OntoAIMS: Semantically-aware and User-adaptive Learning Content Management

AIED05 Interactive Events

BRIEF DESCRIPTION OF ONTOAIMS

OntoAIMS is an adaptive **information searching and browsing environment** that recommends to learners the most appropriate (for their current knowledge) task to work on and aids them to explore domain concepts and read resources related to the task.

This interactive session will be with the instantiation of OntoAIMS in a **Linux domain**. It was used in an Introductory Linux course for self-practice after 2 weeks of face-to-face teaching. The students used OntoAIMS to brush-up and excel their Linux knowledge.

OntoAIMS uses **ontologies** to represent the aspects of the application semantics, to allow a strict separation of domain-dependent data, application related data and resources, and to further enable reusability and sharing. The learning material is specified in terms of a **Resource Model** that describes the documents in the resource repository and is linked to the **Domain Ontology** which represents the domain concepts and their relationships.The course structure is represented as a hierarchy of tasks in a **Course Task Model**. To enable adaptivity, OntoAIMS utilizes a **User Model** that covers learner preferences, personal characteristics, goals and domain understanding. To build a model of the user's conceptual state, OntoAIMS employs an **interactive student modeling component** that maintains a dialog to elicit a user's conceptual model. Both the User Model and the Course Task Model are used for recommending the learner a task to study, so that he can navigate efficiently through the course structure, while the Resource Model is used to allocate resources and rank them according to the appropriateness to the learning task.

TASK

Your task will be to use OntoAIMS to study resources in order to improve your knowledge in Linux.

LOG IN

Open a browser and go to:

www.swale.comp.leeds.ac.uk/staims/

Then click on the link to AIMS viewer at the bottom. A log on window will appear. Enter

Username: ***visitor***
Password: ***visitor***

You will enter OntoAIMS and a screen similar to the one shown in Figure 1 will appear.

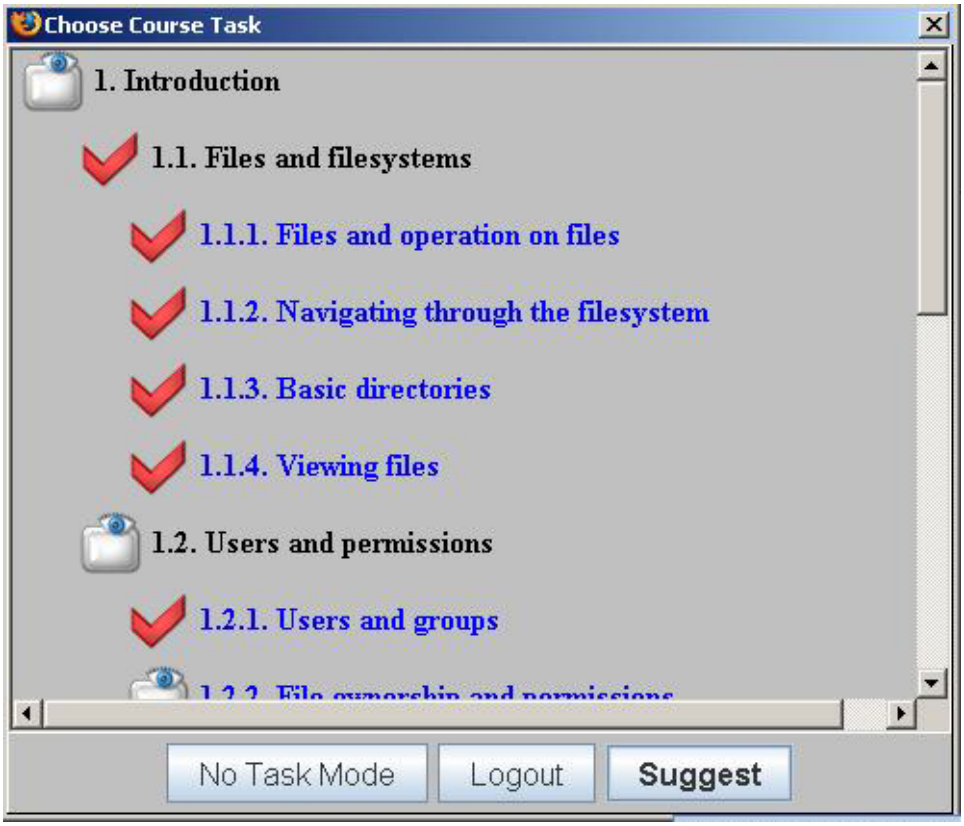

Figure 1: OntoAIMS viewer open screen. Click on a task to go to resource browsing. Click on the Suggest button to go to *adaptive* task recommendation.

