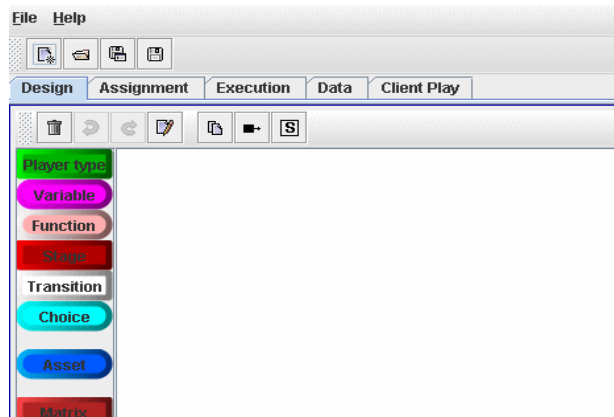


1. Basic design of a strategic form game

a. Open the program.

- Experiments are designed in **Design** window which opens as a default option.

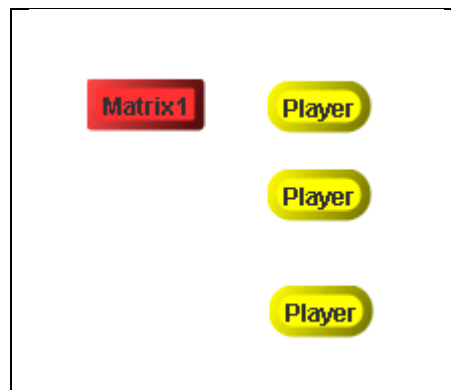


b. Elements for designing an strategic form game on the left side of the design

window are: **Matrix** and **Player**.


c. Necessary steps to design a strategic form game:

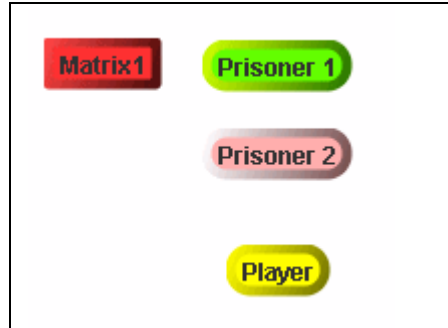
- Drag and drop a **Matrix**, and **Player** icons into a **Design** window like in the picture below. You might need just two players. The program allows you to design a strategic form games with k players.




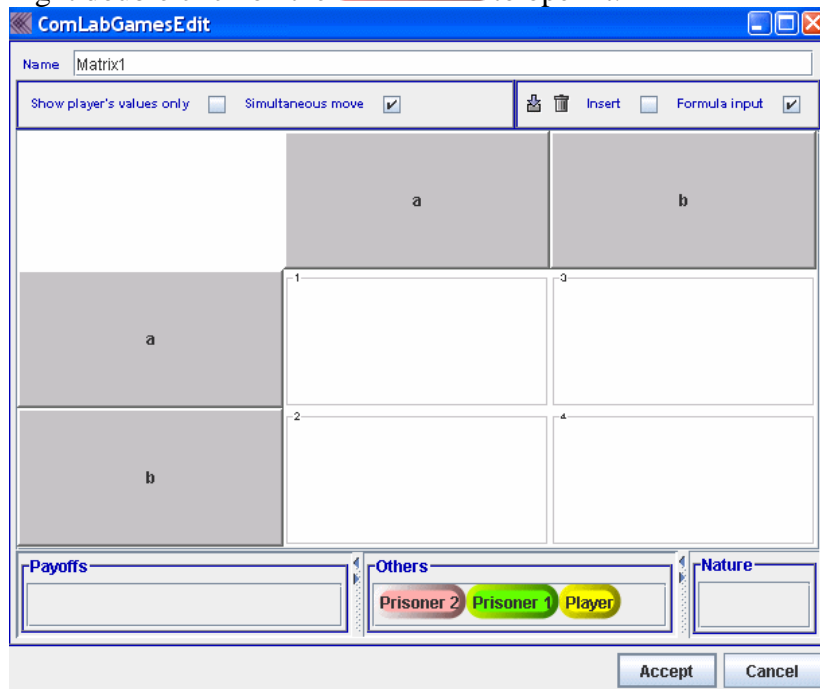
d. Renaming

Player

- Double click on the appropriate icon to open the editor:  and rename it.



- Right double click on the  to open it.



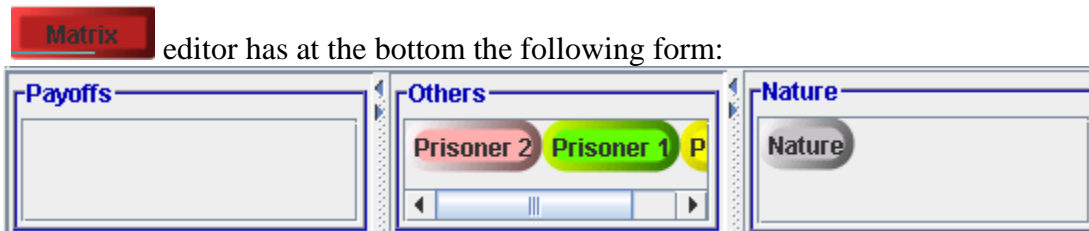
e. Manipulation within a

Matrix

- Show player's values only is the option that determines if a player sees only his own payoff or also the payoffs of other players who participate in the game. If you want players to see only their own payoffs, select this option Show player's values only.

