Python programming review

Immigrating from LISP to python

- Recursion: $\text{Fib}(1) = 1, \text{Fib}(2) = 1, \text{Fib}(n) = \text{Fib}(n-1) + \text{Fib}(n-2)$
- Advantage of recursion?

```
1   def fib(n):
2       assert n > 0
3       if n <= 2:
4           return 1
5       else:
6           return fib(n-1) + fib(n-2)
```

- Lambda expressions (inline functions)

```
lambda fib n: 1 if n <= 2 else fib(n-1) + fib(n-2)
```

- Nested data structures (next week)

Search algorithm

Formulation of a search problem

- E.g. Capture the Pawn using the Knight
- States
- Initial state
- Actions
- Successor function
- Goal test
- Path cost
- Solution