OntoAIMS works in **two modes**.

MODE 1: ADAPTIVE TASK RECOMMENDATION

To enter this mode click on the **Suggest button**. The system will recommend a suitable task for you to study based on your current knowledge. Since there is no sufficient information about your domain knowledge (*cold start*), OntoAIMS will initiate a probing dialogue that will elicit a user model. Following that model, the system will recommend you a task to study.

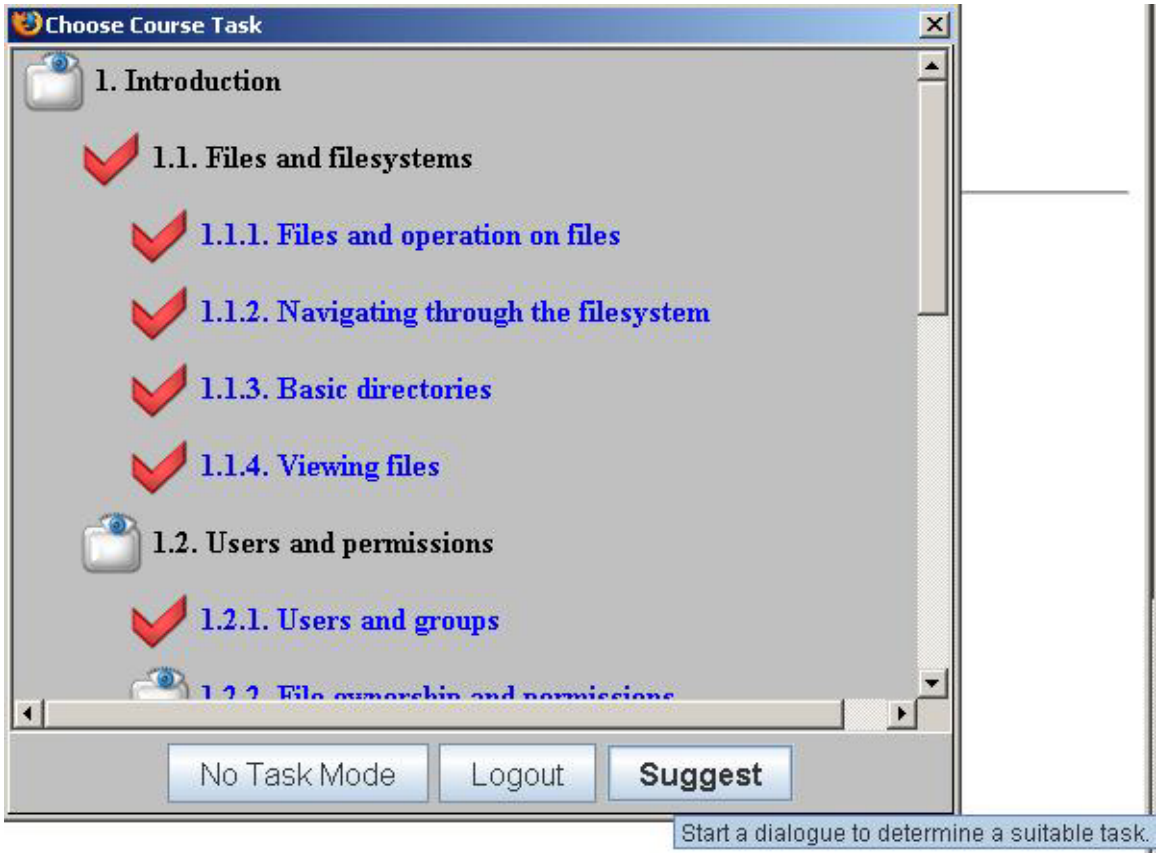

Figure 2: Click on the Suggest button to enter the task recommendation mode.