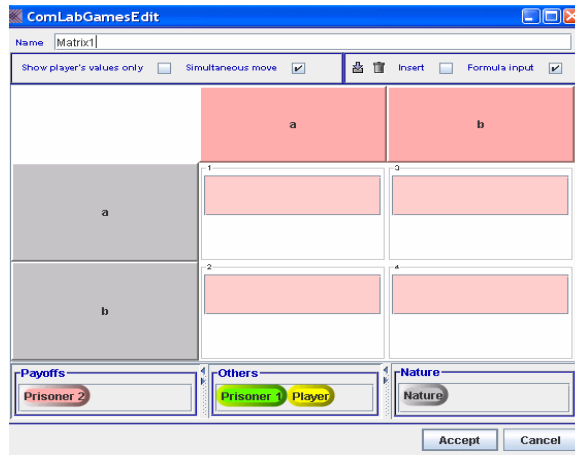
- Simultaneous move . By default this option is selected which means that subjects do not see the moves of each other until the game is over. If Simultaneous move is not selected then one of the subject moves first and after this subject makes a decision, the other subject sees her move before making a decision herself.
- To **add** a row or a column to the existing rows/columns place drag and drop on any row to add a row (similarly for adding a column). Repeat a process to add another row/column.
- Select Insert if you want to insert a new row or column at a specific place in the matrix and then drag and drop to a specific row/column to insert a new row or a column.
- to **delete** a specific row or a column. Drag and drop to the row/column you want to delete. Repeat a process to delete another row/column.

f. Choosing row and column players

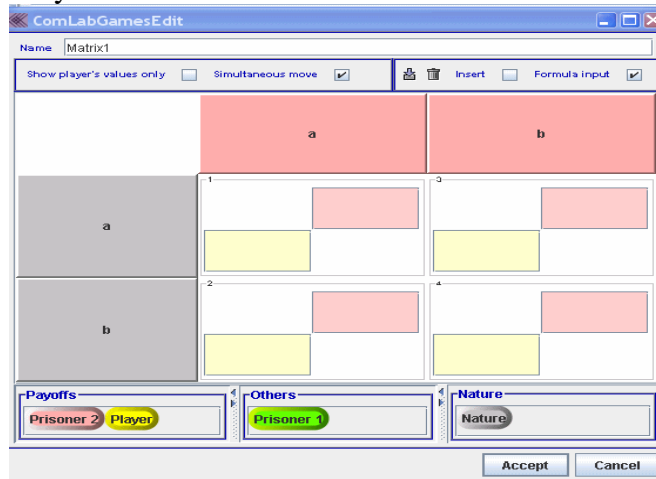


- All created Player will appear under .
- All created Nature will appear under .
- To assign a specific Player to be a row/column player, drag and drop that Player to any row/column from . In the example below Prisoner 2 was assigned to be a column player. By dropping Prisoner 2 to any column, the

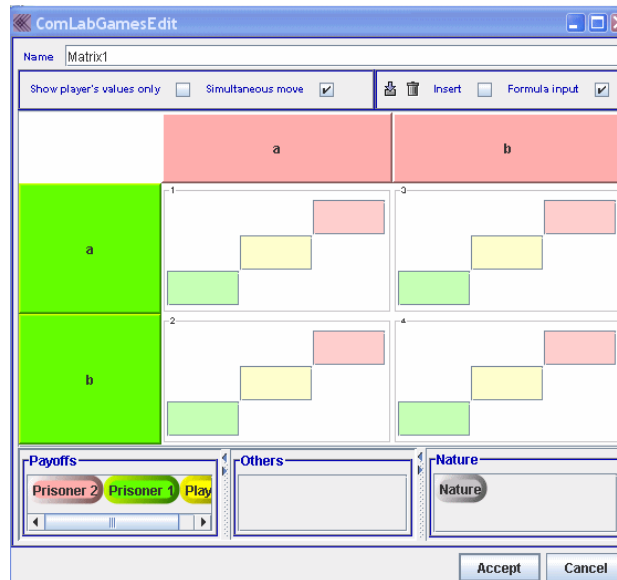




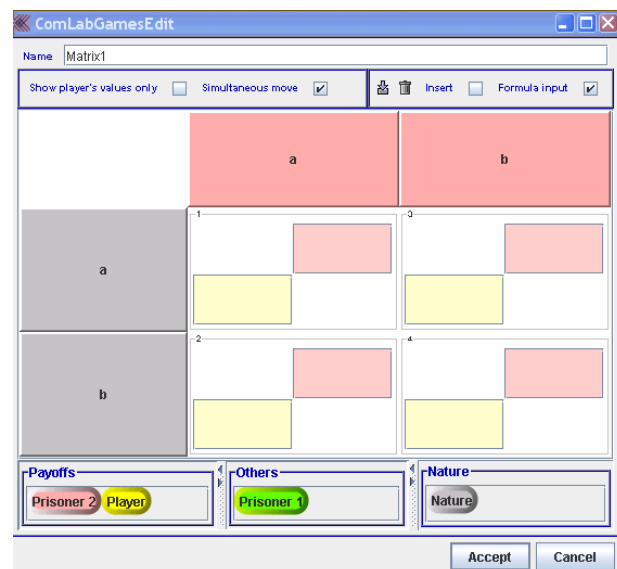
- To assign a **Player** to have a payoff in the game but it is not involved in decision making, drag that **Player** into **Payoffs**. In the example below a moderator can write payoff for **Player** but **Player** is not assigned any role.



In the picture below we completed we assigned **Prisoner 1** to be a raw player by dragging and dropping **Prisoner 1** from **Others** to **Payoffs**.

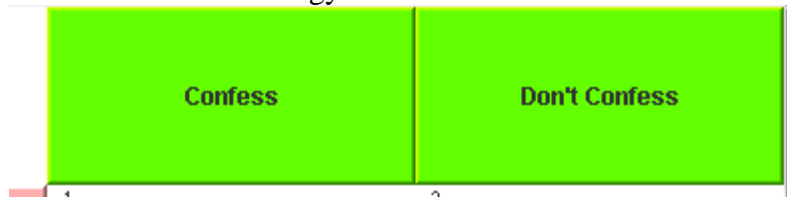


- If a **Player** stays in **Others** then that **Player** is only an observer of a game.
- To remove a **Player** from a role of a decision maker or just being assigned a payoff, drag and drop that **Player** from **Payoffs** to **Others**. **Prisoner 1** was removed from **Payoffs** to **Others** in the example.



g. Labeling strategies

- Double click on a strategy and rename it.

