

# A GUI Editor that Generates Tutoring Agents

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## ABSTRACT

Tutoring agents can provide a dynamic and engaging way to help users understand an application. However, integrating tutoring agents into applications is difficult. It requires the expertise to create the tutoring agent, and also an understanding of the inner workings of the application itself. This demo presents a task-based GUI editor that produces a software agent tutor for free. The designer need only create a task model, and then use the editor to produce the GUI. A tutoring agent will automatically be included in the new application.

**Keywords:** Model-based GUI design, software agents.

## COLLAGEN Middleware

COLLAGEN(for COLLABorative AGENT) [1] is Java middleware that facilitates the implementation of collaborative interface agents. Among other things, COLLAGEN provides a generic implementation of discourse interpretation, plan recognition, and plan generation algorithms, all of which take a given task model as data. COLLAGEN can support a variety of different types of agents, including software tutors.

However, the developer using COLLAGEN still has to hand-code the *agent interface*, which allows the agent to observe the user's interactions with the application and to interact with the application itself. This code can be quite onerous to write, because it requires an understanding of both the GUI implementation and the agent framework.

## UI MODELING AS A SOLUTION

The agent interface is non-declarative software code that expresses the relationship between the task model and the GUI implementation. The field of user interface modeling has focused on expressing this same relationship, but through declarative knowledge bases instead. In this demo, we exploit the output of a model-based user interface design environment to generate the agent interface automatically.

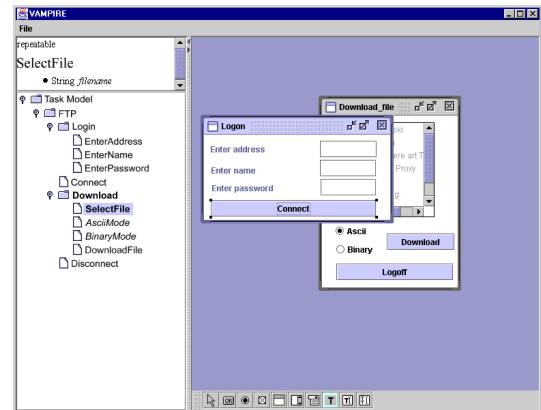


Figure 1: VAMPIRE task-centered GUI design tool.

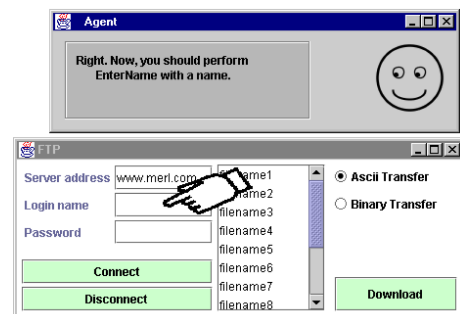


Figure 2: An automatically generated tutoring agent.

VAMPIRE(for VisuAl Model-based Pick-and-place InterFace Editor) is a task-centered GUI editor that we have developed for this purpose. Vampire outputs a model that includes a set of links between individual tasks and GUI elements. This model can then be translated directly into the agent interface code. Thus, all GUIs designed using VAMPIRE will automatically include a software agent tutor with no additional programming required by the designer.

## REFERENCES

1. C. Rich and C. Sidner. COLLAGEN: A collaborative manager for software interface agents. *User Modeling and User-Adapter interaction*, 8(3-4):315–350, 1998.