Virtual Java Operating Tool

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Abstract-It is difficult for the users to remember different commands available in various operating system shells. Thus, our main aim of the project is to allow the users of various OS to use the same set of commands provided by our shell on any of the operating systems i.e We have to build such a Shell system which has a similar behavior over different operating systems such as DOS, Windows and Linux. Our problem was providing platform independence to our shell. So in order to overcome this problem we chose to use JAVA.

Keywords – Operating System, OS, Shell, commands, Virtual shell.

I. INTRODUCTION

The main purpose of VJOT is to develop a shell (and thus the kernel) which the user can be able to run across various operating systems and platforms. To develop a basic set of commands which are available on various popular shells such as dir, cd, md etc. To develop the syntax and output pattern of the commands in such a way that the command syntax and output pattern will not change depending on the beneath platform or operating system. The shell will have a consistent set of records which will not change depending on the beneath operating system or platform. To develop advanced commands that will prove themselves very useful to users of our shell. The commands developed will end the need of installing common third party utilities for file splitting, file/folder locking and unlocking, file/folder zipping etc.

Virtual Java Operating Tool (VJOT) is written in Java, unlike other operating systems like windows or Linux. This makes VJOT portable, secure, thread-safe, robust and object oriented. In short all the features and advantages present in Java are present in VJOT. VJOT has a layered structure, the first and the upper most layer is the shell. The shell has a set of inbuilt user commands that deals with File-System structure, File editing and deleting commands, memory related commands, etc. Our system will have a very simple graphical user interface. The user can be able to type the commands as we do it in DOS. The User interface will be designed simple and in sync with all of the popular shells available such as DOS shell and bash (popular Linux shell).

II. PROPOSED VJOT SYSTEM

2.1 Execution process:
The shell takes input of the user command in a TextField and then the shell reads that input to validate the syntax. Once the syntax is validated the shell invokes the inbuilt method of JVM to execute the command on the current runtime and then display the result.

For example, consider execution sequence for cp (copy) command
Syntax: Cp Source file.txt destination file.txt

This command is used to copy the contents of a text file to another mentioned text file. The execution sequence of this command in Vjot, It creates a FileInputStream [1] to the source file from where the contents are to be copied and another FileOutputStream [1] to write the contents to the destination file.
This execution includes read () method of FileInputStream [1] that reads the contents and stores them locally and the write() method of FileOutputStream[1] writes those contents to the destination file. Here Vjot uses only basic java packages for file input and output.

2.2 Advantages of VJOT are as follows:

- Used on all java supported operating systems.
- Has advanced commands.
- Since Java is used, garbage collector takes care of memory management.
- Platform Independent:-The platform does not have any impact on the syntax and output.
- Uniform Interface:-The input syntax and the output will be same throughout the operating systems.
- Better graphical user interface

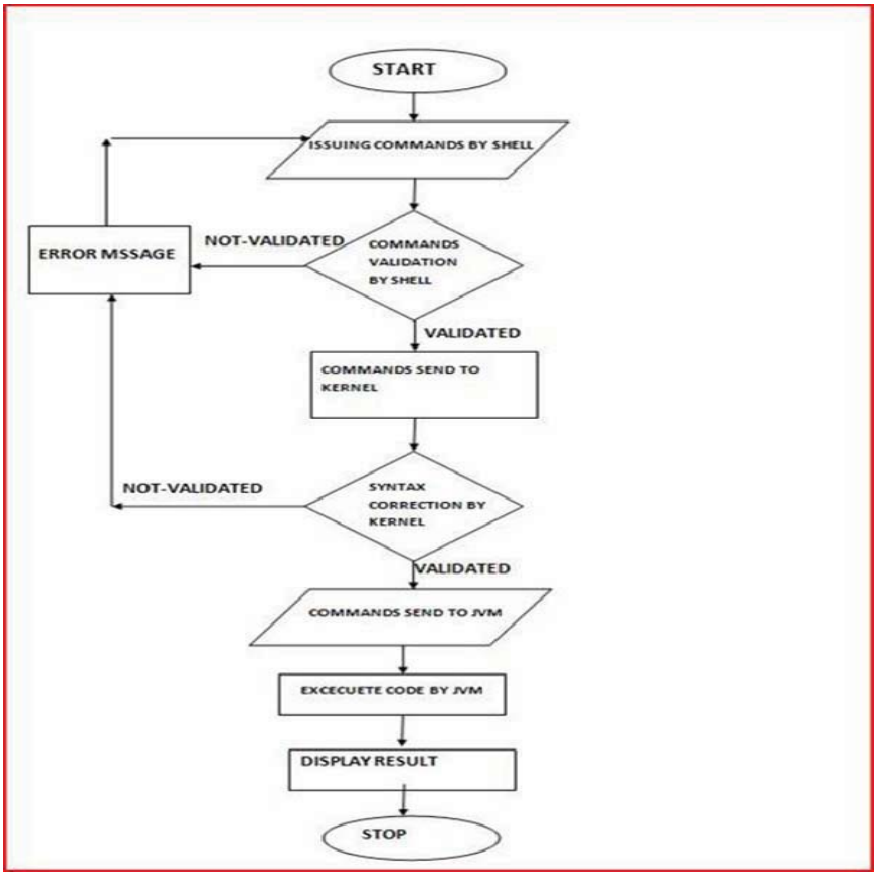


Figure 1.1: *Flow chart*

III. Experiment and Result

This is the list of commands that are executed.

