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Student Number: __2015-04264__   Section: __T-2L__

I. Determine if the term is valid or not, and if valid, if it is an atom or a variable.

#	Term	Valid (Y/N?)	Atom/Variable?
1	`dan`	Y	Atom
2	`Neil`	Y	Variable
3	`_hEll0`	Y	Variable
4	`'k4t4r1n4 l0r3N'`	N	
5	`_____`	Y	Variable
6	`Nameless Nemesis`	N	
7	`matcha`	Y	Atom
8	`c_m_s_c_1_2_4`	N	
9	`UPLBICS`	Y	Variable

II. Determine if the term is a valid complex term, and if valid, identify the functor and the arity.

#	Complex Term	Valid Complex Term (Y/N?)	Functor	Arity
1	`'Will pass'(_student,'cmsc124').`	Y	'Will_pass'	2
2	`Listens(dja,Paramore).`	N		
3	`_writes(Perico,Handouts).`	N		
4	`'assists'('erika',CS56,CS12,CS150).`	Y	'assists'	4
5	`free(all_of_us).`	Y	free	1
6	`eats_with(betel,miyah,kendall).`	Y	eats_with	3

III. Convert the following statements into a knowledge base, and give Prolog's answer to the specified queries. At the back of these sheet, write your knowledge base, the command you used for each query and the result given to you by Prolog.

Statements:

Cobol exercises are take home.

Erlang exercises are take home.

Pig listens during the Erlang discussion.

Pig listens during the Scheme discussion.

Pig studies Scheme.

Pig studies Prolog.

Raven listens during the COBOL discussion.

Raven listens during the Prolog discussion.

Raven studies Scheme.

Cat listens during the Rust discussion.

Cat listens during the Erlang discussion.

Cat studies during the COBOL discussion.

A student finishes their exercise in a PL if the student listens for that PL's discussion, or if the exercise is take home and the student studies that PL.

Queries:

1. Will Pig finish the Erlang exercise?

2. Will Pig finish the Scheme exercise?

3. Will Pig finish the Prolog exercise?

4. Will Pig finish the Cobol exercise?

5. Will Raven finish the Erlang exercise?

6. Will Raven finish the Scheme exercise?

7. Will Raven finish the Prolog exercise?

8. Will Cat finish the Rust exercise?

9. Will Cat finish the Scheme exercise?

10. Will Cat finish the Cobol exercise?

KNOWLEDGE BASE:
take_home(cobol)
take_home(erlang)
lab_exer(scheme)
lab_exer(prolog)
lab_exer(rust)
student(pig)
student(raven)
student(cat)

listens(erlang, pig) TRUE
listens(scheme, pig) TRUE
studies(scheme, pig) FALSE
studies(prolog, pig) FALSE
listens(cobol, raven) TRUE
listens(prolog, raven) TRUE
studies(scheme, raven) FALSE
listens(rust, cat) TRUE
listens(erlang, cat) TRUE
studies(cobol, cat) TRUE