

### 11a. About Language (What/When/Who/Why)

```
?- language(python).  
false.  
  
?- language(prolog).  
true.  
  
?- about_language.  
Language: prolog  
Origin Year: 1972  
creator: Alain Colmerauer  
Purpose: Artificial Intelligence and computational linguistics  
true.
```

### 11 b. Atoms, Variables, Facts, and Rules in Prolog

```
?- parent(john,mary).  
true.  
  
?- grandparent(john,sam).  
true .  
  
?- granndparent(john,sara).  
Correct to: "grandparent(john,sara)"? yes  
true.  
  
?- |
```

### 12. Ancestor program using Prolog

```
File Edit Settings Run Debug Help  
% d:/materials/4th sem/ai/lab/part ii/question12 compiled 0.00 sec, -1 clauses  
?- ancestor(john,mary).  
true .  
  
?- amcestor(john,alice).  
Correct to: "ancestor(john,alice)"? yes  
true .  
  
?- ancestor(mary,kate).  
true .  
  
?-
```

### 13. Family relationship (family tree) program using prolog.

```
?- father(john,mary).
true.

?- mother(susan,mike).
true.

?- sibling(mary,mike).
true.

?- sister(mary,mike).
true.

?- grandfather(john,sam).
true.

?- grandmother(susan,kate).
true.

?- ancestor(john,sam), descendant(sam,john), uncle(mike,sam), aunt(mary,kate).
true |
```

### 14. Semantic Net

```
SWI-Prolog -- d:/Materials/4th sem/AI/lab/part ii/question11answer.pl
File Edit Settings Run Debug Help
% d:/materials/4th sem/ai/lab/part ii/question14 compiled 0.00 sec, 0 clauses
?-
| is_a(tom,animal).
true.

?- likes(cat1,cream).
true.

?- color(tom,Color).
Color = ginger.

?- is_a(X,animal).
X = bird.

?- is_a(X,animal).
X = bird ;
X = mammal ;
X = cat ;
X = cat1 ;
X = tom ;
X = bird1.

?- is_a(tom,X).
X = cat ;
X = mammal ;
X = animal ;
false.

?- |
```