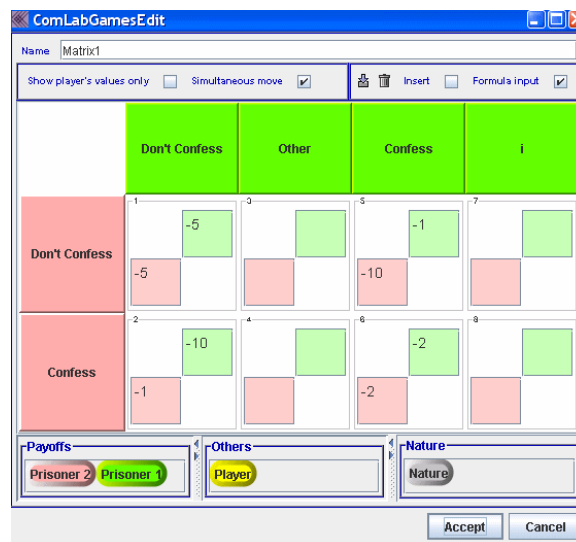


h. Reordering Strategies

- To reorder the strategies drag and drop a strategy to the appropriate place. In the example we would like to move “Other” strategy after “Don’t Confess”

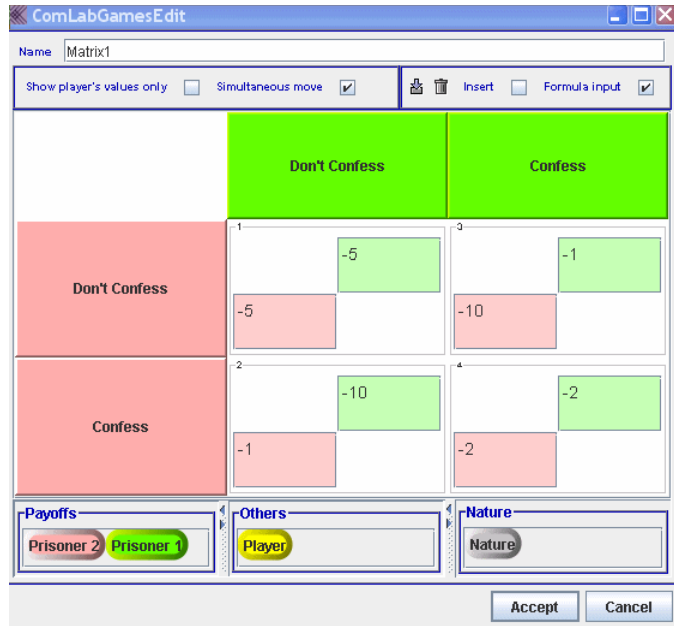


Drag and drop “Other” on “Confess”. Note the whole column “Confess” with the payoffs move.



i. Editing payoffs

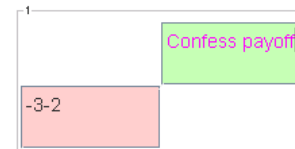
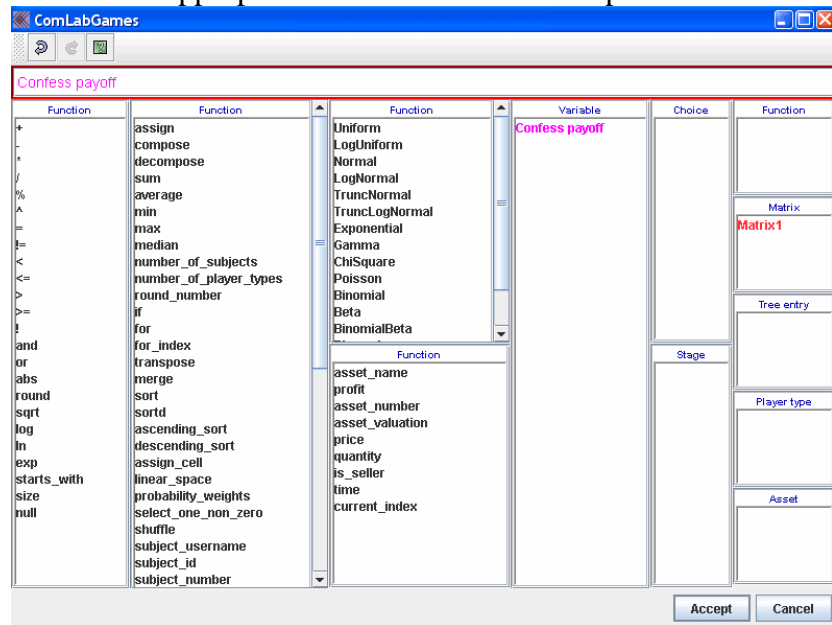
- By default all payoffs are set to zero, and subjects will receive zero of payoffs are not edited.
- To change a payoff, write appropriate number or a label in the payoff cell.



- To insert a variable or write a formulae in the payoffs cell, you can

-3-2

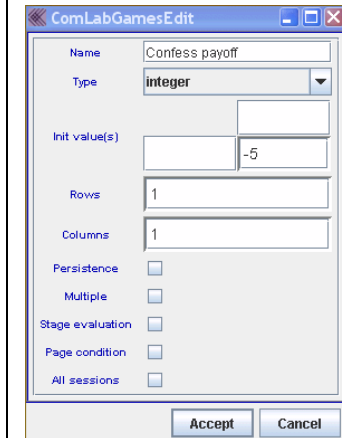
just write a formulae, insert a **Variable** by right clicking on the payoff cell to open function editor, and then double click on the appropriate variable or write an expression.



