The simplified drawing tool

This simple drawing tool can draw the objects with the shape rectangle or oval. The user can move the object or change its colour.

The interface is constructed on one canvas that is divided into two areas, icon areas and drawing area. The interface is shown in figure 1. The Icon area contains two icon objects: icon_rectangle and icon_oval.
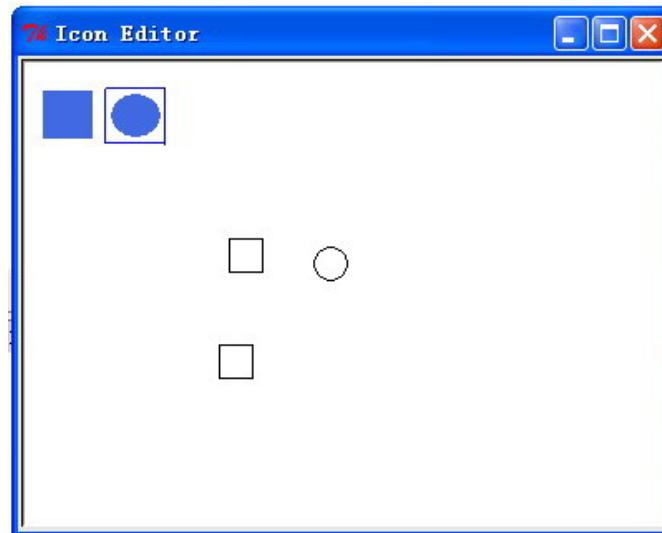

figure 1   the interface of the simplified drawing tool

When the user clicks on the icon object, its appearance is changed indicating it is selected, and the icon object leaves its normal state and goes into the pressed state,. At the same time, the system in the default state enters the insert state. Then when the user clicks on the drawing area, the object with specific shape is added into the drawing area,   and the system goes back to the default state.

The user can move object or change the color of the object only after the object is selected. At the point where the object is selected, the system goes from default state into the selected state. After each operation on the selected object is performed, the system won't leave the select state until the user clicks on the canvas or on the icon object. Clicking on the canvas will cause the system to go back to the default state, while Clicking on the icon object will lead the system from the select state to insert state.

The statecharts used to model the behaviors of the system is shown in figure 2. There are there orthogonal states that represent correspondingly the behavior of the drawing area, icon_rectangle and icon_oval.
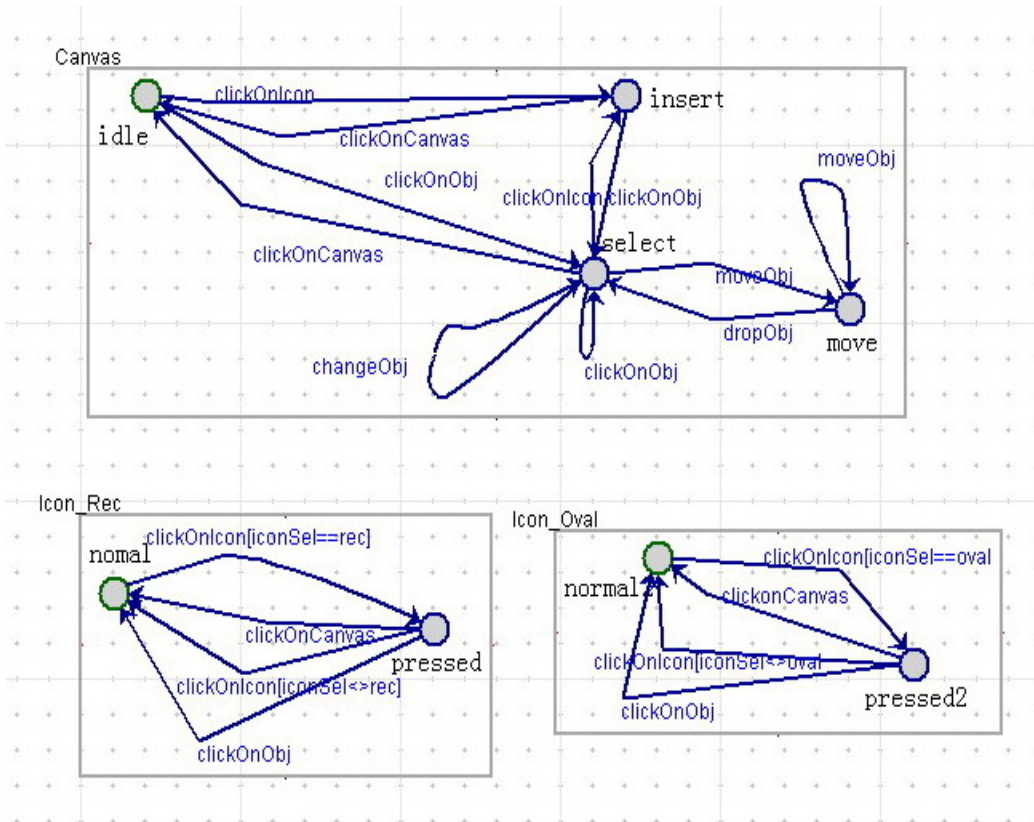
figure 2   Statecharts modeling the behaviors of the interface

The following table shows the binding between the user action on mouse button and the event.

User Action on Mouse Button	Event
ButtonPress-1	clickOnIcon (If click on icon objects), i.e. select icon
	clickOnCanvas (If click on canvas)
	clickOnObj (If click on canvas), i.e. select the object
Button1-Motion	moveObj
ButtonRelease-1	dropObj
ButtonPress-3	changeObj