Once you enter the OntoAIMS adaptive mode, a dialogue agent will interact with you to diagnose your knowledge in the domain.

A dialogue window, similar to the one shown in Figure 3 will appear.

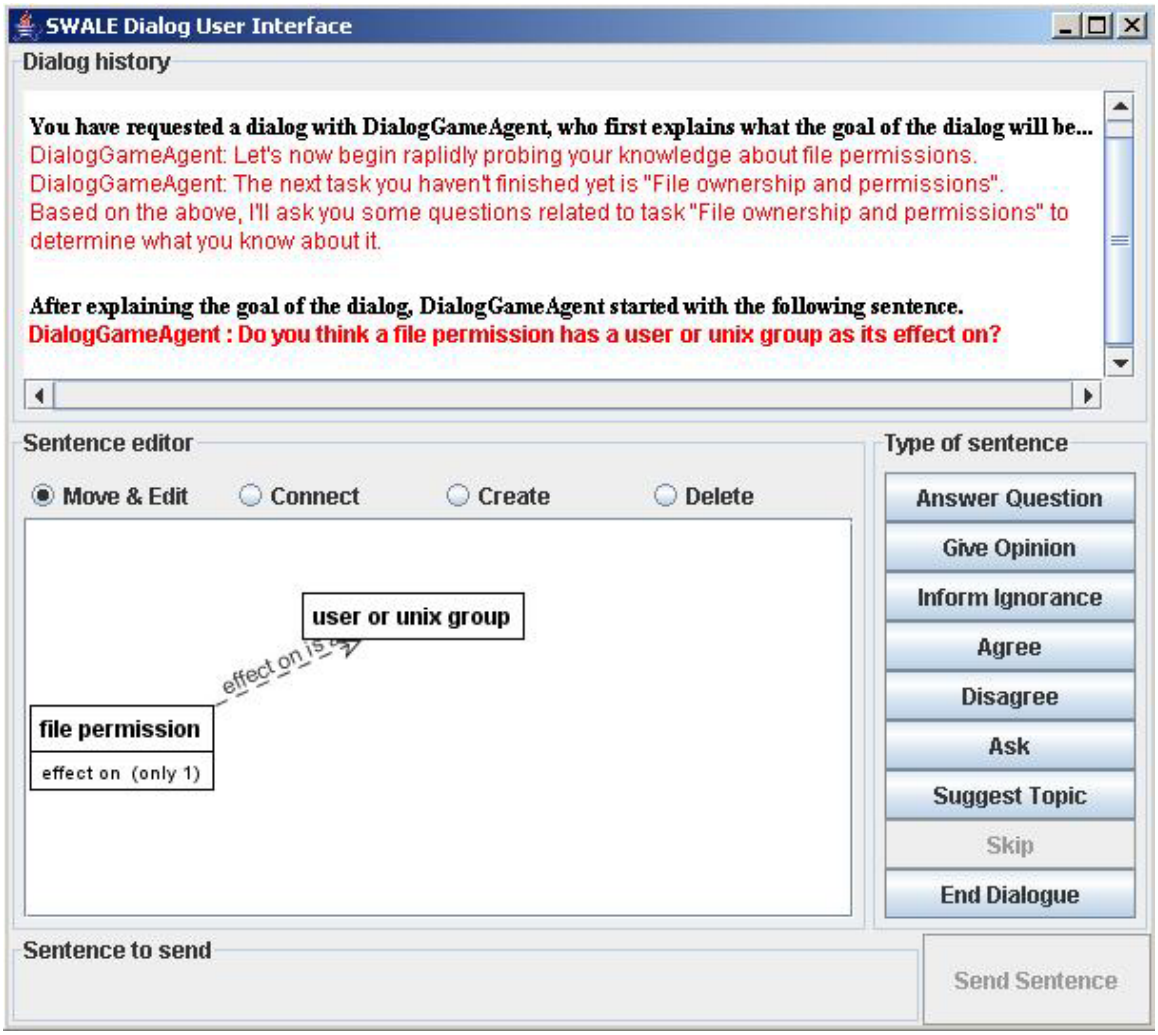

Figure 3: Dialogue screen. The dialogue is conducted in a graphical manner. Each utterance is constructed by combining a proposition rendered in a graphical way in the graph panel and a question opener chosen from the list of sentence types on the right. The text area in the top window presents a record of the dialogue history.

