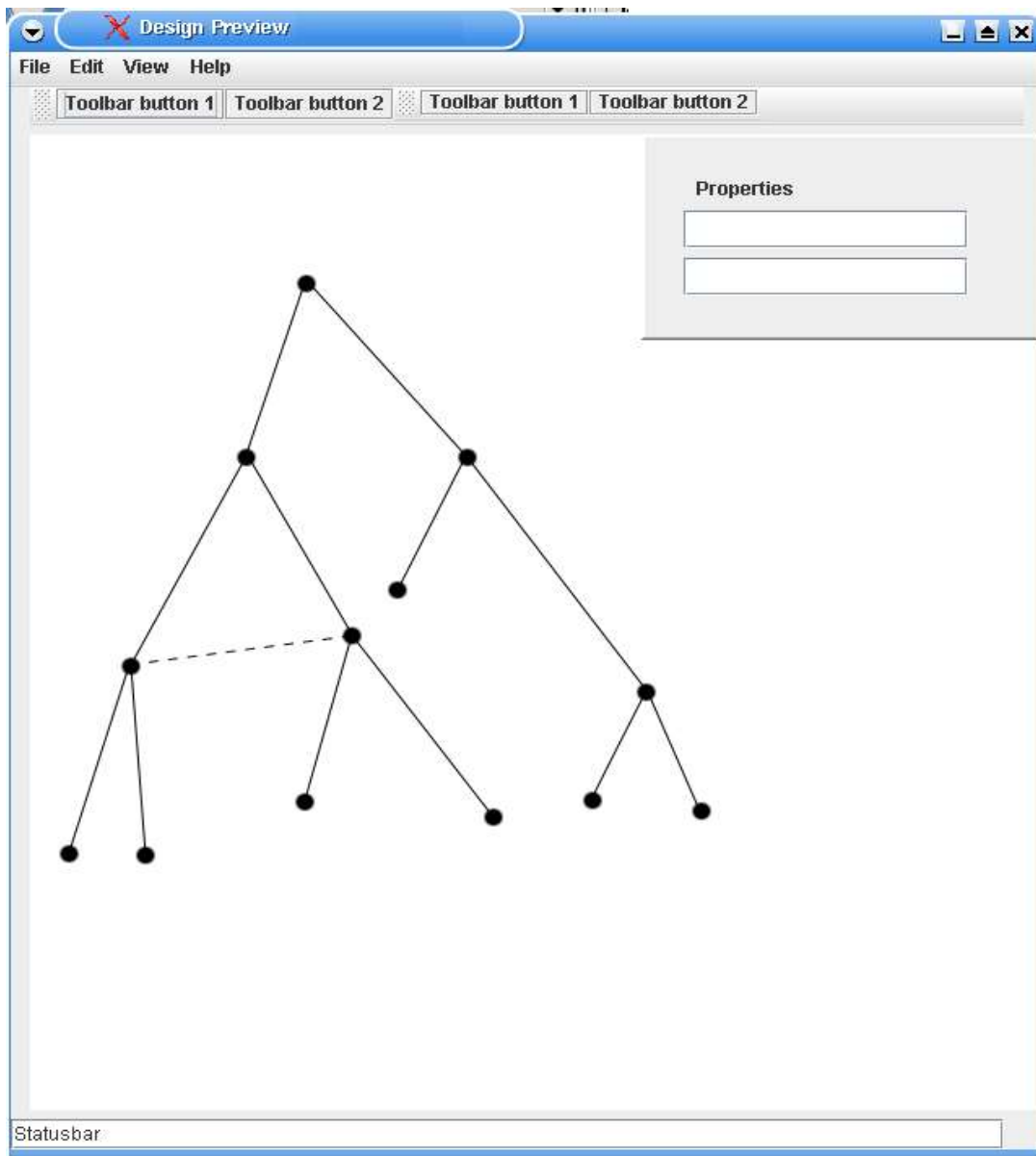


Computation of Equilibria of Finite Games and
other Game Theoretical Computations
Group 20

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4. Graphical User Interface

The graphical user interface that the user will be working with will be the game tree editor. This will consist of a main working window where the user will use the provided tools to create a graphical representation of the game tree. These tools will be available in a toolbox. To assign values to the various elements in the representation there will be a property box provided which will contain fields for the values that may be relevant to the element. After the user has created a game tree in the editor and specified its values, he can then select what type of equilibria he wishes to calculate. The calculated equilibria will then be presented in a presentation box in the appropriate format. The user can then make changes to the game tree and easily update this presentation box. The boxes will be movable so that the user can modify the user interface to fit his needs.



