AUTOMATA, FORMAL LANGUAGES AND LOGIC

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MODULE 5

Propositional Logic & First-Order Logic

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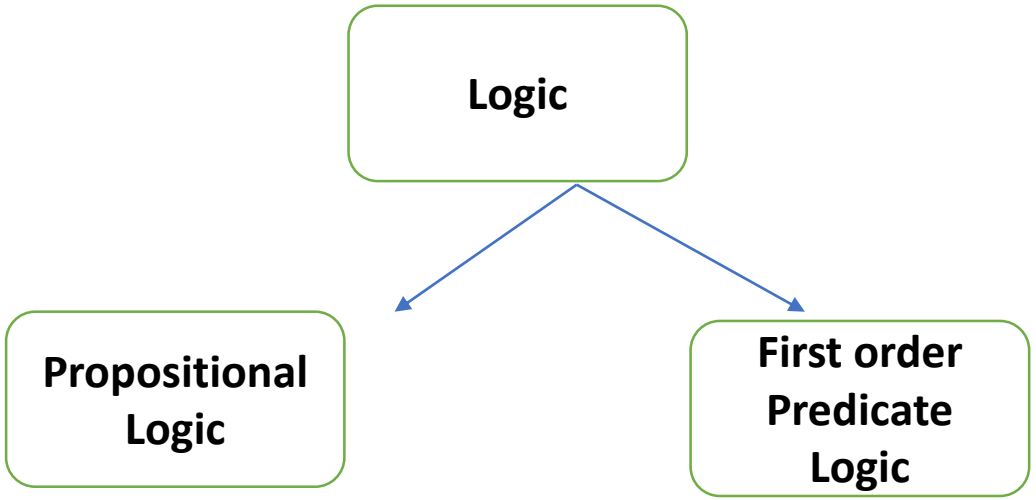
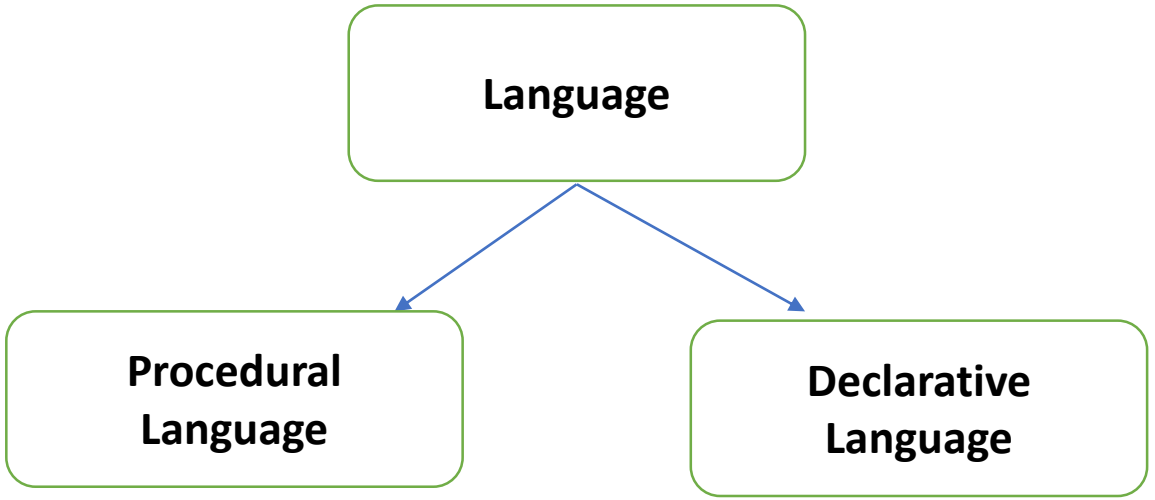
Propositional Logic & First-Order Logic



Propositional Logic converts a complete sentence into a symbol and makes it logical

In First order logic relation of a particular sentence will be made that involves relations, constants and functions.



