UNIX SYSTEMS PROGRAMMING

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Today's Agenda

IO Redirection

- Filters
- – wc
- – sort
- – head
- – tail
- – grep
- – pipe
- – tee

IO Redirection

- Operating system defines a standard input device and a standard output device

- UNIX defines keyboard to be the standard input device and the monitor to be the standard output device

- If a command is defined to take input from the standard input, it takes input from the keyboard

- If a command gives its output to the standard output, it displays the output to the monitor

IO Redirection

- UNIX allows to temporarily change the standard input and standard output by means of what is called as Indirection & Piping

- – The symbol > means indirection of output (to a file or printer)

- – the symbol < means indirection of input for a command (from a file)

IO Redirection

- Create a file named **testfile** with the following content
- ***A person who never made a mistake never tried anything new.***
- Save and close (:wq) the file.
- Execute the following command:
- [SysPgm@labserver ~] $ cat testfile > file2↵
- – The above command declares **file2** as the temporary standard output
- – contents of **testfile** to be redirected to **file2**

IO Redirection

- [SysPgm@labserver ~] $ cat testfile > file2↵
- – If the file file2 is not empty, it will be overwritten
- – To avoid this, use >>
- This appends to the old contents of file2
- [SysPgm@labserver ~] $ cat testfile >> file2↵

IO Redirection

- Input redirection
- [SysPgm@labserver ~] $ cat testfile↵
- – Takes input from the file named testfile and displays the result into the standard output
- This command will not take input from standard input
- [SysPgm@labserver ~] $ cat < testfile↵
- – No difference from the previous command
- – *testfile* is temporarily the standard input and the command cat gets its input from standard input
- [SysPgm@labserver ~] $ cat < testfile > op↵
- [SysPgm@labserver ~] $ cat testfile > op↵

IO Redirection

- Indirect operators

Command	Function
> file	make file as the standard output
< file	make file as the standard input
>> file	make file as the standard output, append to it if it exists
<< word	take the shell input up to the first line containing '*word*'
command1 | command2	make the output of command1 as the input to command 2

IO Redirection

- Now try to make out what the following commands achieve

Commands	What does the command do?
$ ls > filelist	
$ date ; who > op	
$ date ; who; ls >op	
$ (date ; who) > op	
$ date; (who ; ls) > op	

THANK YOU