problem solving Agents

Goal Formulation: Based on the Current situation and
the Agents performance measures

ali goal station by Agents (2)

is the process of deciding what actions and states to consider

Agent 11 (4511 Yest rictions 1) praise a Gialling 1

Sudo Cocle Input

Function Supleproblem Solving Agent (percept) retures (Action)

persistent: seg. an action sequence (initially Empty)

العام المحال الم

State - Update State (State, Percept)

if seg is empty then: Action of join List and of

good - Formulate Good (State)

probleme Formulate problem (States good)

with Formulation (SI

sey + Search (problem)

action - First (seq)
action - First (seq)
action Uses (seq)
Seq - Rest (seq)

return action.

problem solving stops

- O God Formulation
- 1 problem Formulation
- 3 Search For Solution
- @ Executing the Found solution

Agent assumes that the environment is static

Environment is Fully observable

- Environment is discrete and deterministic

عبدات بحيله معلومات كاملة ، و نكوم عارمين كل Action نترجيته ايت ، عبداء ال ومثام ال وكان كل Action الترفيد الم

م لوحملت اى معتقعة من السروط وى عنقلف الريابيولا

problem types

MSingle state problem . Melis will english

Ofmy observable

- 1 Deterministic and discrete
- 3 the agent can calculate the state

(newstate I state me Environt I) jain Agent II in evil shis was consexpected Events of ris in any

@ Multiple-state (SenSorless)

env. Il actions II non-observable

(in isali)

But the Agent knows the effects of all its a cetions

3 Contingency problems

النقول عليه حالة طواري. لام الامالا معالم مراء بقرة عمامة

non deterministic

Sils Action gents

partially observable

Conditional Action

- percepts provide new info about current state

Agant cakulates tree of actions

Each branch deals with

a possible contingency

tree livery dois tree Jeannel, Sequence Jelladu

in Tollar & Seg of

(4) Exploration

Cupi State Misies)

unknown state

Agent discovers what its action do and state exists

the agent leaves a (map), which it can use to some

Subsequence problem.

Exploration @ Kennenber space our of allie Agent of @Single state فيقاع الوالماء اللامك يحط - Fully observable . مالل سعت ني س. كل. - descrete is modzinos Exploration II - deterministic الد عام و د النوع ده لوعاشم @ Hull: State هسق الشفاد جسم رهيفلها resigned - not fully observable مع المالك المالي من المالك الم Sensors - and deterministic 3 Contingency __ non deterministic conditional partially observable Action Rule @ Exploration non deterministic - no state space (search space) - not observable agent will use to decide what to do Components: Q initial state laid de de @ possible available Actions lele vier Agent Uldlessell E! 3 transition model State Disting of al & All Action 1 and in sur 22 - ino

@ Goal test: wheater a state is a goal state ا منال بقول الد state الا يقول المعال على المعال المعال المعال المعال المعالم (5) path cost: a Function that assigns a numeric cost to each path تع من النك لغة بالمكل طرعتاء أخِمًا بالأبر يك لغة Some Notel Important When 20 Available Action 11 كم السخلم اللي يقيس العلما . current state Ilabout Function w Estel Actions Il gamas new state Mosai Action Lauls State A description of what each action does Result (S, a) State Successor state: refers to any state reachable From a given state by a single action goal test goal is specified An explicit set of by an abstract possible goal State And the test checks property whether the given State is one of then Levis test Eiros State Mals 13 المانا سكوراله ف رام رال الحد سَعَ حول ولا كر

en uni le l'él d'all state de

8 69

الهند حاجات بتومي كل معاطه poble دول بين قبوا حامل اسم

State space of the problem

it's the set of all states reachable from the initial state by any sequence of actions

- state space Forms a graph - nodes = states - arcs between nodes = Action

actions. In is, it is Initial

Solution: a path From the initial state to a state that satisfief the goal test (measured by Path Cost Function).

Agent Jose (tree Jun (tree Juni) Graph a space lyani Agent Jose AI Die Casa MI node J. Will hade J. Lie Path. None ide Search was in

selecting a state space

Abstraction:

process of removing irrelevent details from representation