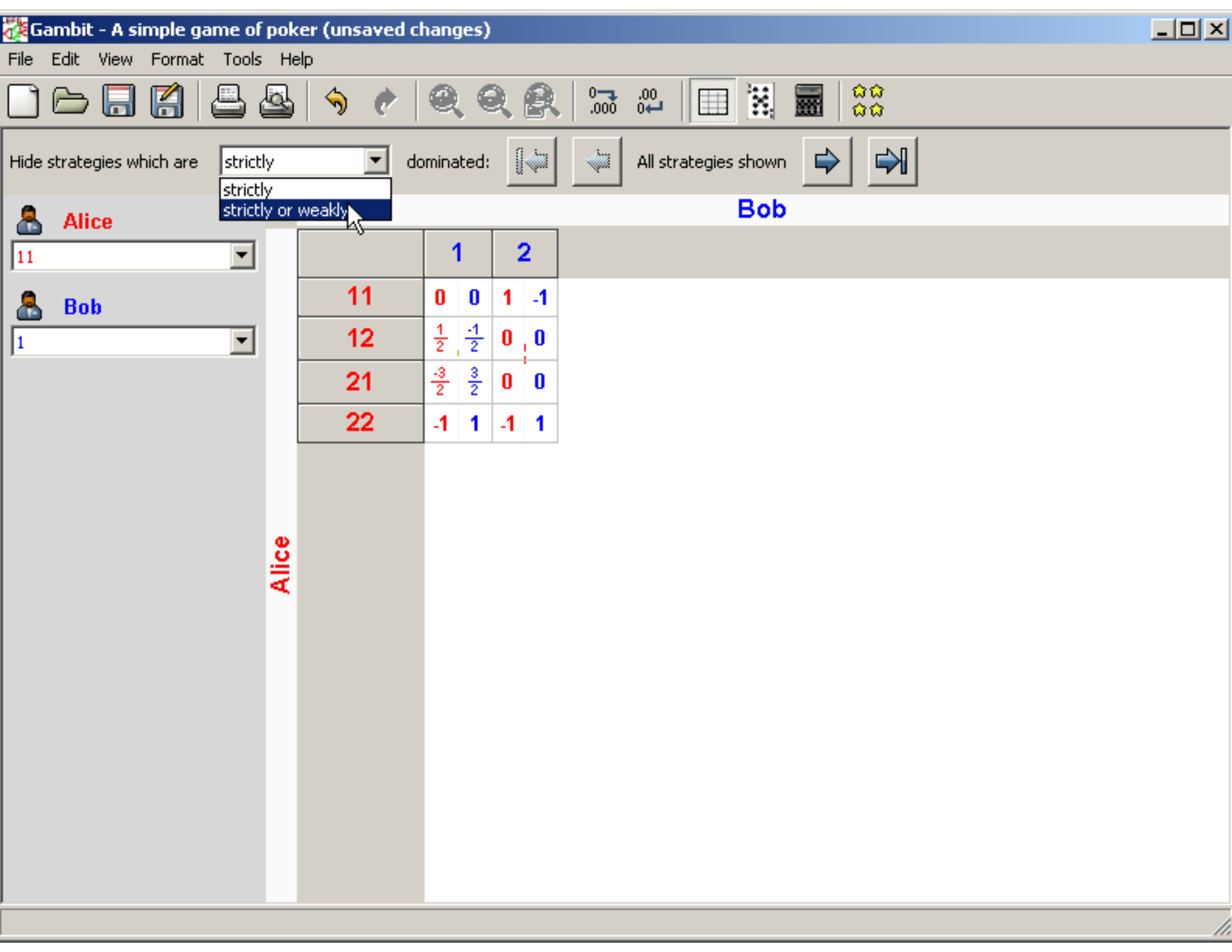

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide strategies which are strictly dominated:
All strategies shown
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
Alice
Gambit uses a shorthand to summarize strategies. For Alice, each strategy lists the action she takes at each of her information sets. Thus, this strategy corresponds to her taking her second action (fold) at her first information set (when she has the high card), and her taking her first action (raise) at her second information set (when she has the low card).
View the strategic form of the game

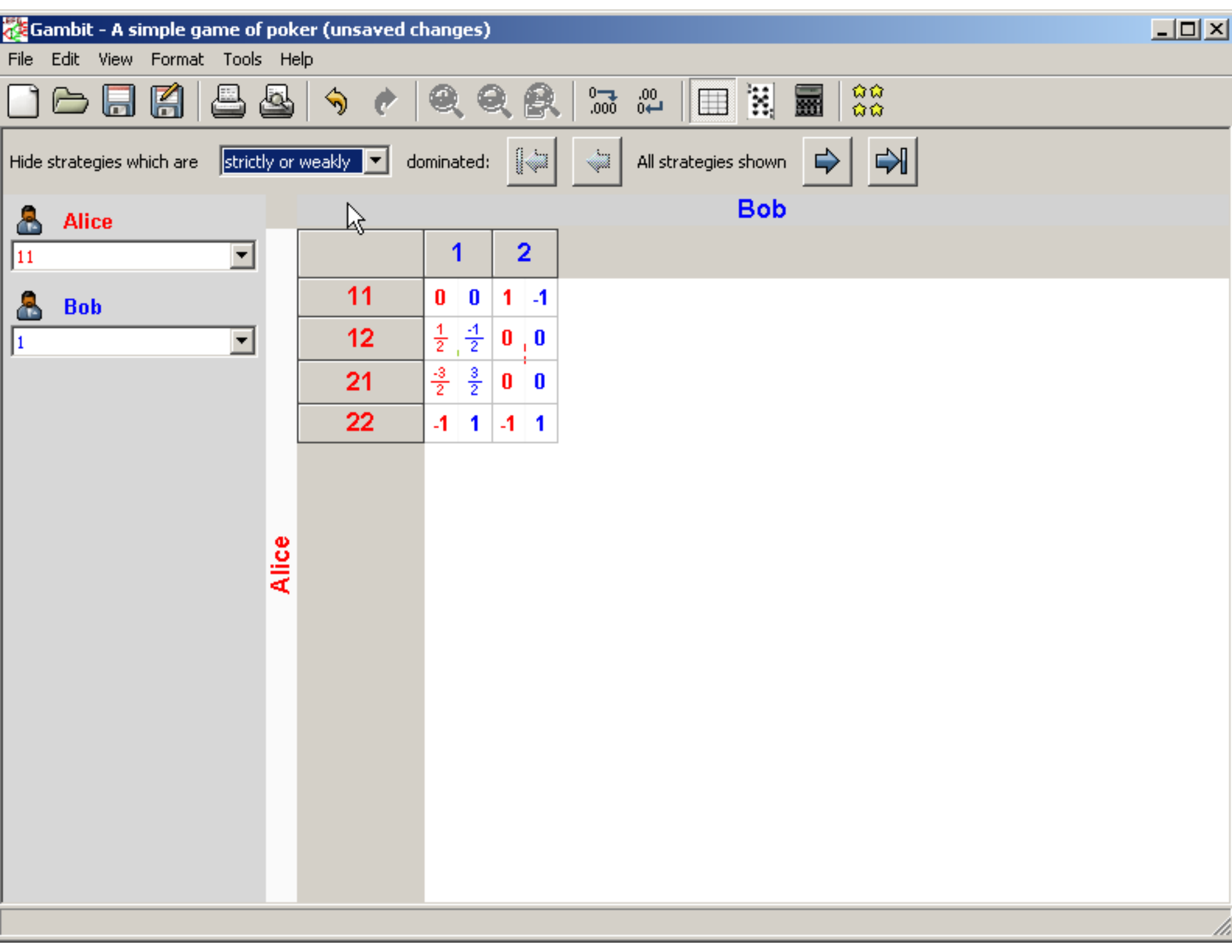

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide strategies which are strictly dominated:
All strategies shown
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
22 -1 1 -1 1
Alice
Let's repeat the dominance analysis on the strategic form. The dominance toolbar works analogously on the strategic form as it did in the extensive form.
View the strategic form of the game

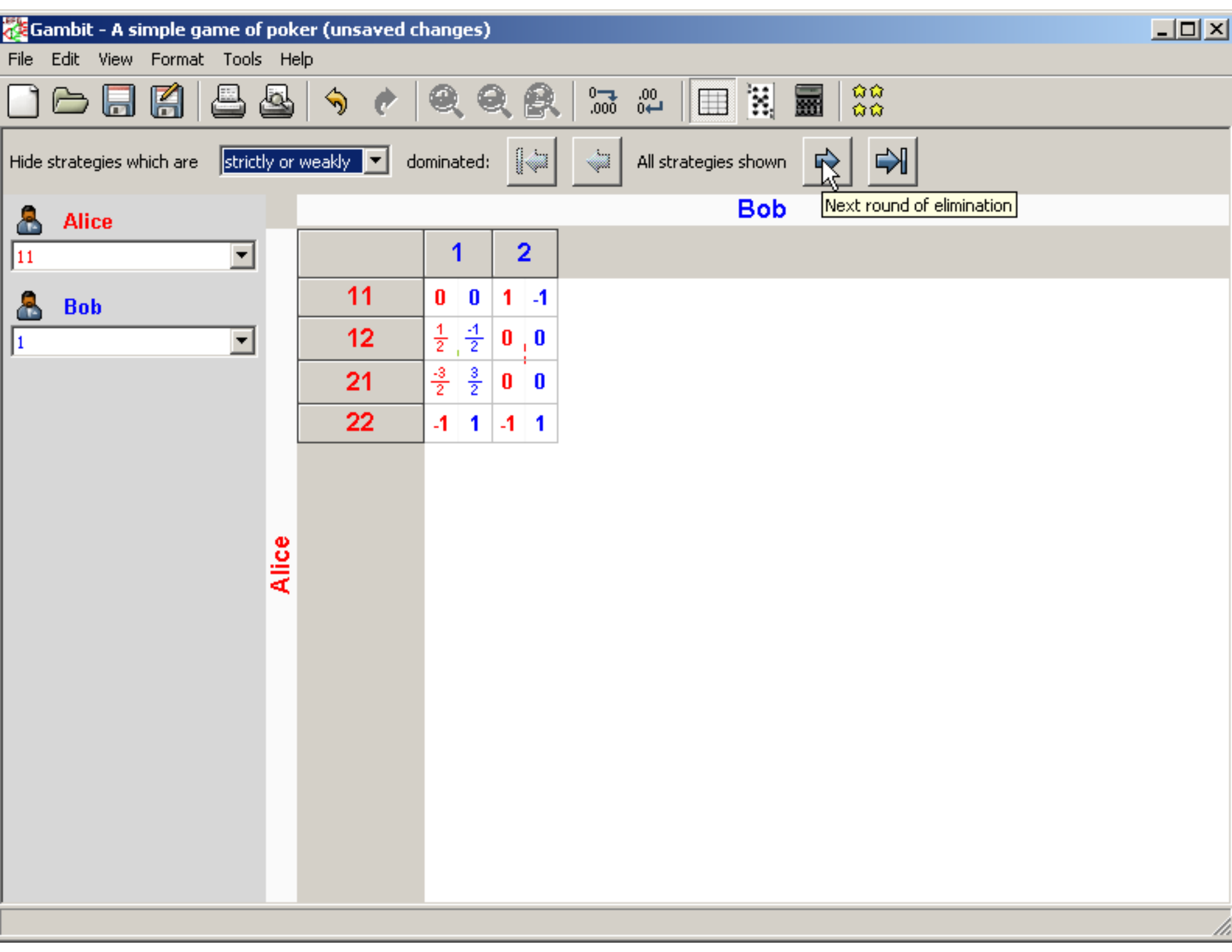

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide strategies which are strictly dominated:
All strategies shown
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
22 -1 1 -1 1
Alice

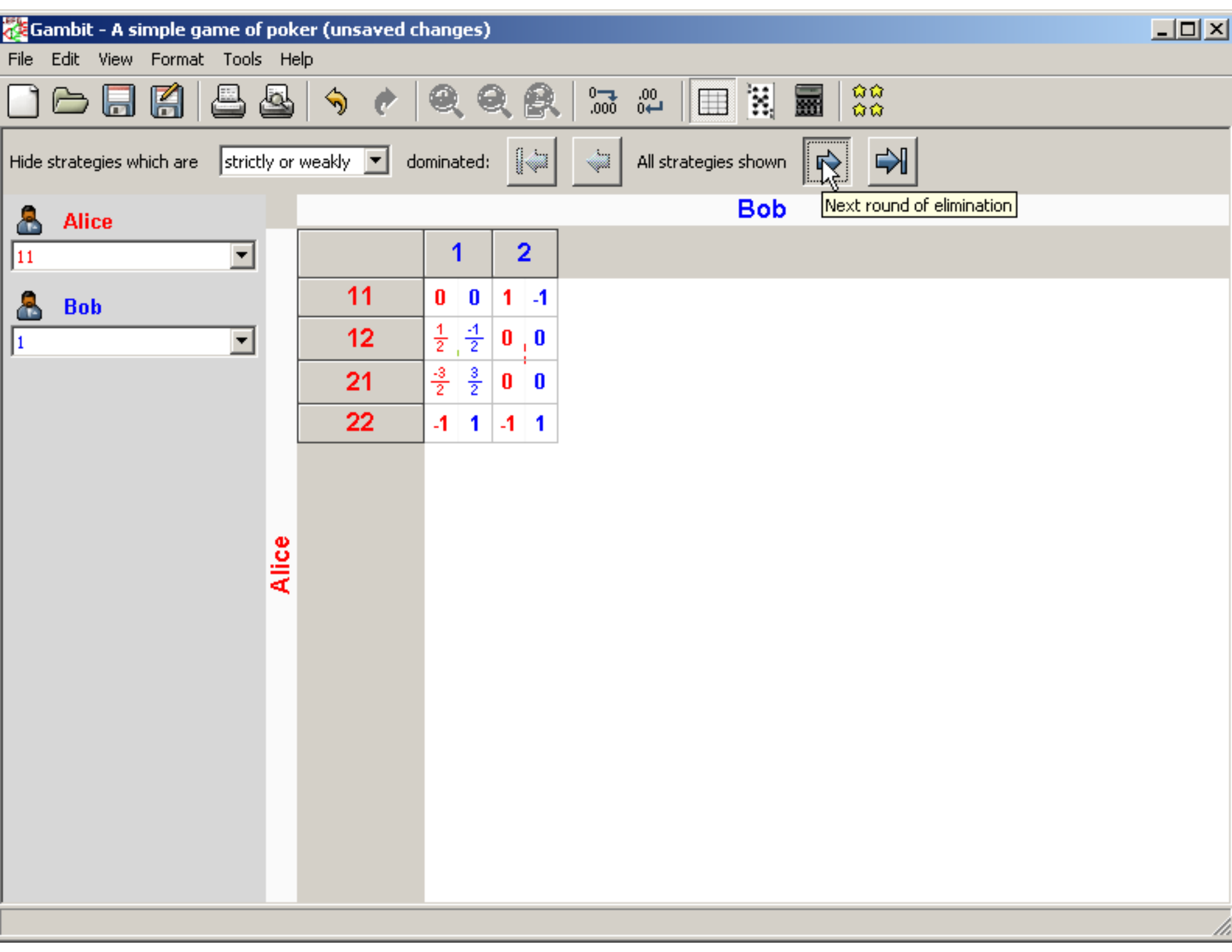

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide strategies which are strictly dominated:
strictly
strictly or weakly
All strategies shown
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
22 -1 1 -1 1
Alice

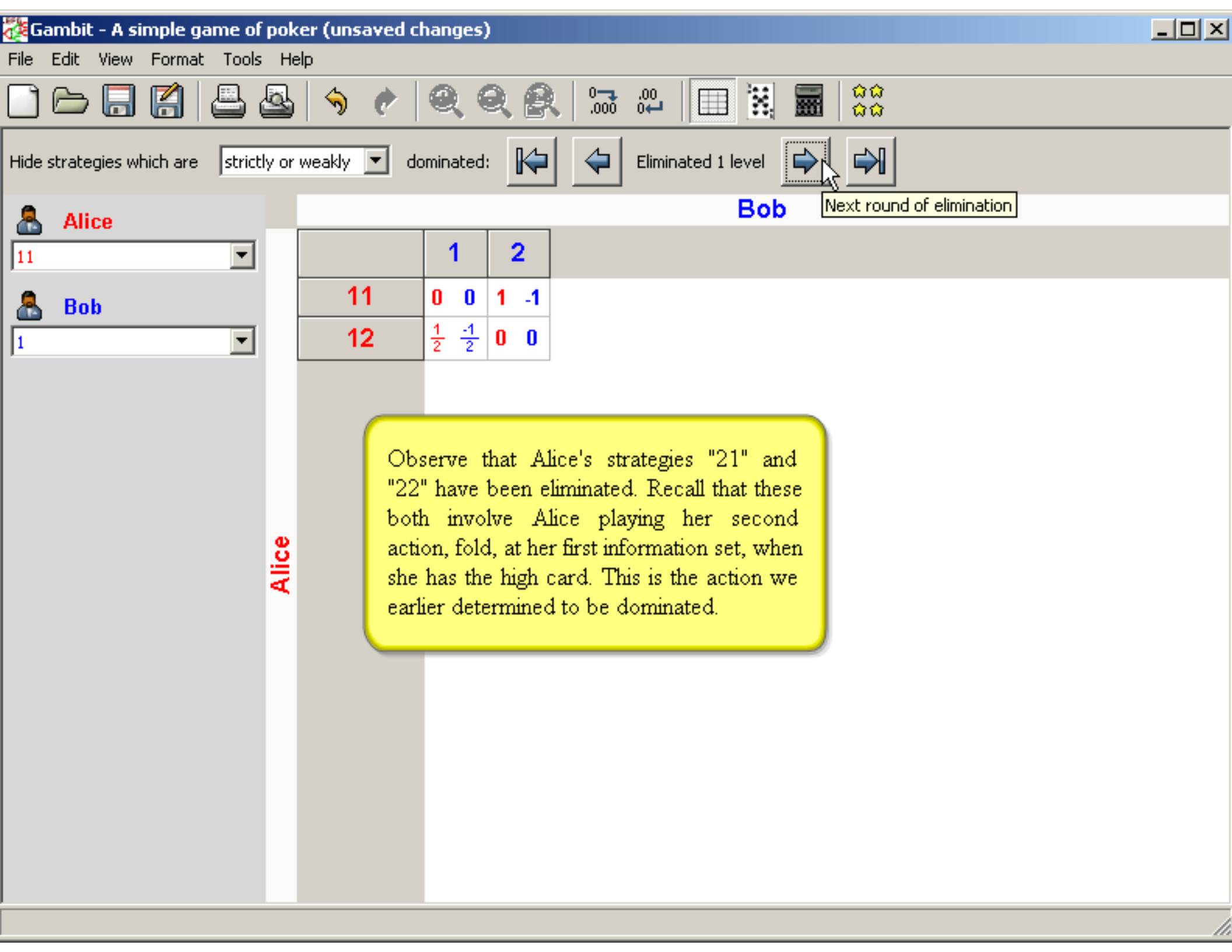

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide strategies which are strictly dominated:
strictly
strictly or weakly
All strategies shown
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
22 -1 1 -1 1
Alice

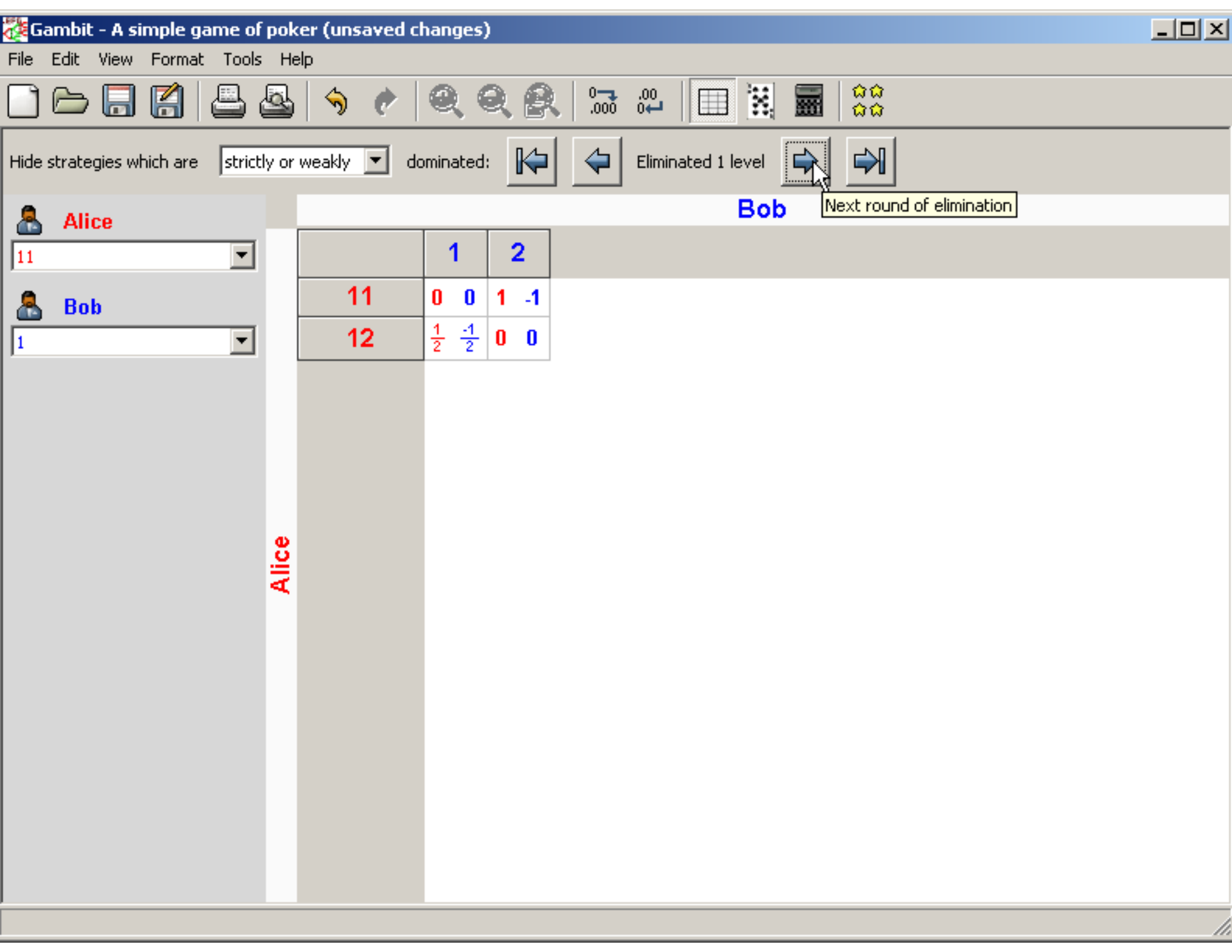

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide strategies which are strictly dominated:
strictly
strictly or weakly
All strategies shown
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
22 -1 1 -1 1
Alice

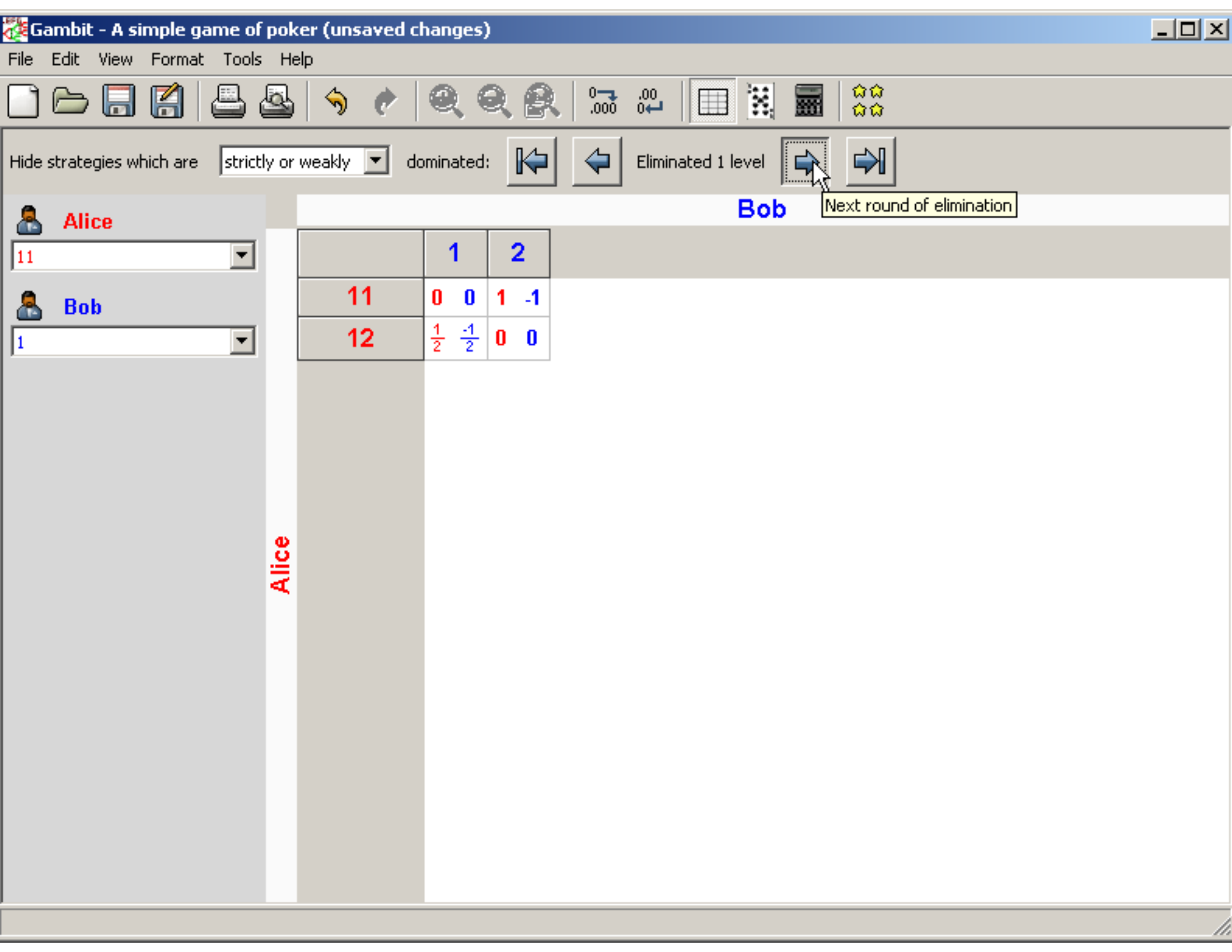

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide strategies which are strictly or weakly dominated:
All strategies shown
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
22 -1 1 -1 1
Alice

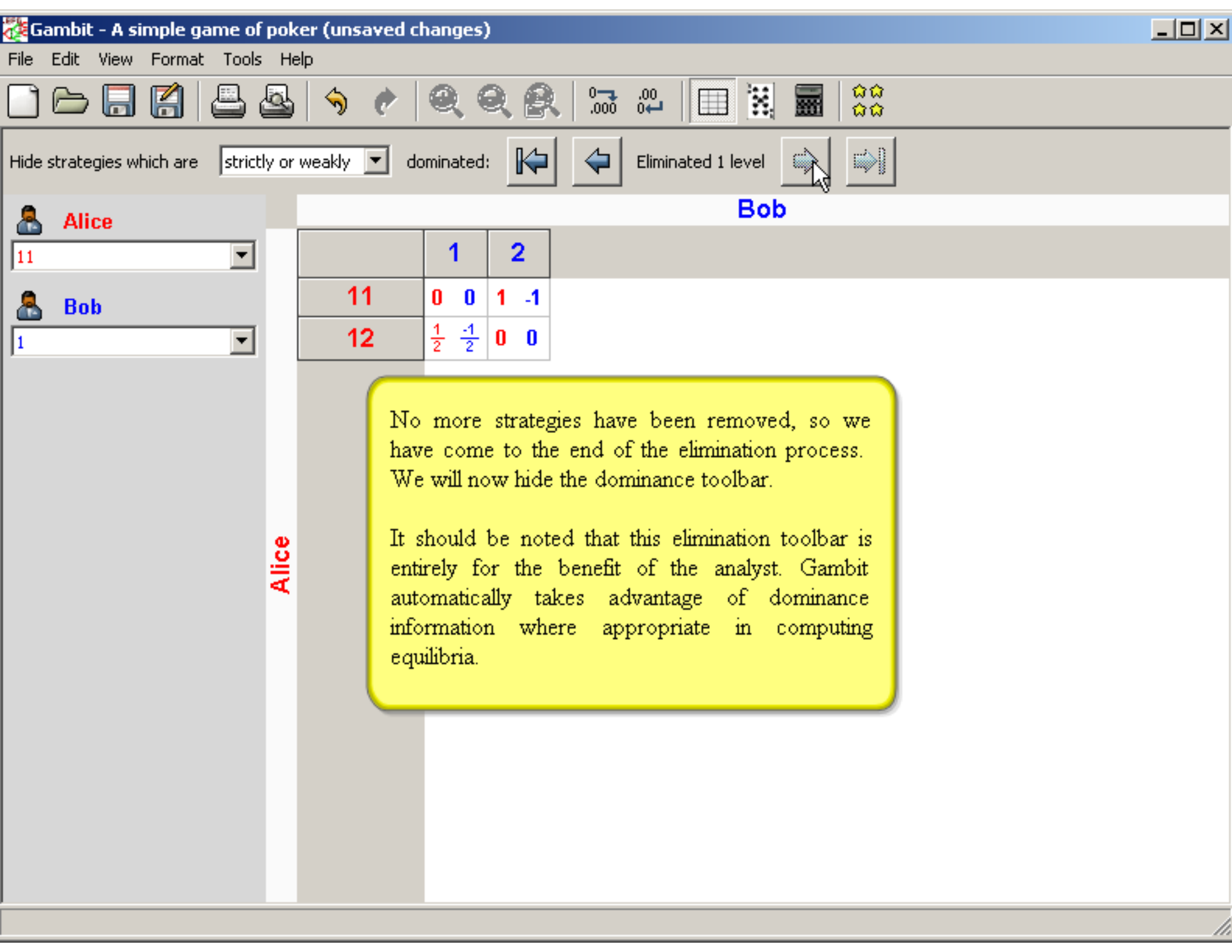

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide strategies which are strictly or weakly dominated:
All strategies shown
Next round of elimination
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
22 -1 1 -1 1
Alice

