



বরেন্দ্র বিশ্ববিদ্যালয়  
VARENDRA UNIVERSITY



# Lab Report:

Course Title: Artificial Intelligence Lab

Course Code: CSE 414

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**Title:**

Basics of Prolog programming language

**Introduction:**

**Fact** is a predicate expression that makes a declarative statement about the problem domain. We can define fact as an explicit relationship between objects, and properties these objects might have. So, facts are unconditionally true in nature.

Here we have some facts as given below –

- Varendra is a university
- Rahim likes mango
- Color of sky is blue

Facts are written in the Prolog language by following this syntax –

```
university(varendra).  
likes(rahim,mango).  
color(sky,blue).
```

Note: A fact must start with a predicate and end with a full stop.

**Rules** is an implicit relationship between objects. A rule can be viewed as an extension of a fact with added conditions that also have to be satisfied for it to be true. It consists of two parts. The first part is similar to a fact (a predicate with arguments) and the second part consists of other clauses (facts or rules which are separated by commas) which must all be true for the rule itself to be true. These two parts are separated by this sign (:-).

Some rules given below –

- Rahim likes to eat mango if Karim likes tomato.
- Jodu is happy if he runs

Those rules are written by following this syntax in prolog -

```
likes_to_eat(rahim,mango) :- likes(karim,tomato).  
happy(jodu) :- runs(jodu)
```

**Queries** are some questions on the relationships between objects and object properties. So, question can be anything as given below –

- Is Varendra a university?
- Does Rahim like mango?
- Is sky blue?

Queries are written by following this syntax –

```
university(varendra).  
likes(rahim,tomato).  
blue(sky).
```