**AIML 1 - Search problems and uninformed search algo**

***The problem solving process***

* Goal formulation
* Problem formulation
* Search
* Execution

We will assume a fully observable, deterministic, known environment and an *open loop* in the agent (capability of ignoring percepts mid-execution)

Some definitions:

* **State space S** set of every state possible (S)
* **Initial state** the starting state
* **Goal states** could be multiple, aim of search, subset of S

F: S → B B is a Boolean (is goal or no)

* **Actions A** applicable actions to elements of S

F **:** S → 2ᴬ 2ᴬ is a power set (the set of all possible subsets of S)

F(s) returns the set of actions that can be executed in *s*

* **Transition model** description of what each action does

F : S X A ↛ SF(s,a) returns the state that results from doing an action *a* in a state *s*

* **Action-cost fct** evaluates model performance (assuming cost > 0)
* **Path** sequence of actions
* **Solution** a path from the initial state to one of the goal states
* **Performance measure**