K.G.C.E.
Karjat - Raigad

Tutorial No - 2

Page No. :
Date :

KGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCE

Name:- Bhanesh S Panchal

Roll. no - 42.

Branch. I.T

Year - B.E.

DOA DOP Remark Sign.

* Aim:- To understand state space based problem foundation of AI problems so that problem solving agent can be applied.

* Theory:- First we introduced the problem solving agent first formulates goal and problem, then determines or rather searches an action sequence

function SIMPLE-PROBLEM-SOLVING-AGENT returns
static seq, an action sequence, initially empty
state, some description of current world state
goal, a goal, initially null
problem, a problem foundation
state ← UPDATE-STATE(state, percept)
if seq is empty then do
goal ← FORMULATE-GOAL(state)
problem ← FORMULATE-PROBLEM(state goal)
seq ← SEARCH (problem)
action ← FIRST (seq)
seq ← REST(seq)
return action

* Problem solving Agent Architecture *

Defining the problem is referred to as problem formulation. It involves defining following five things

- Initial state - It's the starting state that problem is in

- Action - It defines all possible actions available to the agent given it is in some state currently. It's function that return itself of all possible actions.

- Transition model also known as successor function which define which states the system that to move to when a particular action is executed by the agent. successive application of transition model give rise to what is known as state space
- Goal test - This act is as a stopping condition when the state passed to this function is goal state
- Path cost - It is accumulated cost of performing certain sequence of action

* Working :-

i) Navigate to KGCE workshop from HOD IT cabin with min no of moves. moves can be climbing stairs
2 8 puzzle problem
3. The missionaries and cannibals problem
4 N Queen's problem
5 Two room vaccum cleaner world
6 Water Jug problem