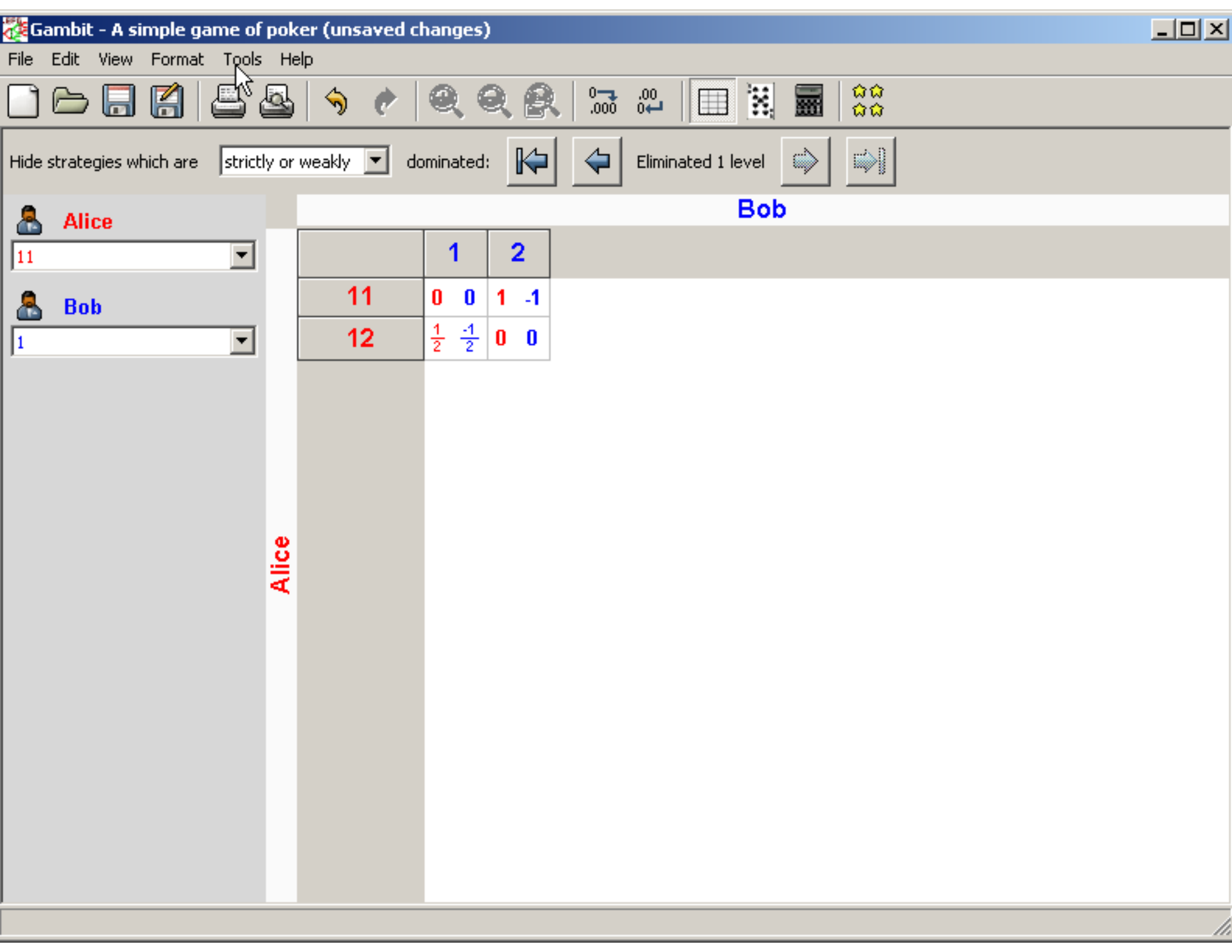

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide strategies which are strictly or weakly dominated:
All strategies shown
Next round of elimination
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
22 -1 1 -1 1
Alice

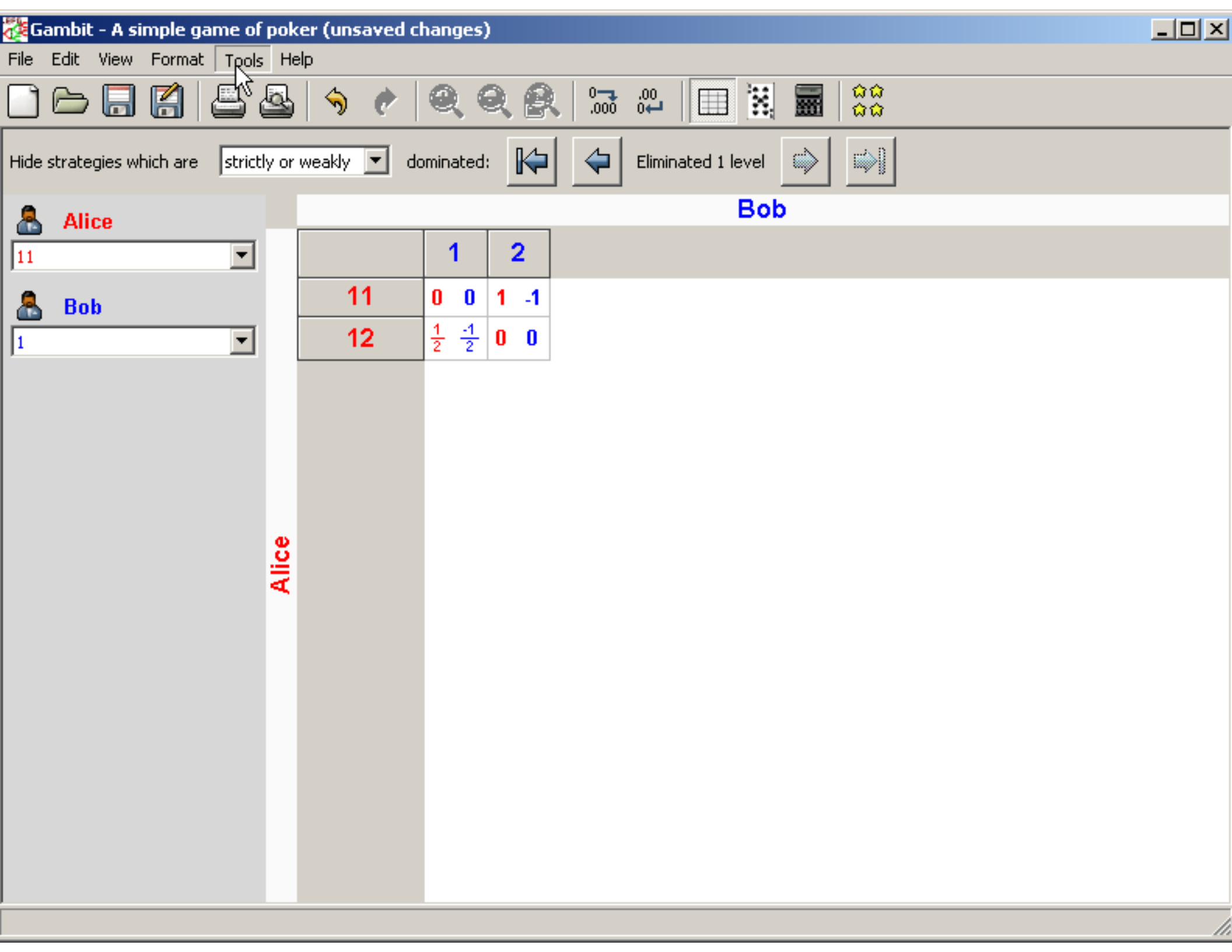

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide strategies which are strictly or weakly dominated:
Eliminated 1 level
Next round of elimination
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
Alice
Observe that Alice's strategies "21" and "22" have been eliminated. Recall that these both involve Alice playing her second action, fold, at her first information set, when she has the high card. This is the action we earlier determined to be dominated.

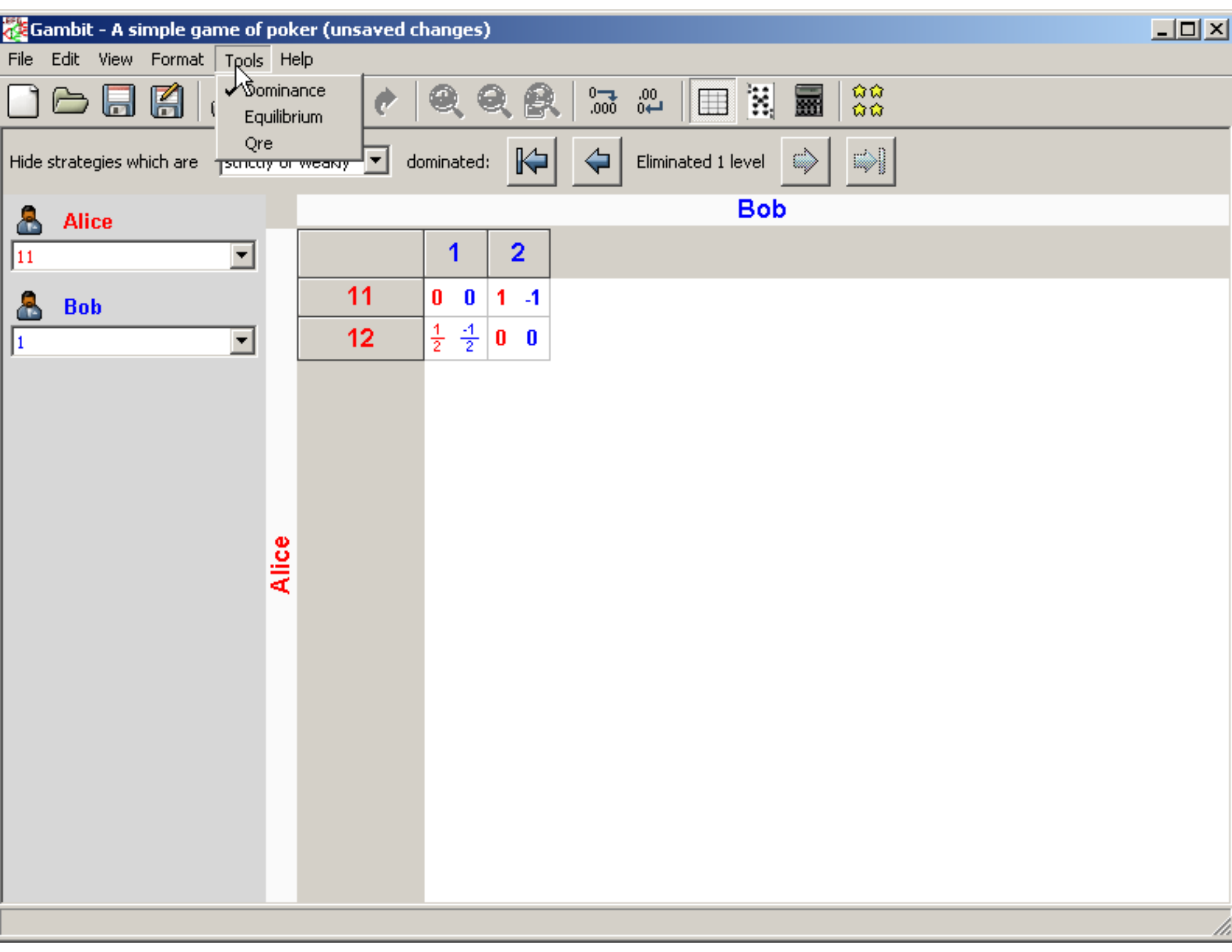

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide strategies which are strictly or weakly dominated:
Eliminated 1 level
Next round of elimination
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
Alice

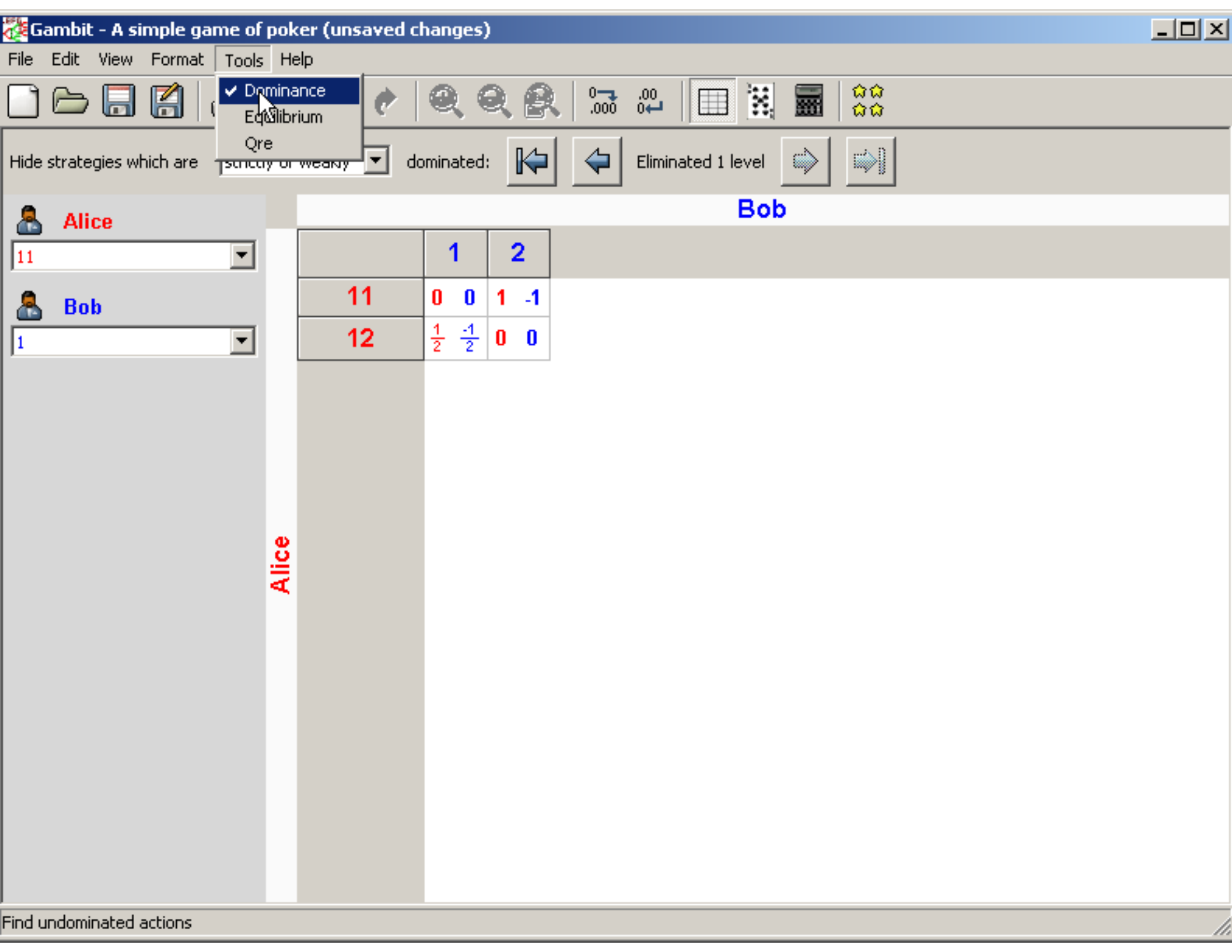

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide strategies which are strictly or weakly dominated:
Eliminated 1 level
Next round of elimination
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
Alice

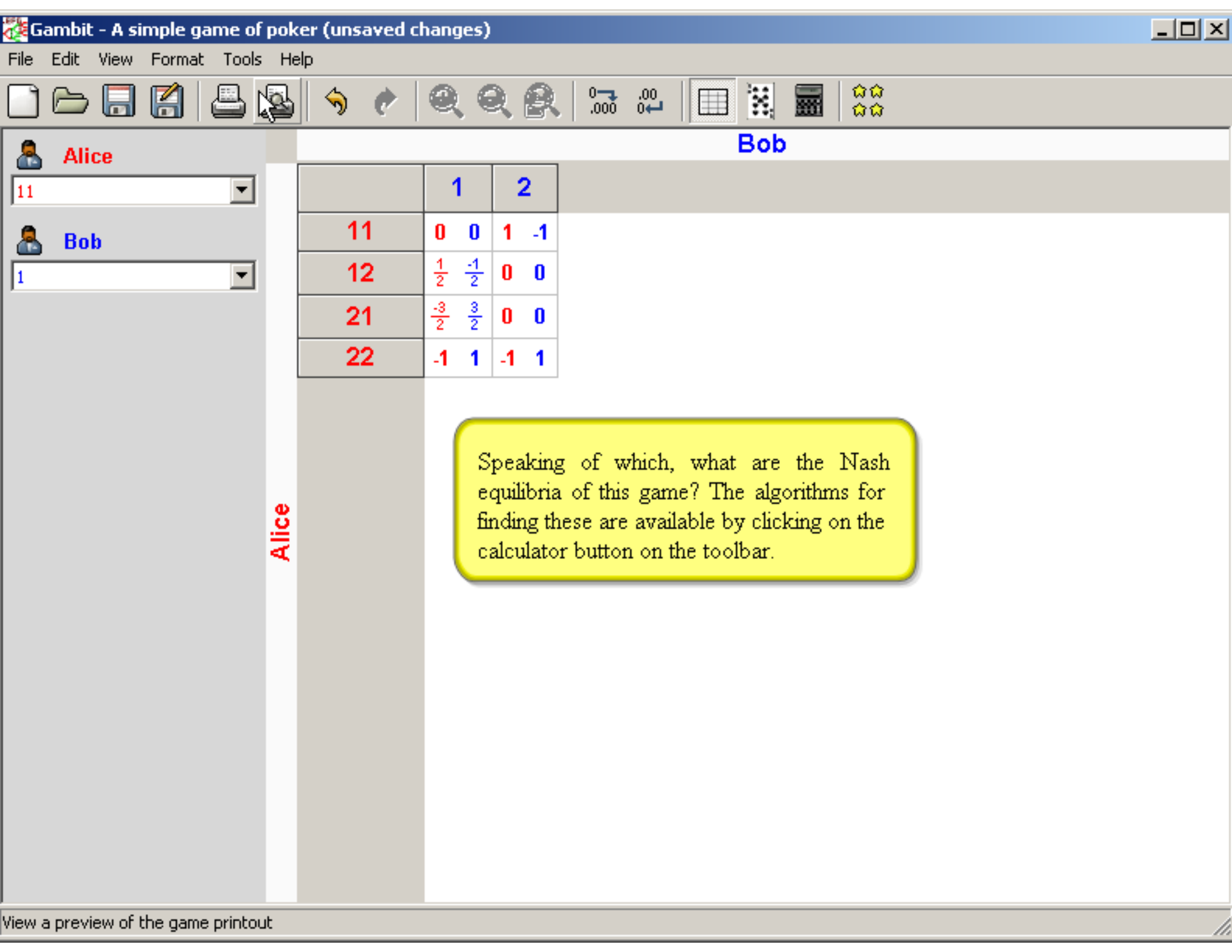

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide strategies which are strictly or weakly dominated:
Eliminated 1 level
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
Alice
No more strategies have been removed, so we have come to the end of the elimination process. We will now hide the dominance toolbar.
It should be noted that this elimination toolbar is entirely for the benefit of the analyst. Gambit automatically takes advantage of dominance information where appropriate in computing equilibria.

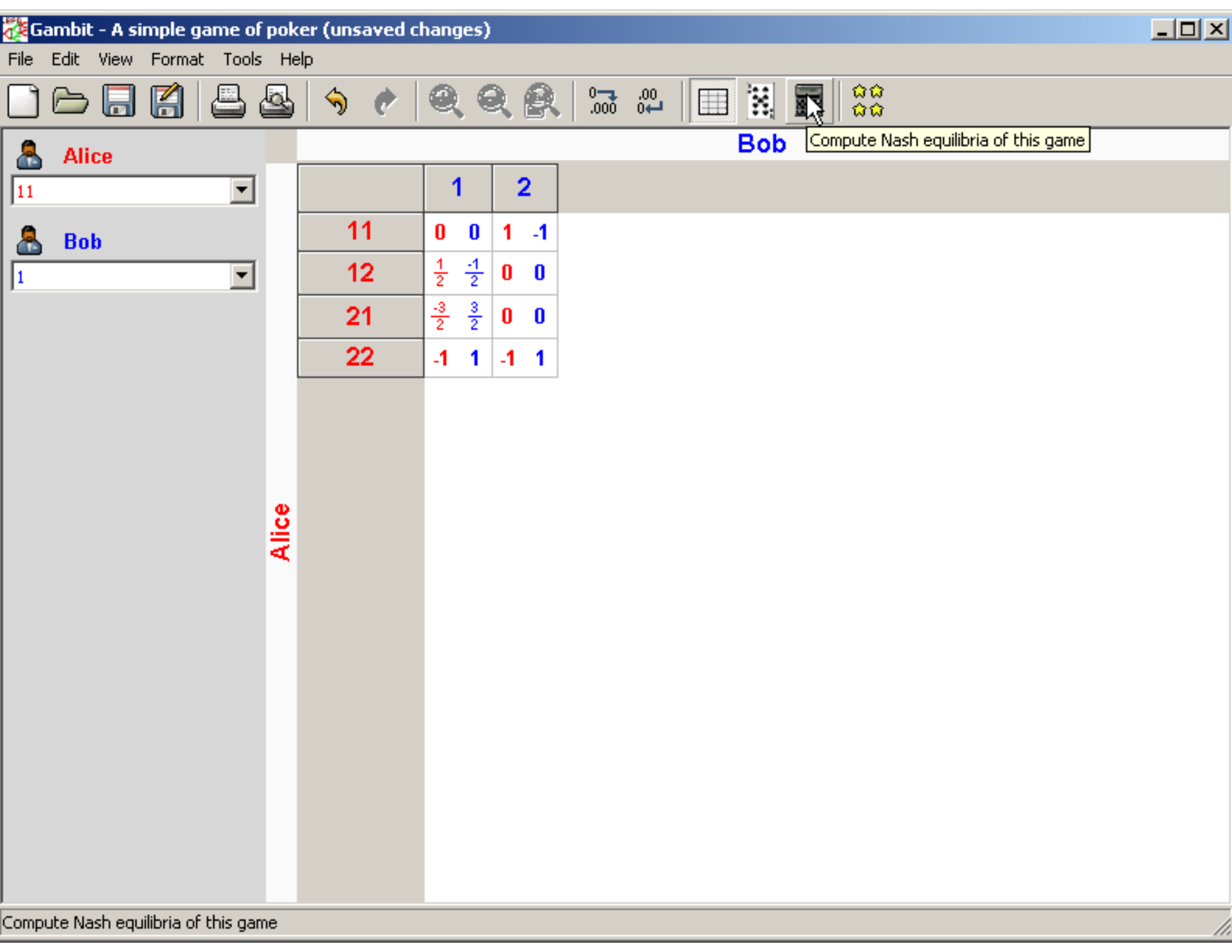

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Hide strategies which are strictly or weakly dominated:
Eliminated 1 level
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
Alice

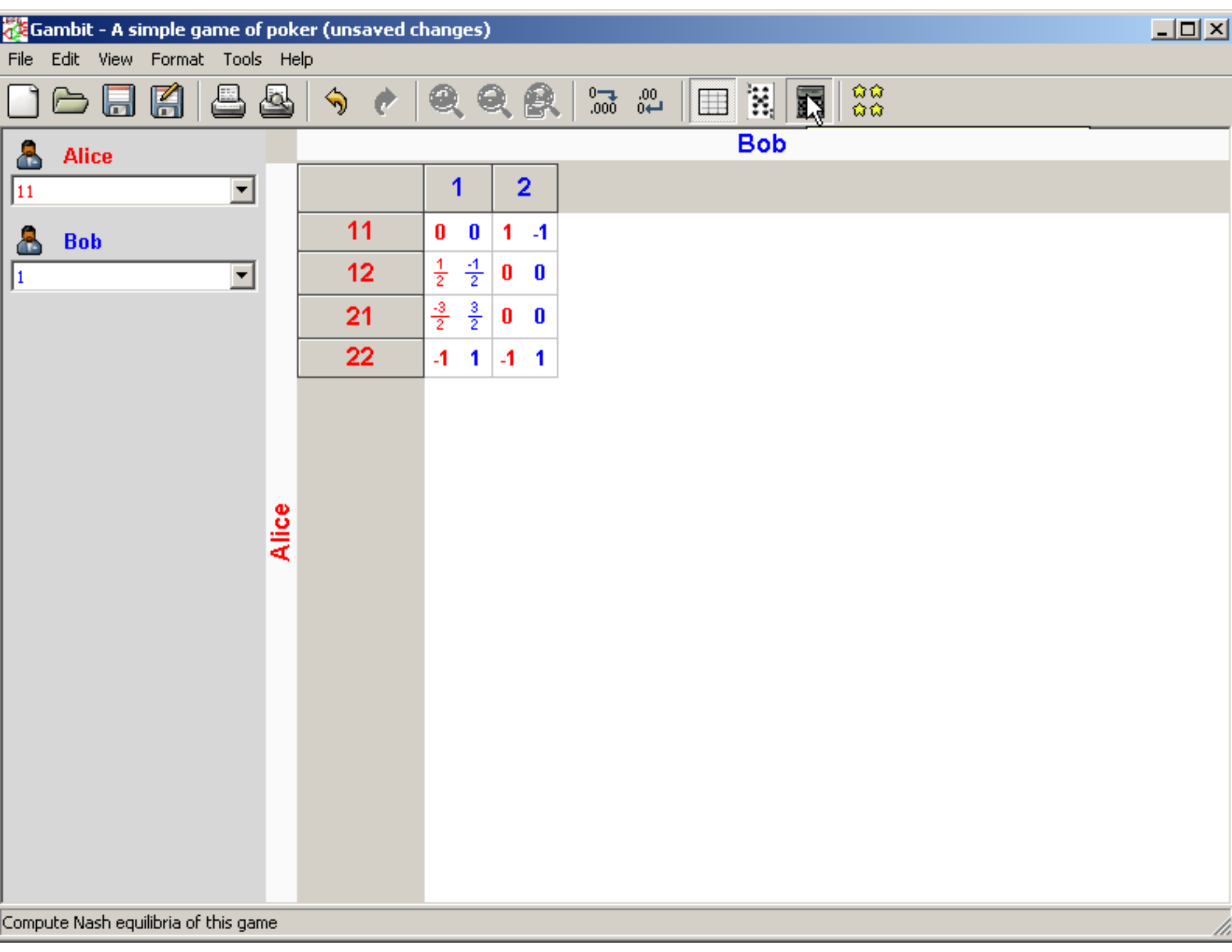

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Hide strategies which are
strictly or weakly
dominated:
Eliminated 1 level
Alice
11
Bob
1
Bob
1
2
11
0 0
1 -1
12
1/2 -1/2
0 0
Alice

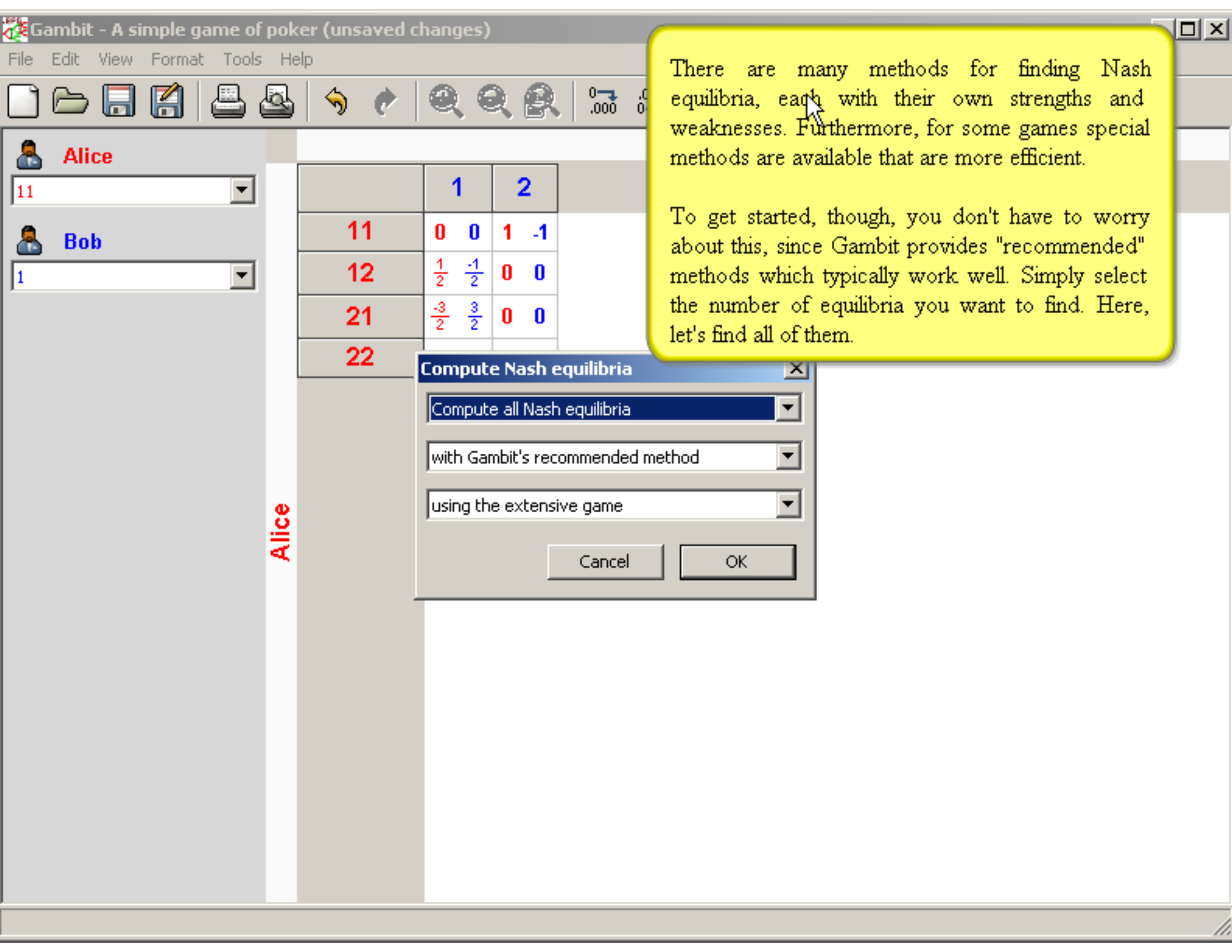

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Dominance
Equilibrium
Qre
Hide strategies which are
dominated:
Eliminated 1 level
Alice
11
Bob
1
Bob
1
2
11
0 0
1 -1
12
1/2 -1/2
0 0
Alice