In the payoffs **Confess payoff** is shown as:

The **Variable** that we created is called **Confess payoff**, has initial value of -5

Double click on the edge of **Confess payoff** to open the variable and write the initial value of -5 in this case:

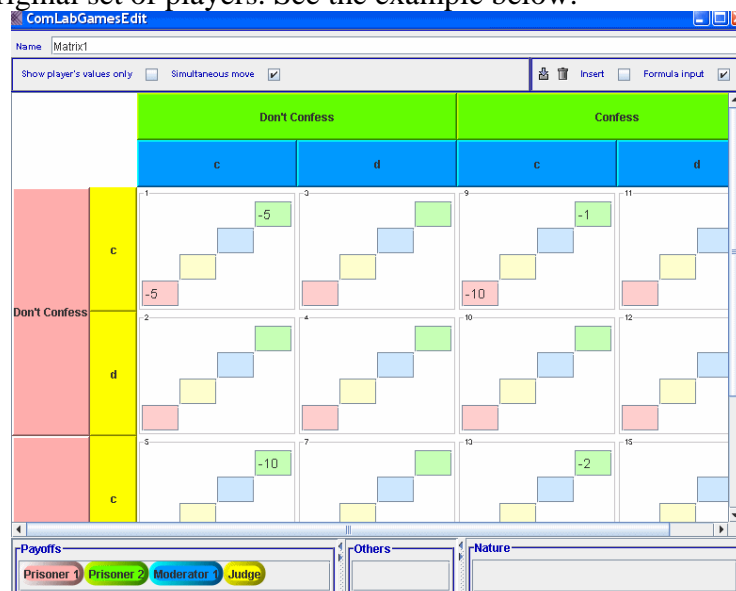


The **Design** window has the following icons created so far:



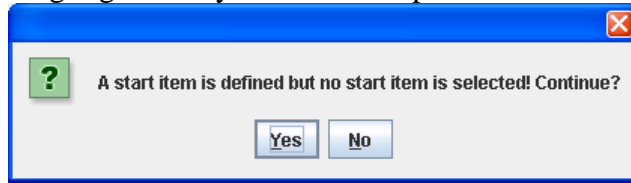
j. Strategic game with multiple players


- Create the necessary players and drag and drop them on the column/raw to insert the strategies. It is useful that you first write the payoffs for 2x2 player game and then insert the additional players. Program duplicate the payoffs for the original set of players. See the example below:



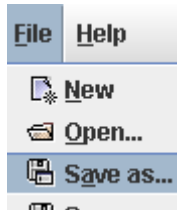
k. Determining the starting point of the experiment

- **Matrix** has to be highlighted. If you start the experiment and receive a



following message: it means that the **Matrix** was not defined as a start icon. Go to the design window, click on **Matrix** and click on .

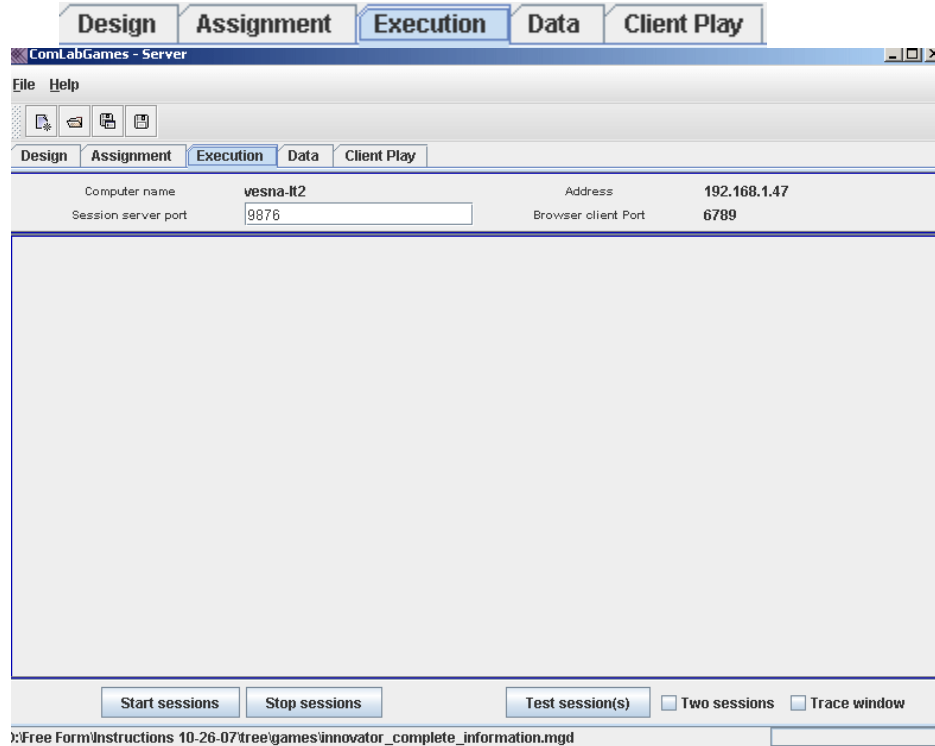
l. Saving the matrix



- Click on **Save as...** and save the file. The program automatically adds suffix “mgd”.

m. Conducting the experiment

- Click on **Execution** on

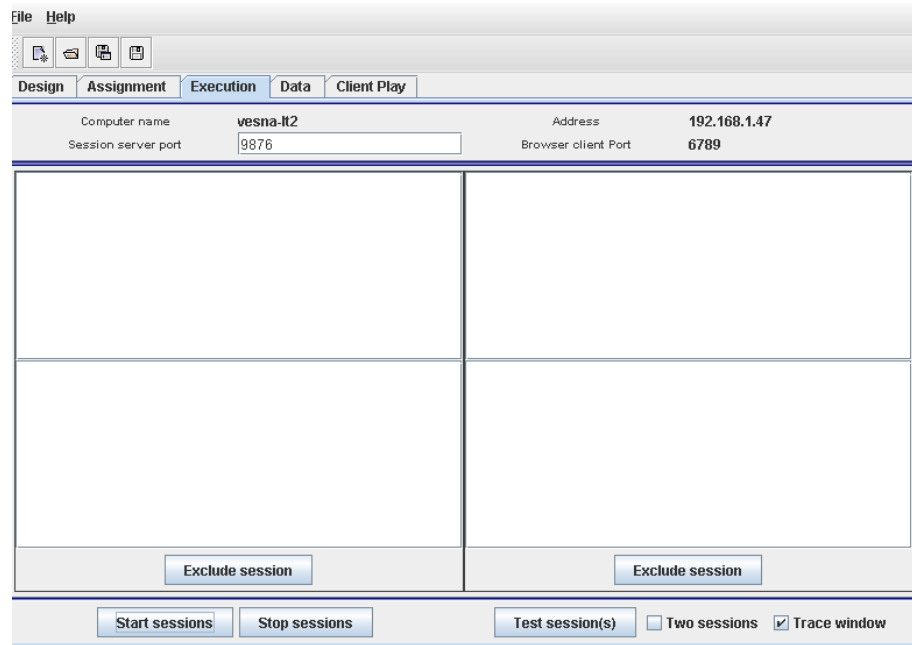


- Make sure the game is loaded on the design window

- To test the game before conducting an experiment, click on **Test session(s)** that can be found at the bottom right end of the window. This option allows the moderator to see how the client window looks like and to go through the experiment on the same screen as the program. Selecting **Two sessions** tests two sessions running at the same time. **Trace window** shows all the calculations during the test. Figure below captures the screen with client windows, trace window and the result window during the **Test session(s)**, and with the **Trace window** selected.

