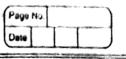
	Page No. Uate
	Department of Intermation Technology
	Academic Year 2021-22
	Samidha Santosh Yele.
	Roll 20:-74
	Classi- BiE: 100 project alleged
	Subject i- IS LAB.
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	Date
	Aim :- To understand State Space based
	problem formulation of AI problems so that
	Problem Solving Agent can be applied.
el	Theory i- First we understand the problem solving
	agent. Higgsithm Shown in the 3 shows agent
	program for problem solving agent. Agent first
	remulates goal and problem, then determines or rather
	searches an action sequence, after which it returns
	the next action to be executed in a sequentral manor.
	all
	tunction SIMPLE-PROBLEM-SOLVING-AGENT returns
	as action.
	The state of the s
	Static: Seg, an action Sequence, initially empty
	State, some description of the current world state
3	goal, a goal, initially null
	problem, a problem formulation.
7	
	State - UPDATE - STATE (State, percept)
	if Segis empty then do
-	goal - FORMULATE -GOAL (State)
	problem + FORMULATE - PROBLEM (State, goal)
	Seg + SEARCH (problem)
	action + FIRST (seg)
	Seg + REST (seg)
i.u	return delim.
	La 2. Problem Solve a 1 a 1 m 1
	Fig 3. Problem Solving Agent Architecture.
7 7	August Au



Defining the Problem is selfered to as problem formulation. It involves defining following fire things Initial State It is the starting state that the Actions It defines all posible actions available to the agent, given it is in some state scurently. It is a function Action (s) that returns list of all possible actions hansition model also known as squesson function which define which state the system and to more on when a particular action is excluded by the agent. Goal Test This act as a stopping condition when the state passed to this function is goal state it will seturn true and Searching would stop. · Path Cost It is arrumulated cost of performing certain sequence of actions. This help in determining weather the action sequence under consideration is optimal. Thus a problem can formally specified by identifying initial state, actions, transition model, goal test and path cost. In term of problem solving agent solution is the path from initial state to a goal state, optimal solution is the lowest path cost of all solution Process of Linding a solution is called search.

	Page No. Date
	Water the state of
, 1	Working in
	Students need to formulate following problems. They
	will clearly show space up to death level 2 or till
	node which ever is shallowest.
	1
	1. Having ate to KACE Workshop from HOD IT cabin with
	minimum number of moves, moves can be climbing or alighting staircase, turning left, right, walking
	Amough a corridor.
1	2.8 Pazzle Problem.
1	3. The missions and cannibals problem. There are
	three missionaries and three connibals who must cross a
made.	river using a boat which can carry at most two people.
, 1, 3,	ander the contraint that, for both, banks, it there are
	missionnies present on the bank, they cannot be
	out numbered by annibals if they were, the cannibals would cat the missionaries. The boat cannot cross the
	river by itself with no people on board.
· ·	Also the way of their and mark the first of the good by the
	4. N Queen's problem, Arrange N queens on a Norau N
,	thess board where no two queens attack each other.
11	5. Two room varium cleaner world.
Cim 6	The first of the state of the s
An in	6 · Water Jug Problem -
	Resources; - Refer to Second chapter from Artifical
	Intelligence. A modern Approach.