

Name: Mai Tien Dat Tran

Student ID: 104207944

COS30002 - Lab 07 - Note

I have modified the "gob_simple.py" file and created a new file called "gob_step2.py" to demonstrate two situations where Simple Goal-Oriented Behavior (SGOB) works appropriately and inappropriately.

With SGOB, the scenario provided in "gob_simple.py" is successfully resolved. However, when the program is executed in "gob_step2.py," the loop never ends because it is unable to identify a condition that fulfills the requirements of "consume food," "stay healthy," and "be productive":

```
"objectives = {  
    'stay healthy': 5,  
    'consume food': 3,  
    'be productive': 2 }"
```

And for Step 2, these are the tasks I came up with:

```
"activities = {  
    'consume junk food': {'consume food': -2, 'stay healthy': +3, 'be productive': +1},  
    'work in coal mine': {'consume food': 6, 'stay healthy': +2, 'be productive': -3},  
    'consume nutritious food': {'consume food': -4, 'stay healthy': -3, 'be productive': +3},  
    'work as kitchen assistant with complimentary meal': {'consume food': -1, 'stay  
healthy': -1, 'be productive': -1}  
}"
```

Because every action (apart from the final one) affects the goals in conflict, the SGI is ineffective in this situation. For example, "eat fast food" positively affects "eat," but negatively affects "keep fit" and "work." This could lead to situations where the agent chooses to do something that helps one goal at the expense of another.

SGI takes into account an action's immediate usefulness for the most important goal—that is, the one that has to be minimized the most—while making its decision. It does not consider the long-term implications or the full impact on all goals. For example, repeatedly choosing "work in mine" might accomplish the goal of "work," but it would gradually exacerbate the "eat" and "keep fit" objectives.

Actually, the only way to prevail is to continue with the final move, which is to "work in kitchen hand with free meal." But for every iteration, the SGI only takes into account the most important goal and the most useful action towards that goal; it almost certainly never selects the action for which the change value is -1 only in support of a goal. Stated differently, it is solely concerned with the behavior (state) that exists at that particular iteration.