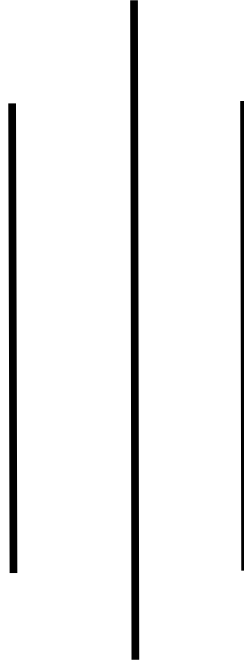


Deerwalk Institute of Technology

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Artificial Intelligence Practical - 9

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1. Read, Write & built-in predicates in prolog

Predicate **write(term)** causes a term to be written to the current output stream (the monitor screen by default). X will be output in the same standard syntactic form in which prolog normally displays values of variables. A useful feature of prolog is that the write procedure 'knows' to display any term.

Predicate **read(term)** is used to read a term from the current input stream (the keyboard by default). The goal read(X) will cause the next term T, to be read which match with X. If X is a variable then X will be instantiated to T. The predicate read is deterministic.

Another built-in predicate **tab(N)** causes N space output whereas predicate **nl** causes the start of a new line output.

Some results:

```
?- write(likes(marry,pizza)).  
likes(marry,pizza)  
true.
```

```
?- write(23).  
23  
true.
```

```
?- write("apple").  
apple  
true.
```

```
?- write(`apple`).  
[97,112,112,108,101]  
true.
```

Fact:

```
likes(simona,bibek).
```

```
likes(bibek,simona).
```

Output:

```
?- likes(simona,X),likes(bibek,Y),write(X),write(Y).  
bibeksimona  
X = bibek,  
Y = simona.
```

Read Task

```
?- read(X).  
|: 23.
```

```
X = 23.
```

```
?- read(X).  
|: ram.
```

```
X = ram.
```

```
?- read(X).  
|: likes(ram, biscuit).
```

```
X = likes(ram, biscuit).
```

```
?- read(likes(jane,X)).  
|: likes(jane,pizza).
```

```
X = pizza.
```

Example for tab(N) and nl

```
?- write(hi), tab(15),write(there),nl.  
hi           there  
true.
```

```
?- write(hi), tab(15), nl, write(there).  
hi  
there  
true.
```

Predicate PUT. Writes the character C on the current output stream.

```
?- put(C).  
ERROR: put/1: Arguments are not sufficiently instantiated  
?- put('f').  
f  
true.
```

```
?- put(102).  
f  
true.
```

Predicate **get** and **getbyte**: read a single character from the current input stream use `get_byte(C)`, where C is a variable.

```
?- get(C).  
|: abcd  
  
C = 97.
```

Example: Read a character and print its ASCII.

Fact:

```
read_a_char(C) :- write('Type: '), flush_output, get(C).
```

Output:

```
?- read_a_char(X).  
Type: a  
  
X = 97.
```

Example: Read and write to find the cube of a number.

```
cube:- write('Please enter a number: '), read(N), process(N).  
process(stop):-!.  
process(N):- C is N * N * N, write('Cube of '),write(N),write(' is '),write(C),nl,cube.
```

```
?- cube.  
Please enter a number: 2.  
Cube of 2 is 8  
Please enter a number: |: 11.  
Cube of 11 is 1331  
Please enter a number: |: stop.  
  
true.
```

Writing a list

```
writelist([]).
```

```
writelist([X|L]):-write(X),nl,writelist(L).
```

```
?- writelist([1,2,3,4,5]).  
1  
2  
3  
4  
5  
true.
```

I/O in Prolog

```
position('Spielberg', director).
```

```
position('Allen', manager).
```

```
position('Lee', supervisor).
```

```
find_position:- write('Whose position do you wish to know?'),
```

```
read(Input),
```

```
position(Input, Output),
```

```
write('The position of '),
```

```
write(Input),
```

```
write(' is '),
```

```
write(Output),
```

```
write('.').
```

```
?- find_position.
```

```
Whose position do you wish to know? sameer.
```

```
The position of sameer is ceo.
```

```
true.
```

```
?- find_position.
```

```
Whose position do you wish to know? anish.
```

```
The position of anish is sweeper.
```

```
true.
```

Q. Enter the two numbers from the user and find the greatest among them

```
greatest:- write('Please enter number 1: '), read(N1),  
            write('Please enter number 2: '), read(N2), process(N1,N2).  
  
process(N1,N2):- N1 > N2, write(N1), write(' is Greatest number.'),!.  
  
process(N1,N2):- N2 > N1, write(N2), write(' is Greatest number.').
```

```
?- greatest.  
Please enter number 1: 7.  
Please enter number 2: |: 2.  
7 is Greatest number.  
true.
```

```
?- greatest.  
Please enter number 1: 3.  
Please enter number 2: |: 5.  
5 is Greatest number.  
true.
```

Q. Write the output of

```
put(65).  
put(66).  
put(67).  
get0(c)
```

```
?- put(66).  
B  
true.
```

```
?- put(65).  
A  
true.
```

```
?- get0(C).  
|: c.  
  
C = 99.
```

```
?- put(67).  
C  
true.
```

Q. Suppose Ashim is Cr of class, Sachin is programmer , Prabina is librarian and john is hacker write a prolog program to find their specialty.

```
speciality(ashim,cr).
```

```
speciality(sachin,programmer).
```

```
speciality(prabina,librarian).
```

```
speciality(john,hacker).
```

```
find_speciality:- write('Enter name: '),
```

```
read(Input),
```

```
speciality(Input,Output),
```

```
write('The speciality of '),
```

```
write(Input),
```

```
write(' is '),
```

```
write(Output),
```

```
write(',').
```

```
?- find_speciality.
```

```
Enter name: ashim.
```

```
The speciality of ashim is cr,  
true.
```

```
?- find_speciality.
```

```
Enter name: john.
```

```
The speciality of john is hacker,  
true.
```

Q. Write a prolog program to find the position of the corresponding DWIT staff name.

```
position(surendra,principal).  
  
position(hitesh,cao).  
  
position(bijay,academic_coordinator).  
  
position(amrit,accountant).  
  
position(shivangi,librarian).  
  
find_position:- write('Whose position do you wish to know? '),  
read(Input),  
position(Input,Output),  
write('The position of '),  
write(Input),  
write(' is '),  
write(Output),  
write('.').
```

```
?- find_position.  
Whose position do you wish to know? hitesh.  
The position of hitesh is cao.  
true.
```

```
?- find_position.  
Whose position do you wish to know? bijay.  
The position of bijay is academic_coordinator.  
true.
```

```
?- find_position.  
Whose position do you wish to know? surendra.  
The position of surendra is principal.  
true.
```


Q. Write a prolog program to write a list of list program [hint[[a,b,c],[d,e,f]]]

```
writelist([]).
```

```
writelist([X|L]):-write(X),nl,writelist(L).
```

```
?- writelist([[a,b,c],[d,e,f]]).  
[a,b,c]  
[d,e,f]  
true.
```