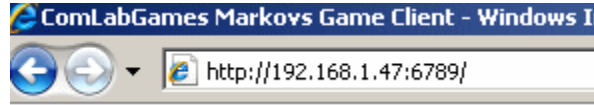
- To run an experiment, click on **Start sessions** and give the address of the server to the subjects. The address consists of two parts: the address and the port number. The address is located in the top right corner of the window. In our example the address is: 192.168.1.47. There are two port numbers: session server port: 9876 and Browser client port: 6789.

Computer name	vesna-kt2	Address	192.168.1.47
Session server port	9876	Browser client Port	6789

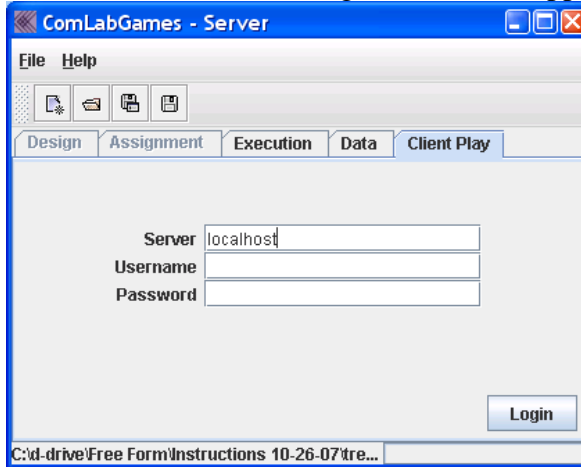


- Provide the Url address to the subjects:

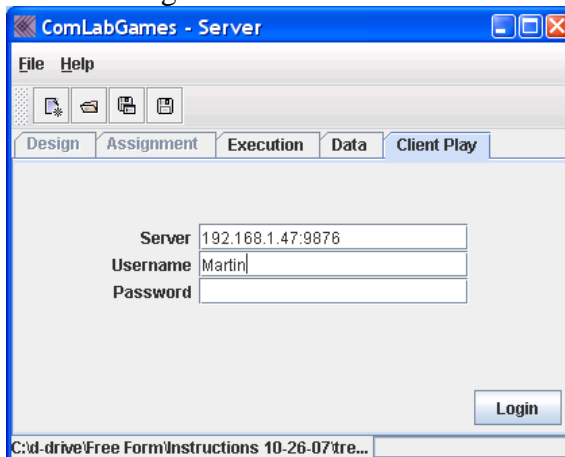
- If a subject uses a browser the address written in the browser should be as follow: `http://192.168.1.47:6789` (do not omit `http://`)



- If a subject uses Comlabgames program then a subject should select **Client Play**. The following window will appear:



- Provide Url address, colon and session server port: `192.168.1.47:9876` (Note session server port is: 9876)
- A subject writes a Url address under server, login name that can be any name. Password is not necessary. Clicking on **Login** connects the client to the game.



n. Viewing the data

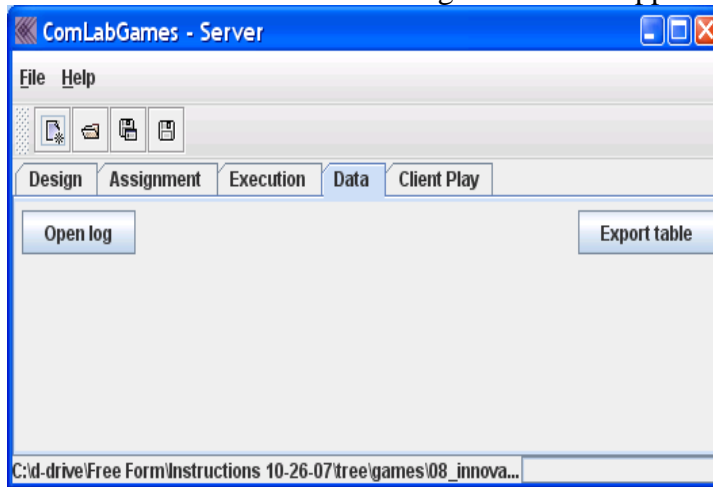
- During a game a moderator observes all the results for all sessions, each subject observes the data for her game (session).

<p>Each subject see the results after they both make a decision:</p>	<p>A moderator see the results of all sessions:</p>
--	---

o. Viewing the Data after the experiment (i.e. after clicking on

Stop sessions)

- Moderator can show the data immediately after the experiment
- Click on **Data** and the following information appears in the window:



<ul style="list-style-type: none"> • Click on Open log and select the appropriate data file. Data file have start with “log-date-time-name-of-the-experiment”. 	<ul style="list-style-type: none"> • After selecting a file and clicking on Open the data will have the following structure:
--	--

Matrix1 the red icon is storing the information on cells reached.

