Practice 11. State Space Tree

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What is a State Space Tree?

- The state space tree is a tree that represents a search problem mathematically.

![State Space Tree Diagram]
Searching the State Space Tree

- Starting from the root node (initial state), we want to find the most promising path to achieve a goal.
- Searching the whole space in the tree takes exponential time.
- Shallow search vs Deep search

What should I do next??
Searching the State Space Tree

- Instead of searching the tree until any winning path is discovered, selecting the next path based on the scores of the nodes that have ever been found so far is more desirable.

- We are going to try this kind of strategy only on the child nodes from the current node.
How to score boards

- It’s up to you to decide what scoring method to be used.
- For those who want to make very efficient algorithms, consider the minimax algorithm.
- Good Luck 😊
Global Variables Shared on Multiple Files

- We may want to use some global variables shared on multiple source files.
- Firstly, declare it normally on a c file, then access that variable on other c files by declaring it as an extern variable.

```
[apple.c]
int x = 10;

void g( )
{
 ...

[banana.c]
extern int x;

void h( )
{
    printf("%d", x);
 ...
```
Assignment Submission

- Create a directory named assignment in your home directory.
- Create a directory named 11 in your assignment directory.
- Put your source files and a single makefile.
- An execution file named run should be created when make is done.
- Due to: 5/22(Fri) 23:59 pm
Assignment [10 points]

- Inputs come from the project.
- Output all possible next state where each state is represented as same as the input format (6 lines!).
- Use a makefile.

[Input]
ool
Heo
Go
Lo
GE
C