```
fun sum(numlist :: List<Number>) -> Number:
  doc: "sums numbers in list"
  cases (List) numlist:
       empty => 0
       link(fst, rst) => fst + sum(rst)
  end
end
             original call
                                  function call
sum([list: 7, 3, 4])
numlist = [list: 7, 3, 4]
 7 +
       numlist = [list: 3, 4]
                              input parameters
       3 +
             numlist = [list: 4]
            4+
                 numlist = [list:]
   local context
                  0
```

This slide shows a **FUNCTION CALL DIAGRAM**.

It starts with a concrete example.

Each time a function gets called, we draw a box. The parameters are listed in the shaded area inside the box. When the function call finishes, we erase the box (and its contents).

The **local context** is the part of the computation that is waiting on the result of the function call.

```
fun sum(numlist :: List<Number>) -> Number:
                                                                                             In the blocks, we draw a
                                                                   Here's another view
  doc: "sums numbers in list"
                                                                                                 nested box as []
                                                                    with more detail
  cases (List) numlist:
                                                                                             (in the local context part)
        empty => 0
        link(fst, rst) => fst + sum(rst)
                                                                             original call
                                                                                                       function call
  end
end
                                                          Call Record
               original call
                                     function call
                                                          Parameters |
                                                          Local Variables
sum([list: 7, 3, 4])
                                                          Call sum([list: 7, 3, 4]) Local Context []
                                                                                                     input parameters
                                                          Call Record
numlist = [list: 7, 3, 4]
                                                          Parameters (Binding numlist [list: 7, 3, 4]
                                                          Local Variables Binding fst 7 Binding rst [list: 3, 4]
 7 +
        numlist = [list: 3, 4]
                                 input parameters
                                                          Call sum([list: 3, 4]) Local Context 7 + []
                                                                                                            local context
                                                          Call Record
        3 +
                                                          Parameters Binding numlist [list: 3, 4]
              numlist = [list: 4]
                                                          Local Variables Binding fst 3 Binding rst [list: 4]
                                                          Call sum([list: 4]) Local Context 3 + []
                   numlist = [list:]
                                                          Call Record
                                                          Parameters (Binding numlist [list: 4]
   local context
                   0
                                                          Local Variables (Binding fst 4 Binding rst [list: ]
                                                          Call sum([list: ]) Local Context 4 + []
                                                         Binding numlist [list:]
```