Laboratorio: Planificación con PDDL

Video_1

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2. Instalación de entorno VSC
3. Instalación Plugging PDDL
4. Comprobación de Funcionamiento


Objetivos

Objetivos

- Conocer la primera alternativa para PDDL
- Instalar el entorno de VSC
- Instalar el Plugging de PDDL
- Confirmar mediante planificador BFWS-FF correcto funcionamiento

Instalación y familiarización con el entorno VSC y PDDL

Entorno

- Hay un plugin bastante cómodo para Visual Studio Code. Esta opción es la más recomendada.

  VSCode: https://code.visualstudio.com/

  Extensión: SHIFT-CONTROL-X Buscar PDDL
  https://marketplace.visualstudio.com/items?itemName=jan-dolejsi.pddl

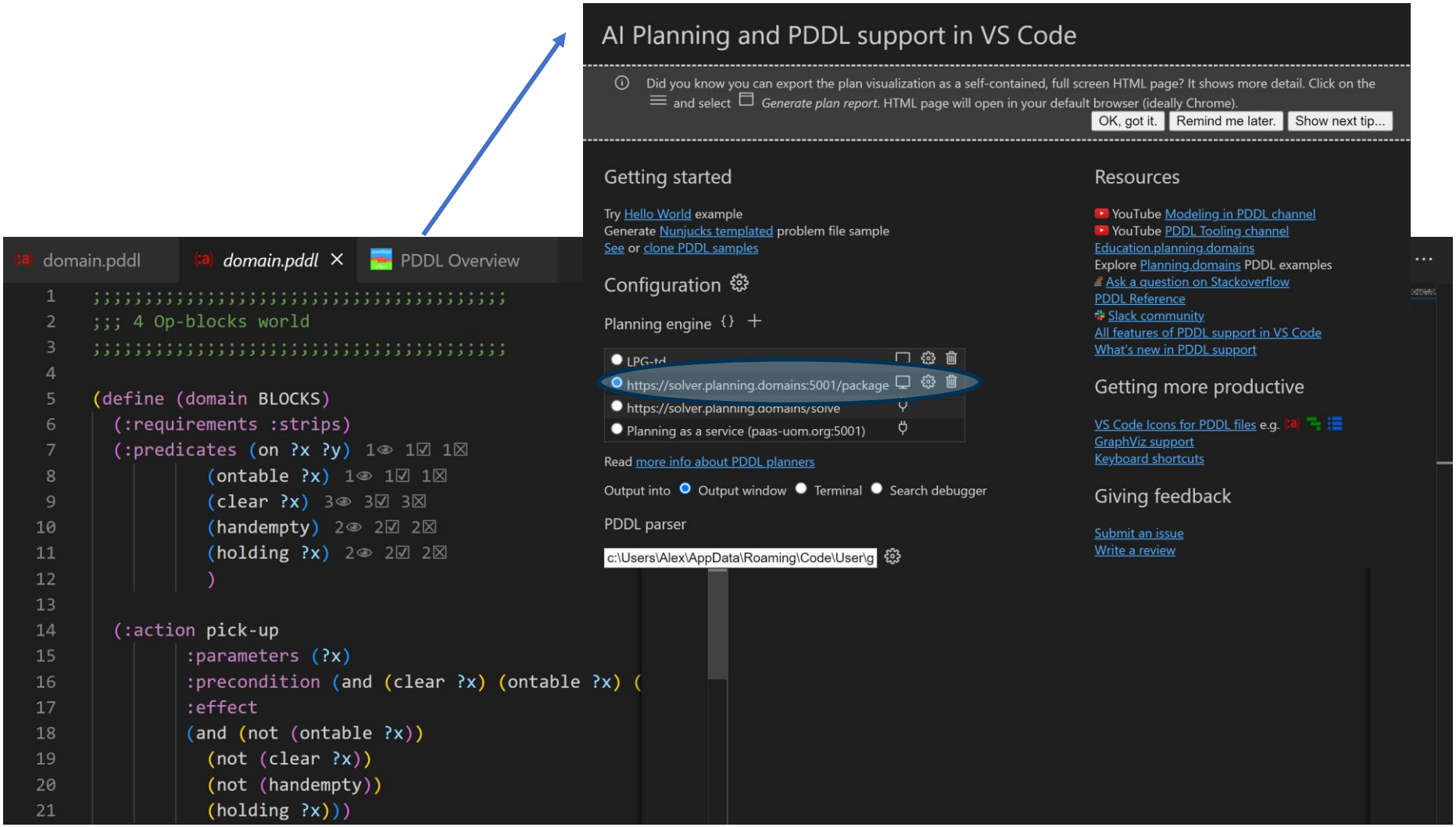
  - Configuración planning-as-a-service: https://solver.planning.domains:5001/package