You can use simple graphical manipulations to compose/modify the proposition in the graph panel. You can then select a sentence opener to add illocution and compose a dialogue utterance, see Figure 4.

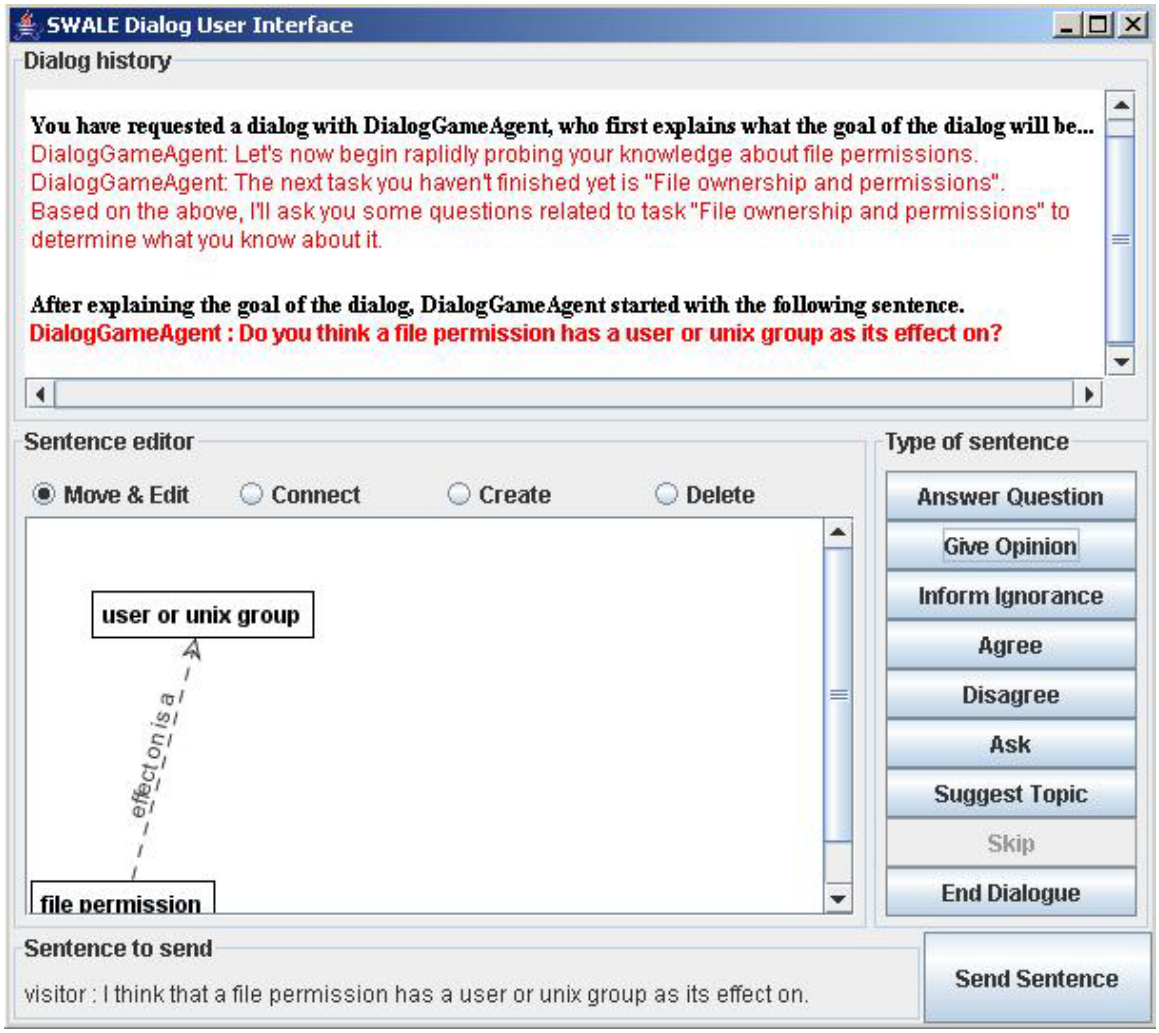

Figure 4: Composing a dialogue utterance.

