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Artificial Intelligence :→

Search

Problem → AI Algorithm →

↓

Solve all problems in the world

↓

Brain

Hard working guy	Intelligent guy
↓	↓
Learn from his teacher/ environment	Good at many things
	↑
	Observe Analyse

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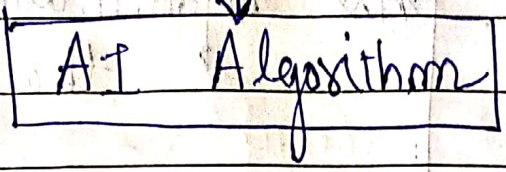
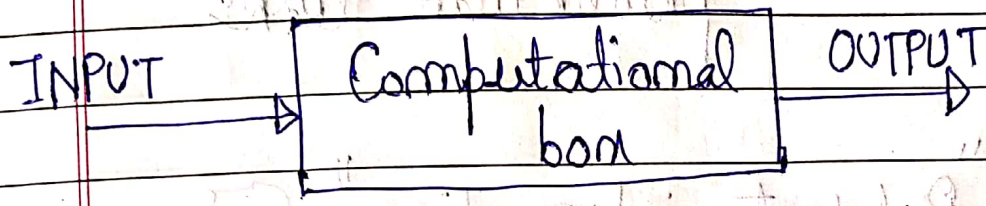
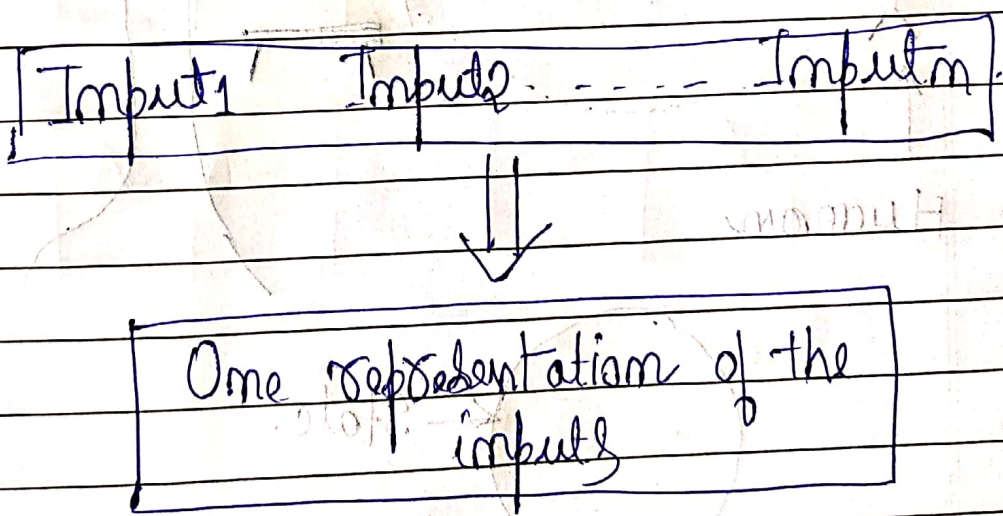
One input / Not multiple inputs





Goal: To build one algorithm that solves all the problems in the world.



