Backtracking

Intro

- Try something and if it works, move on, else move back and try something different...

- 8 Queens problem (or N Queens).

```
1 placeQueen(row)
2    for all cols c in same row
3       if c is open
4          place next queen in [row][c]
5       if(row < 8)
6          placeQueen(row+1)
7       else
8          done
9       remove queen from c.
```

- Implementation?
- Arrays...
- Columns vs Diagonals (left and right)
- Left = r + c, Right = r - c?

Recursive descent

```
statement ::= id = exp
exp ::= term {+|− term}
term ::= factor {*|/ factor}
factor ::= id | num | ( expr ) | −factor

term ()
   f = factor ()
   while (nextToken * or /)
        f2 = factor ()
        f {*|/}= f2
   return f
```

Expression?