

RECURSION

WHAT IS RECURSION?

- Method of solving a problem
 - breaks a problem into smaller forms of the same problem
 - solve by using functions that call themselves
- Not the only way of implementing, one choice

RECURSIVE FUNCTION

- Base case:
 - specific results for one or more inputs
- Recursive case:
 - compute the result by combining one or more calls to the same function with inputs reduced somehow

WHEN TO USE RECURSION

- Depends on the problem
- Some problems are naturally recursive
 - bunny modeling (Fibonacci) is described recursively -> makes sense to implement recursively
- For some problems, far easier to implement with recursion
- Can produce far more elegant and easier to understand code
- Don't have to, can always express iteratively (but may be difficult/messy)

RECURSION - COMMON MISTAKES

- Forget the base case
- Forget to reduce input when calling recursively