

## CS 511 AI 2 - Project 1

**Alias : Snitch**

### Simple Reflex Agent

The task of this project is to maximize the total score while the agent is moving around the randomly generated world. The simple reflex agent doesn't keep track of the unseen world and it will just react to reflex. The input is the percept which represents the state. Then the rules based on that percept is run and the action is returned.

I have modified the process function in the AgentFunction file. I have defined the actions to be done based on the situations.

The action table consists of the following,

```
actionTable[0] = Action.NO_OP;  
actionTable[1] = Action.GO_FORWARD;  
actionTable[2] = Action.GO_FORWARD;  
actionTable[3] = Action.GO_FORWARD;  
actionTable[4] = Action.TURN_RIGHT;  
actionTable[5] = Action.TURN_LEFT;  
actionTable[6] = Action.GRAB;  
actionTable[7] = Action.SHOOT;
```

Based on this, I am deciding the action to do.

I always check if the location has glitter, if so I am grabbing it. That's my initial condition.

Then, I am checking if there is no bump and no glitter and no breeze and no stench and no scream, I am moving forward

If I meet a bump, I am turning towards the right. (It can be modified to left as well)

If there is stench, it means that the wumpus is near. So, there is two possibilities for this.. The agent can shoot or do no actions. I generate random value here to determine to choose whether to shoot or do no action. Shooting will happen only 5% of the time.

If there is scream and there is no breeze, it means that there is no one on the way and the agent can move forward. Else, there is no action taken.

### Sample Outputs:

I tried running the project in both non deterministic approach and in deterministic approach.

**No. of trials : 10000**

### **Non deterministic approach**

Total Score: 1387814  
Average Score: 138.7814

Total Score: 1408363  
Average Score: 140.8363

Total Score: 1460704  
Average Score: 146.0704

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### **Deterministic approach**

Total Score: 1433802  
Average Score: 143.3802

Total Score: 1407601  
Average Score: 140.7601

Total Score: 1430042  
Average Score: 143.0042

To Run:

```
javac WorldApplication.java to compile  
java WorldApplication -n false -t 10000
```

Or

If you are using eclipse,  
Modify the run configurations with arguments as -n false -t 10000