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UNIVERSITAT ROVIRA I VIRGILI

MASTER IN ARTIFICIAL INTELLIGENCE

PLANNING AND APPROXIMATE REASONING

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# The Coffee Problem

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# 1 Introduction

This deliverable uses a STRIPS (Stanford Research Institute Problem Solver) to solve the following linear planning problem:

*There is a squared building composed by 36 offices, which are located in a matrix of 6 rows and 6 columns. From each office it is possible to move (horizontally or vertically) to the adjacent offices. The building has some coffee machines in some offices that can make 1, 2 or 3 cups of coffee at one time.*

*The people working at the offices may ask for coffee and a robot called “Clooney” is in charge of serving the coffees required. Each office may ask for 1, 2 or 3 coffees but not more. The petitions of coffee are done all at early morning (just when work starts) so that the robot can plan the service procedure. Each petition has to be served in a single service.*

*The goal is to serve all the drinks to all the offices in an efficient way (minimizing the travel inside the building, in order to not disturb the people working).*

## 2 Problem Analysis

Analysis of the problem (search space, operators, pre-conditions, special situations, etc.)

### 2.1 Predicates

### 2.2 Operators

## 3 Planning Algorithm

The implementation is based on the STRIPS algorithm which works in the following way:

## 4 Implementation

Implementation design (class diagram and details of the methods you consider more relevant).

## 5 Tests

[[1,1], [1,3], [2,5], [2,6], [5,1], [3,1], [2,1]]

## 6 Results

results (show the contents of the stack during the execution, not only the final path).  
Analysis of the results (graphics with complexity, number of steps, etc.).

# Appendices

## A Included Files

## B Eclipse Instructions

Instructions to execute the program.