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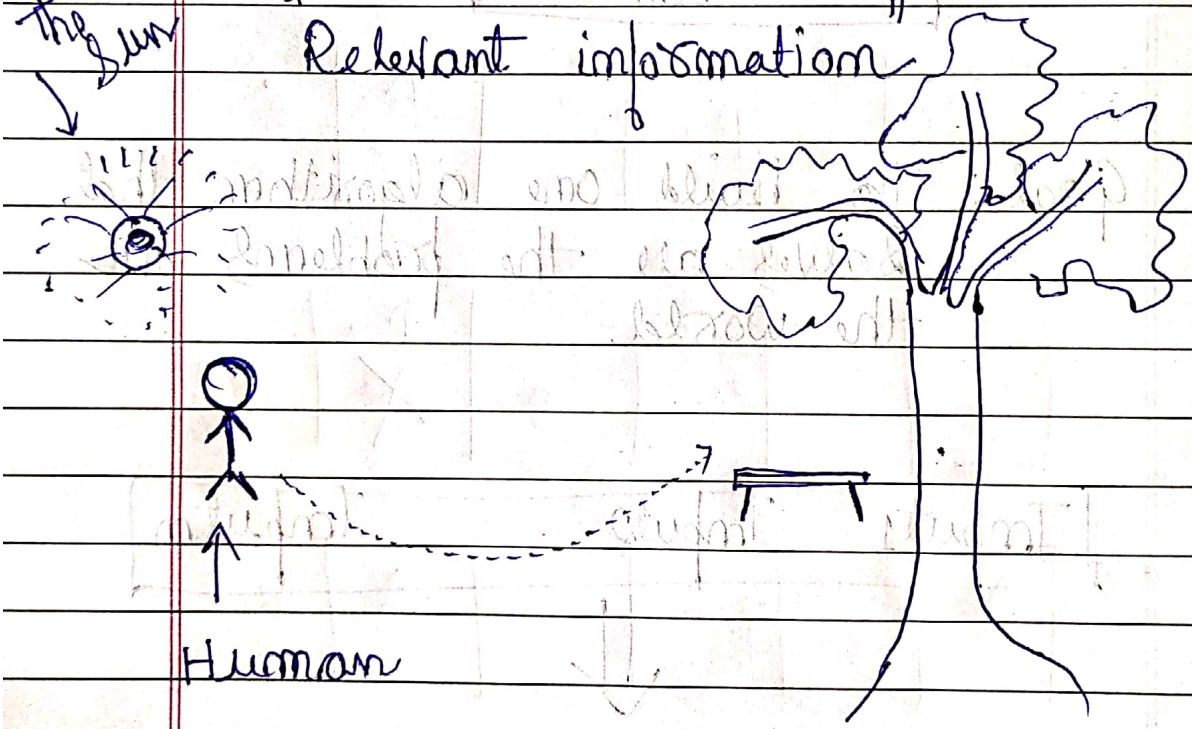
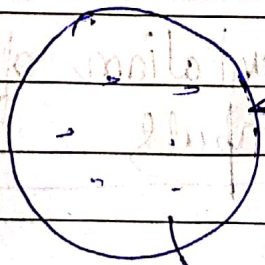
The Representation :→

State : → All information about the environment

→ All information for a particular task

"Relevant information"





→ All the important information to solve a particular problem.

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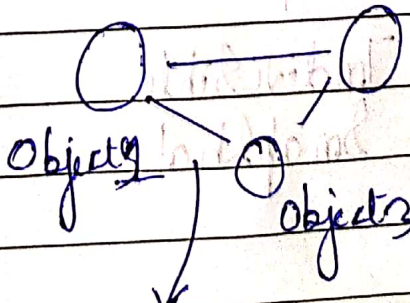
Note: Set of States

Representation of States :→

1. Atomic : States are indivisible
   ↳ No Internal Structure.

2. Propositional: (Factored)
   States are made up of State variables that take values
   ↑ State variables
   Values : Propositional
   Multivalued
   Continuous

