

Student Name: Nguyen Khanh Toan - 104180605

In this lab 7 - Task: Goal Oriented Behaviours & SGI

**In step 1**, SGI can work properly when it will reduce the discontentment score to 0 by choosing the most insistent action.

**In step 2**, by modifying the program, the SGI model likely to choose prioritize action that only reduce individual goal, without considering the other goal.

- For example, in this modified program (Figure 1), the action being choose is “get raw food”, which reduce “Hunger” better than “get snack”. However, it will add up the “Unhappiness” value up. Meanwhile, theoretically, choosing the option “get snack” 5 times would reduce hunger without let the “unhappiness” value go up.
- This led to forever loop since there is no solution to reduce “Unhappiness” score (Figure 2)



```
1
2 goals = {
3     'Hunger': 100,
4     'Unhappiness': 100
5 }
6 actions = {
7     'get raw food': { 'Hunger': -50, 'Unhappiness':50},
8     'get snack': { 'Hunger': -20},
9 }
10
```

Figure 1: Goal and Actions modified

```
>> Start <<
-----
GOALS: {'Hunger': 100, 'Unhappiness': 100}
BEST_GOAL: Hunger 100
BEST ACTION: get raw food
NEW GOALS: {'Hunger': 50, 'Unhappiness': 150}
-----
GOALS: {'Hunger': 50, 'Unhappiness': 150}
BEST_GOAL: Unhappiness 150
BEST ACTION: get raw food
NEW GOALS: {'Hunger': 0, 'Unhappiness': 200}
-----
GOALS: {'Hunger': 0, 'Unhappiness': 200}
BEST_GOAL: Unhappiness 200
BEST ACTION: get raw food
NEW GOALS: {'Hunger': 0, 'Unhappiness': 250}
-----
GOALS: {'Hunger': 0, 'Unhappiness': 250}
BEST_GOAL: Unhappiness 250
BEST ACTION: get raw food
NEW GOALS: {'Hunger': 0, 'Unhappiness': 300}
```

Figure 2: Loop action