Example:- C, C++, COBOL, FORTRAN

Provides each step, how to do it

Procedural:-

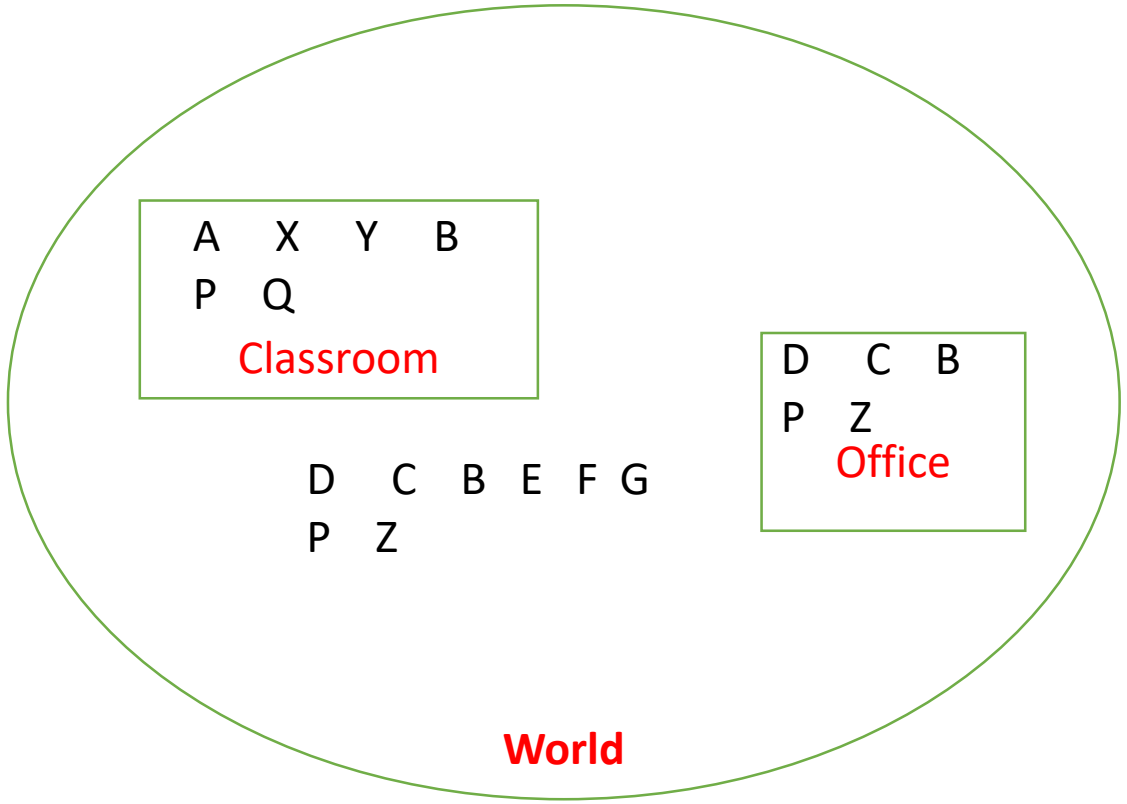
1. Go to kitchen.
2. Get sugar, milk and tea.
3. Mix them and boil it
4. Put it in a cup and bring it to me.

Example:- LISP, PROLOG

Based on Logic

Declarative:-

1. Get me a cup of tea.


A X Y B
P Q
Classroom
D C B
P Z
Office
D C B E F G
P Z
World

Outline

- Knowledge-based agents
- Wumpus world
- Logic in general—models and entailment
- Propositional logic - A very Simple Logic
  - Syntax and Semantics
  - A Simple Knowledge Base
  - A Simple Inference Procedure
- Propositional Theorem proving
  - Inference and Proofs
  - Proof by Resolution
- First-Order Logic
  - Syntax and Semantics of First-Order Logic
  - Numbers, Sets and Lists
  - Example – The Electronic Circuit Domain

THANK YOU

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