Planning and Approximate Reasoning: Practical Exercise 1

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1 Introduction to the problem

2 Analysis and formalization

OPERTORS	PRECONDITIONS	DELETE	ADD
PICK-UP-RIGHT(x)	ON-TABLE(x) CLEAR(x) EMPTY-ARM(R)	ON-TABLE(x) EMPTY-ARM(R)	HOLDING(x,R) USED-COLS-NUM($n+1$)
PICK-UP-LEFT(x)	ON-TABLE(x) CLEAR(x) EMPTY-ARM(L) LIGHT-BLOCK(x)	ON-TABLE(x) EMPTY-ARM(L)	HOLDING(x,L) USED-COLS-NUM($n+1$)
UNSTACK-RIGHT(x,y)	ON(x,y) CLEAR(x) EMPTY-ARM(R)	ON(x,y) EMPTY-ARM(R)	HOLDING(x,R) CLEAR(y)
UNSTACK-LEFT(x,y)	ON(x,y) CLEAR(x) EMPTY-ARM(L) LIGHT-BLOCK(x)	ON(x,y) EMPTY-ARM(L)	HOLDING(x,L) CLEAR(y)
STACK-RIGHT(x,y)	HOLDING(x,R) CLEAR(y) HEAVIER(x,y)	CLEAR(y) HOLDING(x,R)	ON(x,y) EMPTY-ARM(R)
STACK-LEFT(x,y)	HOLDING(x,L) CLEAR(y) HEAVIER(x,y)	CLEAR(y) HOLDING(x,L)	ON(x,y) EMPTY-ARM(L)
LEAVE-RIGHT(x)	HOLDING(x,R) USED-COLS-NUM(n) $n > 0$	HOLDING(x,R)	ON-TABLE(x) EMPTY-ARM(R) USED-COLS-NUM($n-1$)
LEAVE-LEFT(x)	HOLDING(x,L) USED-COLS-NUM(n) $n > 0$	HOLDING(x,L)	ON-TABLE(x) EMPTY-ARM(L) USED-COLS-NUM($n-1$)

Table 1: Operators of the system. Specified with Preconditions, add list and delete list.