

## Appendix

### ***Creating a New LIDA Framework Project***

The description that follows is for installing and running the framework with NetBeans 6.9 or above.

1. With NetBeans running select **File** → **New Project...**
  - a. Select Java for *categories* and select Java Application for *projects*
2. Give the project a name
  - a. Uncheck **Create main class**
  - b. Check **Set as main project**
3. Include required Libraries
  - a. Right-click project, select **Properties**
  - b. Select Libraries
  - c. Add JAR / folder
    - i. Add all jars from lib
    - ii. Add framework jar
4. Set references to source code and Javadoc for LIDA framework Library
  - a. Go to Properties → Libraries → Select **lida-framework-v1.0b.jar**
    - i. Edit framework jar and select the respectively zip files.
5. Create a 'config' folder and add all necessary configuration files.
  - a. In NetBeans go to the Files view and create the 'config' folder inside the Project from here.
  - b. Add the following configuration files (you can copy those from a tutorial project):
    - i. agent xml file
    - ii. factoryData xml file
    - iii. guiPanels properties
    - iv. guiCommands properties
    - v. lidaConfig properties

vi. LidaXMLSchema.xsd

vii. LidaFactories.xsd

### **Study Question Answers**

**STUDY QUESTION 1.1:** *What module of the LIDA Model is the Perceptual Buffer in? Where do the nodes in this buffer come from? How do they differ from the nodes in other modules?*

**A:** The Perceptual Buffer is in the Workspace (therefore, it is implemented as a submodule of the Workspace in the Framework). The nodes in the buffer come asynchronously from PAM nodes that have activation above the threshold. The nodes in the Workspace are *Activatable*, but not *Learnable*; they have current activation but not base-level activation (like PAM nodes). However, they are copies of PAM nodes, and represent the same data as those nodes, and they have a reference to the original PAM node. They can have different excite and decay strategies from the PAM nodes, and different linkage patterns.

**STUDY QUESTION 1.2:** *Where do the coalitions in the Global Workspace come from? Where do they go? Think about how the answer to these questions depends on whether we are discussing the LIDA Model or a specific agent implemented using the Framework.*

**A:** Coalitions come from the Workspace. In the Model, one coalition wins the competition and is chosen for broadcast to most other modules (see the arrows in the LIDA Model diagram). In a particular implementation of an agent using the Framework, the broadcast will only go to modules that implement BroadcastListener and have registered as listeners with the agent's GlobalWorkspace module.

**STUDY QUESTION 1.3:** *How are the contents of the Current Situational Model related to the contents of the Perceptual Buffer? To the contents of PAM? Think about how the answer to these questions depends on whether we are discussing the LIDA Model, or a specific agent implemented in the Framework.*

**A:** In the LIDA Model, CSM should contain the agent's idea about what is currently happening in the external and/or internal environments. It will be built by Structure Building Codelets, primarily out of input from PAM and Declarative Memory Modules. In a specific Framework implementation, the CSM's contents will depend on the specifications in the agent declaration and other configuration files. In the basicAgent exercise, there are no Declarative Memory modules, and all of the CSM contents are from the Perceptual Buffer by way of PAM.

**STUDY QUESTION 2.1:** *Compare the GUI for the alifeAgent to the GUI of basicAgent. What are the differences, and why are they different?*

**A:** The differences in the GUI between the two agents are due to differences in the `guiPanels.properties` file. Inspecting the files shows the differences. The two agents have different environments, and the `alifeAgent` does not have a CSM panel (which was added to `basicAgent` in the exercises of Project I).

**STUDY QUESTION 2.2:** *Why does the agent's behavior change in this way after the new feature detectors were added?*

A: The agent already has Schemes in Procedural Memory to respond to bad health and predators (see the declarations for Schemes 6 and 8 in the `ProceduralMemory` section of the agent declaration file). When the new perceptive capabilities are added, it begins to use these Schemes appropriately.

**STUDY QUESTION 2.3:** *What are the possible reasons the agent doesn't flee?*

A: It may be that the agent cannot perceive the predator (feature detector absent); it cannot bring such a perception to consciousness (attention codelet missing); and/or it does not have an action mechanism to allow it to flee from predators (Scheme and/or Behavior missing). In the case of `alifeAgent_Exercise 3`, the agent is missing the attention codelet for predators, so it cannot pay attention to them.

**STUDY QUESTION 2.4:** *How does this affect the agent's cognition and behavior?*

A: The agent can now bring the "concept" of a predator to "consciousness" and act appropriately.

**STUDY QUESTION 2.5:** *How does this parameter change affect the agent's cognition?*

A: It becomes less "interested" in food, and less likely to "notice" it.