

CS512 LABORATORY – WEEK 3 – Winter 2010

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This lab will study a generic implementation of **graph search**. A switch can be set that determines whether graph search will conduct breadth-first, depth-first, or best-first search. Best-first search will become A* search with appropriate choice of evaluation function.

Obtain copies of files

```
~voigt/cs512/gs.lisp (graph search)
~voigt/cs512/lab3-puzz8.lisp (8-puzzle)
~voigt/cs512/utils.lisp (some utilities)
```

Exercise 1. Study the generic graph search implementation. This will take some time ... listen carefully, ask questions. Much is gained by truly understanding the Lisp code.

Exercise 2. Open file `lab3-puzz8.lisp` and study the code. Fill in the missing functions.

Exercise 3. Run graph search to solve the 8-puzzle in 3 different modes, and compare the outcomes:

```
(itgs <problem>)           -- best-first, A*

(itgs <problem> 'bfs)      -- breadth-first search

(itgs <problem> 'dfs)      -- depth-first search
```