CS 411 - Artificial Intelligence I
Fall 2018
Assignment 3 Solutions
Department of Computer Science, University of Illinois at Chicago

2.

Atomic representation

unique identifier for each state, doesn't represent internal structure of the state

S_0, S_1 …… S_20735

Factored representation

Variables => x_agent, y_agent, x_star, y_star, num_stars_collected

x_agent ∈ [1 : N], y_agent ∈ [1 : M], x_star1 ∈ [1 : N], y_star1 ∈ [1 : M],...,

num_stars_collected ∈ [0,1,2]

Structured representation

```
#define objects
Agent
x :: int
y :: int
num_stars_collected :: int
function take_star( Star star)
if(X==star.X && Y== star.Y && star.is_taken==false)
        num_stars_coolected +=1
        star.is_taken = true
function move(Action action)
if(action==right)
        x+=1
elseif(action==up)
```

```
        y+=1
```

Star

x :: int

y :: int

is_taken :: bool