TRINITY COLLEGE FOR WOMEN NAMAKKAL

Department of Computer Science

SHELL PROGRAMMING

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Presented by

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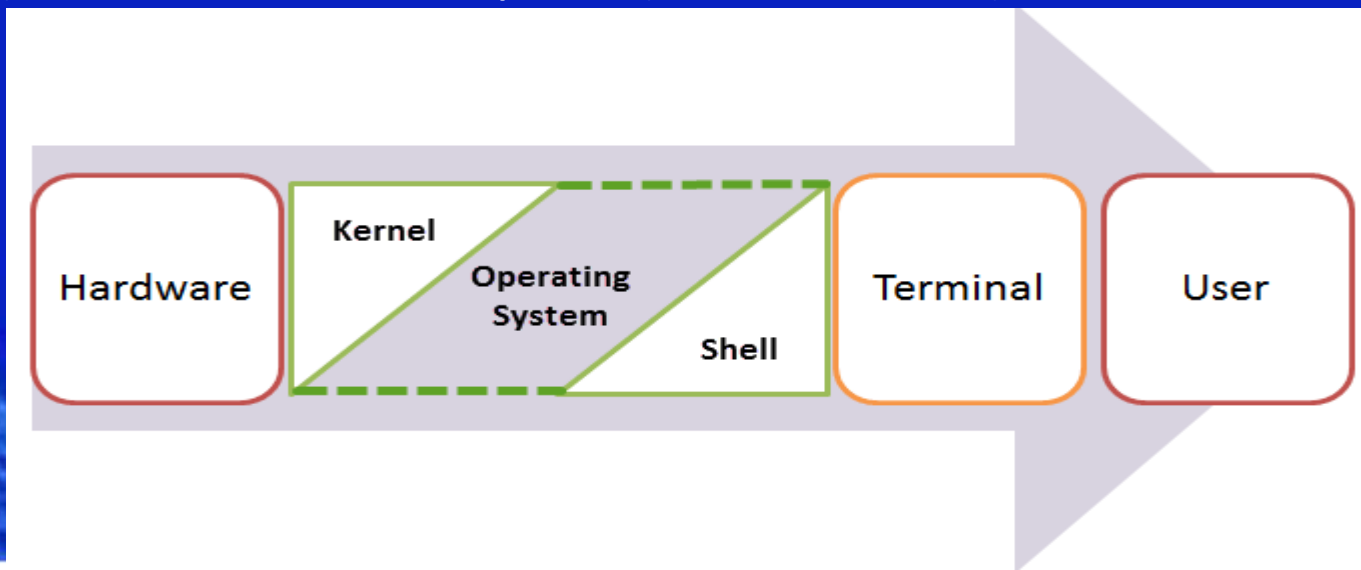Assistant Professor

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<u>SHELL</u>

An Operating is made of many components, but its two prime components are -

- Kernel (A Kernel is at the nucleus of a computer. It makes the communication between the hardware and software possible. It is the innermost part of an operating system, while a shell is the outermost one.')

- Shell (Shell is a program which interprets user commands through CLI(Command Line Interpreter) like Terminal.)

SHELL SCRIPTING

- **SHELL SCRIPTING**: is writing a series of commands for the shell to execute.

- Following steps used to create a shell script-
  - Create a file using a vi editor (or any other editor). Name script file with extension .sh
  - Start the script with #! /bin/sh
  - Write some code.
  - Save the script file as filename.sh
  - For executing the script type bash filename.sh
  - we'll just write a script which says "Welcome Unix".

- Create a file (test.sh) as follows:

test.sh

#!/bin/sh
This is a comment!
echo Welcome Unix
This is a comment, too!

- "#!" is an operator called **shebang** which directs the script to the interpreter location.
- use"#! /bin/sh" the script gets directed to the bourne-shell.

Let's create a small script -

#!/bin/sh ls

Creating a new script file scriptsample.sh

```
home@VirtualBox:~$ vi scriptsample.sh█
```

Adding the command 'ls' after #!/bin/sh

```
#!/bin/sh
ls


~
```

Executing the script file

```
home@VirtualBox:~$ bash scriptsample.sh
abc                 Desktop             newfile             samp
ABC                 Documents           newt.txt            scri
ABC~                Downloads           Pictures            Temp
abc.bash            examples.desktop    Public              tes
abcd.sh             help                sample              tes
```

Explanation :

- The first line tells Unix that the file is to be executed by /bin/sh.
- This is the standard location of the Bourne shell on just about every Unix system.
- The second line begins with a special symbol: #.
- This marks the line as a comment, and it is ignored completely by the shell.
- The third line runs a command: echo, with two parameters, or arguments - the first is "welcome"; the second is "Unix".

Note: echo will automatically put a single space between its parameters.

- now run chmod 755 test.sh to make the text file executable, and run ./test.sh.
- Your screen should then look like this:

```
$ chmod 755 test.sh

$ ./test.sh

welcome unix

$
```

- OR You could even just run like this :
$ echo Hello World
Hello World
$

Points To Remember

- Kernel is the nucleus of the operating systems, and it communicates between hardware and software.
- Shell is a program which interprets user commands through CLI(Command Line Interpreter) like Terminal.
- The Bourne shell and the C shell are the most used shells in Unix/Linux.
- Shell scripting is writing a series of command for the shell to execute.
- Shell variables store the value of a string or a number for the shell to read.

SHELL FUNCTIONS (CORE)

- ➤ Built-in commands, Scripts, Redirection
- ➤ Wildcards, Pipes, Subshells
- ➤ Background processing
- ➤ Command substitution
- ➤ Variables (Local & Environment)
- ➤ Sequences (Conditional & Unconditional)

SELECTING A SHELL

1. Password is required to change shell

2. Utility: use **chsh** & input password

   Bunrne --- /bin/sh
   C   --- /bin/csh
   Korn   --- /bin/ksh (not avl. Here)
   Bash   --- /bin/bash (Default for most
                    of the Linux)

THANK YOU

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