Shell Programming

A Necessity for all Programmers

Recursive Functions

Nagesh Karmali | Firuza Karmali



Department of Computer Science and Engineering
IIT Bombay

You will learn to ...



Write recursive functions

Recursion



- Function calls itself
- Value of parameters differ
- Divide and Conquer
- Condition to stop the recursion process

Recursion: Example Program



```
#!/bin/bash
counter()
        echo "Entry call $1"
        if [ $1 -le 2 ]
        then
                 counter $(($1+1))
        fi
        echo "Exit call $1"
counter 1
```

Recursion: Execution flow



```
counter()
                          counter()
                                                     counter()
 echo "Entry call $1"
                            echo "Entry call $1"
                                                       echo "Entry call $1"
 if [ $1 -le 2 ]
                            if [ $1 -le 2 ]
                                                       if [ $1 -le 2 ]
 then
                            then
                                                       then
    counter $(($1+1))
                              counter $(($1+1))
                                                         counter $(($1+1))
 fi
                            fi
                                                       fi
                            echo "Exit call $1"
 echo "Exit call $1"
                                                       echo "Exit call $1"
```

Now, you can ...



Write recursive functions

Thank you

