Chapter 5 Summary

5.1 Summary

In this paper, we present a system called DIVINE which is 3D environment to visualize the debugging information with metaphors. Metaphor is a way of presenting a set of data, and different metaphors may reveal different aspects of data. We design architecture for DIVINE to cope with maintenance problem in the future. A metaphor is implemented as a plug-in module, allowing easy switching between several metaphors. Such a design allows tool users to examine data structure in different ways, therefore, providing the freedom to see other aspects of the examined debugging data.

5.2 Future works

There are several works need to be done in future. Our work presented in this paper is independent of haptic equipments such as 3D data gloves and trackers, which are used to get the position of a debuggee object and to move the location of camera and cursor. With various input devices, DIVINE can provide metaphors allowing more nature computer-human interaction.
To design other metaphors is also important. For example, visualizing graph data structure as nodes and edges is not a rule and not necessary. A useful metaphor is determined by its usability.

Besides, we can add more communication actions between HILCADT and DIVINE to support other interesting features. For example, we can record changes of a designated data structure in a period of time and have metaphor visualize the data structure in animation.