The graphical user interface consists of a main window with a drop down menu at the top, an editing area and several panels that may be moved about by the user at will and may be docked against edges of the window and result windows.

Document elements are results, points, lines, dotted lines, rows, column, tables, and table elements. They are displayed in the editing area. They can be selected individually with a pointer, and sets of them can be selected by holding shift and selecting those that are to be added to the current set with the mouse as when individual elements are to be selected. Results can also be displayed in separate windows. Document elements can be dragged with the pointer, and Results can be dragged out of the editing area.

How results are displayed is decided by what type of results they are and it is inappropriate to detail it in the description of the user interface.

The drop down menu has the entries File, Edit, View and Help. If an entry on any of these menus is clicked submenus are displayed, in the case of file one consisting of New, Open Save, Save as, Close and Edit, the case of Edit, Undo, Do, Cut, Copy, Fit box, Delete and Rescale, in the case of View, Zoom in, Zoom out and Fit screen, and in the case of Help, Documentation.

If the menu entry New is selected a new editing window is to be displayed, if open is selected a standard 'open'-dialog, if Save is selected a standard 'save'-dialog, if Save as is selected a standard 'save as'-dialog, if close is selected the current file is to be closed and if exit is selected the program is to exit completely.

If Undo is selected any action that has changed the state of that which is displayed in the editing area is to be reverted, if Redo is selected an Undo is to be undone in the same manner as selecting Undo would have undone a regular action, if cut is selected the set of document elements that are selected are to be removed from the document and placed in the paste buffer, the internal relations between the elements retained. If Copy is selected in the menu the set of selected objects in the editing area are treated in the same manner as in the case of Cut, but with the elements not being removed, if delete is selected the set of document elements that are selected in the editing area are to be removed, if fit box is selected the user specifies a box with the pointer into which the selected set in the editing area are selected. If rescale is selected the set of selected elements in the editing area are rescaled to a scale indicated by the user by moving the pointer.

If Zoom in is selected the editing area is zoomed in on, similarly with Zoom out, and Fit screen.

If Help is selected an HTML-document containing documentation is opened in whatever web-browser there is on the system.

There is a property panel with a probability box and utility box, the first in which that a value is entered indicates that the same value is to be assigned to the currently selected line and the second one which into which that a value is entered indicates that a utility is to be assigned to a currently selected node.

At the very bottom of the window there is to be an error bar in which reasons why things in the editing area cannot be created are detailed.'

There is a tool panel, from which tools to be made active are selected. The things that can be selected from the tool panel are Point, Line, Dashed Line, Rotate selected, Delete, Move Row and Column. If Point is selected it is indicated that points are to be created by clicks in the editing area, if line is selected it is indicated that lines are to be created in the editing area, if dashed line is selected it is indicated that dashed lines are to be created between the set of selected points. If Rotate selected is selected the selected elements are to be rotated according to how the user moves the mouse pointer. If Delete is selected the currently selected document elements are to be removed. If Move is selected it is indicated that document elements are to be moved about in the editing area when selected moved about. If Row or Column, Row or Column document elements are to be created.

There is also a view panel, consisting of Zoom, which functions as the zoom element in the menu, Pan which functions as the pan element in the editing menu, Fit to screen, which fits the document element in the editing area to it, Fit selected to box, which fits the selected document elements in the editing area to a box.

There is also a calculate panel, consisting of the elements Calculate, OnChange, an InNewWindow/inWindow-toggle, and Annotate Game tree toggle: The element Calculate is a drop down menu from which things to be calculated can be selected, the OnChange box is a box into which results can be dragged, that they are dragged there indicating that they are to be automatically recalculated upon any change in that from which they are calculated, the InNewWindow/inWindowMode-toggle is such that if the toggle is in the state 'InNewWindow' Results from newly done calculations are to be displayed in new windows as opposed to otherwise in the editing area. All Result windows must be saveable.

If the annotate game tree toggle is active a game is annotated with the subgame perfect equilibrium if it is calculated instead of being displayed separately.