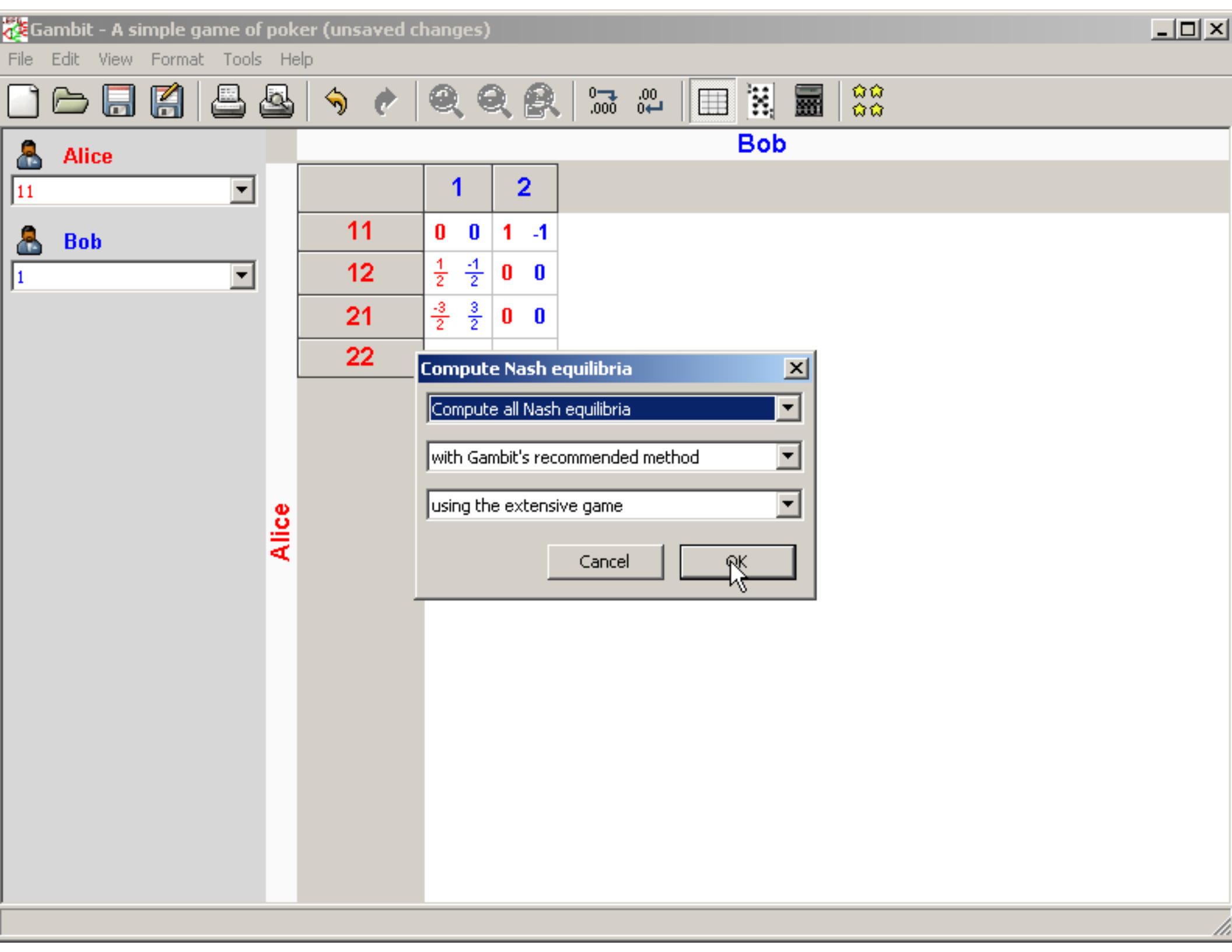

Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Dominance
Equilibrium
Qre
Hide strategies which are
dominated:
Eliminated 1 level
Alice
11
Bob
1
Bob
1
2
11
0 0
1 -1
12
1/2 -1/2
0 0
Alice
Find undominated actions

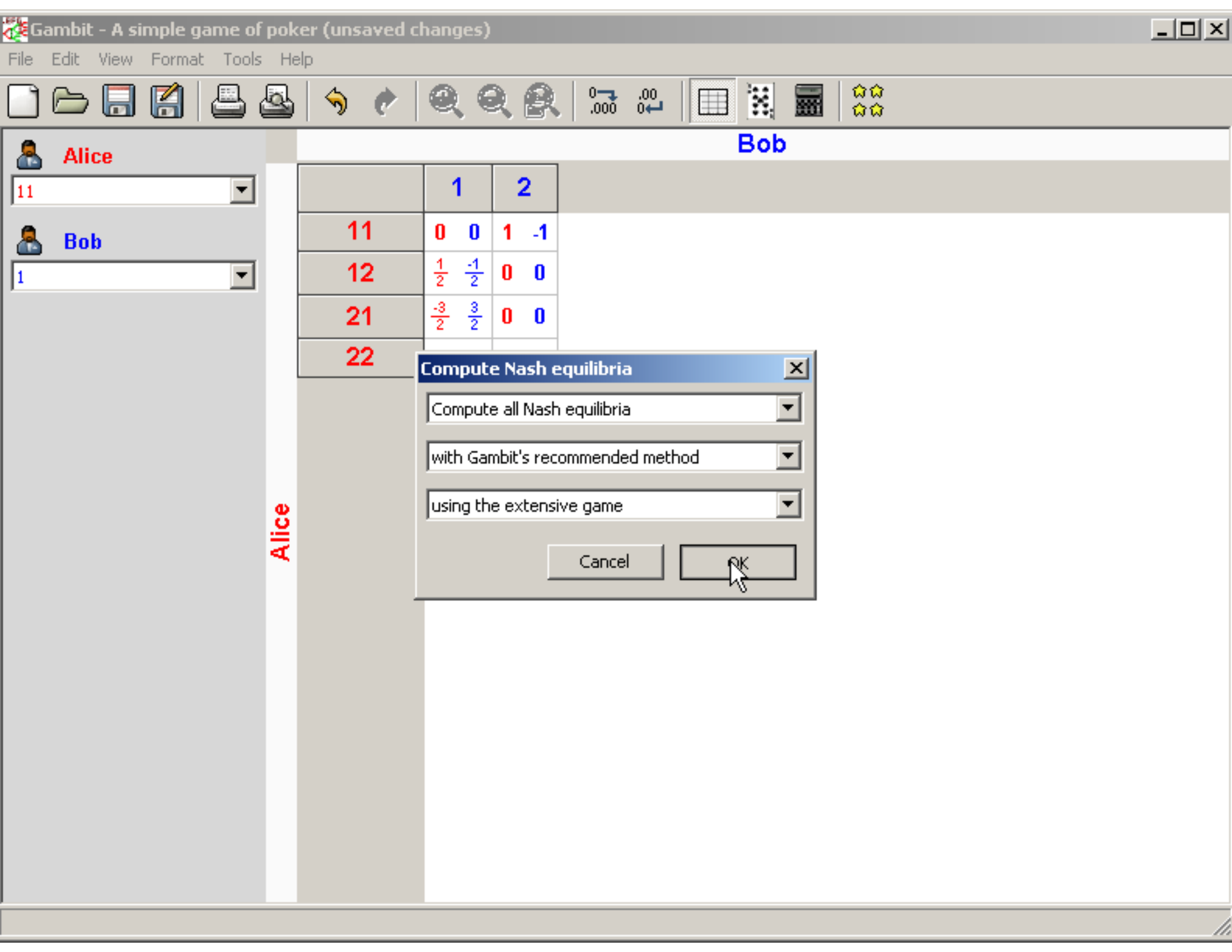

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
22 -1 1 -1 1
Alice
Speaking of which, what are the Nash equilibria of this game? The algorithms for finding these are available by clicking on the calculator button on the toolbar.
View a preview of the game printout

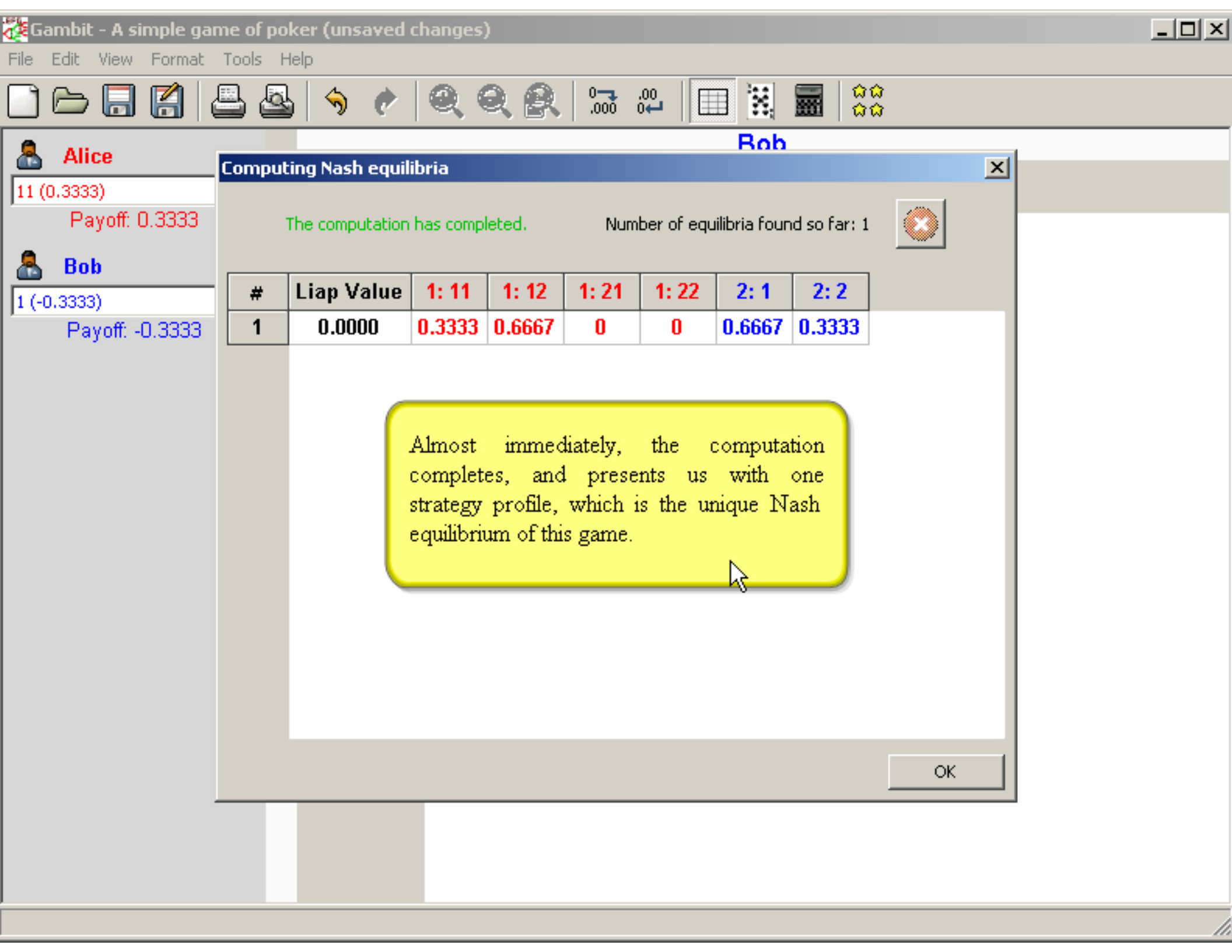

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Compute Nash equilibria of this game
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
22 -1 1 -1 1
Alice
Compute Nash equilibria of this game

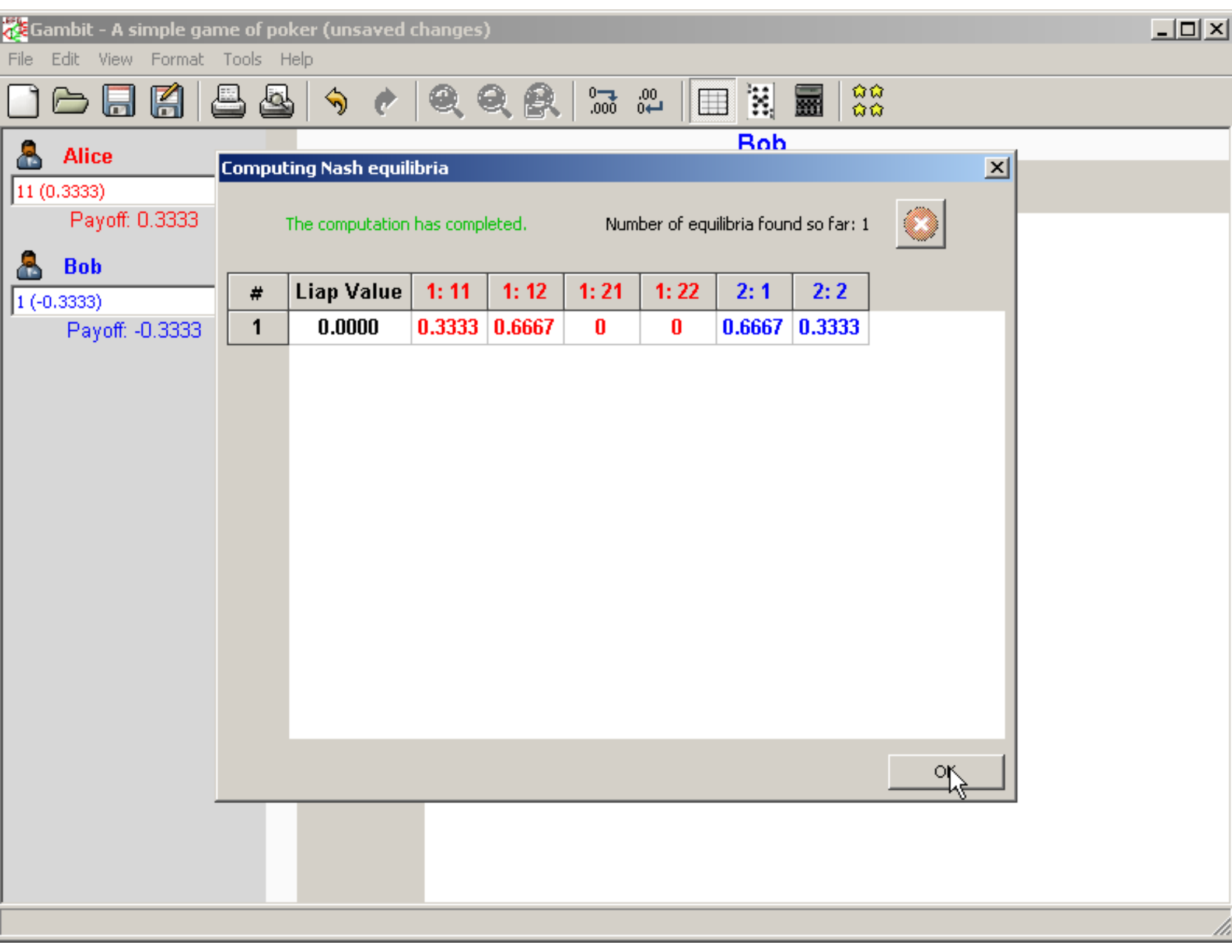

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
22 -1 1 -1 1
Alice
Compute Nash equilibria of this game

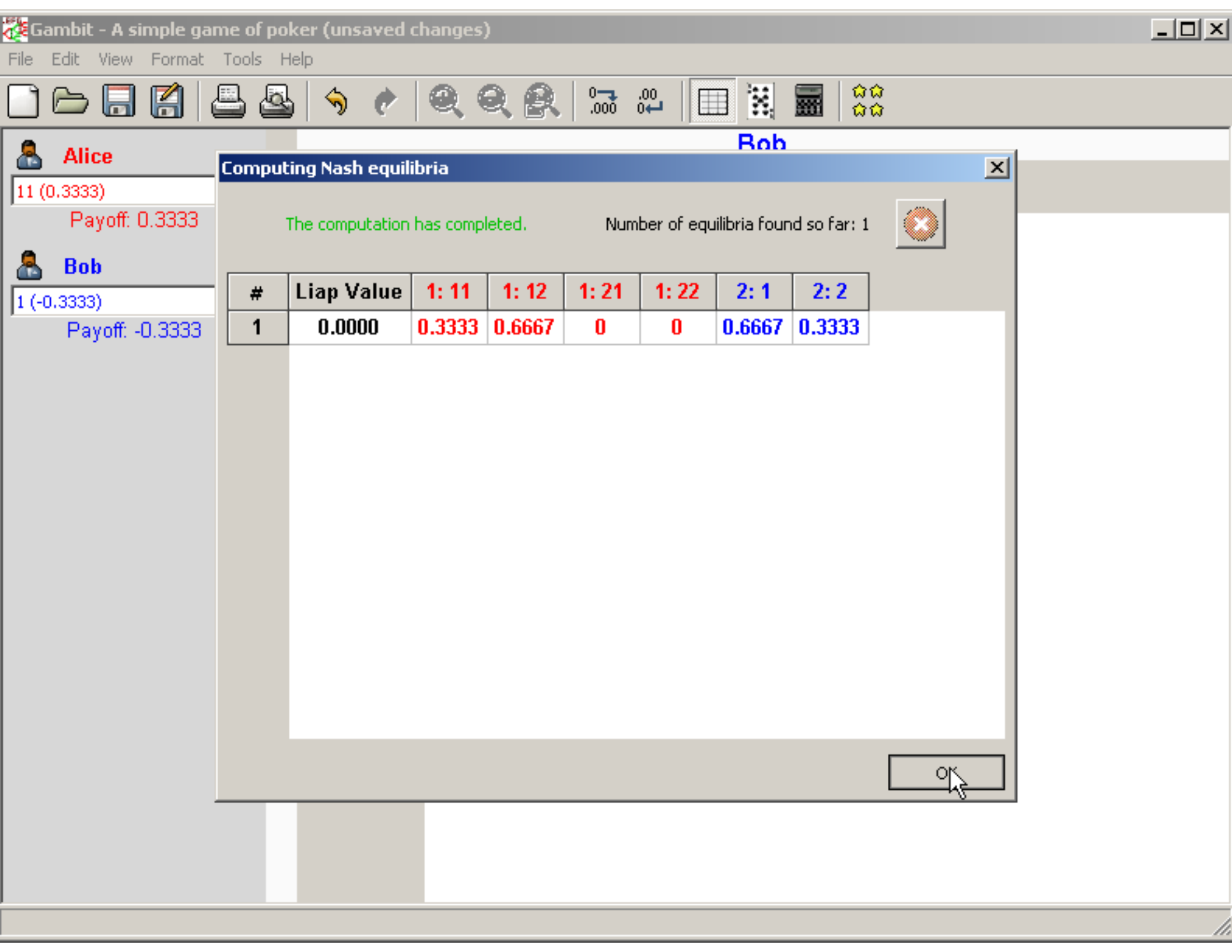

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Alice
11
Bob
1
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
22
Alice
There are many methods for finding Nash equilibria, each with their own strengths and weaknesses. Furthermore, for some games special methods are available that are more efficient.
To get started, though, you don't have to worry about this, since Gambit provides "recommended" methods which typically work well. Simply select the number of equilibria you want to find. Here, let's find all of them.
Compute Nash equilibria
Compute all Nash equilibria
with Gambit's recommended method
using the extensive game
Cancel
OK

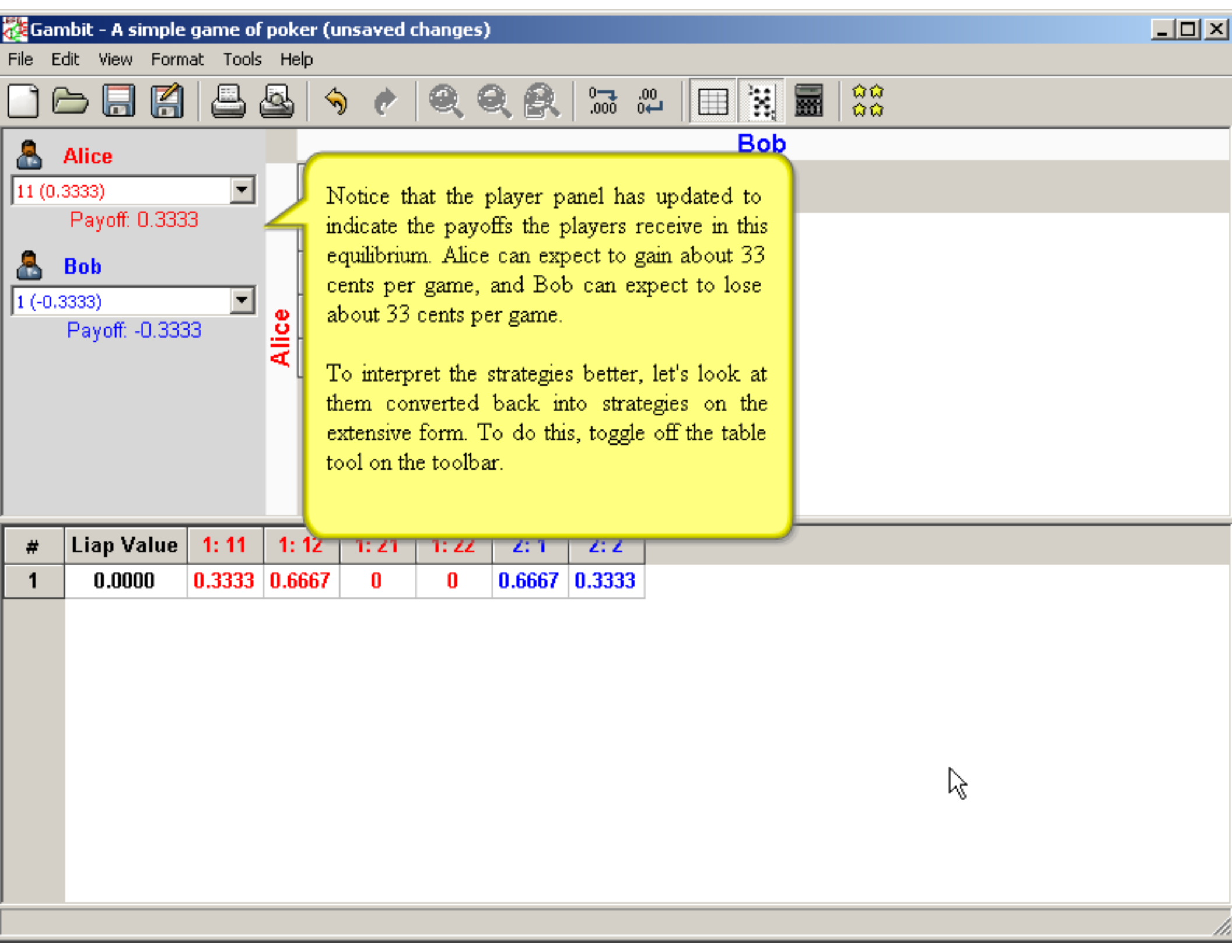

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
22
Alice
Compute Nash equilibria
Compute all Nash equilibria
with Gambit's recommended method
using the extensive game
Cancel
OK

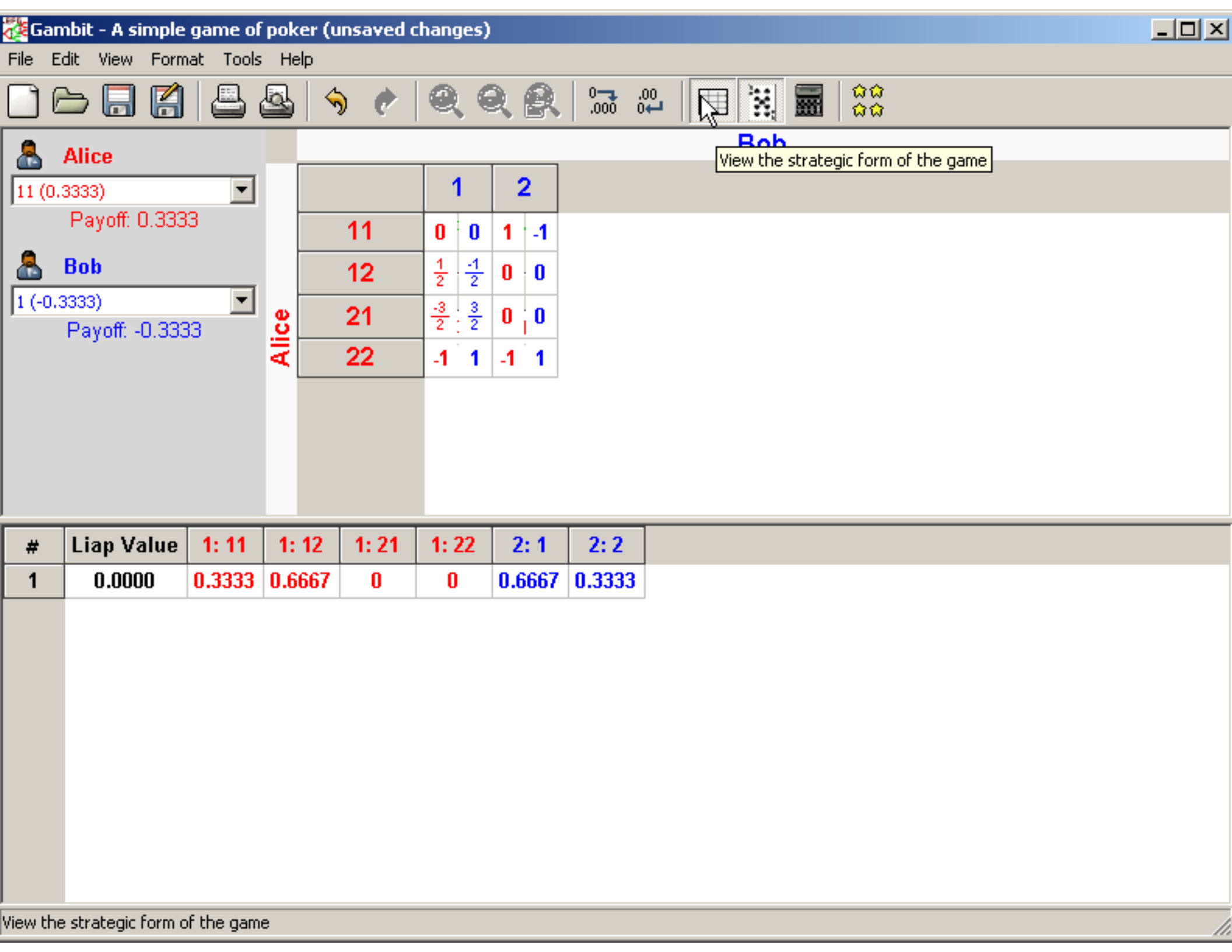

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Alice
11
Bob
1
Bob
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
22
Alice
Compute Nash equilibria
Compute all Nash equilibria
with Gambit's recommended method
using the extensive game
Cancel
OK

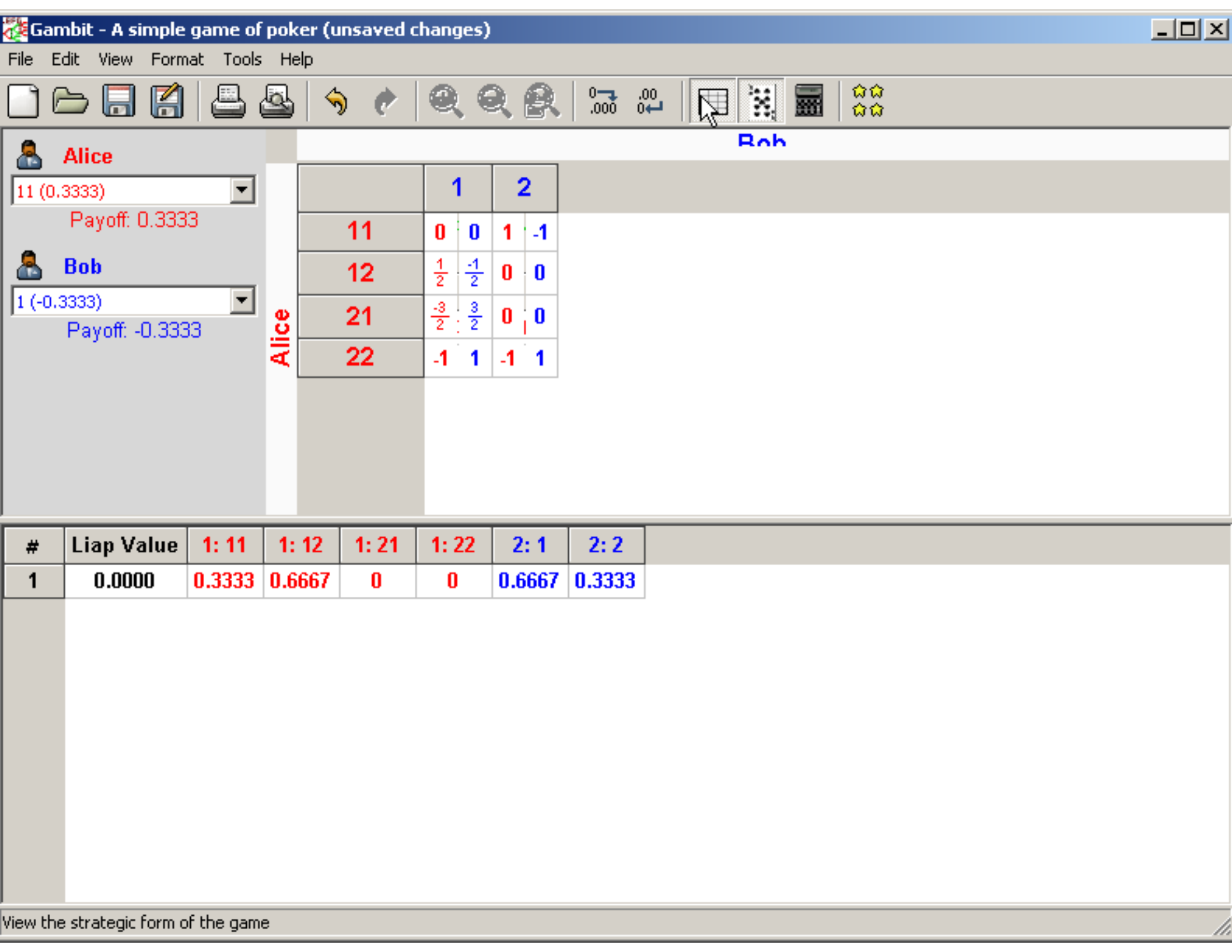

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Alice
11 (0.3333)
Payoff: 0.3333
Bob
1 (-0.3333)
Payoff: -0.3333
Bob
Computing Nash equilibria
The computation has completed.
Number of equilibria found so far: 1
Liap Value 1: 11 1: 12 1: 21 1: 22 2: 1 2: 2
1 0.0000 0.3333 0.6667 0 0 0.6667 0.3333
Almost immediately, the computation completes, and presents us with one strategy profile, which is the unique Nash equilibrium of this game.
OK

