Towers of Hanoi

- The story:
  - 3 tall spikes
  - Stack of 64 different sized discs – start on one spike
  - Need to move stack to second spike (at which point universe ends)
  - Can only move one disc at a time, and a larger disc can never cover up a small disc

Towers of Hanoi

- Having seen a set of examples of different sized stacks, how would you write a program to print out the right set of moves?

- Think recursively!
  - Solve a smaller problem
  - Solve a basic problem
  - Solve a smaller problem

```python
def printMove(fr, to):
    print('move from ' + str(fr) + ' to ' + str(to))

def Towers(n, fr, to, spare):
    if n == 1:
        printMove(fr, to)
    else:
        Towers(n-1, fr, spare, to)
        Towers(1, fr, to, spare)
        Towers(n-1, spare, to, fr)
```