Commands	Meaning
Ip	Internet protocol
Run	Run program
Dt	Show date
Clr	Clear screen
Cdir	Change directory
Cp	Copy
Dr	Show directory
Memcheck	Memory check
Prompt	Change prompt sign

Urlinfo	url information
Findfl	Finds a file
Ct	Shows country date and time
Kill	Deletes a file
Nv,bv,gv,ov,yv	Changes the background and foreground color of the prompt
Rn	Renames a file
Mkdr	Makes a directory
Show	Displays contents of the file
Osinfo	Displays the OS information
Exit	Exits the prompt
Helpme/?	Displays help
Whois	Gives information about the site
Split	Opens file splitter
Myzip	Opens file zipper
Wordpad	Opens a WordPad window
Paint	Opens paint window

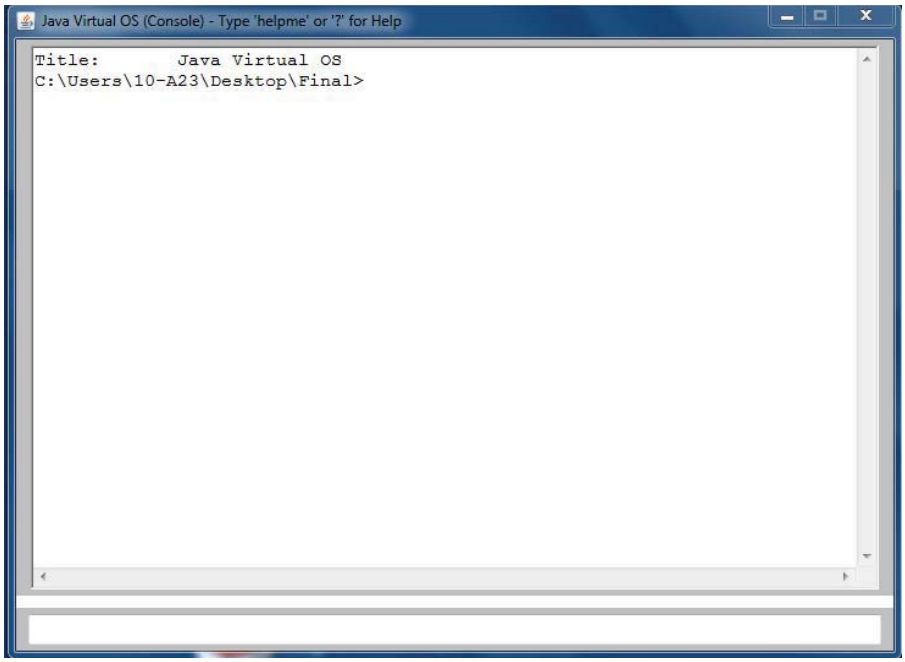
Table 1.1: *List of commands*

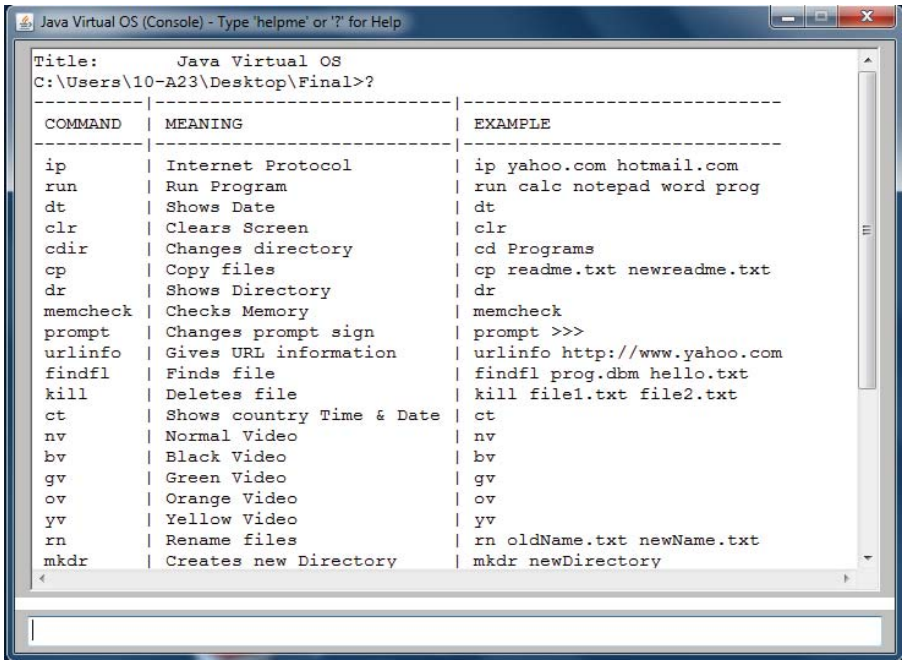
Windows	**Linux**	**VJOT**
Md	Mkdir	Mkdr
Ren	Mv	Rn
Del	Rmdir	Kill
Dir	Ls	Dr
Copy	Cp	Cp
Where	Locate	Findfl
Now	Date	Dt
-	Cat	Show
Mem	/proc/meminfo	Memcheck