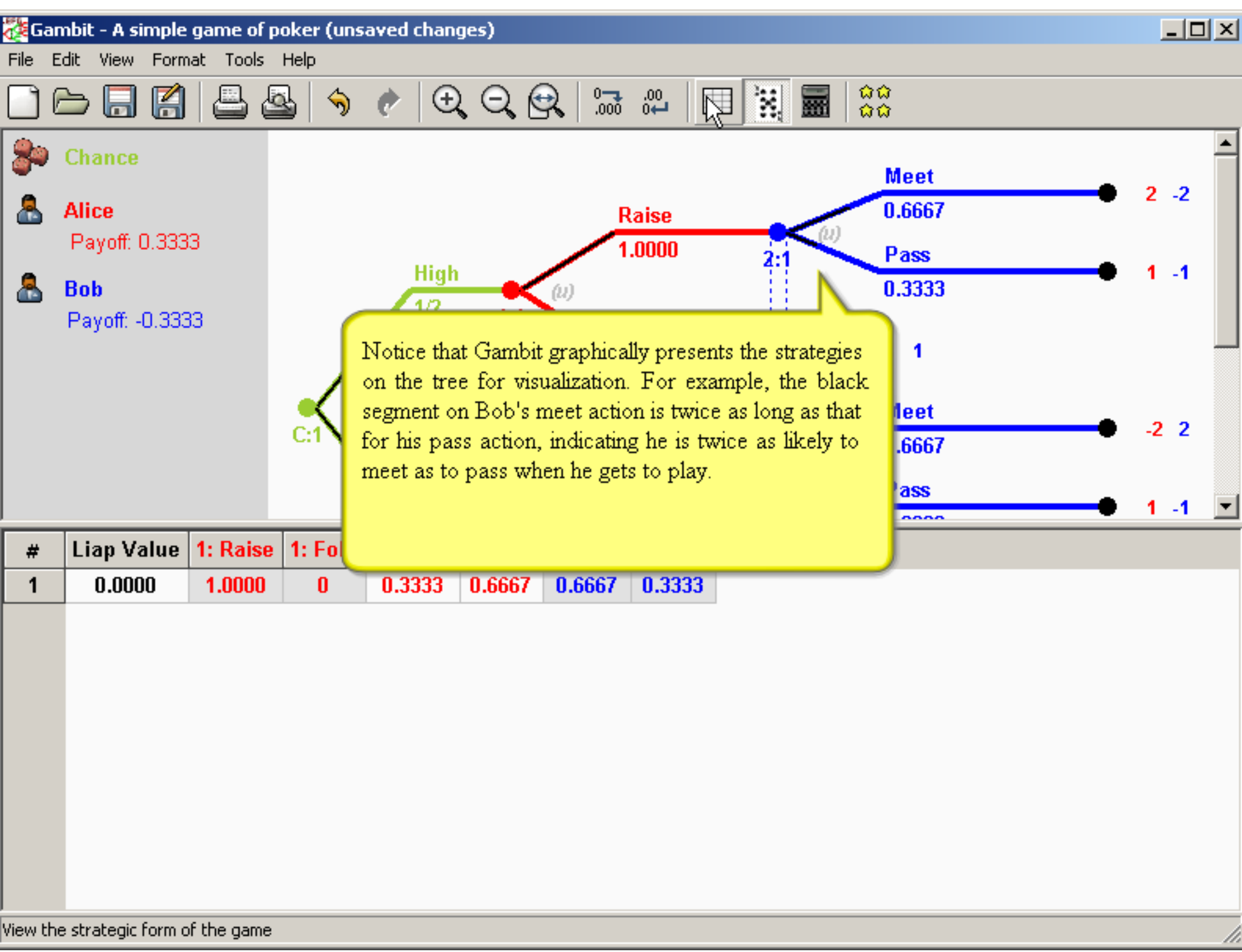

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Alice
11 (0.3333)
Payoff: 0.3333
Bob
1 (-0.3333)
Payoff: -0.3333
Bob
Computing Nash equilibria
The computation has completed.
Number of equilibria found so far: 1
Liap Value 1: 11 1: 12 1: 21 1: 22 2: 1 2: 2
1 0.0000 0.3333 0.6667 0 0 0.6667 0.3333
OK

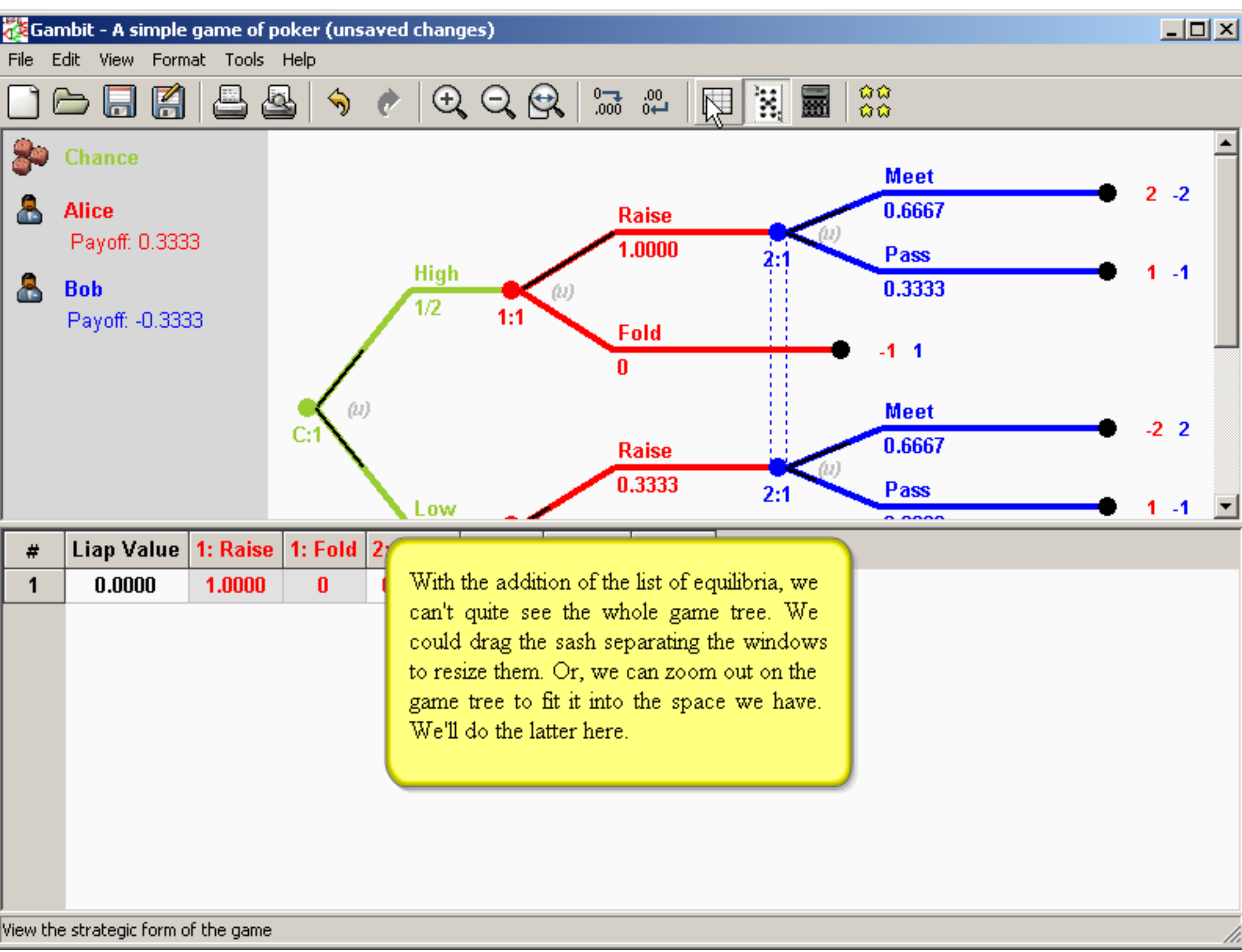

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Alice
11 (0.3333)
Payoff: 0.3333
Bob
1 (-0.3333)
Payoff: -0.3333
Bob
Computing Nash equilibria
The computation has completed.
Number of equilibria found so far: 1
Liap Value 1: 11 1: 12 1: 21 1: 22 2: 1 2: 2
1 0.0000 0.3333 0.6667 0 0 0.6667 0.3333
OK

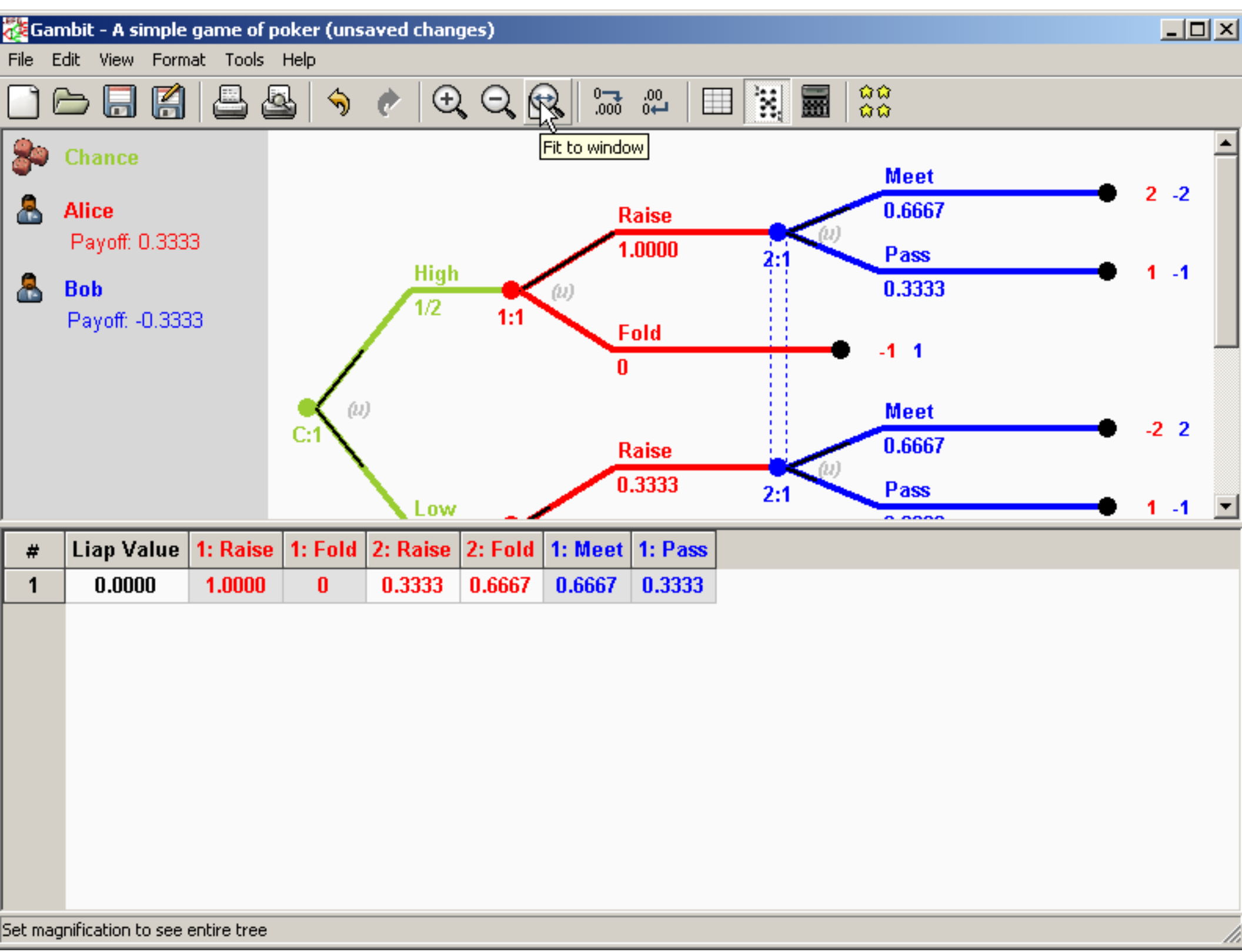

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Alice
11 (0.3333)
Payoff: 0.3333
Bob
1 (-0.3333)
Payoff: -0.3333
Bob
Alice
Notice that the player panel has updated to indicate the payoffs the players receive in this equilibrium. Alice can expect to gain about 33 cents per game, and Bob can expect to lose about 33 cents per game.
To interpret the strategies better, let's look at them converted back into strategies on the extensive form. To do this, toggle off the table tool on the toolbar.
Liap Value 1: 11 1: 12 1: 21 1: 22 2: 1 2: 2
1 0.0000 0.3333 0.6667 0 0 0.6667 0.3333


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
View the strategic form of the game
Alice
11 (0.3333)
Payoff: 0.3333
Bob
1 (-0.3333)
Payoff: -0.3333
Bob
1 2
Alice
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
22 -1 1 -1 1
Liap Value 1: 11 1: 12 1: 21 1: 22 2: 1 2: 2
1 0.0000 0.3333 0.6667 0 0 0.6667 0.3333
View the strategic form of the game


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Alice
11 (0.3333)
Payoff: 0.3333
Bob
1 (-0.3333)
Payoff: -0.3333
Bob
Alice
1 2
11 0 0 1 -1
12 1/2 -1/2 0 0
21 -3/2 3/2 0 0
22 -1 1 -1 1
Liap Value 1: 11 1: 12 1: 21 1: 22 2: 1 2: 2
1 0.0000 0.3333 0.6667 0 0 0.6667 0.3333
View the strategic form of the game


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Payoff: 0.3333
Bob
Payoff: -0.3333
High
Raise
1.0000
2:1
Meet
0.6667
Pass
0.3333
2 -2
1 -1
C:1
Notice that Gambit graphically presents the strategies on the tree for visualization. For example, the black segment on Bob's meet action is twice as long as that for his pass action, indicating he is twice as likely to meet as to pass when he gets to play.
Liap Value 1: Raise 1: Fo
1 0.0000 1.0000 0 0.3333 0.6667 0.6667 0.3333
View the strategic form of the game

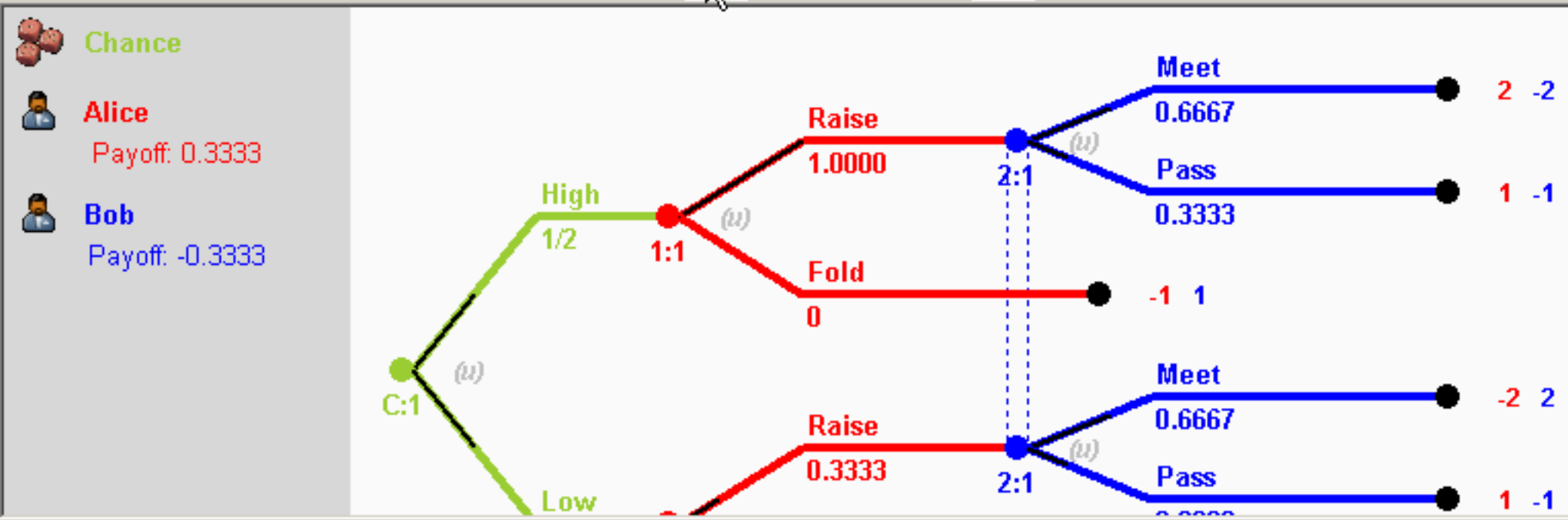

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Payoff: 0.3333
Bob
Payoff: -0.3333
C:1
High
1/2
Low
1:1
Raise
1.0000
Fold
0
Raise
0.3333
2:1
Meet
0.6667
Pass
0.3333
2:1
Meet
0.6667
Pass
2 -2
1 -1
-1 1
-2 2
1 -1
| Liap Value | 1: Raise | 1: Fold
1 | 0.0000 | 1.0000 | 0
With the addition of the list of equilibria, we can't quite see the whole game tree. We could drag the sash separating the windows to resize them. Or, we can zoom out on the game tree to fit it into the space we have. We'll do the latter here.
View the strategic form of the game



#	Liap Value	1: Raise	1: Fold	2: Raise	2: Fold	1: Meet	1: Pass
1	0.0000	1.0000	0	0.3333	0.6667	0.6667	0.3333

Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help

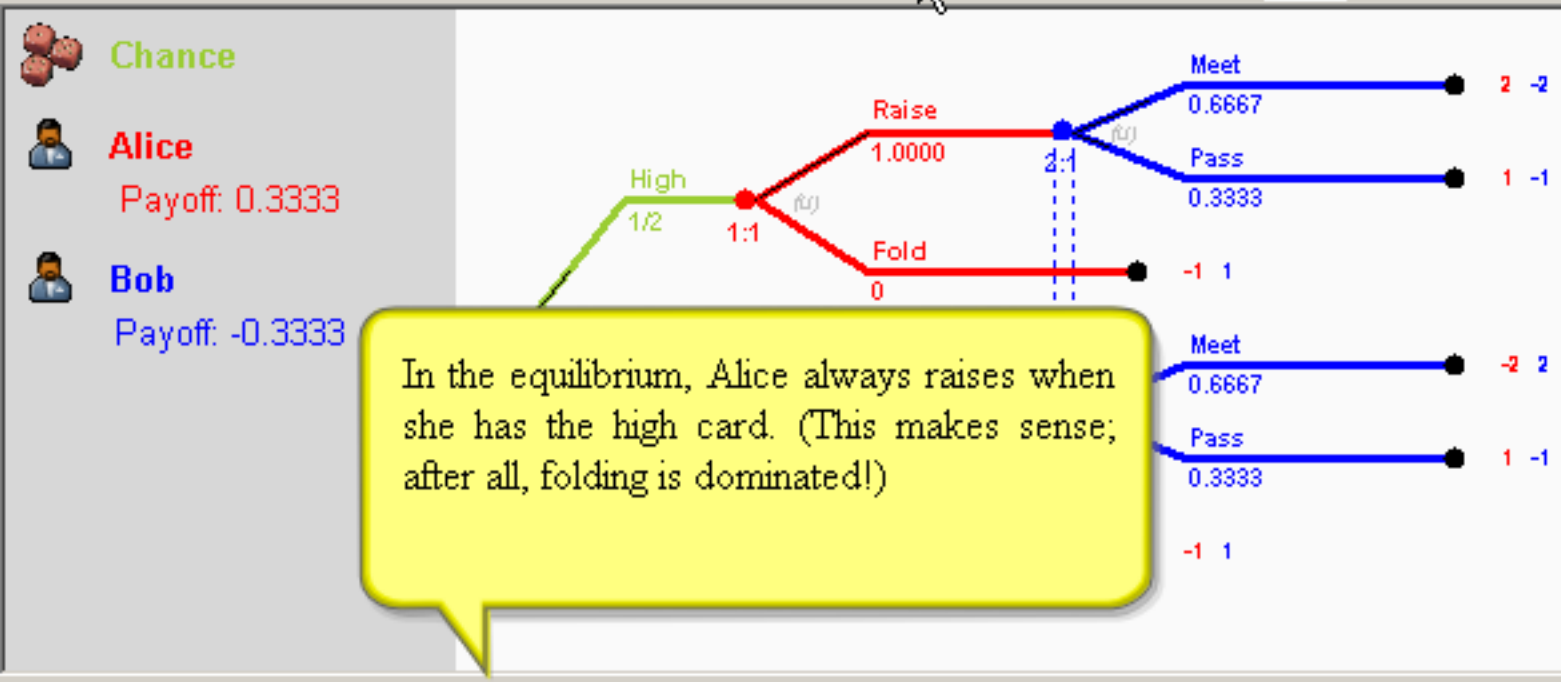


#	Liap Value	1: Raise	1: Fold	2: Raise	2: Fold	1: Meet	1: Pass
1	0.0000	1.0000	0	0.3333	0.6667	0.6667	0.3333

Set magnification to see entire tree

Gambit - A simple game of poker (unsaved changes)

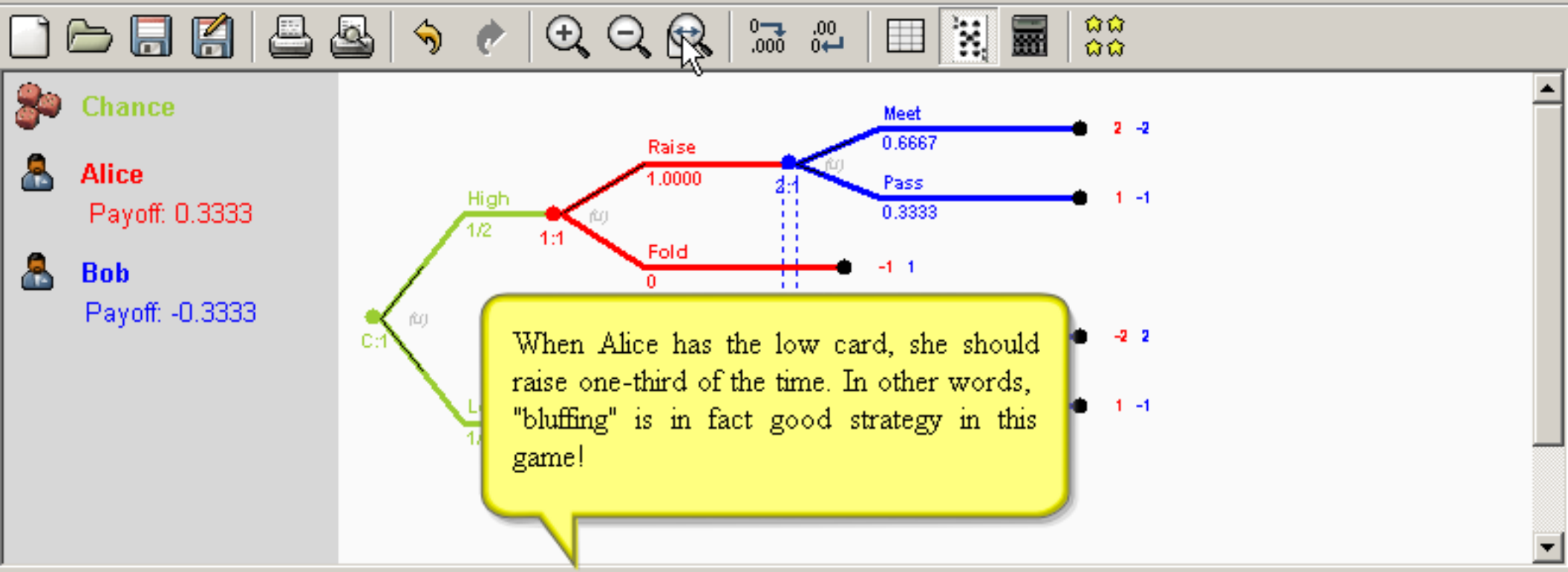
File Edit View Format Tools Help



#	Liap Value	1: Raise	1: Fold	2: Raise	2: Fold	1: Meet	1: Pass
1	0.0000	1.0000	0	0.3333	0.6667	0.6667	0.3333

Gambit - A simple game of poker (unsaved changes)

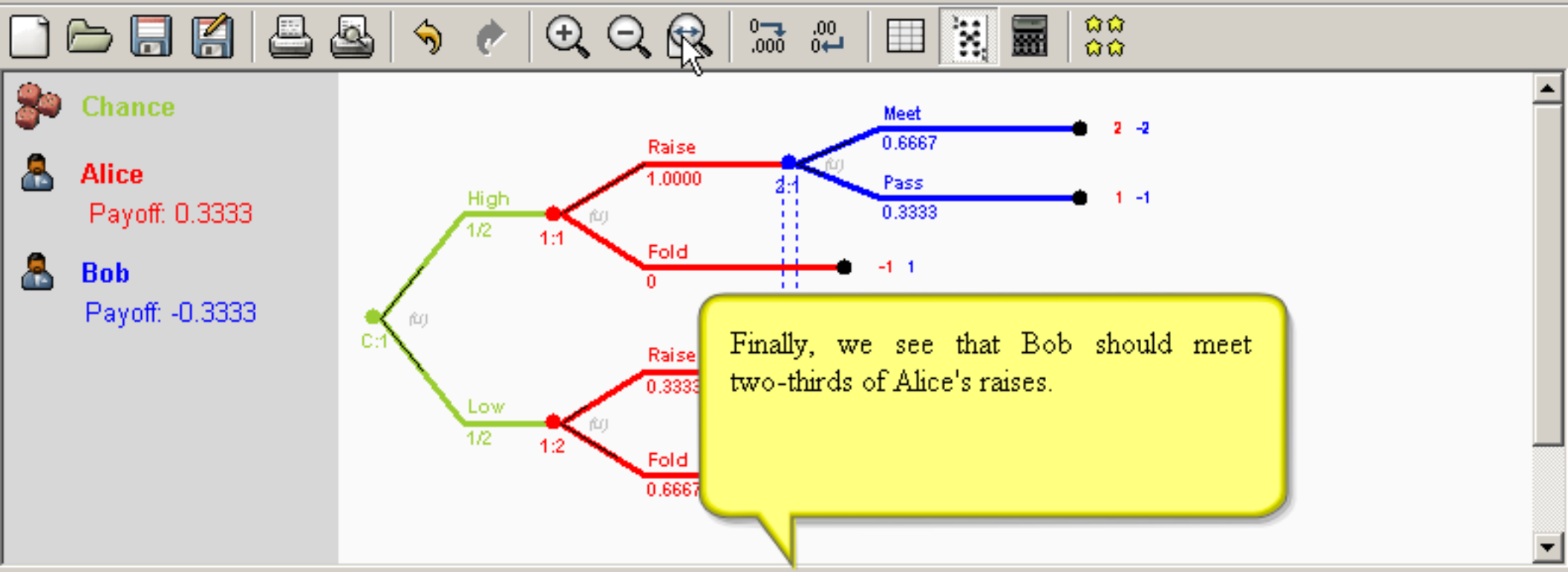
File Edit View Format Tools Help



#	Liap Value	1: Raise	1: Fold	2: Raise	2: Fold	1: Meet	1: Pass
1	0.0000	1.0000	0	0.3333	0.6667	0.6667	0.3333

Gambit - A simple game of poker (unsaved changes)

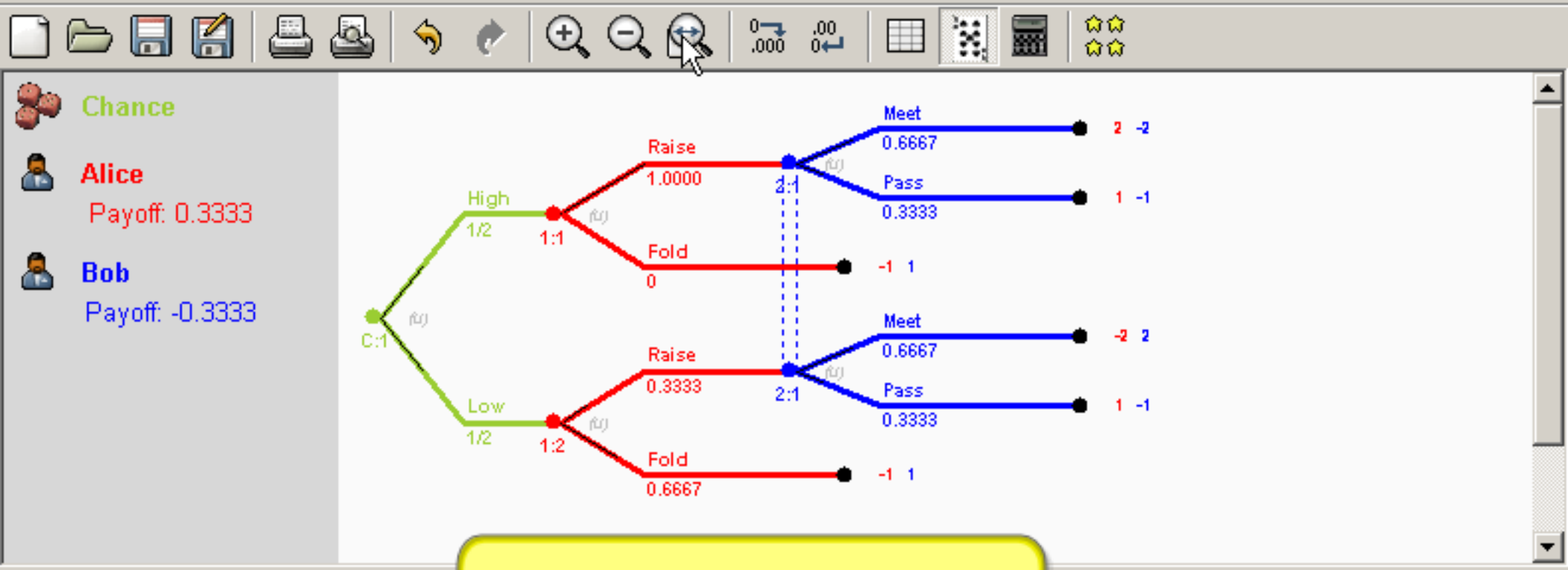
File Edit View Format Tools Help



#	Liap Value	1: Raise	1: Fold	2: Raise	2: Fold	1: Meet	1: Pass
1	0.0000	1.0000	0	0.3333	0.6667	0.6667	0.3333

Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help



#	Liap Value	1: Raise	1: Fold
1	0.0000	1.0000	0

We can navigate around the game tree to get a better idea of how the play of the game proceeds. Click on any node to get more information.

Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help

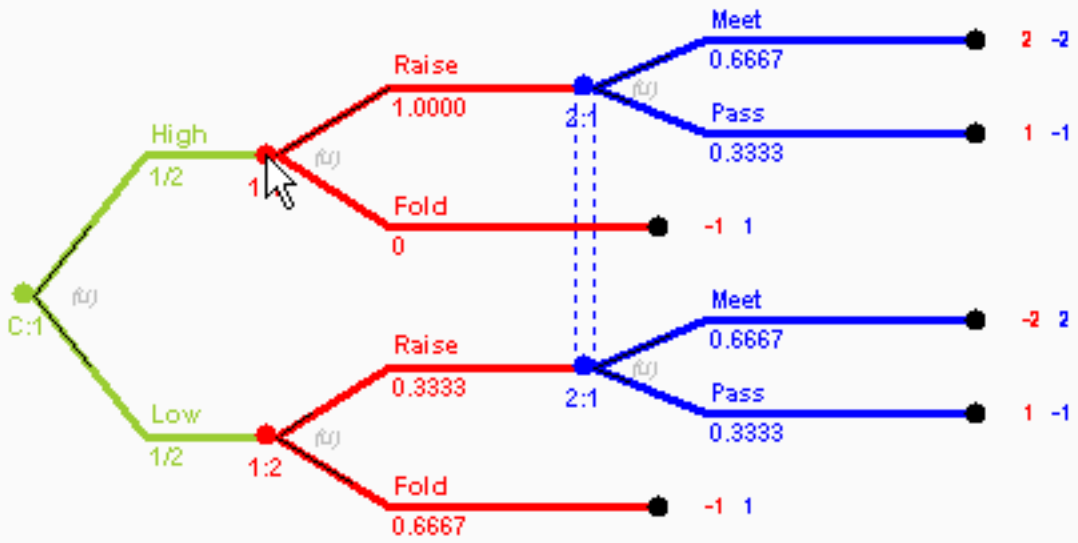
Chance

Alice

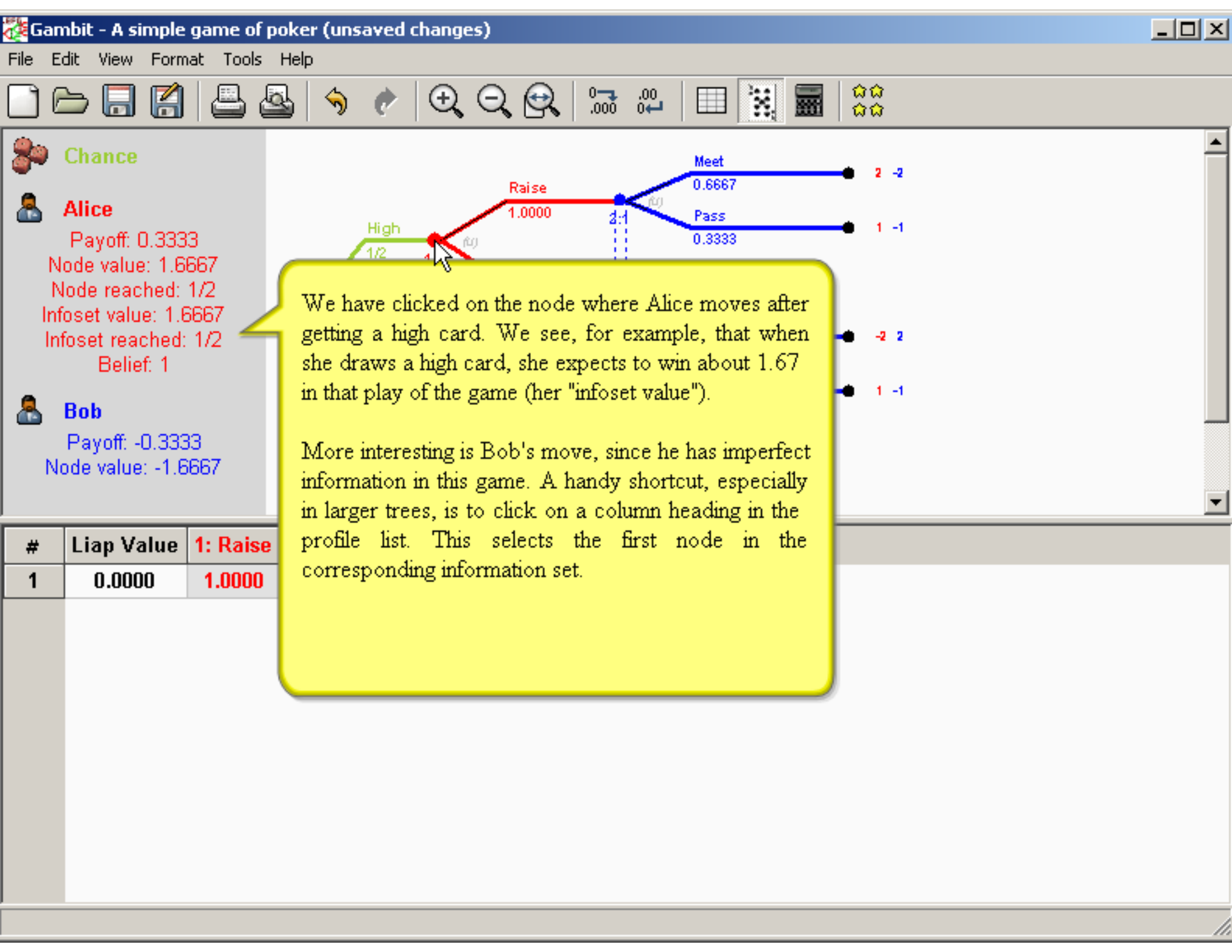
Payoff: 0.3333

Bob

Payoff: -0.3333

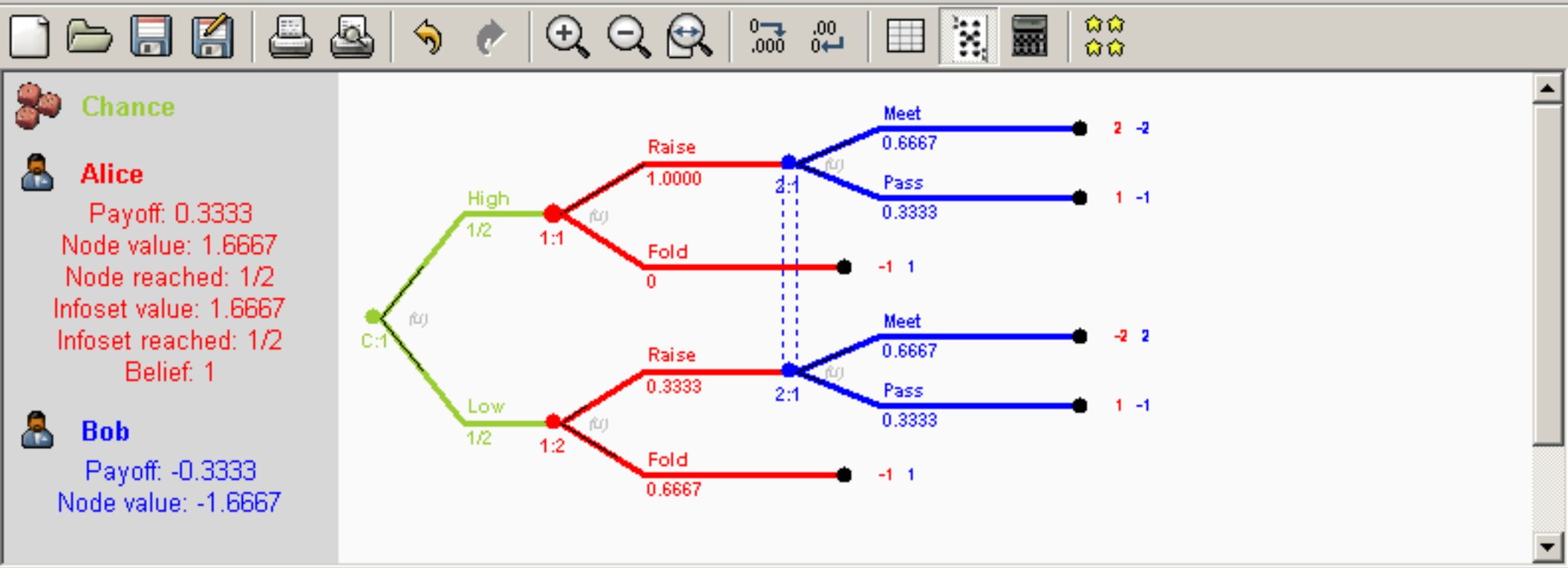


#	Liap Value	1: Raise	1: Fold	2: Raise	2: Fold	1: Meet	1: Pass
1	0.0000	1.0000	0	0.3333	0.6667	0.6667	0.3333


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Payoff: 0.3333
Node value: 1.6667
Node reached: 1/2
Infoset value: 1.6667
Infoset reached: 1/2
Belief: 1
Bob
Payoff: -0.3333
Node value: -1.6667
High
1/2
Raise
1.0000
2:1
Meet
0.6667
Pass
0.3333
2 -2
1 -1
-2 2
1 -1
We have clicked on the node where Alice moves after getting a high card. We see, for example, that when she draws a high card, she expects to win about 1.67 in that play of the game (her "infoset value").
More interesting is Bob's move, since he has imperfect information in this game. A handy shortcut, especially in larger trees, is to click on a column heading in the profile list. This selects the first node in the corresponding information set.
Liap Value 1: Raise
1 0.0000 1.0000

Gambit - A simple game of poker (unsaved changes)

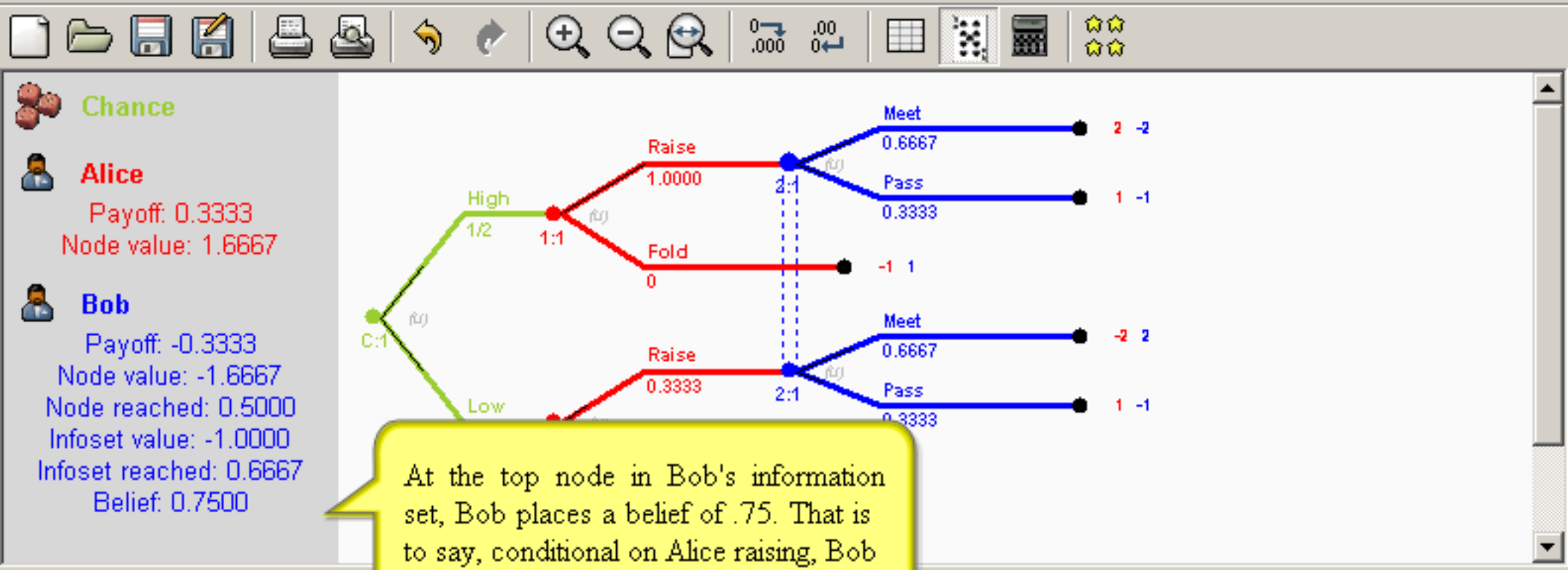
File Edit View Format Tools Help



#	Liap Value	1: Raise	1: Fold	2: Raise	2: Fold	1: Meet	1: Pass
1	0.0000	1.0000	0	0.3333	0.6667	0.6667	0.3333

Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help

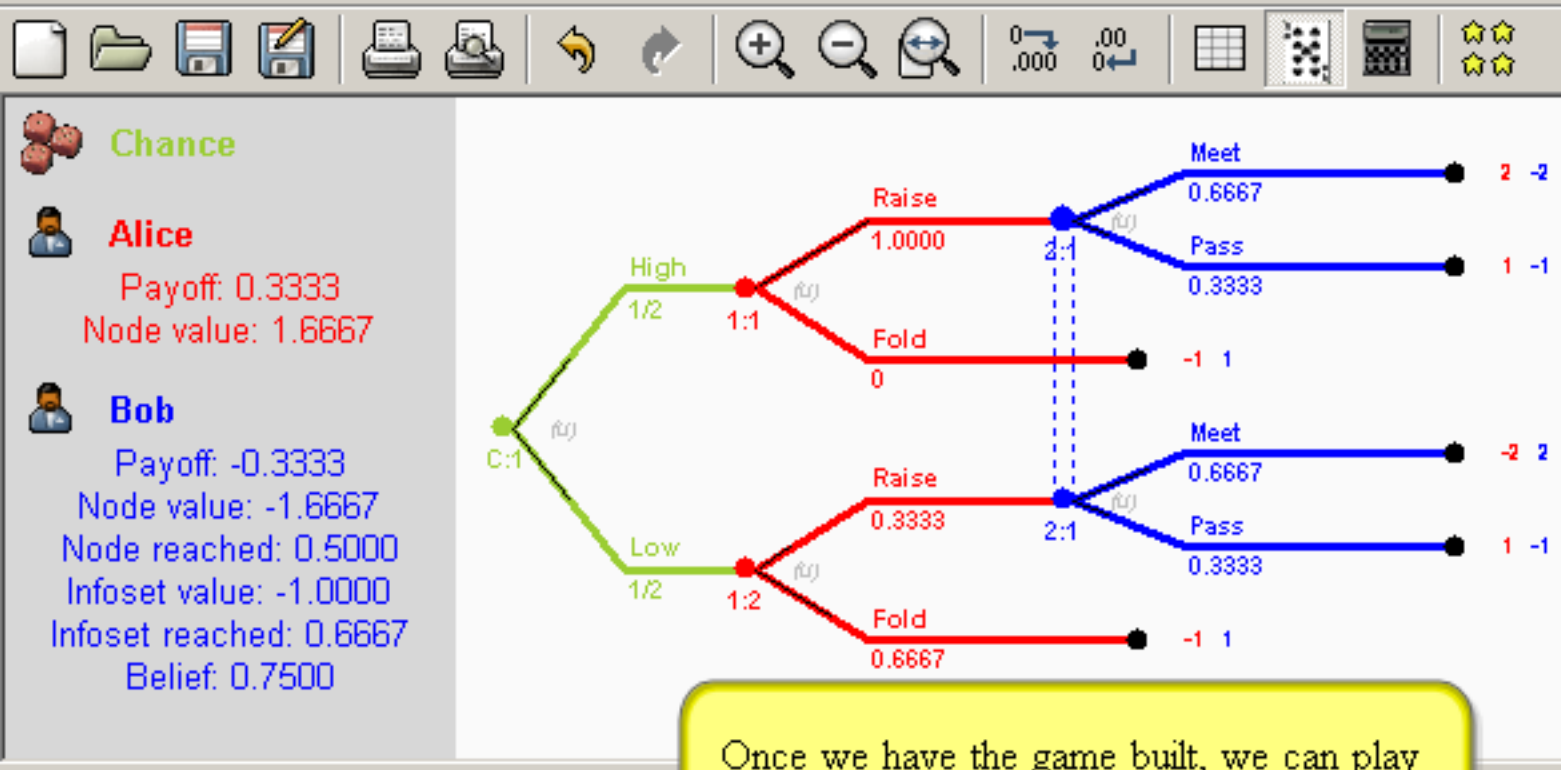


At the top node in Bob's information set, Bob places a belief of .75. That is to say, conditional on Alice raising, Bob believes there is a three-fourths chance he is actually at the top node in his information set, or, in other words, a three-fourths chance that Alice has the high card.

#	Liap Value	1: Raise
1	0.0000	1.0000

Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help



#	Liap Value	1: Raise	1: Fold	2:
1	0.0000	1.0000	0	0.

Once we have the game built, we can play around with parameters to see how strategies change. For example, what if we change the rules so that Alice now has a two-thirds chance of drawing the high card?

Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help

Chance

Alice

Payoff: 0.3333

Node value: -1.0000

Bob

Payoff: -0.3333

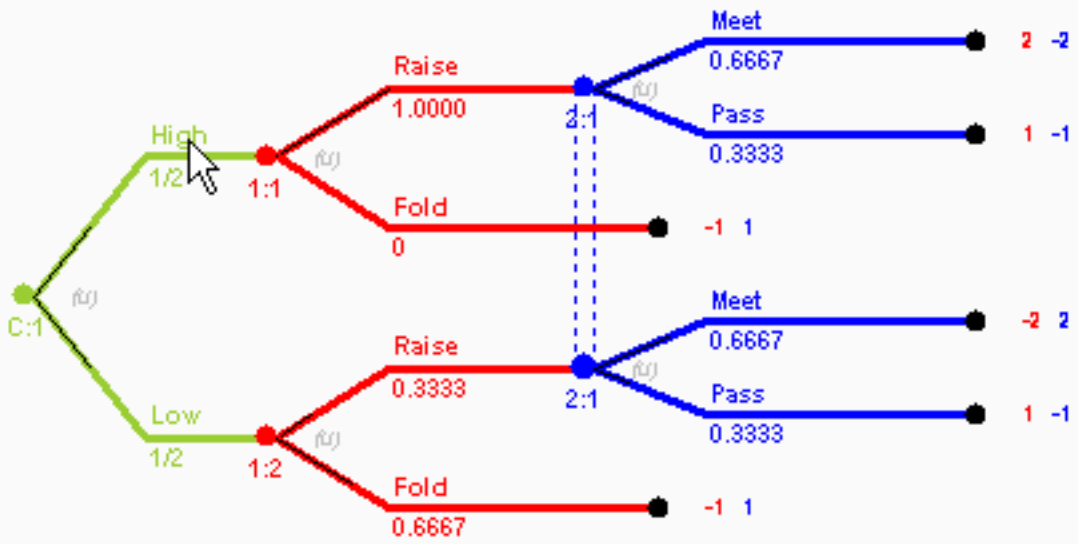
Node value: 1.0000

Node reached: 0.1667

Infoset value: -1.0000

Infoset reached: 0.6667

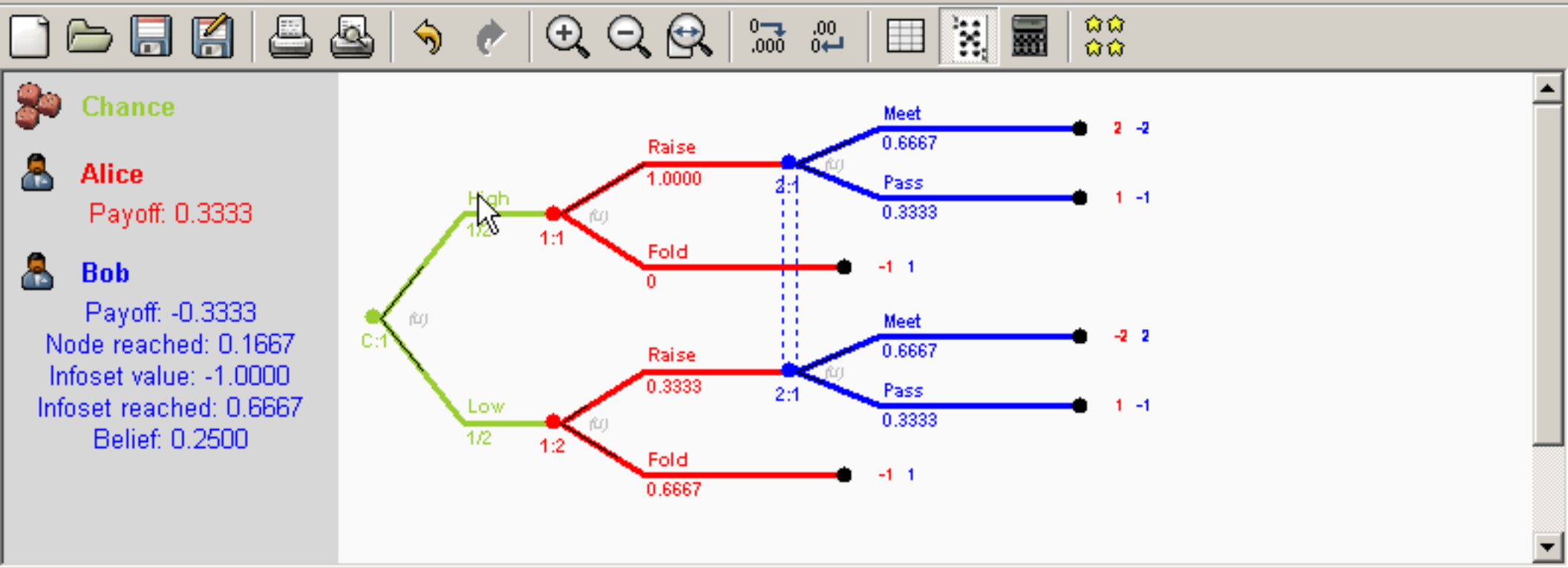
Belief: 0.2500



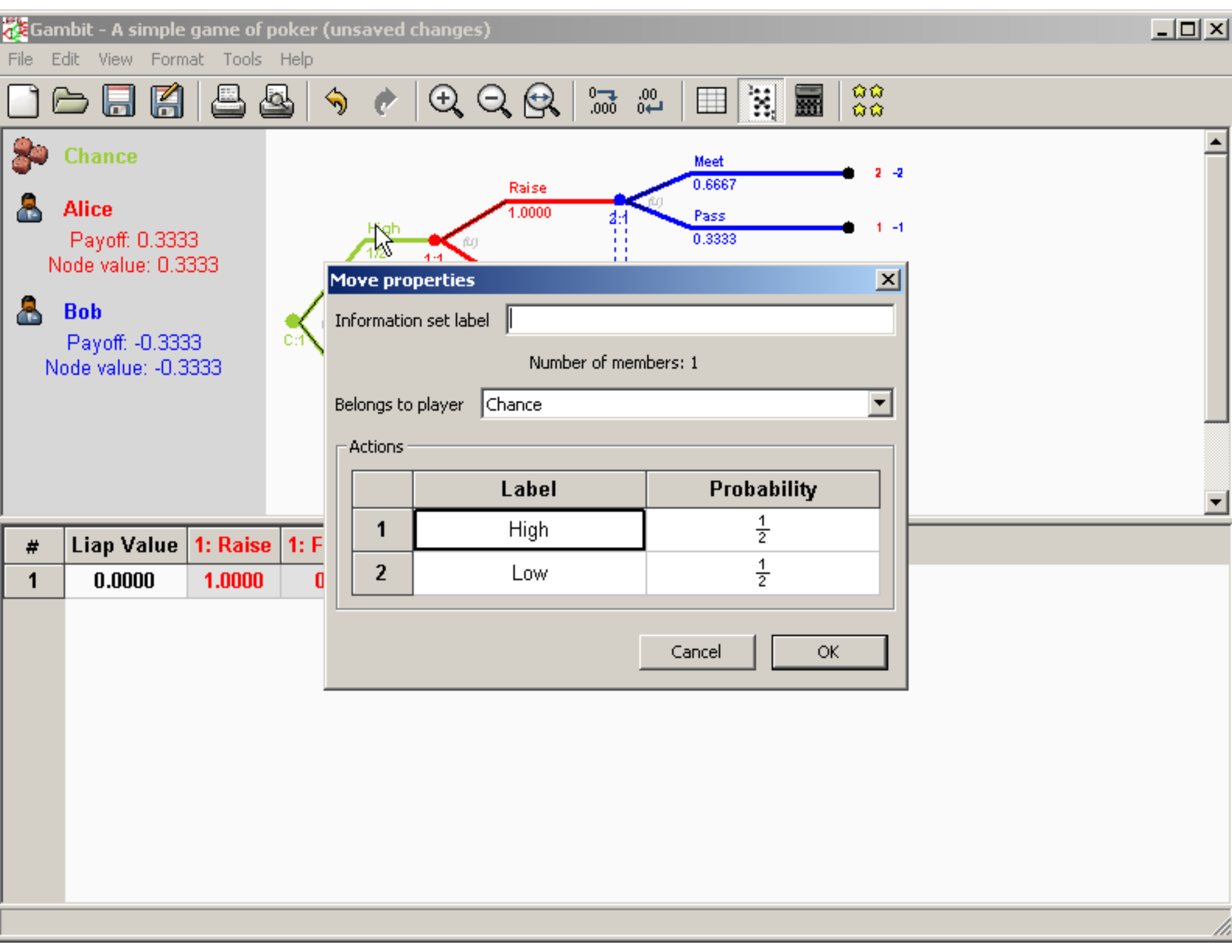
#	Liap Value	1: Raise	1: Fold	2: Raise	2: Fold	1: Meet	1: Pass
1	0.0000	1.0000	0	0.3333	0.6667	0.6667	0.3333

Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help

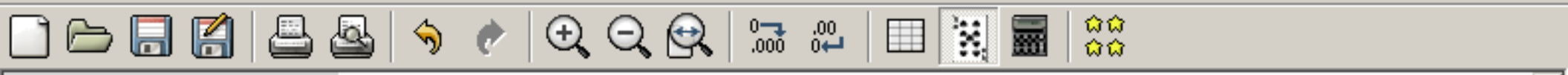


#	Liap Value	1: Raise	1: Fold	2: Raise	2: Fold	1: Meet	1: Pass
1	0.0000	1.0000	0	0.3333	0.6667	0.6667	0.3333


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Payoff: 0.3333
Node value: 0.3333
Bob
Payoff: -0.3333
Node value: -0.3333
Raise
1.0000
Meet
0.6667
Pass
0.3333
2 -2
1 -1
2:1
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
High
1/2
2
Low
1/2
Cancel
OK
Liap Value 1: Raise
1 0.0000 1.0000

Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help



Chance

Alice

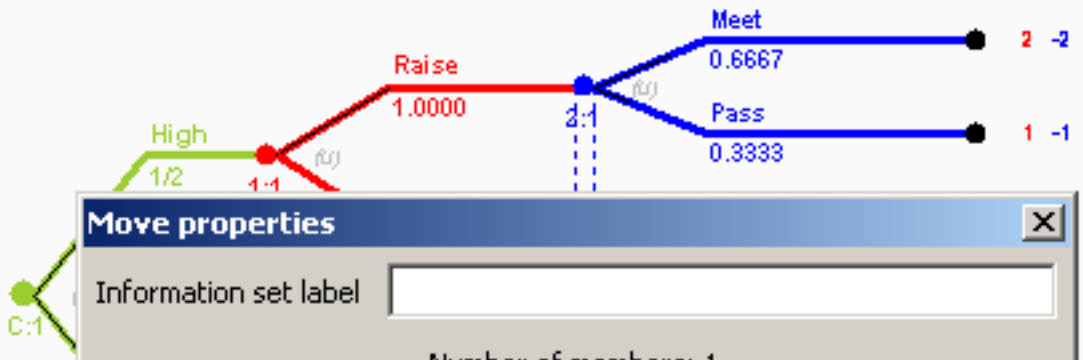
Payoff: 0.3333

Node value: 0.3333

Bob

Payoff: -0.3333

Node value: -0.3333



Move properties

Information set label

Number of members: 1

Belongs to player: Chance

Actions

	Label	Probability
1	High	$\frac{1}{2}$
2	Low	$\frac{1}{2}$

Cancel OK

#	Liap Value	1: Raise	1: F
1	0.0000	1.0000	0

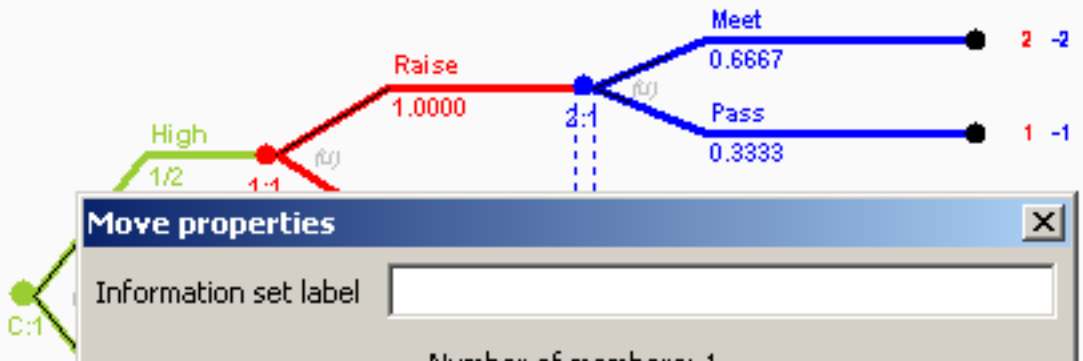
Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help

Chance

Alice
Payoff: 0.3333
Node value: 0.3333

Bob
Payoff: -0.3333
Node value: -0.3333



Move properties

Information set label

Number of members: 1

Belongs to player: Chance

Actions

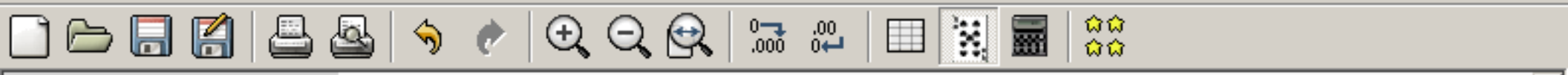
	Label	Probability
1	High	$\frac{1}{2}$
2	Low	$\frac{1}{2}$

