

- To refine the behaviour so that the decision-making and processing conform to the 14-stages framework;
- Search the library of the coordination machine, and reuse existing implemented functions as far as possible. This will be where the functional behaviour is identical to the required one;
- For those stages where no implemented functions can be reused, implement new functions in which the following three methods must exist:
 - **exec**: to verify whether function is applicable, perform the necessary change of state, messaging, and certain databases update;
 - **backtrack**: to reset all the operations performed and restore the original state;
 - **Label**: give any newly implemented function a label.

2.3.4 Adding New Coordination Graphs to the Engine

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After a repository of implemented functions has been defined, in order to allow the engine to use a particular coordination graph, a string description of the graph should simply be added to the engine. (The engine can unify multiple coordination graphs into one unified graph which contains no duplication of states.)

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If more than one coordination mechanism is required to solve a particular problem, the engine should in this case be given the graphs describing the required coordination processes. Following unification of the graphs, the engine is able to apply the different mechanisms implicit in the unified graphs opportunistically.

25 2.4 Acquaintance Database 215

The resource, task, and acquaintance databases 225, 230, 215 primarily serve as information repositories, and can be implemented using conventional database technologies which support storage, retrieval and query facilities. In one implementation, a hashtable (linking each data item to be stored with a unique key) is used as the main data storage structure for each module.

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The acquaintance database 215 stores an acquaintance model for the agent in the form of a relationship table as in the following example: the domain in this example is a dealing environment such as between two shops: Shop 1 and