A graphical statement is composed in the graph panel and "*Give opinion*" sentence opener is selected. The textual form of the utterance is shown in the bottom window. To send your utterance to the dialogue agent, press the *Send Sentence* button.

At any time, you can terminate the dialogue by clicking on "End Dialogue" button and then "Send Sentence" to pass this request to the agent. You will then go to the browsing mode that will start

MODE 2: BROWSING THROUGH LEARNING RESOURCES

You will enter this mode automatically after the graphical dialogue is ended. You can also enter the browsing mode by clicking on any of the tasks from the list suggested upon login. The main screen in the browse mode is the graphical view of the concepts related to the task, see Figure 5.

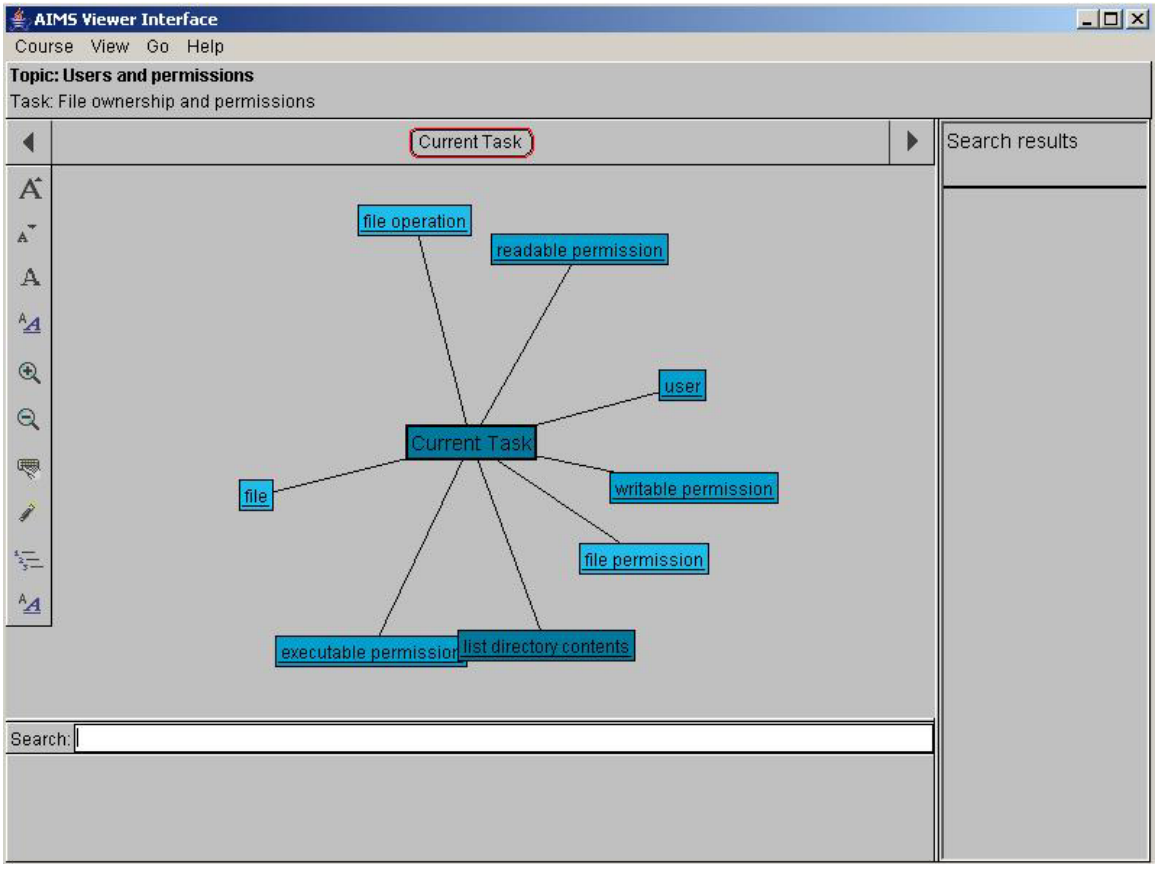

Figure 5: OntoAIMS browse mode – overview of the concepts related to the current task.

