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Task using t-UCK tool

The task in t-UCK is to model knowledge graphically. Usually the knowledge is extracted from a domain expert using different methods like observations, interviews etc. Since there isn't any material extracted for this example, the material will be obtained from a website about mushrooms.

The domain will be modelled so the system can determine what mushroom the user is asking about. The idea is that the user has the mushroom nearby and consults a system to determine what kind of mushroom the user has. The system asks questions (like an expert) and, from the information supplied by the user, it classifies what kind of mushroom it is and preferably some information about it. If the system cannot figure out what it is, it must be able to present such a conclusion too.

For the task, select a couple of mushrooms from the website. See the web site:
<http://www.capsandstems.com/specieslist.htm>

The task is to model questions, rules and conclusions to match the knowledge about the mushrooms. There must be a couple of questions that can be posed to the user, for example, asking about the appearance and the environment where the mushroom normally grows. Try to get as much information from the users as possible. The more information the system gets, the better the conclusion can be. If needed use certainty factors too. That can give some security of the conclusion.

There must be rules to take care of the knowledge and to reach a conclusion. It has to have at least one rule, but probably several for each mushroom. Hint, it is possible to cluster similar mushrooms. The graphic presentation is made in object diagrams and sequence diagrams, according to description in **Modelling with the User-Centred Knowledge Tool (t-UCK)**.

A clarification of task "Modelling with t-UCK":

1. Select a couple of mushrooms to model
2. Model about 7-10 rules.
3. Model rules, questions and conclusions.
 - a. use object diagrams
 - b. use sequence diagrams

Agaricus silvaticus



Common name: Bleeding Agaricus

Spore Print: Brown

Habitat: Grows on the ground, not usually in manure but that's where these were!

Edibility: Edible and delicious!

Comments: These agaricus are typically grouped in the 'bleeding' agarics which also include *A. fuscofibrillosus* and *A. haemorrhoidarius*. Generally, if you can identify to the genus *Agaricus*, you should avoid eating any of the yellow staining agarics or those that smell like phenol or taste metallic. To get to know the phenol smell, simply have a mushroom expert give you an *Agaricus xanthodermis* and then take it home and fry it up. It will smell so bad you'll throw it out!

Lactarius torminosus



Common name: The Bearded Milk Cap

Spore Print: White

Habitat: Usually grows under aspen.

Edibility: Poisonous.

Comments: This is one of the few *Lactarius* in Colorado that has visible milk when cut or damaged, which is the main characteristic of the *Lactarius* genus. It's a great mushroom to show off what a *Lactarius* is supposed to do when cut. Many *Lactarius* don't bleed milk because of our dry climate. This mushroom is reported to be edible if cooked or pickled but it is poisonous if not cooked completely. I would suggest not eating this mushroom! It's easily identified by its fairly large size and the shaggy 'beard' around the edge of the cap along with white milk when cut.

Cantharellus cibarius



Common name: Chantrelle

Spore Print: Usually yellow, can be cream or pink

Habitat: Grows on the ground in the forest, associated with the roots of certain trees (mycorrhizal)

Edibility: Edible, and very good!

Comments: This mushroom is highly sought after by all mushroom hunters of all ages and 'secret spots' where these mushrooms grow are hardly ever publicly announced. This is one of the few mushrooms a beginner can easily recognize along with morels and *Boletus edulus*. It is a good edible but I've heard of a few reports of people getting sick from eating undercooked or frozen chanterelles. The photos above are of fully mature specimens. Amazingly, they were free from insects! It would seem that the bugs don't like chanterelles (good for us!). The main distinguishing features of this mushroom is the bright orange color, the 'gills' that are thick and flattened and run all the way down the stem, and of course, the fruity smell of the mushroom itself. Once you smell a Chantrelle, you will be able to easily identify this mushroom!

Hypomyces lactifluorum



Common name: Lobster Mushroom

Spore Print: Colorless!

Habitat: Grows on the ground in the forests / mountains of Colorado.

Edibility: Edible - Sold in Markets in Mexico

Comments: This fungus is not actually a mushroom. It's a fungus that engulfs other mushrooms turning them orange. This species attacks various species of *Russula* and *Lactarius*. There are no known cases of poisonings from eating this mushroom and it has been suggested that it only attacks edible species of *Russula* and *Lactarius*. It's easy to recognize with its bright orange color and rough 'sand paper like' surface. Be sure you don't eat other *Hypomyces* of different colors as they engulf mushrooms such as *Amanita* that can result in a deadly poisonous mushroom!

Coprinus comatus



Common name: Shaggy mane

Spore Print: Black

Habitat: Grows in grassy areas

Edibility: Edible

Comments: This delicious mushroom is really easy to identify, at least for experienced mushroom hunters! It is a *Coprinus* and will 'deliquesce' with age. This means that it dissolves into a black mass when it matures, a unique means of spore dispersal. Only the young, unopened buttons are edible. Once the gills turn black they should not be eaten. Also, be careful when consuming alcohol since these can have an adverse reaction and make you very sick! The relatively large size of this mushroom is also a distinguishing feature. One thing you should watch out for, since they like grassy areas, is to avoid eating any of them that have been growing in grass that has no weeds (this probably means that a herbicide has been used on the grass and the mushrooms will concentrate this, rendering them inedible!)

Lepiota lutea

(Also known as *Leucocoprinus birnbaumii*, and *Leucocoprinus luteus*)



Common name: Yellow parasol, Flower pot parasol

Spore Print: White

Habitat: Common in flowerpots!

Edibility: Poisonous to some people.

Comments: This is one of the first mushrooms that I identified to species when I was initially interested in the hobby of mycology. The reason is because I had a plant that would produce a flush of these mushrooms about once a year! It was a corn plant (*Dracaena fragrans*) which seems to be a common houseplant associated with this mushroom. Every year or so I have someone send me an e-mail wondering what this strange yellow mushroom is doing in their house plant. This is a very common mushroom and very easy to identify, unfortunately it's not edible!