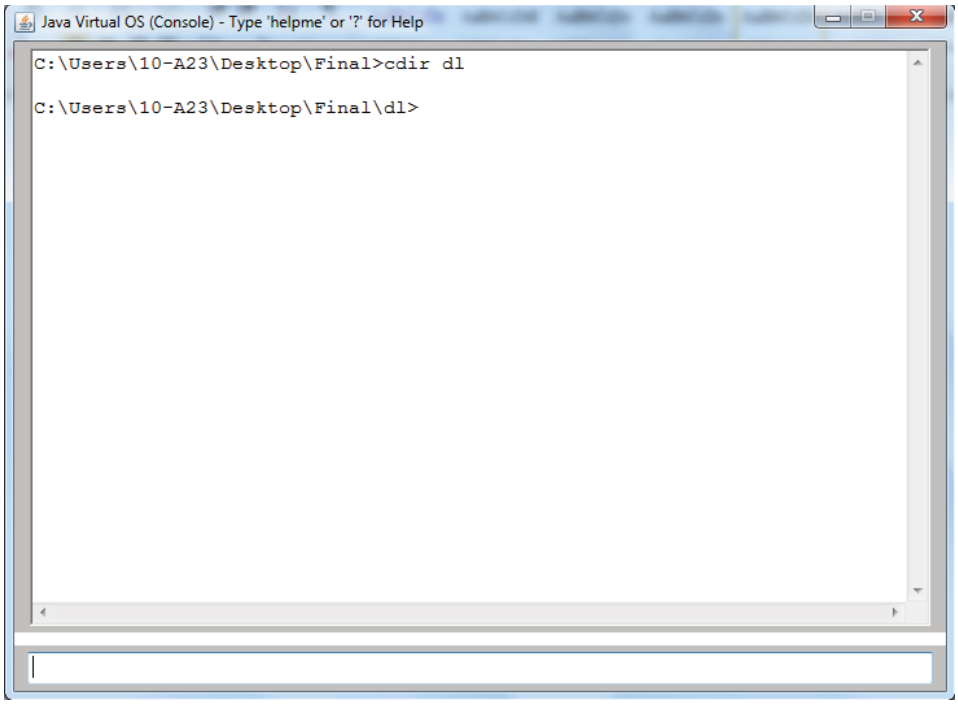
Table 1.2: Comparison between VJOT, Windows and Linux shell commands.

RESULT:

The test experiment uses a Pentium® Dual-Core 3.06GHz CPU and a 2GB of memory.


Java Virtual OS (Console) - Type 'helpme' or '?' for Help
Title: Java Virtual OS
C:\Users\10-A23\Desktop\Final>


Java Virtual OS (Console) - Type 'helpme' or '?' for Help
Title: Java Virtual OS
C:\Users\10-A23\Desktop\Final>?
COMMAND | MEANING | EXAMPLE
ip | Internet Protocol | ip yahoo.com hotmail.com
run | Run Program | run calc notepad word prog
dt | Shows Date | dt
clr | Clears Screen | clr
cdir | Changes directory | cd Programs
cp | Copy files | cp readme.txt newreadme.txt
dr | Shows Directory | dr
memcheck | Checks Memory | memcheck
prompt | Changes prompt sign | prompt >>>
urlinfo | Gives URL information | urlinfo http://www.yahoo.com
findfl | Finds file | findfl prog.dbm hello.txt
kill | Deletes file | kill file1.txt file2.txt
ct | Shows country Time & Date | ct
nv | Normal Video | nv
bv | Black Video | bv
gv | Green Video | gv
ov | Orange Video | ov
yv | Yellow Video | yv
rn | Rename files | rn oldName.txt newName.txt
mkdr | Creates new Directory | mkdr newDirectory



IV.CONCLUSION

We built such a Shell and Kernel system which has a similar behavior over different operating systems such as DOS, Windows and Linux. The shell will consist of all of the utility commands along with some newly designed commands that can prove them self very useful for users. VJOT is portable, secure, robust and object oriented. It is a platform independent shell + kernel developed in Java. Thus our problem of developing a platform independent command prompt is solved using JAVA.

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