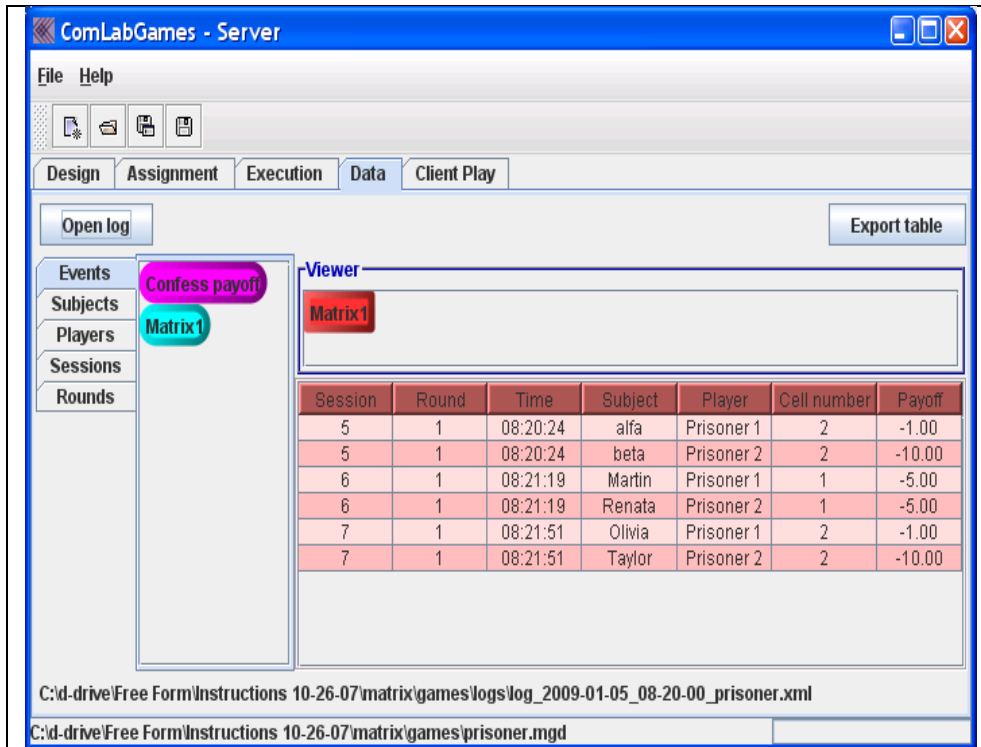
Matrix1 the turquoise color is storing information on choices (i.e. rows and columns) that subjects chose.

Note that the icons are named after the matrix name

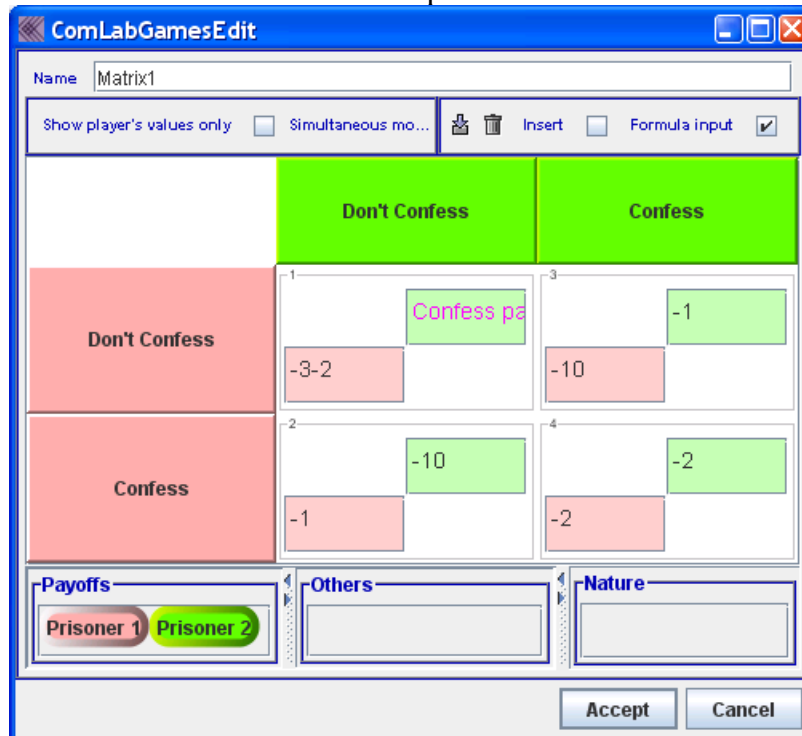
- Drag and drop any icon displayed into **Viewer** to view a particular type of data.

- To view cell numbers, drag and drop **Matrix1** into **Viewer**.

The data includes session number, round number, time that the a decision was made, subject's login name (Subject), player name, cell number, and the payoffs each subject received.



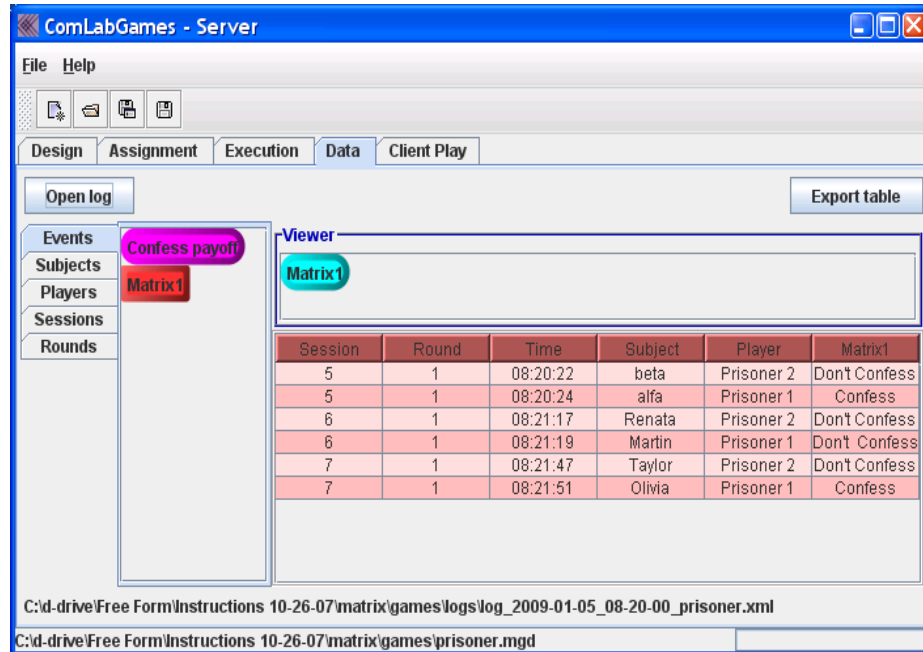
Each cell number in a **Matrix1** (open the matrix in the design window) has a number and that number corresponds to the cell number in the data:



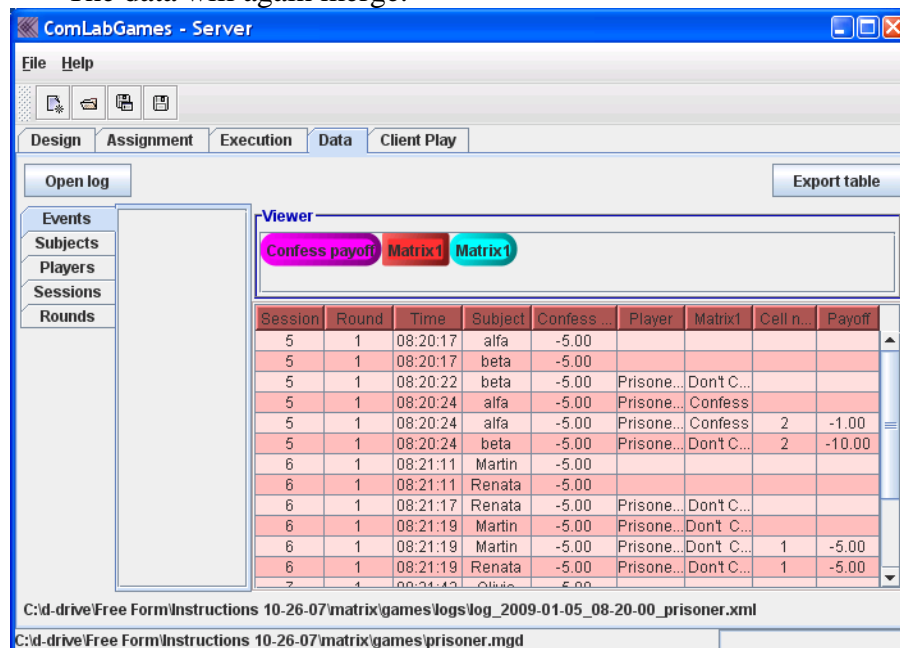
In our example cell number 1 was selected once, and cell number 2 twice.

- To view only the choices subjects made, drag **Matrix1** from **Viewer**

and drop it into Events place and drag&drop **Matrix1** into the **Viewer**.



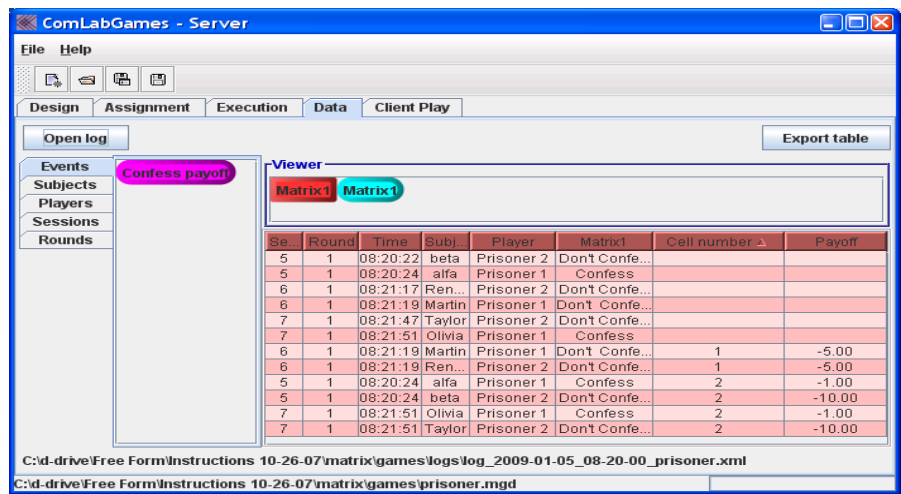
- To view both data together, drag&drop both icons into **Viewer**. The data will merge together.
- To view a variable **Confess payoff** just drag&drop it into **Viewer**. The data will again merge.



- To sort the data ascending order, just click once on one of the

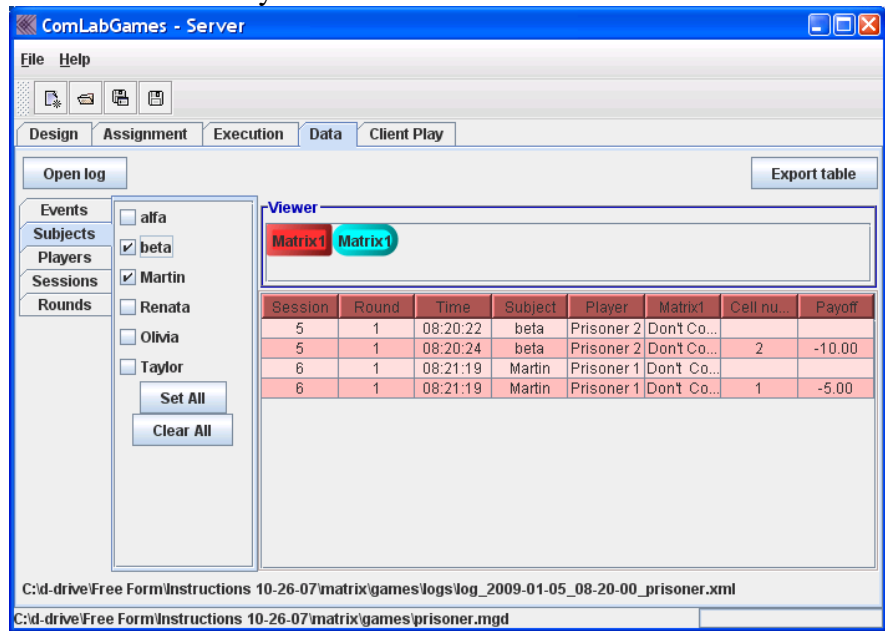
labels in the table. In the example we clicked on label:

