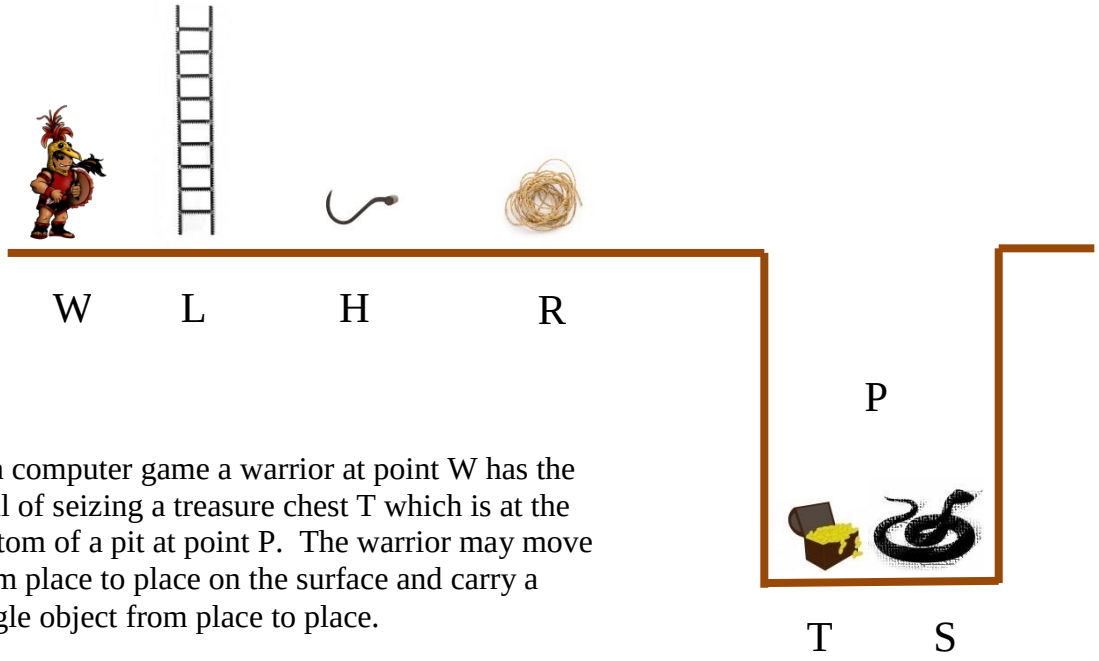
COM1005/2007 : Machines and Intelligence
Semester 2: AI Techniques
Assignment 2 2018
STRIPS Planning in Computer Gaming

This assignment carries 12.5% of the assessment for COM1005/2007

1. The Problem



In a computer game a warrior at point W has the goal of seizing a treasure chest T which is at the bottom of a pit at point P. The warrior may move from place to place on the surface and carry a single object from place to place.

The warrior can reach the treasure by moving a ladder at point L to the pit, lowering it into the pit and climbing down the ladder. However, there may be a poisonous snake S in the pit. In this case the warrior can safely achieve his goal by attaching a hook at point H to a rope at point R, lowering the rope into the pit, hooking the treasure and hauling it up. If both methods are possible, the warrior should prefer to use the ladder

In this assignment you will write and test STRIPS operators for planning a solution to the warrior's problem.

2. What you must do

1. Implement a solution to the Warrior's problem using the planning system STRIPS, using the java STRIPS code available from the COM1005 MOLE site.

2. Run your code for the two cases: when the snake is in the pit and when it is not. See BeerStrips.java for an example of how to do this. Give your results and experiment with your solution to find its limitations.

3. Suggest ways in which the planning system might be improved.

3. Mark Scheme

	Out of
1. **STRIPS implementation** (50% credit)	
Is there a correct and well-organised set of operators?	40
Are there comments which explain the operators?	10
2. **Results and Experimentation** (30%)	
Have solutions to the snake and no-snake cases been demonstrated?	15
Have limitations been identified? How might the system go wrong?	15
3. **Suggestions for improvements** (20%)	
Are there good suggestions for improvements?	10
Are there ideas for how the suggestions could be coded?	10

4. How to Hand in

By MOLE

5. What to Hand in

Hand in a single zip archive containing

a. Your commented code, in a form ready to run.
b. A short report covering points 2 & 3 above.

6. Deadline

Tuesday May 8 th (Week 11), midnight