Cancel OK

#	Liap Value	1: Raise	1: F
1	0.0000	1.0000	0

Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help



Chance

Alice

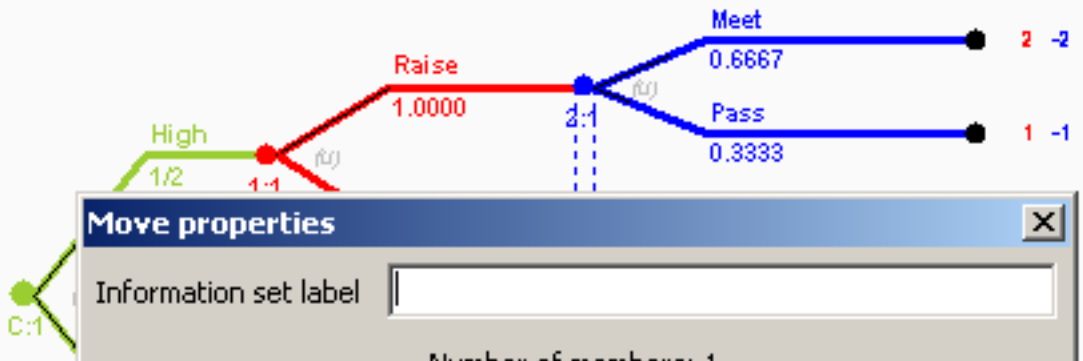
Payoff: 0.3333

Node value: 0.3333

Bob

Payoff: -0.3333

Node value: -0.3333



Move properties

Information set label

Number of members: 1

Belongs to player: Chance

Actions

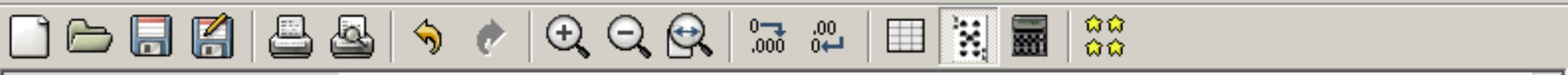
	Label	Probability
1	High	1/2
2	Low	1/2

Cancel OK

#	Liap Value	1: Raise	1: F
1	0.0000	1.0000	0

Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help



Chance

Alice

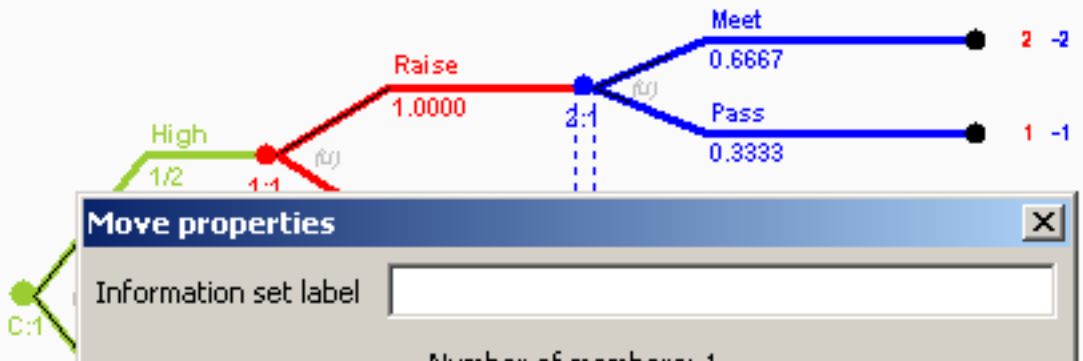
Payoff: 0.3333

Node value: 0.3333

Bob

Payoff: -0.3333

Node value: -0.3333



Move properties

Information set label

Number of members: 1

Belongs to player: Chance

Actions

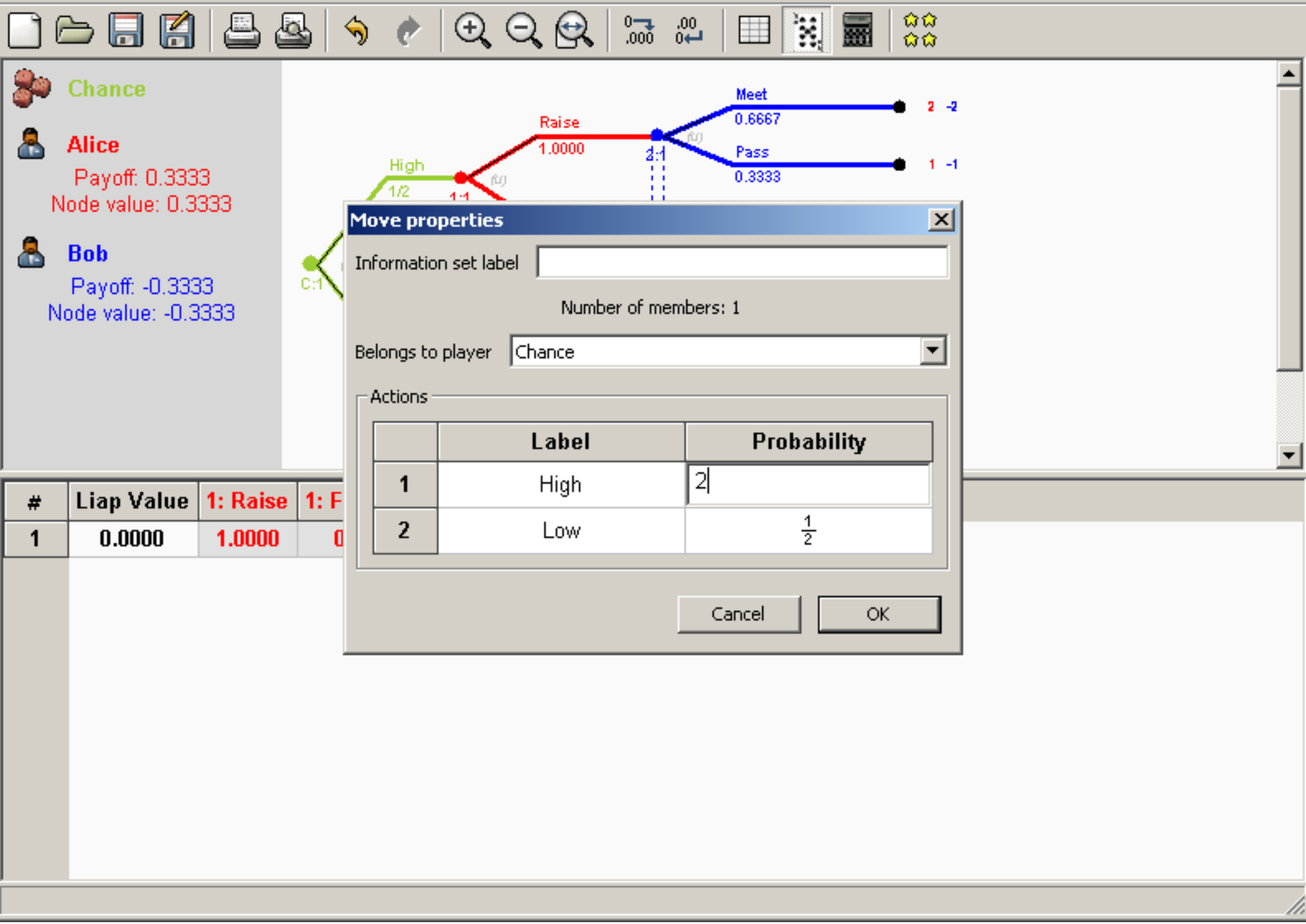
	Label	Probability
1	High	1/2
2	Low	1/2

Cancel OK

#	Liap Value	1: Raise	1: F
1	0.0000	1.0000	0

Gambit - A simple game of poker (unsaved changes)

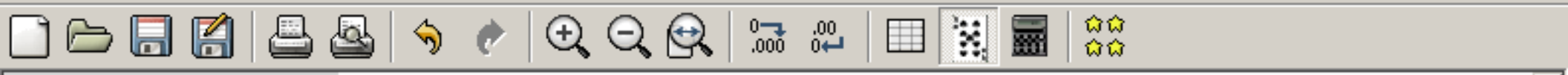
File Edit View Format Tools Help



#	Liap Value	1: Raise	1: F
1	0.0000	1.0000	0

Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help



Chance

Alice

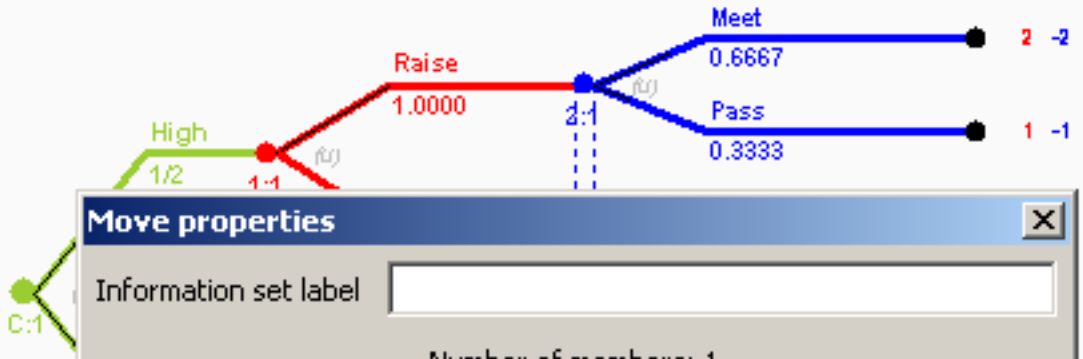
Payoff: 0.3333

Node value: 0.3333

Bob

Payoff: -0.3333

Node value: -0.3333



Move properties

Information set label

Number of members: 1

Belongs to player: Chance

Actions

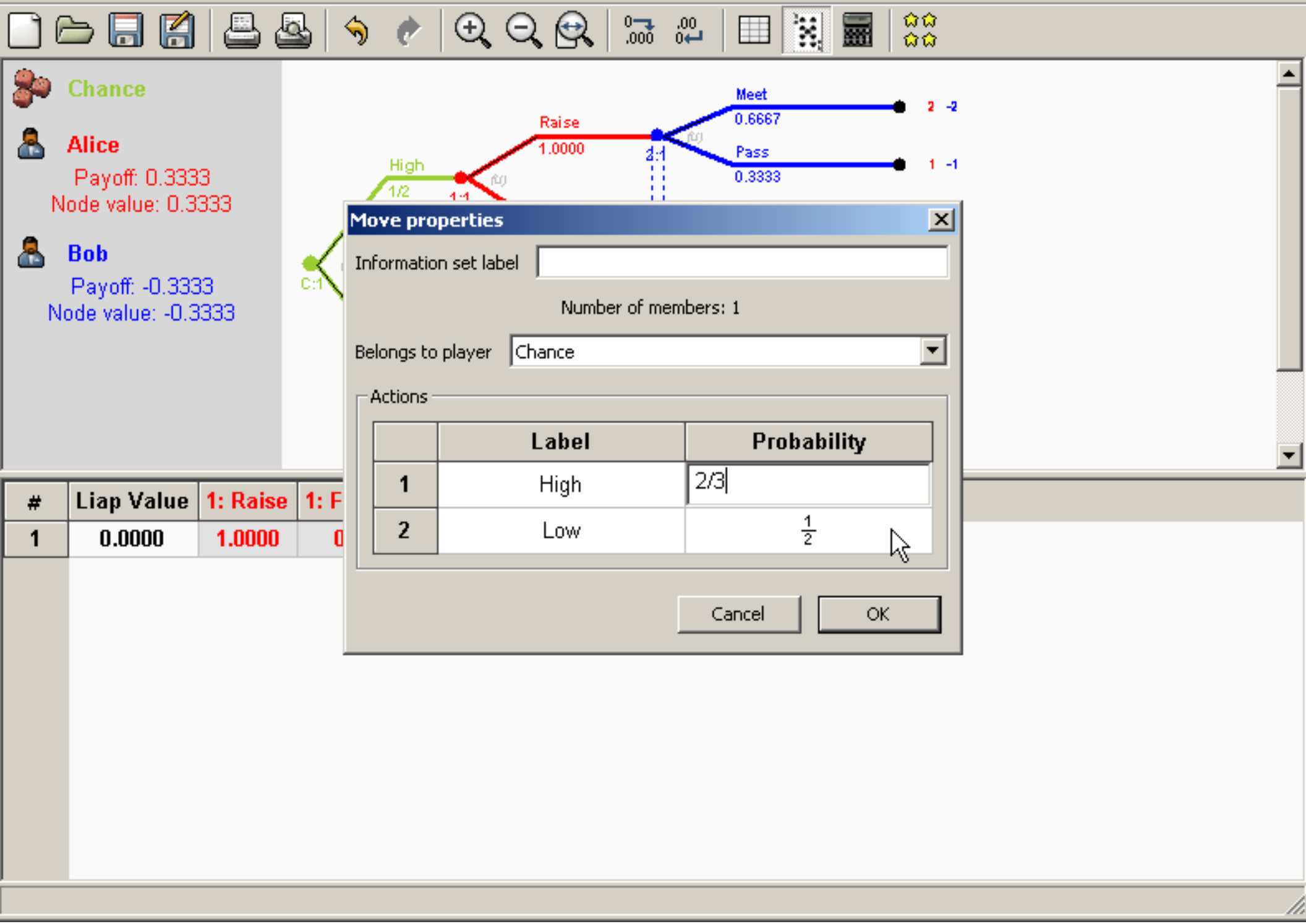
	Label	Probability
1	High	2/
2	Low	1/2

Cancel OK

#	Liap Value	1: Raise	1: F
1	0.0000	1.0000	0

Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help



Move properties

Information set label

Number of members: 1

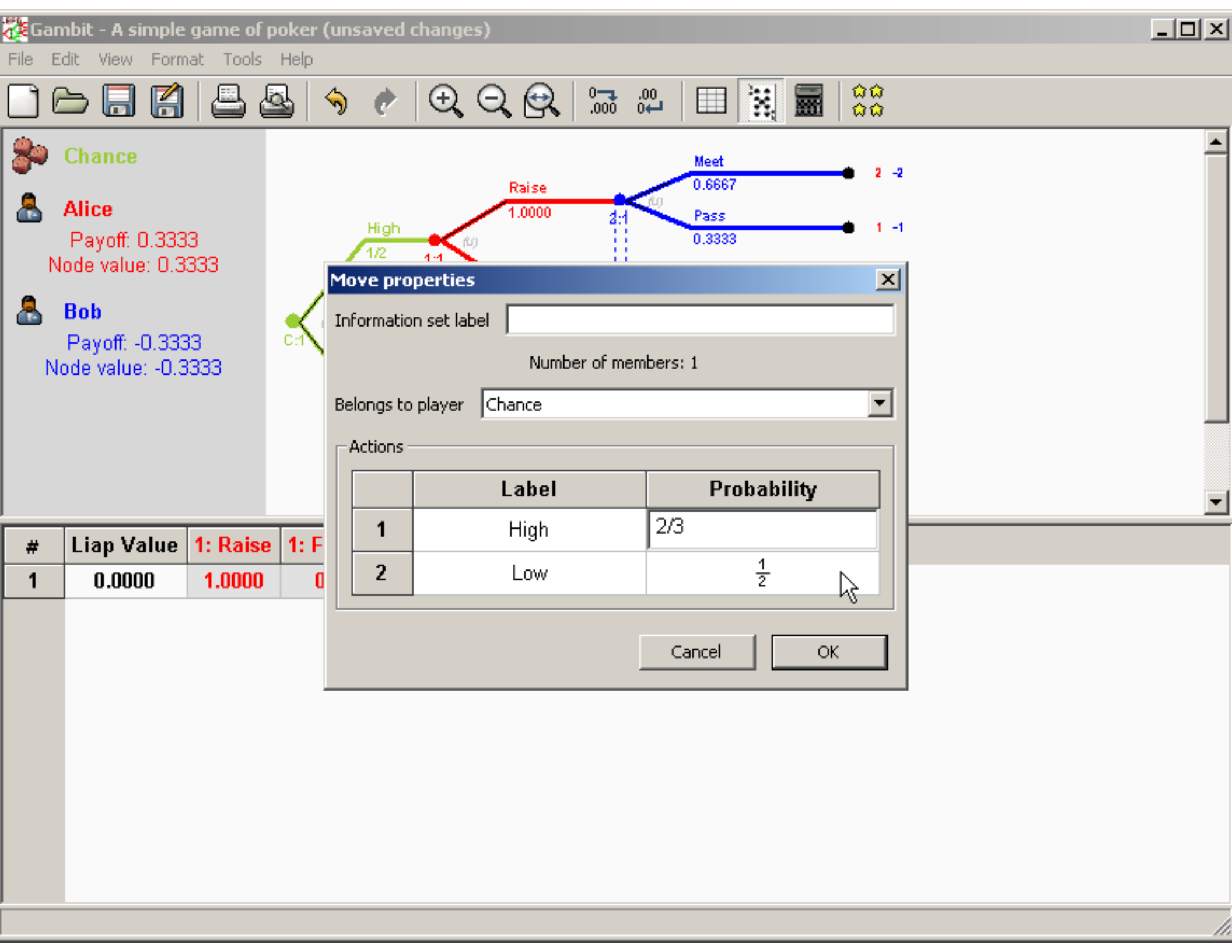
Belongs to player: Chance

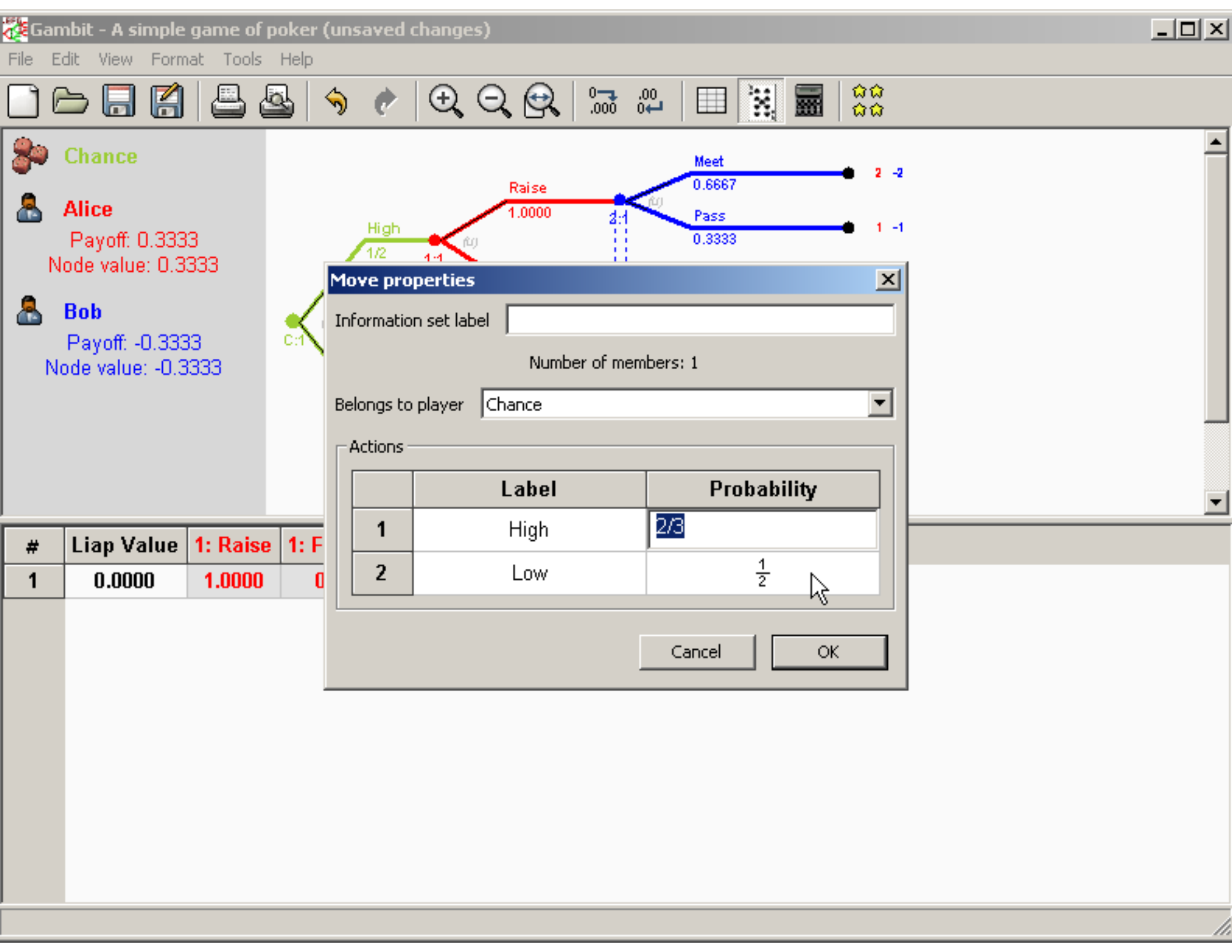
Actions

	Label	Probability
1	High	2/3
2	Low	1/2

Cancel OK

#	Liap Value	1: Raise	1: F
1	0.0000	1.0000	0


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Payoff: 0.3333
Node value: 0.3333
Bob
Payoff: -0.3333
Node value: -0.3333
High
1/2
Raise
1.0000
Meet
0.6667
Pass
0.3333
2 -2
1 -1
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
High
2/3
2
Low
1/2
Cancel
OK
Liap Value 1: Raise 1: F
1 0.0000 1.0000 0


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Payoff: 0.3333
Node value: 0.3333
Bob
Payoff: -0.3333
Node value: -0.3333
High
1/2
Raise
1.0000
Meet
0.6667
Pass
0.3333
2 -2
1 -1
2:1
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
High
2/3
2
Low
1/2
Cancel
OK
Liap Value 1: Raise 1: F
1 0.0000 1.0000 0

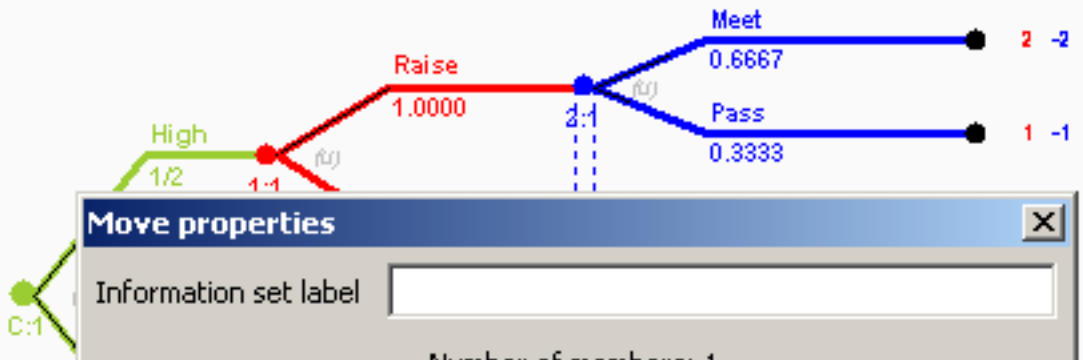
Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help

Chance

Alice
Payoff: 0.3333
Node value: 0.3333

Bob
Payoff: -0.3333
Node value: -0.3333



Move properties

Information set label

Number of members: 1

Belongs to player: Chance

Actions

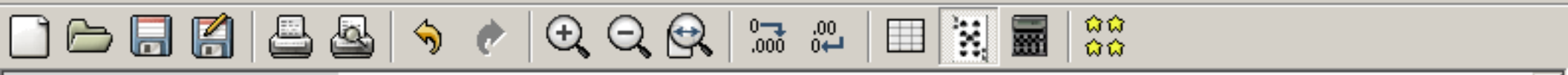
	Label	Probability
1	High	$\frac{2}{3}$
2	Low	$\frac{1}{2}$

Cancel OK

#	Liap Value	1: Raise	1: F
1	0.0000	1.0000	0

Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help



Chance

Alice

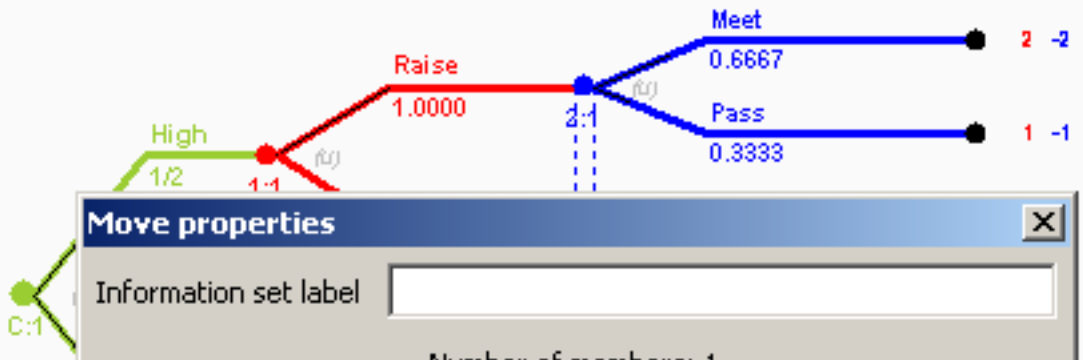
Payoff: 0.3333

Node value: 0.3333

Bob

Payoff: -0.3333

Node value: -0.3333



Move properties

Information set label

Number of members: 1

Belongs to player: Chance

Actions

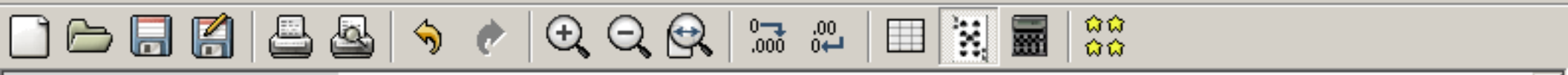
	Label	Probability
1	High	$\frac{2}{3}$
2	Low	1/2

