Assignment 1: Vacuum-Cleaning Agents

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1 Introduction

Our goal was to study to preformance of different types of agents; Memory-less Deterministic Reflex Agent, Random Reflex Agent and Memory-Based Deteministic Reflex Agent. We will measure the performance based on number of cleaned cells vs the number of actions taken. The environment is a n X m empty rectangular room with p% chance of containing dirt. The agents have 5 actions; go forward, turn right by 90 degrees, turn left by 90 degrees, suck up dirt, and turn off. The agents also have 3 sensor to interact with the room; a wall sensor, a dirt sensor, and a home sensor. The memory-less Deterministic Reflex Agent

2 Agents

2.1 Memory-less Deterministic Reflex Agent

2.1.1 Design

2.1.2 If-then Rules

2.2 Random Reflex Agent

2.2.1 Design

2.2.2 If-then Rules

2.3 Memory-Based Deteministic Reflex Agent

2.3.1 Design

2.3.2 If-then Rules

3 Learn