3. Relational :



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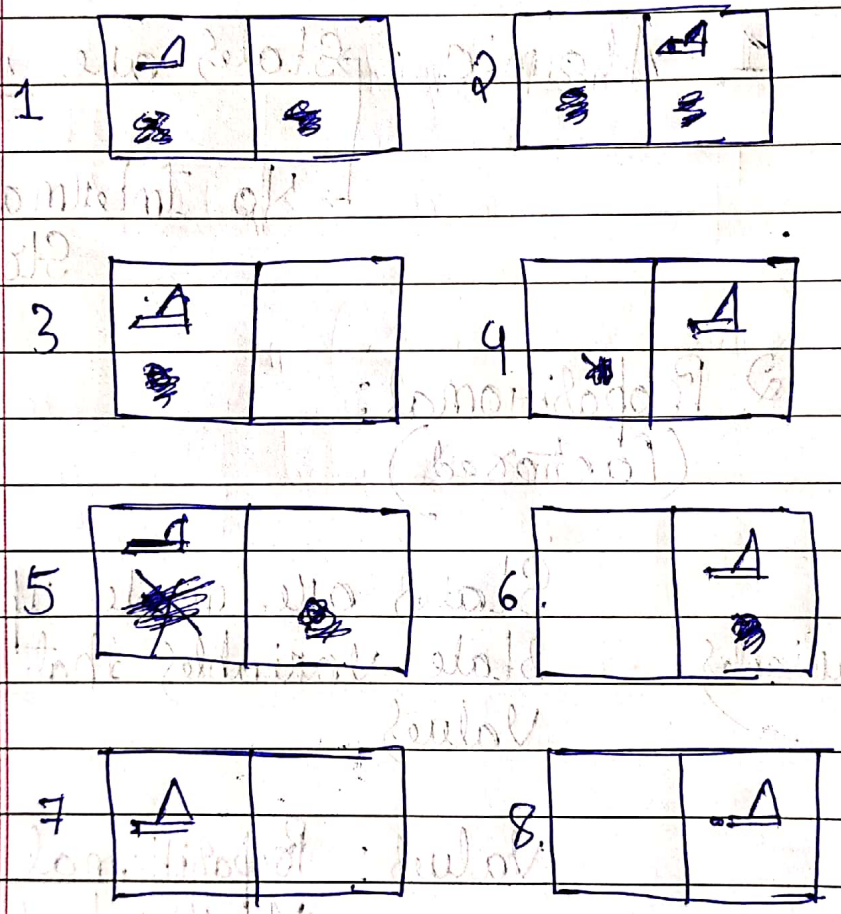
4. First-Order: Functions over objects

The Vacuum Example: →



1. Atomic:

$S_1, S_2, S_3 \dots S_8$

↑

Indivisible Snapshot

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2. Propositional:

State variables : (3)

(A) Dirt-in-left-room : T/F
(B) Dirt-in-right-room : T/F
(C) Vacuum-cleaner-in-room : L/R

A	B	C
T	F	L
T	F	R
F	T	L
F	T	R
T	T	L
T	T	R
F	F	L
F	F	R

Total no. of state variables : 3

∴ The total no. of states = 2^3

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3. Relational :→

Objects : Vacuum Cleaner,

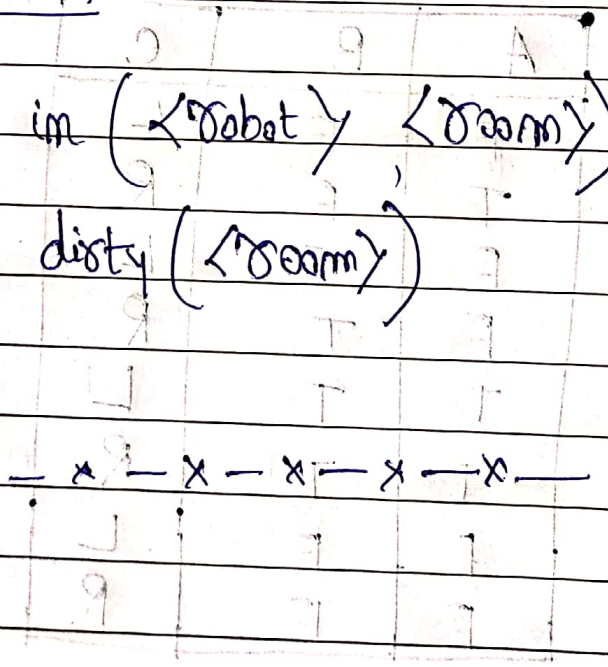
Left-Room,

Right-Room

Relations:

in (<robot>, <room>),

dirty (<room>)



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