Cancel OK

#	Liap Value	1: Raise	1: F
1	0.0000	1.0000	0

Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help



Chance

Alice

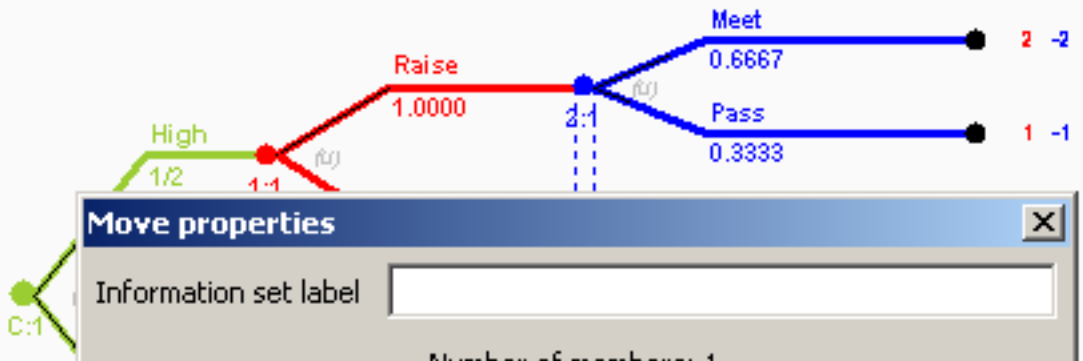
Payoff: 0.3333

Node value: 0.3333

Bob

Payoff: -0.3333

Node value: -0.3333



Move properties

Information set label

Number of members: 1

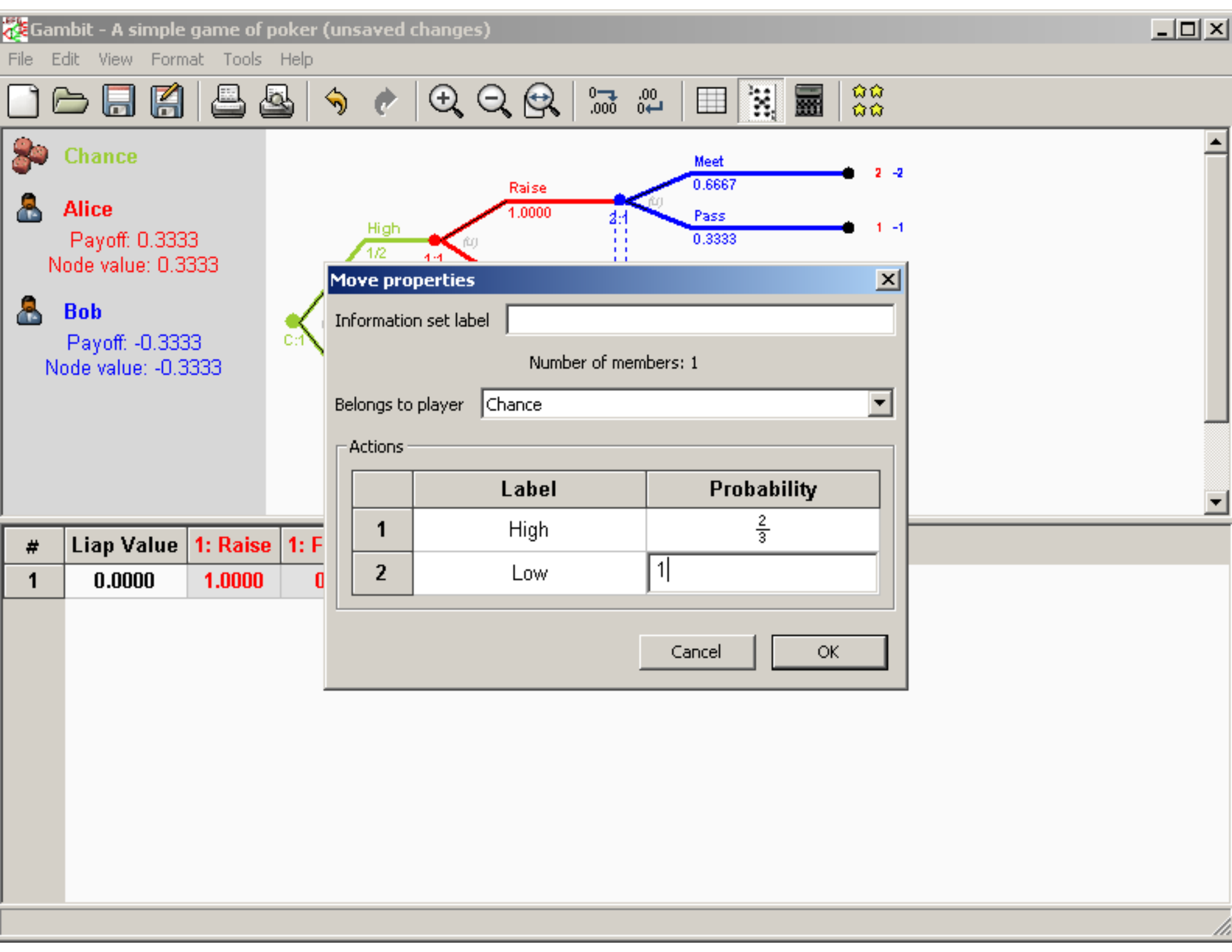
Belongs to player: Chance

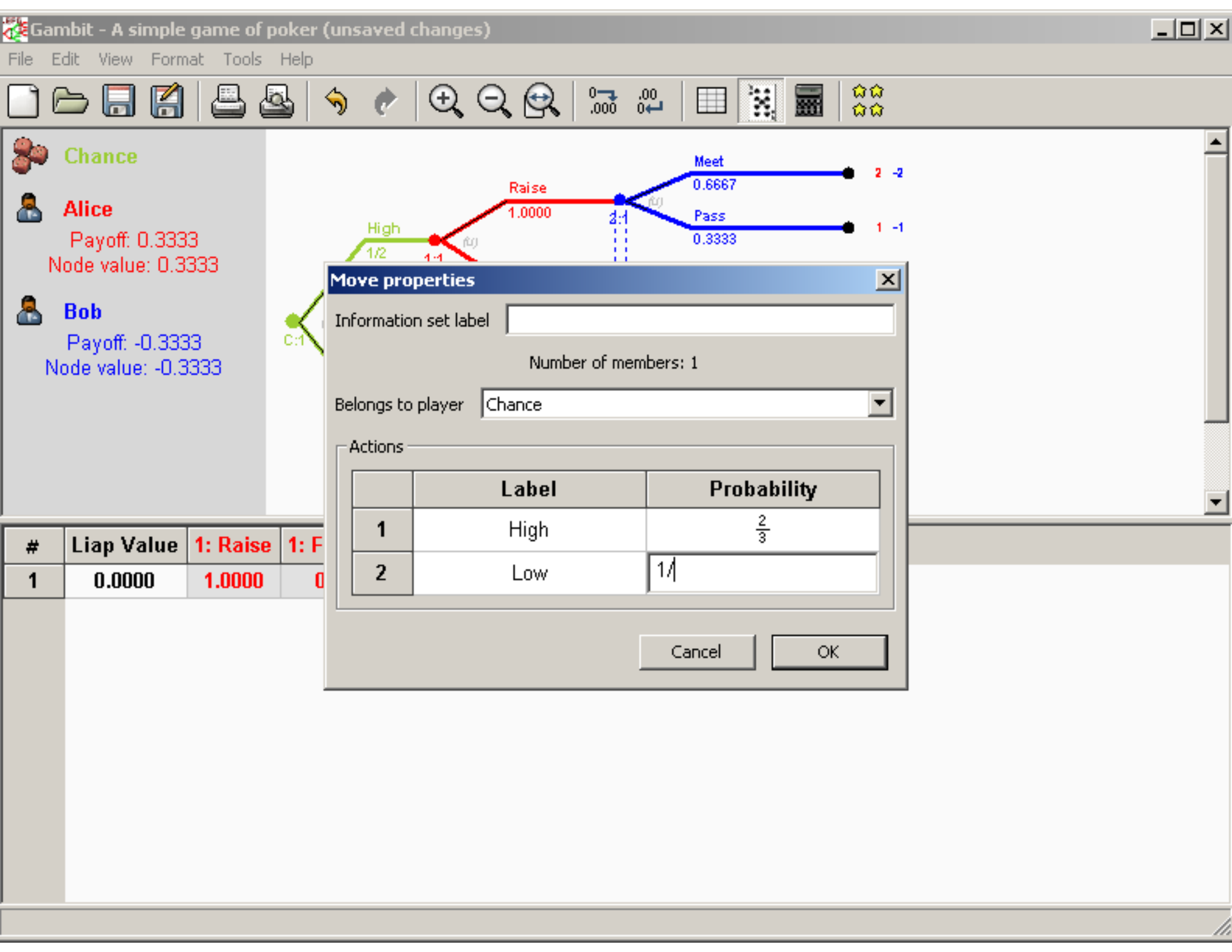
Actions

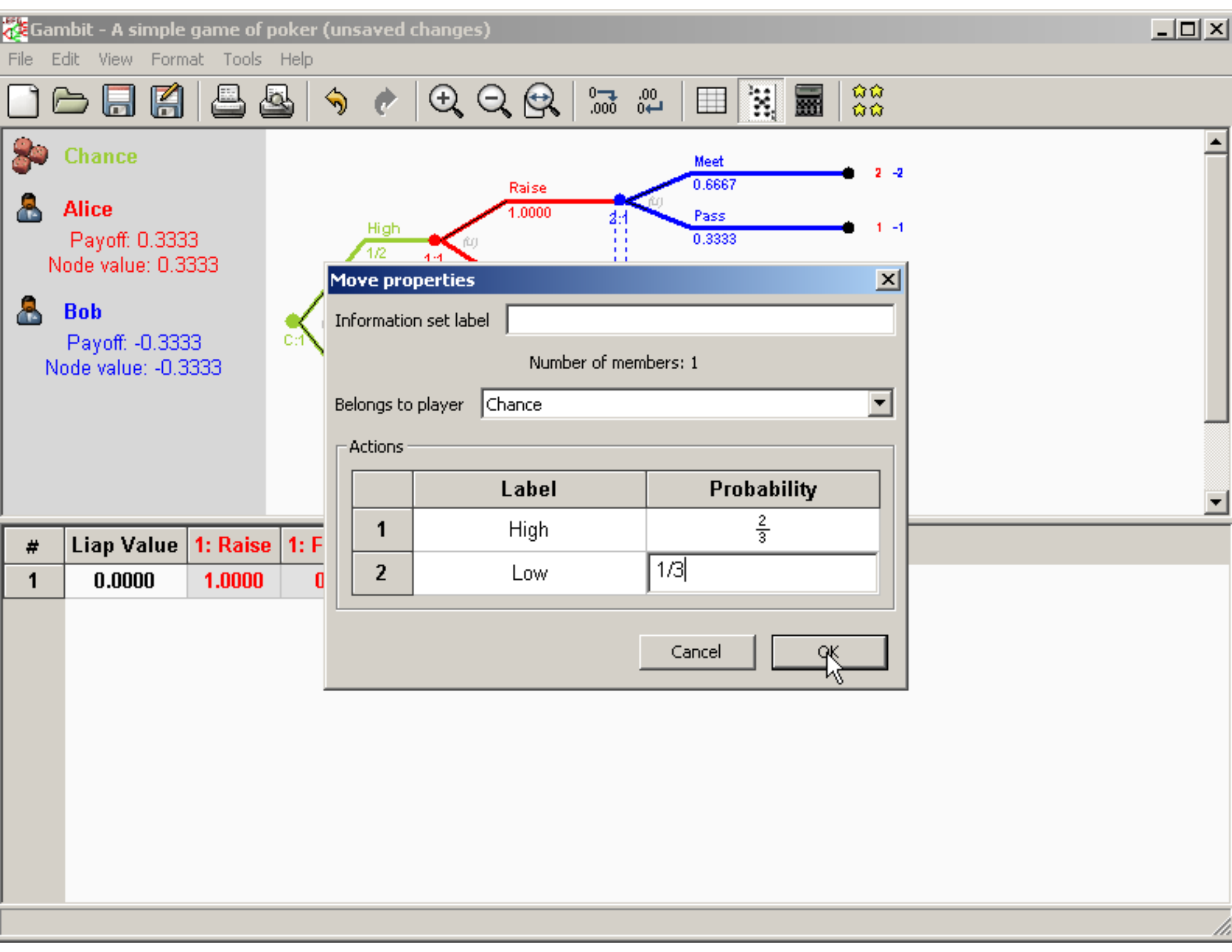
	Label	Probability
1	High	$\frac{2}{3}$
2	Low	1/2

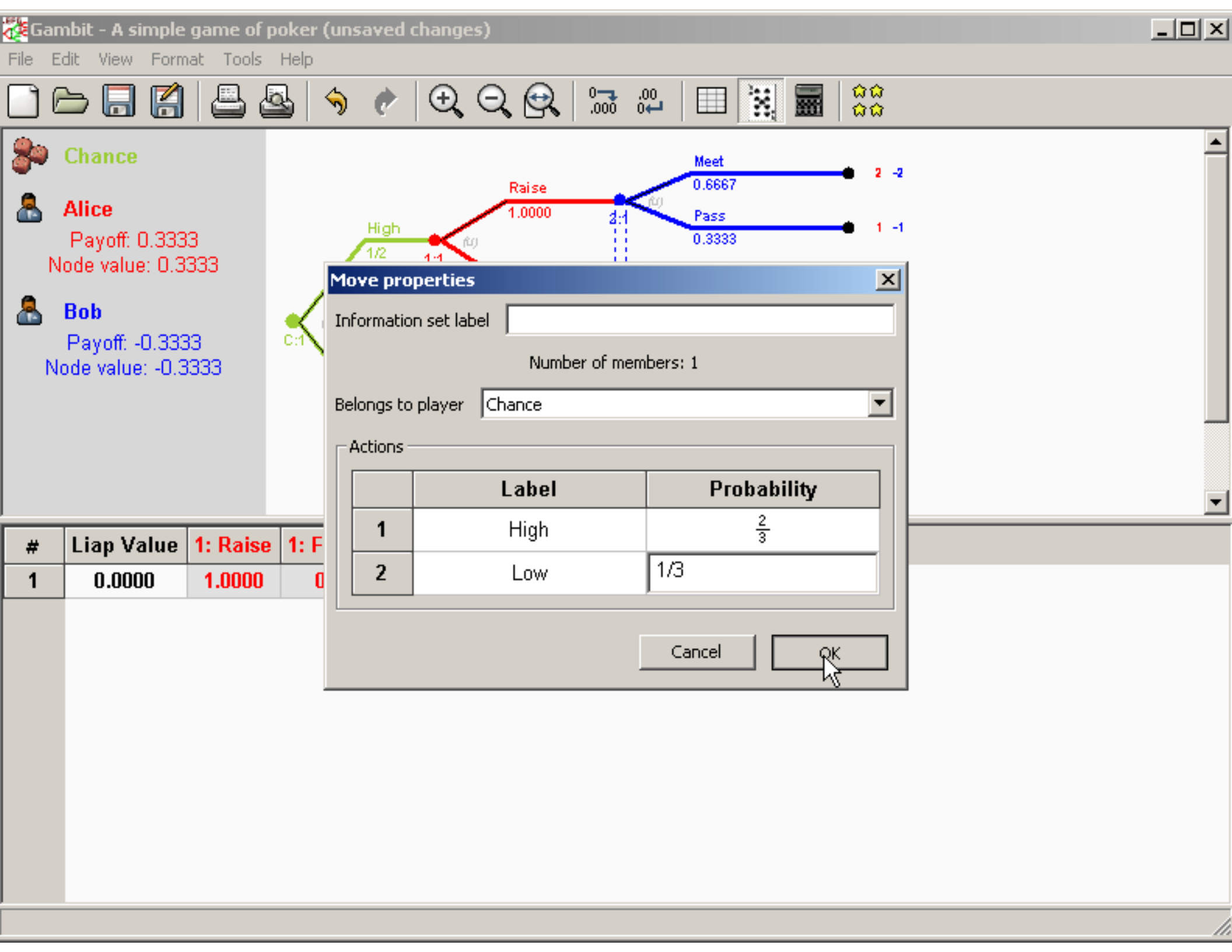
Cancel OK

#	Liap Value	1: Raise	1: F
1	0.0000	1.0000	0


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Payoff: 0.3333
Node value: 0.3333
Bob
Payoff: -0.3333
Node value: -0.3333
Raise
1.0000
Meet
0.6667
Pass
0.3333
High
1/2
2:1
C:1
2 -2
1 -1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
High
2/3
2
Low
1
Cancel
OK
Liap Value 1: Raise 1: F
1 0.0000 1.0000 0

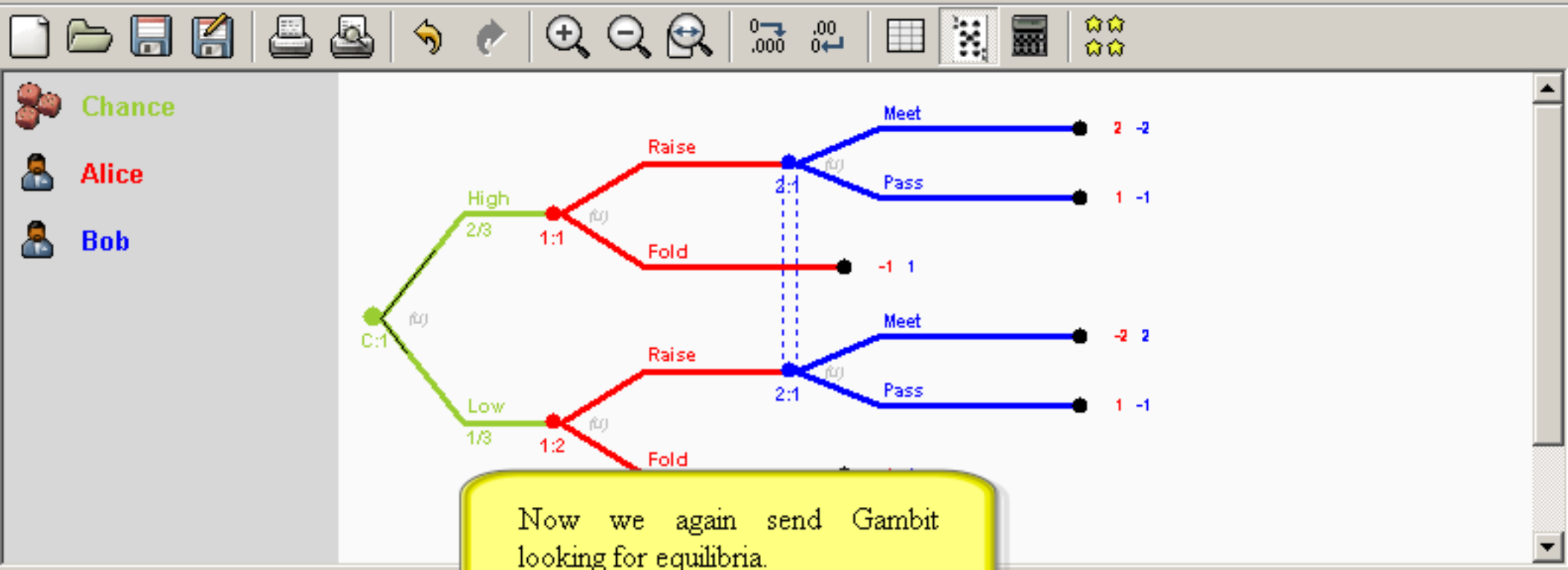

Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Payoff: 0.3333
Node value: 0.3333
Bob
Payoff: -0.3333
Node value: -0.3333
Raise
1.0000
Meet
0.6667
Pass
0.3333
High
1/2
2:1
2 -2
1 -1
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
High
2/3
2
Low
1/
Cancel
OK
Liap Value 1: Raise 1: F
1 0.0000 1.0000 0


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Payoff: 0.3333
Node value: 0.3333
Bob
Payoff: -0.3333
Node value: -0.3333
High
1/2
Raise
1.0000
Meet
0.6667
Pass
0.3333
2 -2
1 -1
2:1
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
High
2/3
2
Low
1/3
Cancel
OK
Liap Value 1: Raise 1: F
1 0.0000 1.0000 0


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Payoff: 0.3333
Node value: 0.3333
Bob
Payoff: -0.3333
Node value: -0.3333
High
1/2
Raise
1.0000
Meet
0.6667
Pass
0.3333
2 -2
1 -1
C:1
Move properties
Information set label
Number of members: 1
Belongs to player
Chance
Actions
Label
Probability
1
High
2/3
2
Low
1/3
Cancel
OK
Liap Value 1: Raise 1: F
1 0.0000 1.0000 0

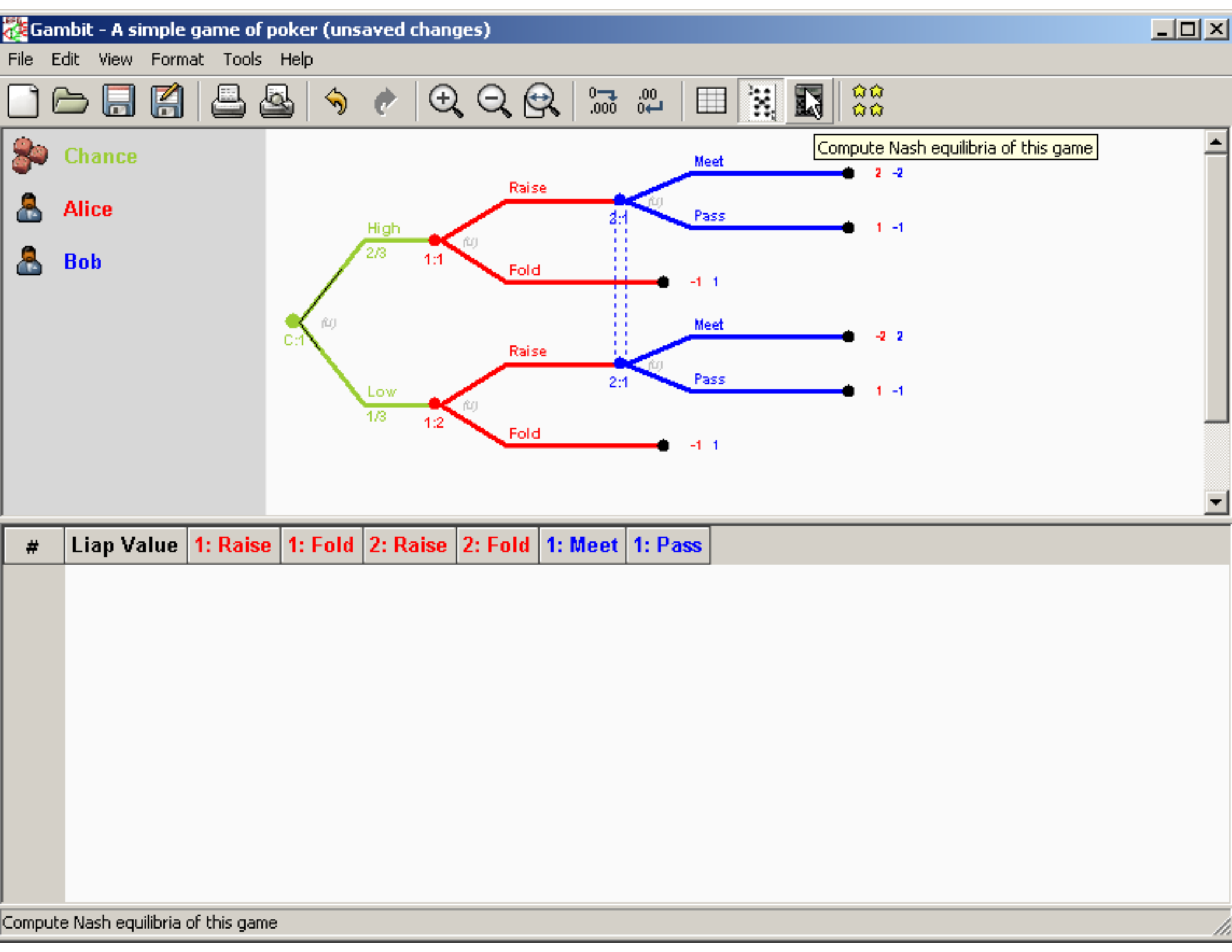
Gambit - A simple game of poker (unsaved changes)

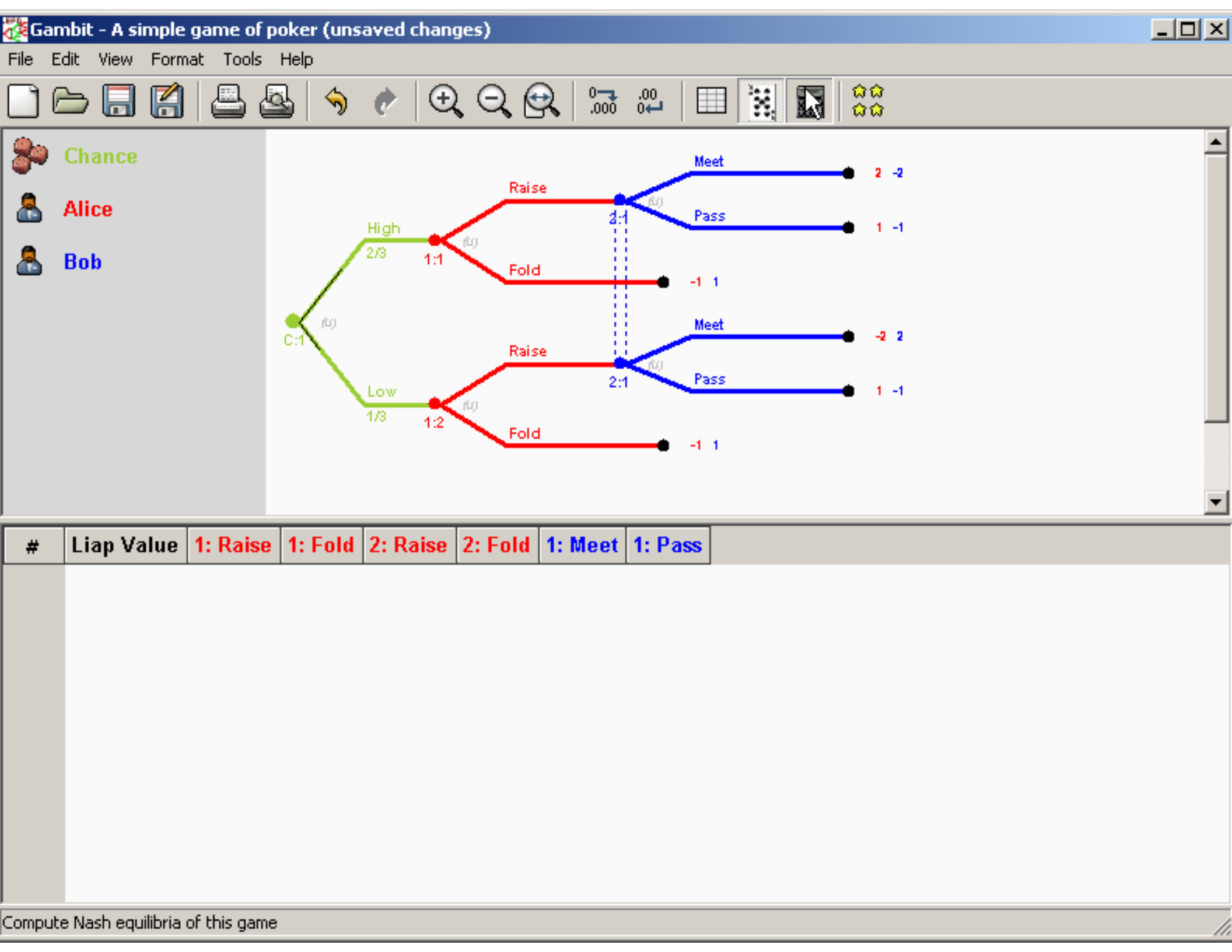
File Edit View Format Tools Help

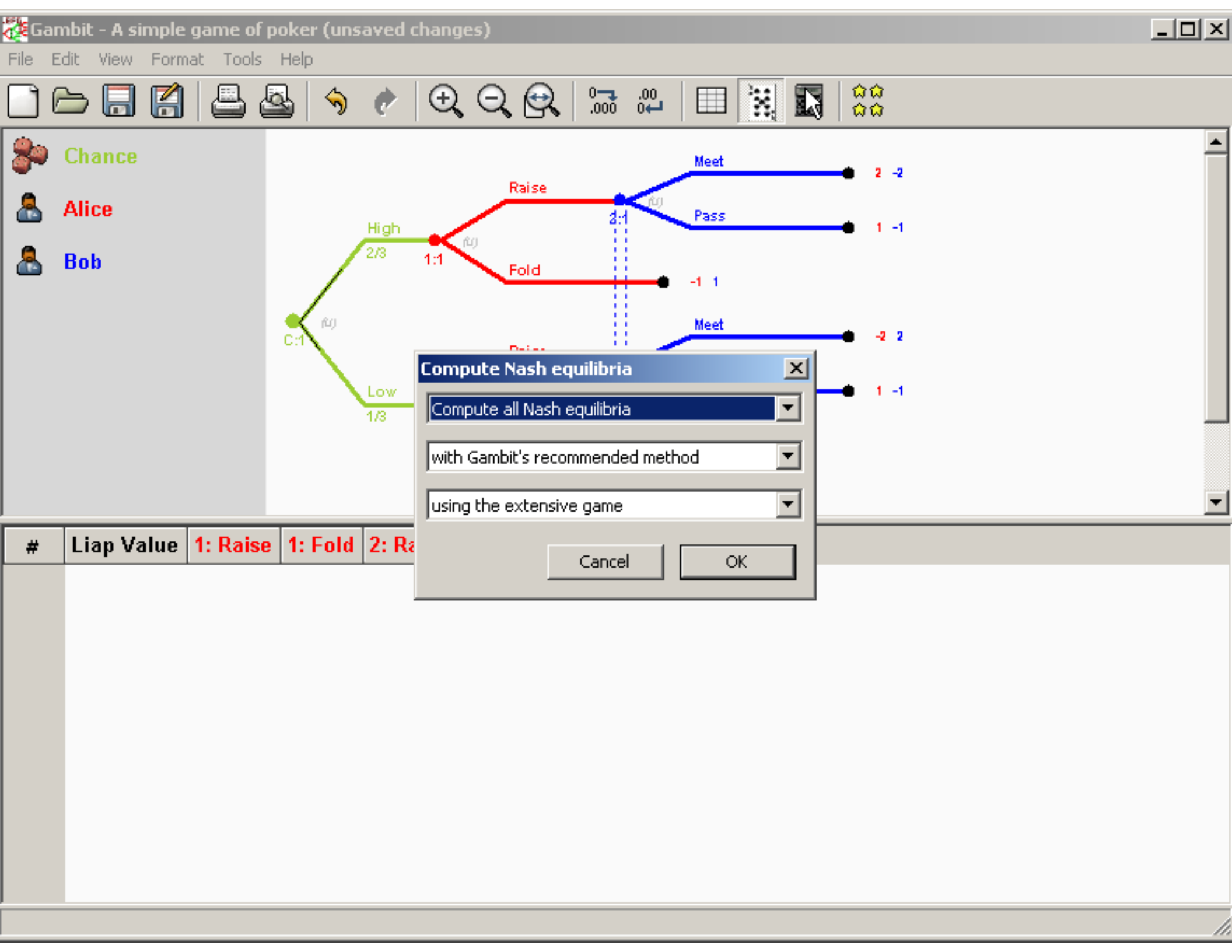


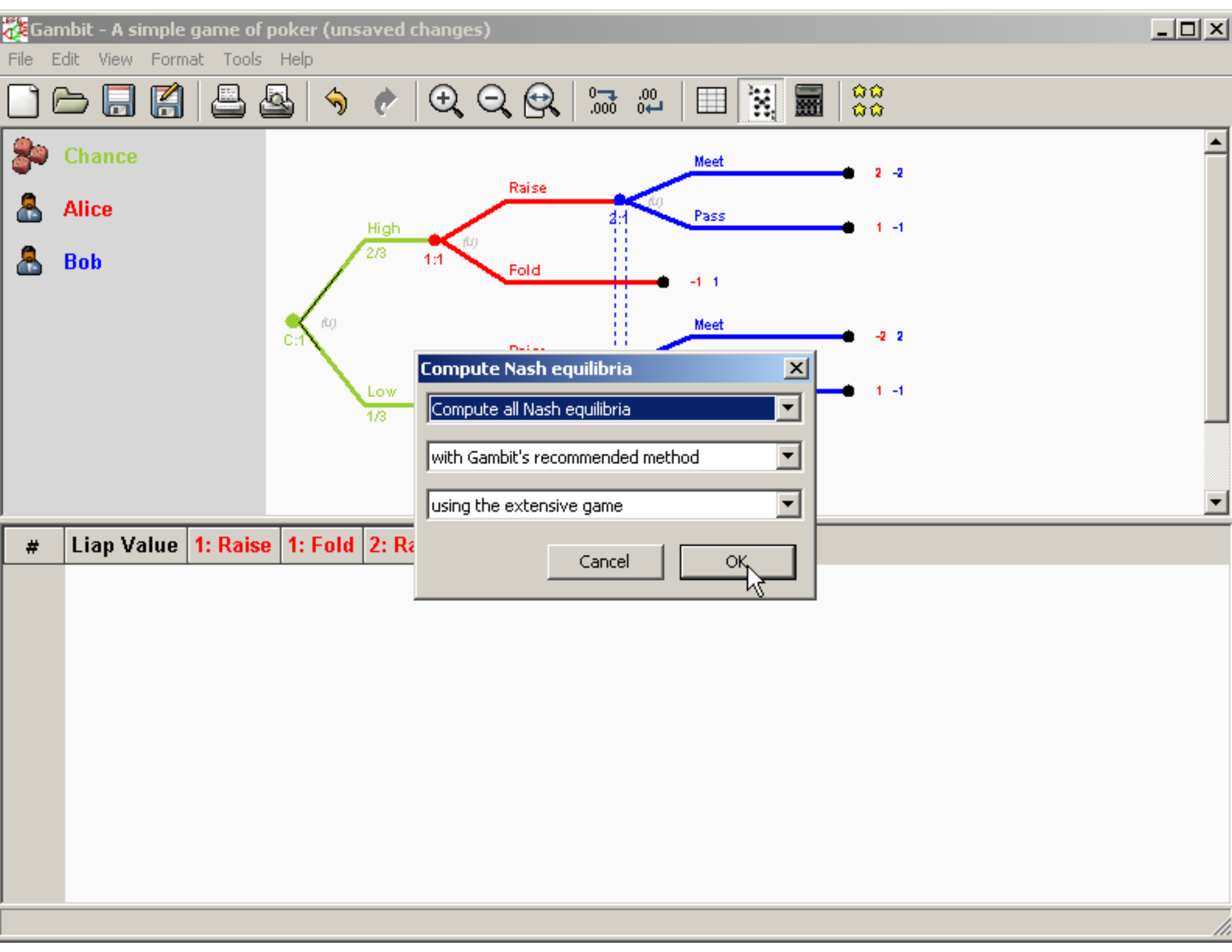
Now we again send Gambit looking for equilibria.