When you click on a concept, it moves to the centre and the concepts related to it are shown. To search for the resources on a concept, press the right button with the mouse positioned on the concept, see Figure 6.

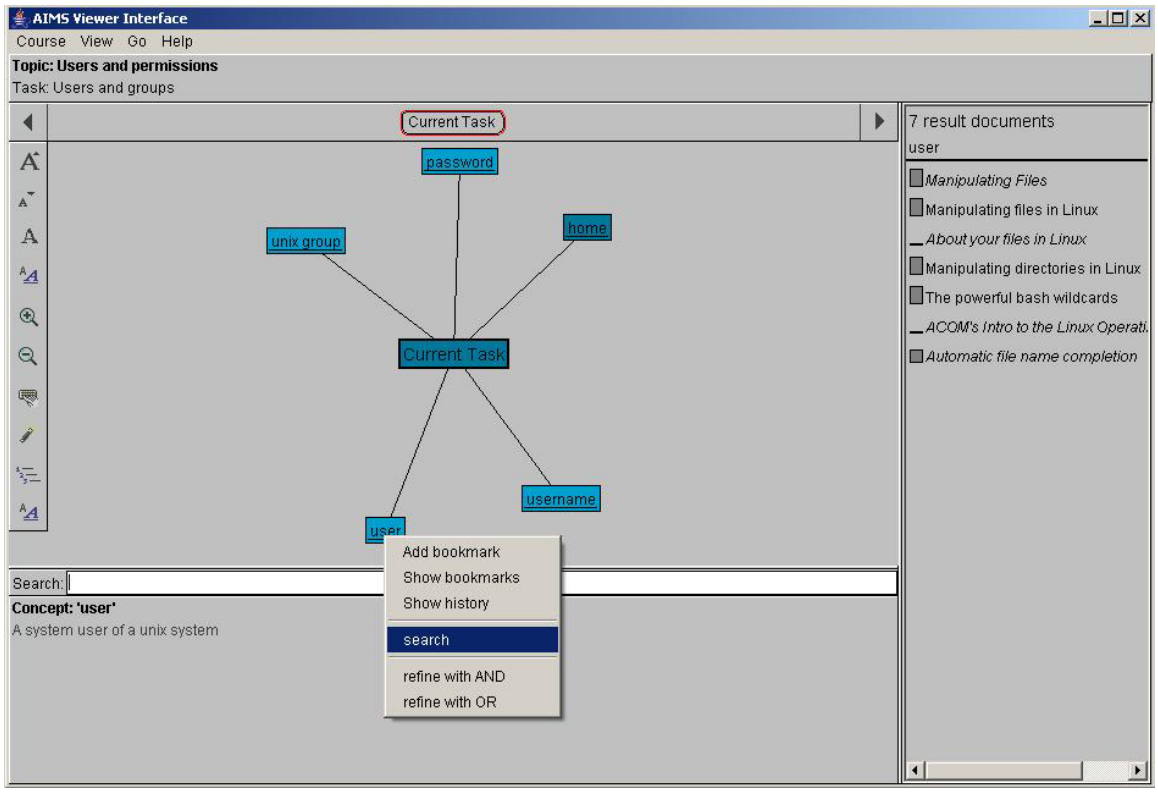

Figure 6: To search for the resources related to a concept, press the right mouse button. The resources related to the selected concept are shown in the window on the right.

A resource can be related to more than one domain concept. To find out which concepts you can study by reading a resource, position the mouse on it. The related concepts will be highlighted in white, see Figure 7. You can also see the definition of a concept and the resources linked to it by positioning the mouse over the concept, Figure 8.

