

problem solving Agents

• Goal Based Agent

• Goal Formulation: Based on the Current situation and the Agents performance measures
لازم يقرر ال Agent ما goal ياله

• problem Formulation:

is the process of deciding what actions and states to consider
ال Agent يقرر ما restrictions ال ال Agent

Sudo code

Input

Function Simple problem Solving Agent (percept) returns (Action)

persistent: seq an action sequence (initially Empty)
الحجرات ال ال seq في seq مشايير ال ال

state a description of current world state

goal (initially null) ← ال ال

problem (problem Formulation)

state ← UpdateState(state, percept)

if seq is empty then: لولة في مشايير قرار Action

goal ← FormulateGoal (state)

problem ← Formulate problem (state, goal)

ال ال Formulation

seq ← Search(problem)

action ← First(seq)

action ← اول

seq ← Rest(seq)

و هي تتبقى عندها

return action.

problem Solving steps:

- ① Goal Formulation
- ② problem Formulation
- ③ Search for solution
- ④ Executing the Found solution

← من المرات الى حركة هيكل يتقدم الى ال sequence و هي هي

ال percept الجديدة في اعتبار

Agent assumes that the environment is static

مبطل فيها اي تغير

Environment is Fully observable

Environment is discrete and deterministic

لازم قبل معلومات كاملة، ونكون عارفين كل Action نتيجته اي

عنا ال Actions معرفة على وجه، ونكون ال اختيارات في دقة.

لو حصلت اي مشكلة من الشروط دي مختلف ال Algorithm

problem type

1] Single state problem

الوضع العادي خالص

① Fully observable

② Deterministic and discrete

③ the agent can calculate the state

Remember

① Single state

- fully observable
- discrete
- deterministic

② Multi State

- not fully observable
- deterministic

③ Contingency

- non deterministic
- partially observable

④ Exploration

- non deterministic
- no state space (search space)
- not observable

Exploration

في Agent في البداية يكون عندنا space فيها كل ال states التي ممكنة في خط فيها. هالشي بيحدث فينا ب. ط. ال Exploration ده بيترعل منه غير ال space و بي. النوع ده لعمامة هيسقر اكتشاف ال map و بيخليها عندنا عتمة يعرف بيستغلها في ال

Problem is a collection of information that the agent will use to decide what to do

Components:

① initial state

② possible available Actions

اية ال جات ال ال Agent يقدر يعملها

③ transition model

حين يروح مينه عينا نسيه ال Action ال عمله و صوته في ال State

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④ Goal test : wheater a state is a goal state

اختبار قبول ال state دی تنفع تفر goal دے

⑤ path cost : a Function that assigns a numeric cost to each path

تفر ال state باع کل طرقات اظہار ال state دے

Important

ال Available Action منہ مینا
کل Action ال یفر یفر
یفر ال Actions ال state
من ال current state

Some Note:

transition model:

current state بقول ال Function دی
new state Action بقول ال

A description of what each action does

Result (S, a)

current ↓
State

↘ available
Action

Successor state : refers to any state reachable from a given state by a single action

goal test

An explicit set of possible goal state

And the test checks whether the given state is one of them

ایہنا بیکوالہف دایج ال state
بہنہ یفر ال state دے

دے

goal is specified by an abstract property

ال test ایہنا
state دے تنفع
تفر جود دے