#	Liap Value	1: Raise	1: Fold


Gambit - A simple game of poker (unsaved changes)
File
Edit
View
Format
Tools
Help
Chance
Alice
Bob
Compute Nash equilibria of this game
Meet
Raise
Pass
Fold
High
2/3
1:1
2:1
C:1
Low
1/3
1:2
2 -2
1 -1
-1 1
-2 2
#
Liap Value
1: Raise
1: Fold
2: Raise
2: Fold
1: Meet
1: Pass
Compute Nash equilibria of this game


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
C:1
High
2/3
Low
1/3
1:1
1:2
Raise
Fold
Raise
Fold
2:1
2:1
Meet
Pass
Meet
Pass
2 -2
1 -1
-1 1
-2 2
1 -1
-1 1
Liap Value 1: Raise 1: Fold 2: Raise 2: Fold 1: Meet 1: Pass
Compute Nash equilibria of this game


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Bob
Meet
Raise
Pass
High
2/3
1:1
2:1
Fold
2 -2
1 -1
-1 1
C:1
Meet
-2 2
Low
1/3
1 -1
Compute Nash equilibria
Compute all Nash equilibria
with Gambit's recommended method
using the extensive game
Cancel
OK
Liap Value 1: Raise 1: Fold 2: Ra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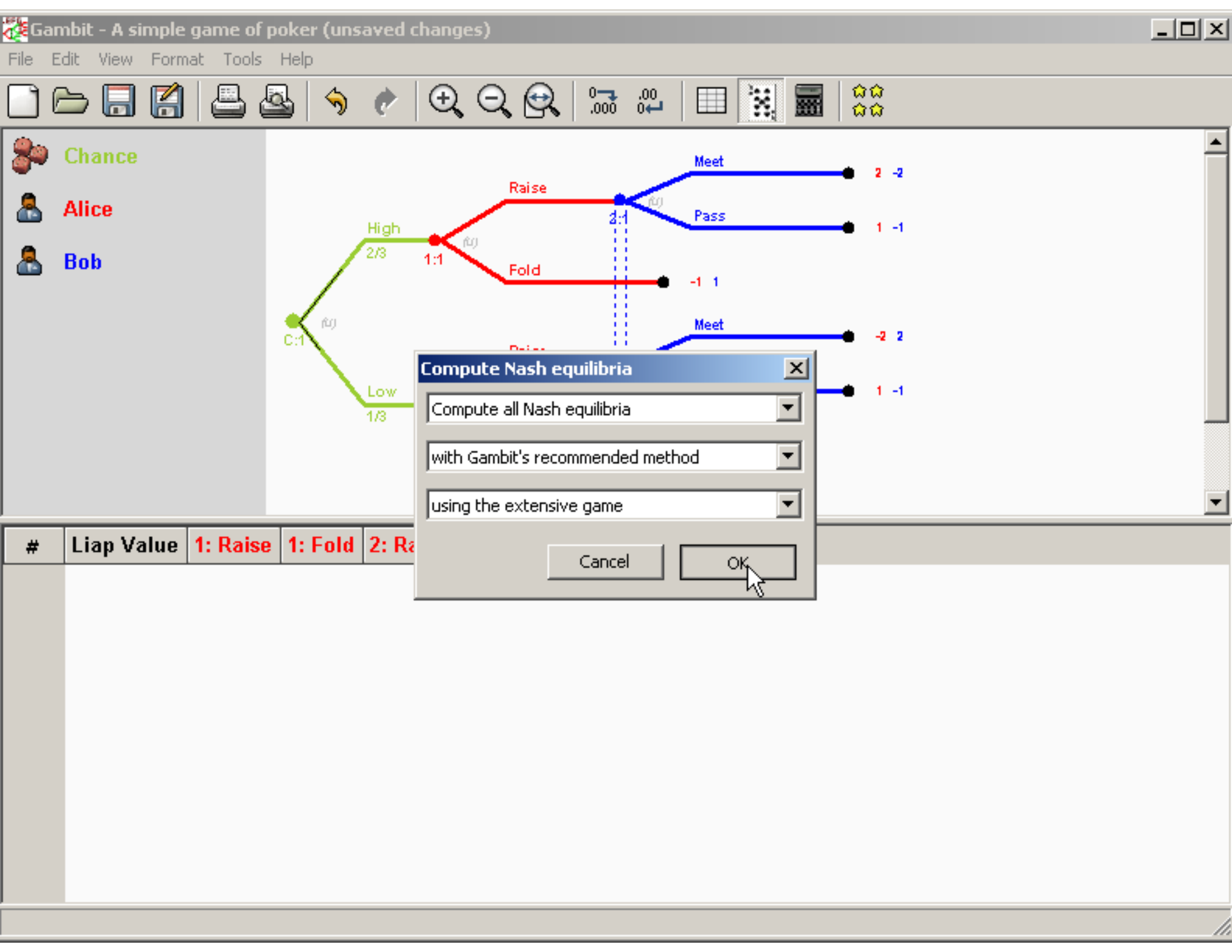
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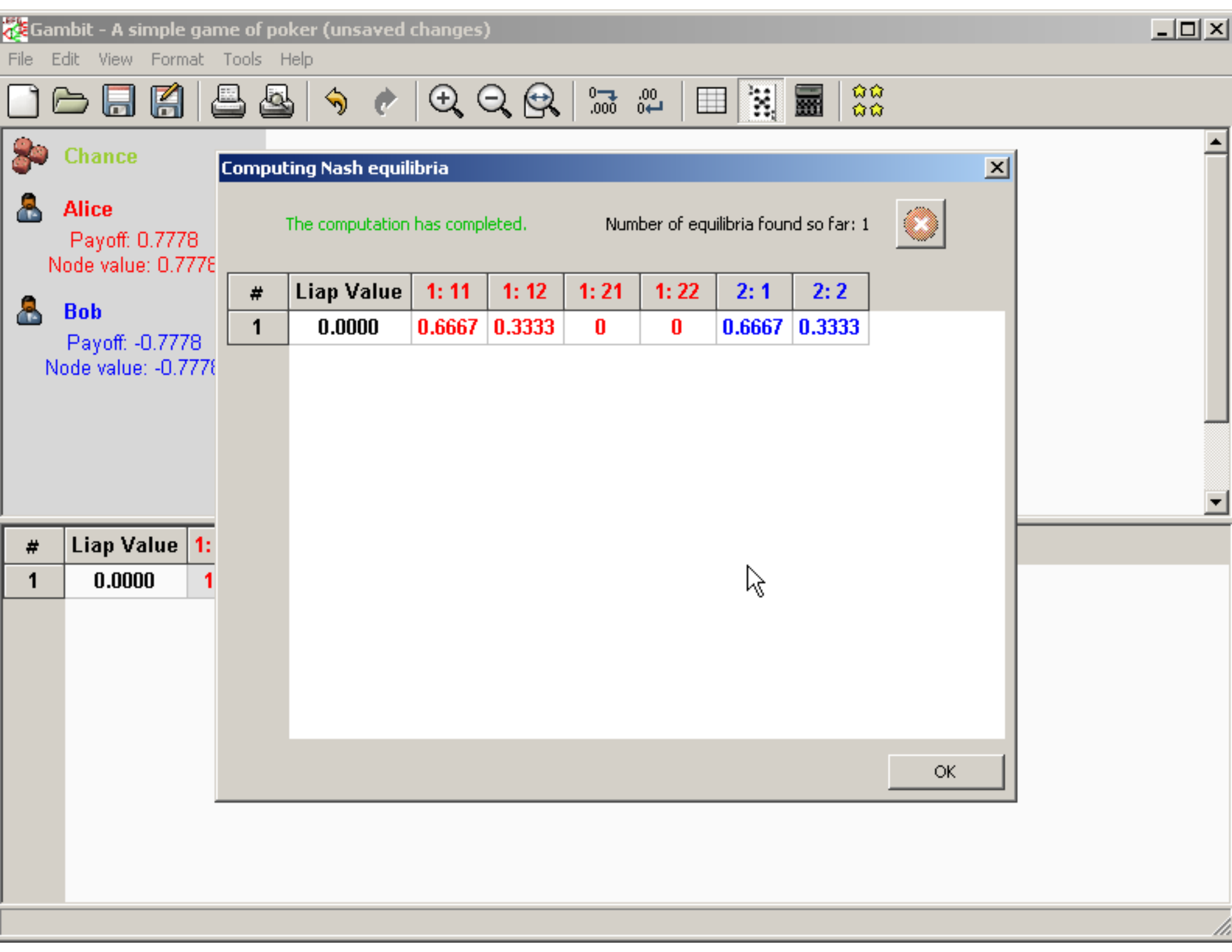
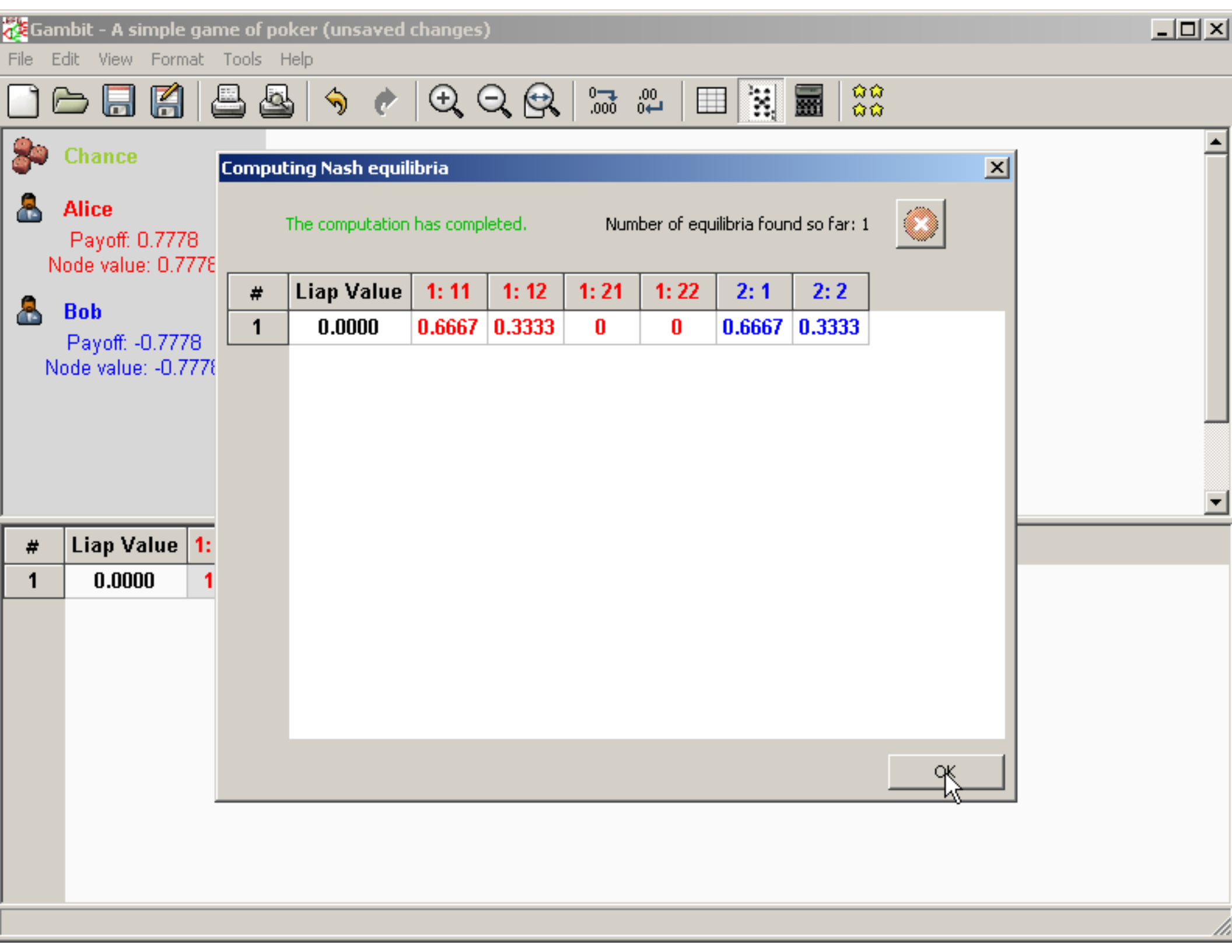
Liap Value 1: Raise 1: Fold 2: Ra


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Payoff: 0.7778
Node value: 0.7778
Bob
Payoff: -0.7778
Node value: -0.7778
Computing Nash equilibria
The computation has completed.
Number of equilibria found so far: 1
Liap Value 1: 11 1: 12 1: 21 1: 22 2: 1 2: 2
1 0.0000 0.6667 0.3333 0 0 0.6667 0.3333
OK
Liap Value 1:
1 0.0000 1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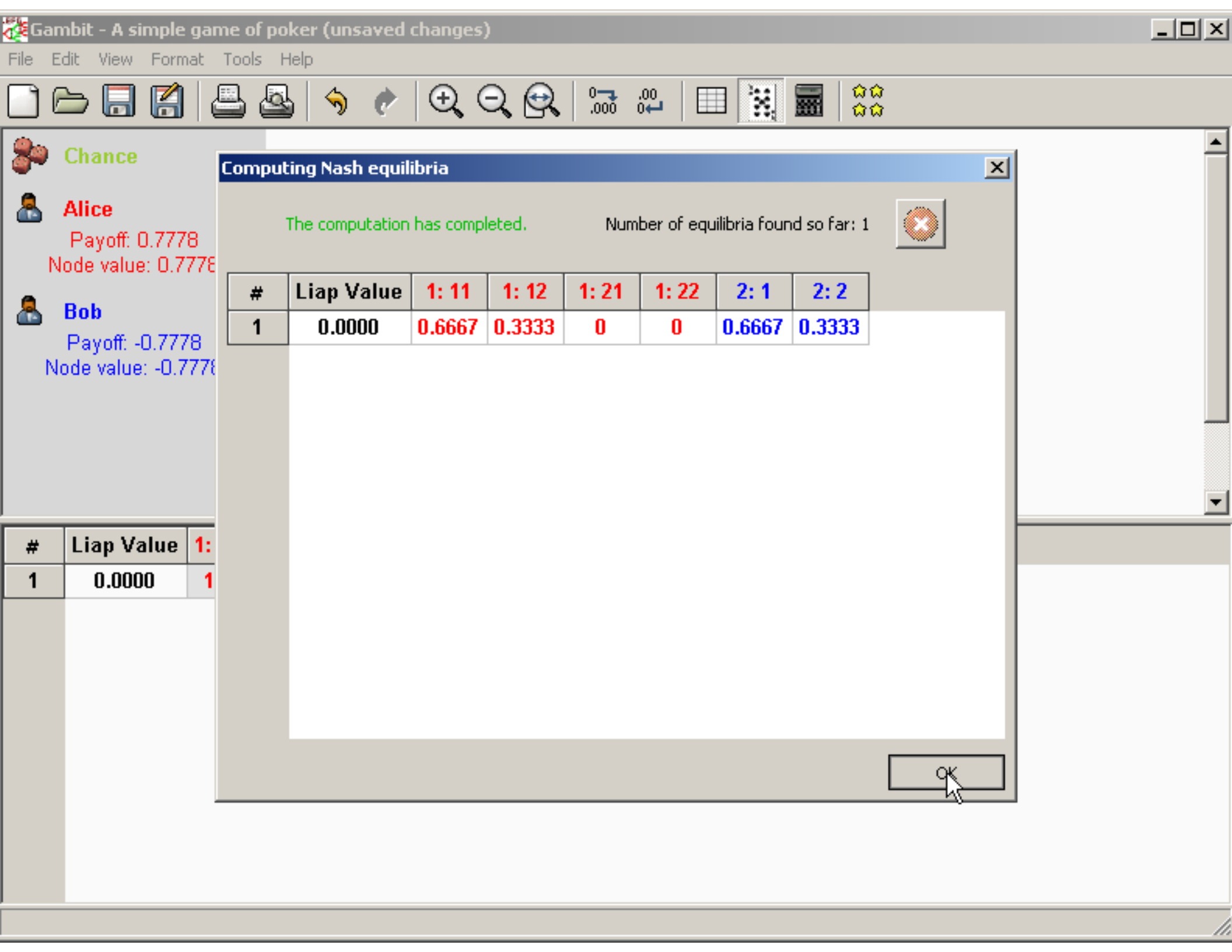
OK
Liap Value 1:
1 0.0000 1


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
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Payoff: 0.7778
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The computation has completed.
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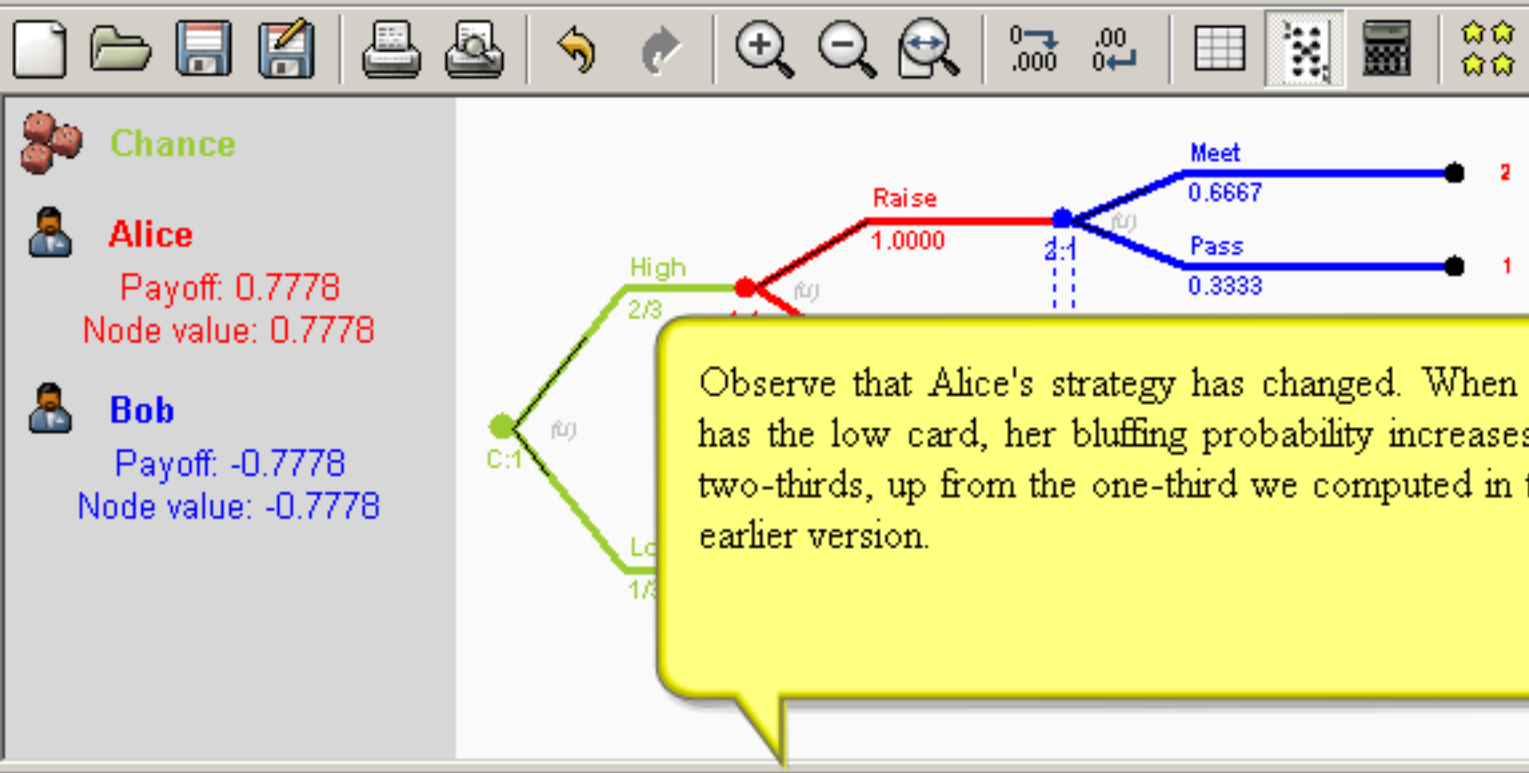
1 0.0000 0.6667 0.3333 0 0 0.6667 0.3333
OK
Liap Value 1:
1 0.0000 1

Gambit - A simple game of poker (unsaved changes)

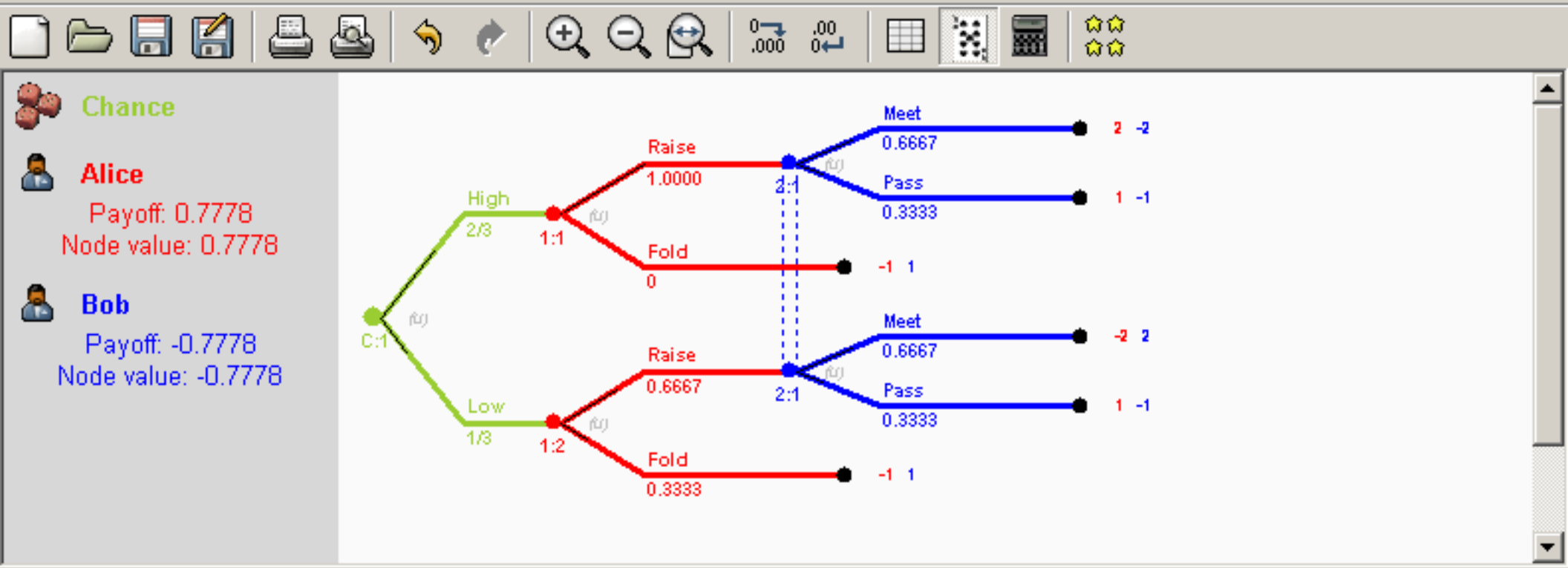
File Edit View Format Tools Help



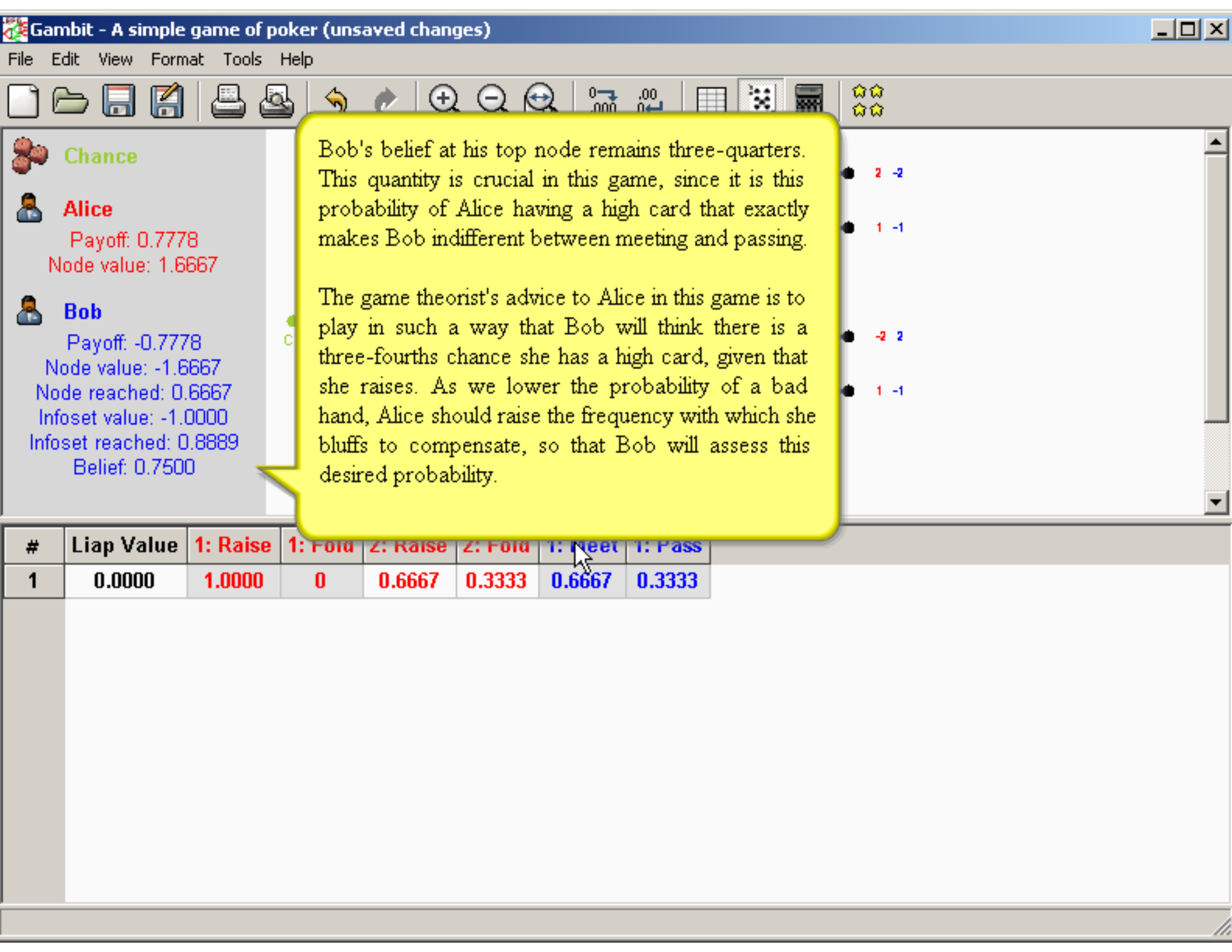
#	Liap Value	1: Raise	1: Fold	2: Raise	2: Fold	1: Meet	1: Pass
1	0.0000	1.0000	0	0.6667	0.3333	0.6667	0.3333

Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help

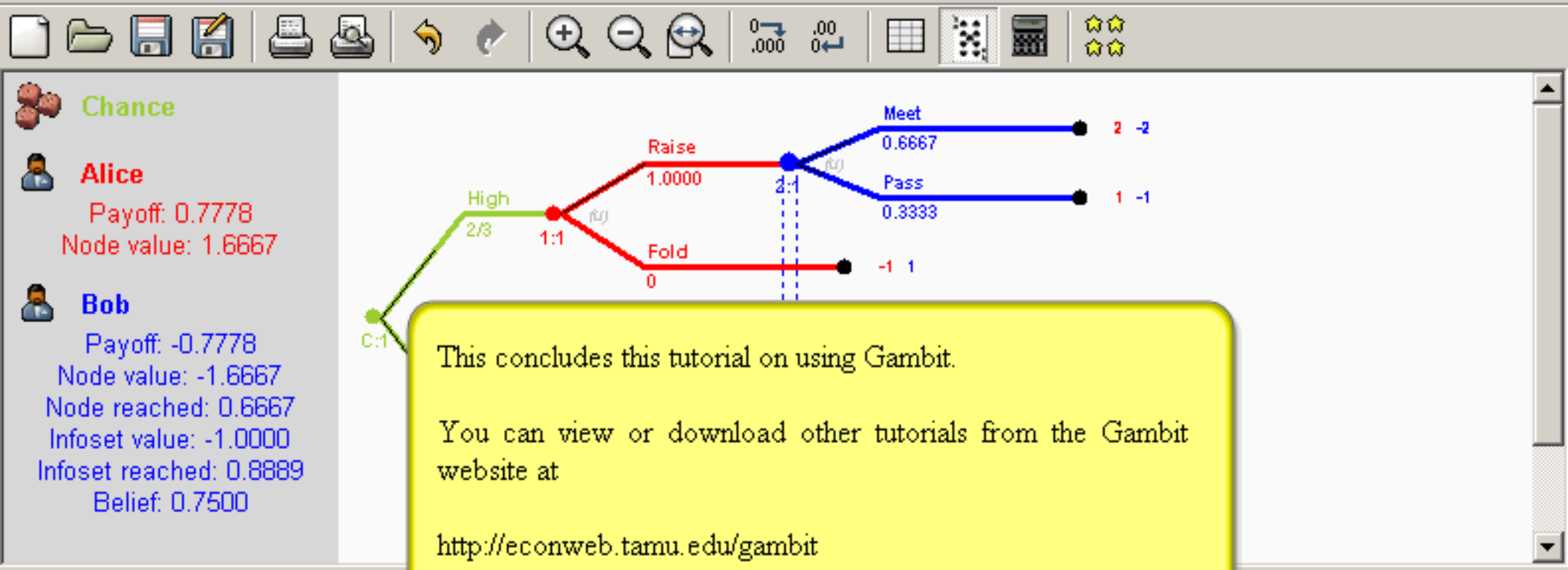


#	Liap Value	1: Raise	1: Fold	2: Raise	2: Fold	1: Meet	1: Pass
1	0.0000	1.0000	0	0.6667	0.3333	0.6667	0.3333


Gambit - A simple game of poker (unsaved changes)
File Edit View Format Tools Help
Chance
Alice
Payoff: 0.7778
Node value: 1.6667
Bob
Payoff: -0.7778
Node value: -1.6667
Node reached: 0.6667
Infoset value: -1.0000
Infoset reached: 0.8889
Belief: 0.7500
Bob's belief at his top node remains three-quarters. This quantity is crucial in this game, since it is this probability of Alice having a high card that exactly makes Bob indifferent between meeting and passing.
The game theorist's advice to Alice in this game is to play in such a way that Bob will think there is a three-fourths chance she has a high card, given that she raises. As we lower the probability of a bad hand, Alice should raise the frequency with which she bluffs to compensate, so that Bob will assess this desired probability.
2 -2
1 -1
-2 2
1 -1
Liap Value 1: Raise 1: Fold 2: Raise 2: Fold 1: Meet 1: Pass
1 0.0000 1.0000 0 0.6667 0.3333 0.6667 0.3333

Gambit - A simple game of poker (unsaved changes)

File Edit View Format Tools Help



This concludes this tutorial on using Gambit.

You can view or download other tutorials from the Gambit website at

http://econweb.tamu.edu/gambit

Happy gaming!

#	Liap Value	1: Raise	1: F
1	0.0000	1.0000	