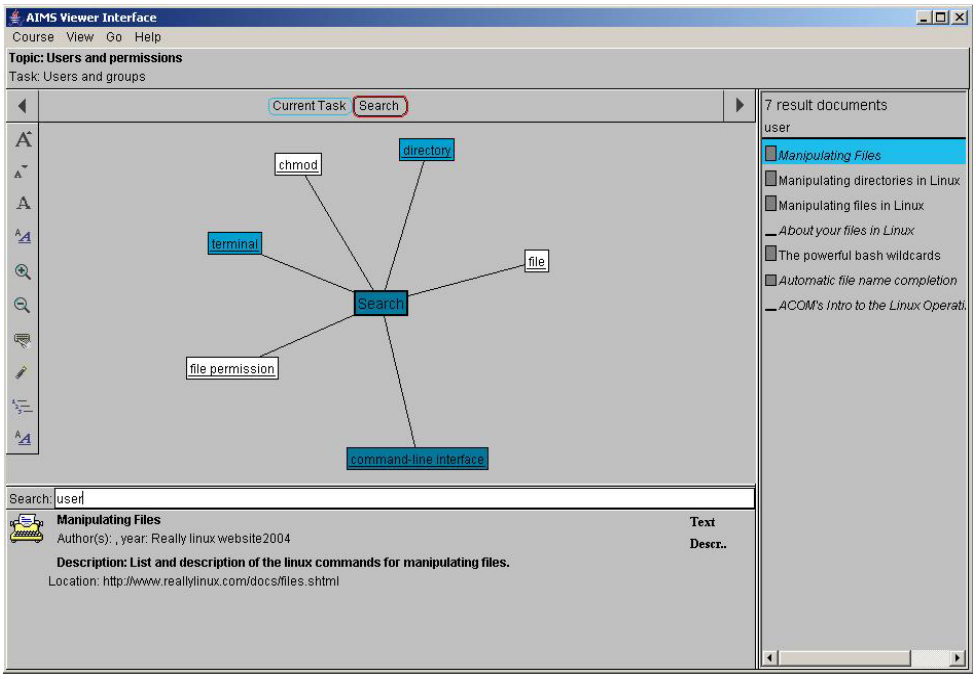

Figure 7: Concepts related to the resource "Manipulating files".

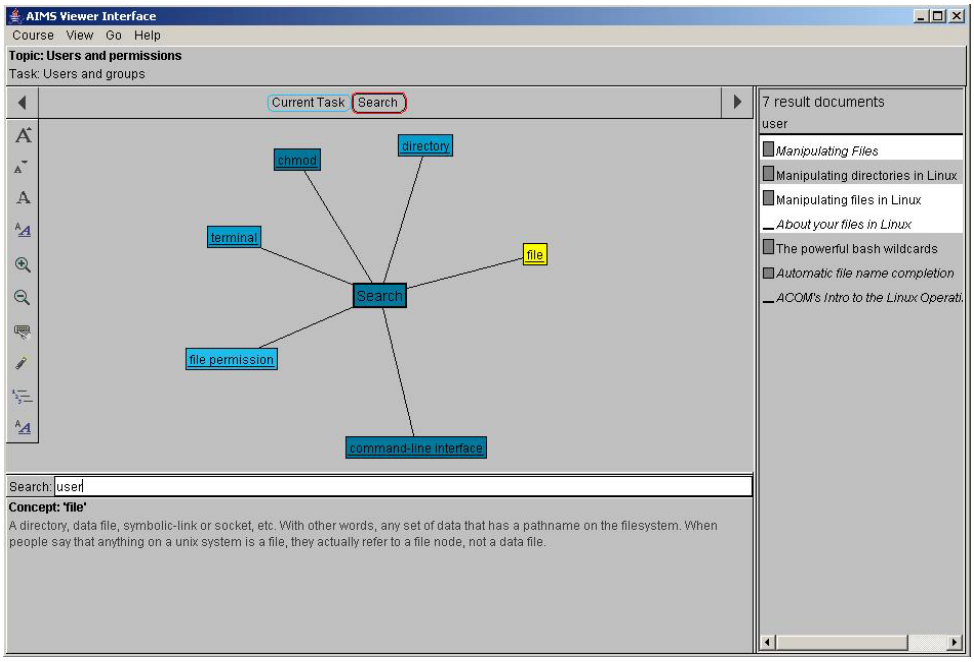

Figure 8: Resources related to the concept "file". The definition of the concept is shown in the bottom window.