Cell number

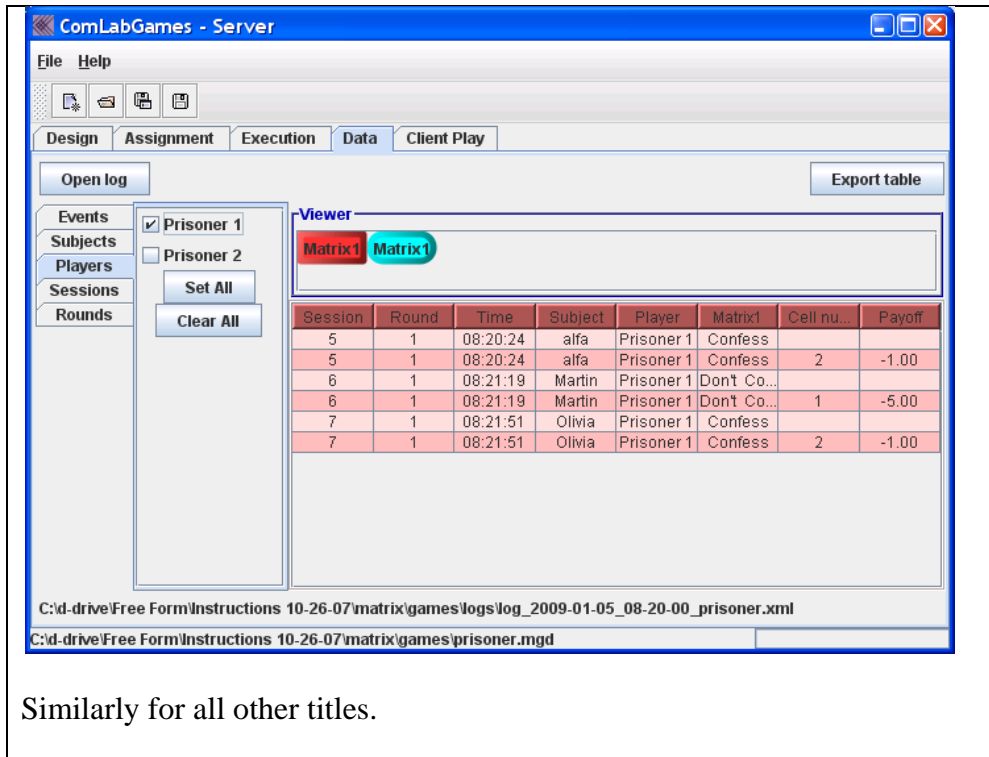


Clicking again on the Cell number label sorts the data in descending order.

- To view a subset of subjects, click on Subjects and select the names that you want to view.

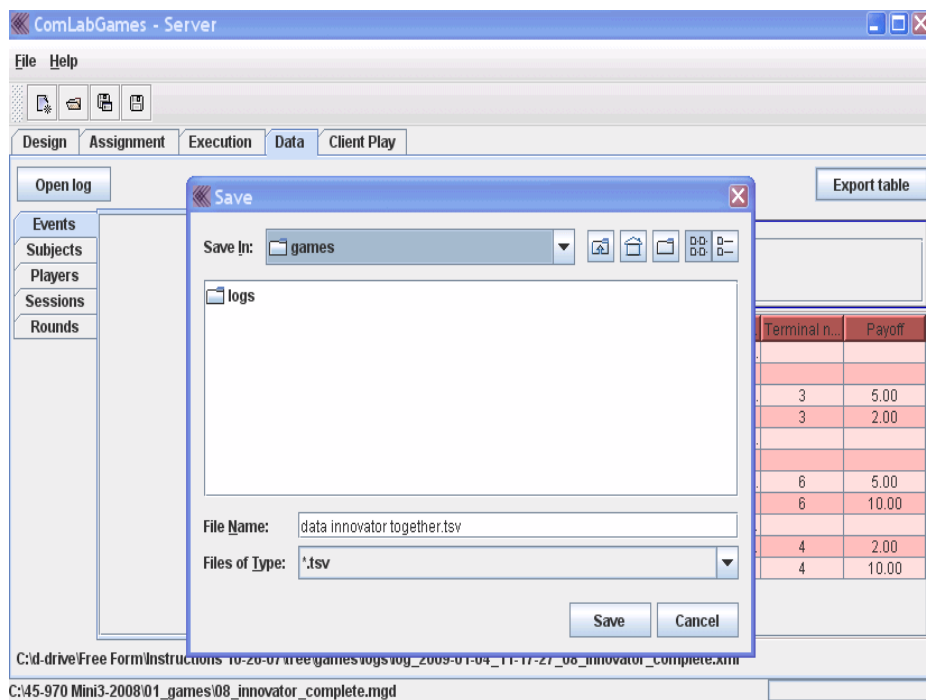


To view players, select Players



Similarly for all other titles.

- Select **Export table** to create an ASCII file for the viewing/using the data in other programs such as Excel, STATA, Matlab etc.



- In order to save the data in ASCII form the variable icons that you want to select have to be placed in **Viewer**.
- File name has a default extension *.tsv. In the example above the file name is called “data innovator together.tsv”
- **Open Excel to read the data and use them for statistical analysis**

The screenshot shows a Microsoft Excel spreadsheet titled "prisoner_together". The spreadsheet has the following data:

Session	Round	Time	Subject	Confess payoff	Player	Cell number	Payoff
2	5	1	8:20:17 alfa	-5	.	.	.
3	5	1	8:20:17 beta	-5	.	.	.
4	5	1	8:20:24 alfa	-5	Prisoner 1	2	-1
5	5	1	8:20:24 beta	-5	Prisoner 2	2	-10
6	6	1	8:21:11 Martin	-5	.	.	.
7	6	1	8:21:11 Renata	-5	.	.	.
8	6	1	8:21:19 Martin	-5	Prisoner 1	1	-5
9	6	1	8:21:19 Renata	-5	Prisoner 2	1	-5
10	7	1	8:21:43 Olivia	-5	.	.	.
11	7	1	8:21:43 Taylor	-5	.	.	.
12	7	1	8:21:51 Olivia	-5	Prisoner 1	2	-1
13	7	1	8:21:51 Taylor	-5	Prisoner 2	2	-10
14							
15							
16							