Cambiar planificador: Control-Alt-P.
Planificar: Alt-P.

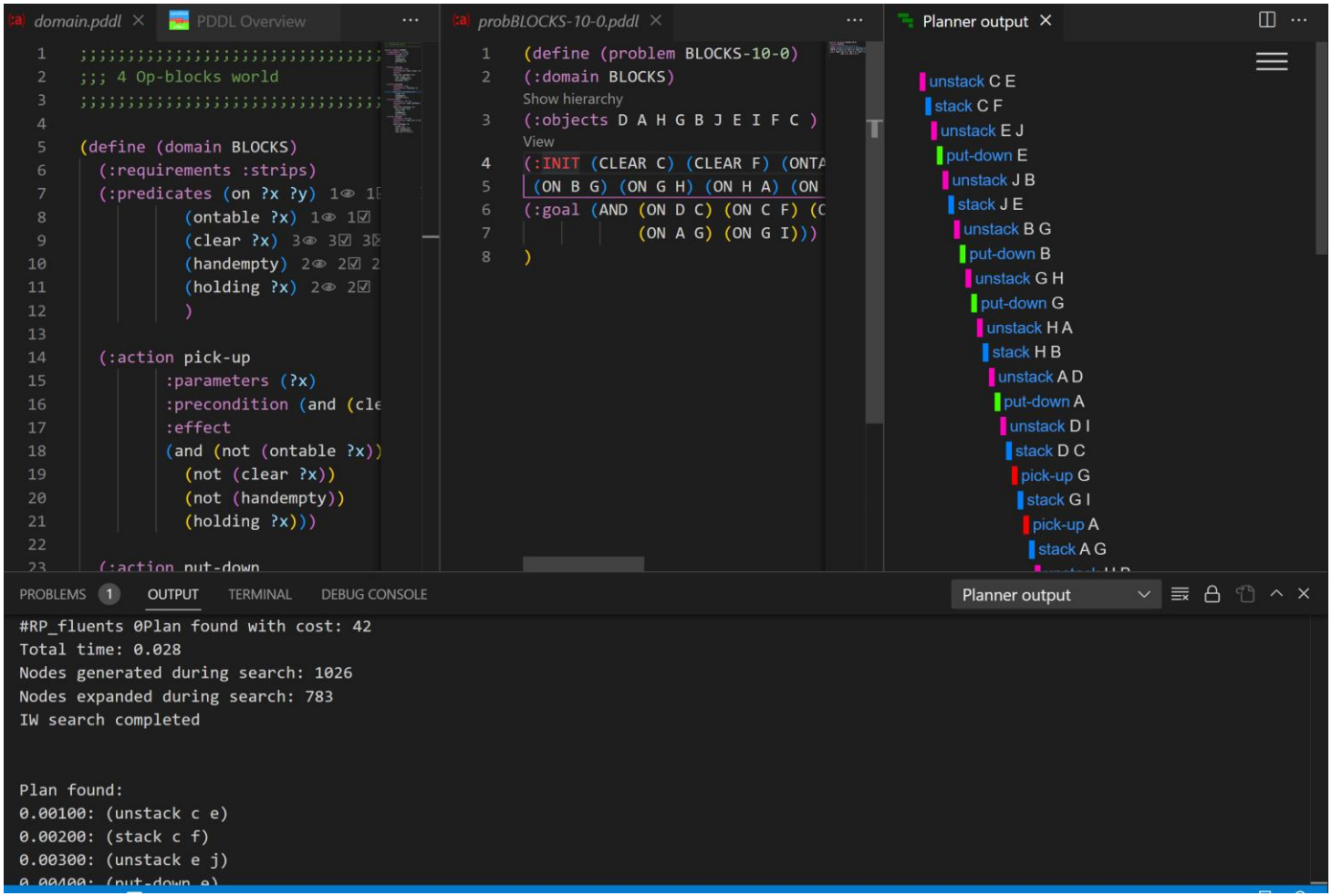
No se pueden usar fluents numéricos (porque los planners básicos no los implementan)