To change the task and go again to the initial OntoAIMS window, select **Course task** from the **Course** menu, Figure 9.

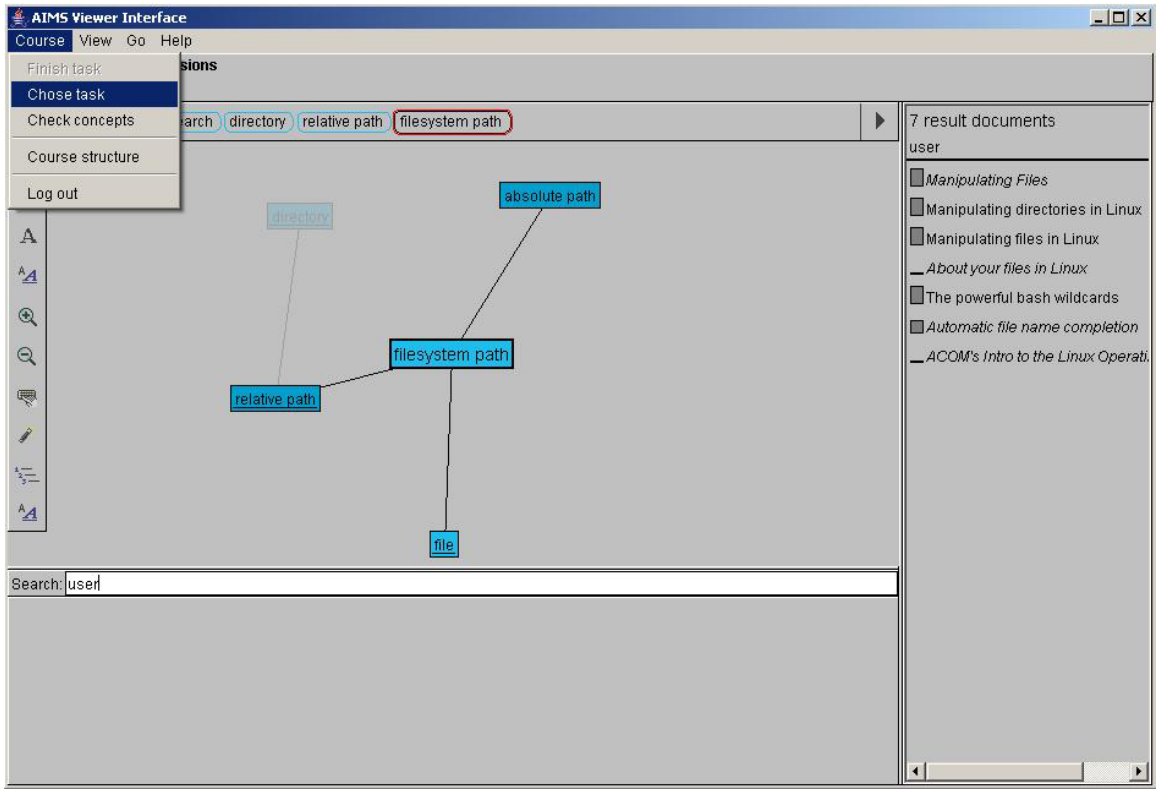

Figure 9: Changing the task and exploring a new group of domain topics.

We hope you will enjoy working with OntoAIMS and will greatly appreciate if you complete the user questionnaire and give us some feedback on your experience with the system.

THANK YOU VERY MUCH FOR YOUR TIME!

IF YOU WISH TO HAVE FURTHER INFORAMTION ABOUT ONTOAIMS OR WISH TO USE THE SYSTEM (EITHER IN LINUX OR IN ANOTHER DOMAIN), PLEASE SEND AN EMAIL TO

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