CS171: Expert Systems
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Project 1: Media Advisor

The goal of the project is to implement Media Advisor, a demonstration rule-based expert system, in Prolog. You can find the description of the system in Negnevitsky, page 41. The **rules** are (copied from the book):

Rule 1:
if the environment is papers
or the environment is manuals
or the environment is documents
or the environment is textbooks
then stimulus_situation is verbal

Rule 2:
if the environment is pictures
if the environment is illustrations
if the environment is photographs
if the environment is diagrams
then stimulus_situation is visual

Rule 3:
if the environment is machines
if the environment is buildings
if the environment is tools
then stimulus_situation is 'physical object'

Rule 4:
if the environment is numbers
or the environment is formulas
or the environment is 'computer programs'
then stimulus_situation is symbolic

Rule 5:
if the job is lecturing
or the job is advising
or the job is counceling
then the stimulus_response is oral

Rule 6:
if the job is building
or the job is repairing
or the job is troubleshooting
then the stimulus_response is 'hands-on'

Rule 7:
if the job is writing
or the job is typing
or the job is drawing
then the stimulus_response is documented

Rule 8:
if the job is evaluating
or the job is reasoning
or the job is investigating
then the stimulus_response is analytical

Rule 9:
if stimulus_situation is 'physical object'
and the stimulus_response is 'hands-on'
and feedback is required
then the medium is workshop

Rule 10:
if stimulus_situation is symbolic
and the stimulus_response is analytical
and feedback is required
then the medium is 'lecture-tutorial'

Rule 11:
if the stimulus_situation is visual
and the stimulus_response is documented
and feedback is 'not required'
then the medium is videocasette

Rule 12:
If the stimulus_situation is visual
and the stimulus_response is oral
and feedback is required
then the medium is 'lecture-tutorial'

Rule 13:
if the stimulus_situation is verbal
and the stimulus_response is analytical
and feedback is required
then the medium is 'lecture-tutorial'

Rule 14:
if the stimulus_situation is verbal
and the stimulus_response is oral
and feedback is required
then the medium is 'role-play exercises'

Your system should be able to recommend the most appropriate medium by asking a set of questions (see **Dialog**, Negnevitsky, page 44):

Q: What sort of environment is a trainee dealing with on the job?
A: machines

Q: In what way is a trainee expected to act or respond on the job?
A: repairing

Q: Is feedback on the trainee\'s progress required or not required?
A: required

Output: medium is workshop

You can assume that the user will not give you values which are not allowed (for example, environment – "helicopters" so no error checking should be implemented in the sense that you do not need to output a message "Helicopters not defined" or something similar.

However, you should assume that there is a combination of inputs that your Media Advisor simply does not know how to handle, in which case you should provide a graceful message: "I am unable to draw any conclusions on the basis of the data."

Hints: Instead of thinking in terms of forward and backward chaining, think of how you would solve it Prolog. The hint may sound cryptic, so it will definitely be discussed next Monday.