NO USÉIS CARACTERES INTERNACIONALES (TILDES, ETC.) EN EL CÓDIGO NI EN LOS COMENTARIOS (falla el acceso remoto a solver.planning.domains, error 400).

VSCode + PDDL


AI Planning and PDDL support in VS Code
Did you know you can export the plan visualization as a self-contained, full screen HTML page? It shows more detail. Click on the and select Generate plan report. HTML page will open in your default browser (ideally Chrome).
OK, got it.
Remind me later.
Show next tip...
Getting started
Try Hello World example
Generate Nunjucks templated problem file sample
See or clone PDDL samples
Configuration
Planning engine
LPG-td
https://solver.planning.domains:5001/package
https://solver.planning.domains/solve
Planning as a service (paas-uom.org:5001)
Read more info about PDDL planners
Output into
Output window
Terminal
Search debugger
PDDL parser
c:\Users\Alex\AppData\Roaming\Code\User\g
Resources
YouTube Modeling in PDDL channel
YouTube PDDL Tooling channel
Education.planning.domains
Explore Planning.domains PDDL examples
Ask a question on Stackoverflow
PDDL Reference
Slack community
All features of PDDL support in VS Code
What's new in PDDL support
Getting more productive
VS Code Icons for PDDL files e.g.
GraphViz support
Keyboard shortcuts
Giving feedback
Submit an issue
Write a review
domain.pddl
domain.pddl
PDDL Overview
;;
;;; 4 Op-blocks world
;;
(define (domain BLOCKS)
(:requirements :strips)
(:predicates (on ?x ?y) 1 1 1
(ontable ?x) 1 1 1
(clear ?x) 3 3 3
(handempty) 2 2 2
(holding ?x) 2 2 2
)
(:action pick-up
:parameters (?x)
:precondition (and (clear ?x) (ontable ?x) (
:effect
(and (not (ontable ?x))
(not (clear ?x))
(not (handempty))
(holding ?x)))

VSCode + PDDL


domain.pddl
PDDL Overview
;;
;;; 4 Op-blocks world
;;
(define (domain BLOCKS)
(:requirements :strips)
(:predicates (on ?x ?y)
(ontable ?x)
(clear ?x)
(handempty)
(holding ?x)
)
(:action pick-up
:parameters (?x)
:precondition (and (cle
:effect
(and (not (ontable ?x))
(not (clear ?x))
(not (handempty))
(holding ?x)))
probBLOCKS-10-0.pddl
(define (problem BLOCKS-10-0)
(:domain BLOCKS)
Show hierarchy
(:objects D A H G B J E I F C)
View
(:INIT (CLEAR C) (CLEAR F) (ONTA
(ON B G) (ON G H) (ON H A) (ON
(:goal (AND (ON D C) (ON C F) (C
(ON A G) (ON G I)))
)
Planner output
unstack C E
stack C F
unstack E J
put-down E
unstack J B
stack J E
unstack B G
put-down B
unstack G H
put-down G
unstack H A
stack H B
unstack A D
put-down A
unstack D I
stack D C
pick-up G
stack G I
pick-up A
stack A G
PROBLEMS 1
OUTPUT
TERMINAL
DEBUG CONSOLE
Planner output
#RP_fluents 0Plan found with cost: 42
Total time: 0.028
Nodes generated during search: 1026
Nodes expanded during search: 783
IW search completed
Plan found:
0.00100: (unstack c e)
0.00200: (stack c f)
0.00300: (unstack e j)

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