Command Line and Files

Note for teacher: If admin login is used for the students, no need to teach "command" and 8.3 File Naming.

Command Line

Task 1

Learn the usage of following commands. [Take help from http://www.computerhope.com/msdos.htm or google]

Command	Summary	Highlights
cmd	New command line / console in Windows Vista/7	• Command prompt using both a. Dr. Java (in interaction pane) b. Console (cmd) • 8.3 File naming system • Handing paths with spaces using double quotes • Write a java program that take 3 numbers from the user and prints their sum. Run your program using both c. Dr. Java d. Console
command	Old / Traditional command line / console in Windows XP and older systems.	
cd	Change Directory / Folder. Another similar command is **chdir**.	
c:	To go to C drive. Similarly, typing **d:** and pressing enter (↵) will take you to D drive.	
md	Make/Create a Directory / Folder. Another similar command is **mkdir**.	
set	To view / change value of **environment variables** (?)	
dir	Show list of files and folders	
javac	To compile a java program and create class file	
java	To run a java program (class file)	

Part C: Learning to take input from console

Task 2

Complete the following program. You must use loop and **arrayName.length** for all current and future tasks in all labs. For example, following array name is "a", so you should write a.length instead of 3 to stop the loop.

Program	Expected Output

`class Lab10Task02{`
`  public static void main(String[] args){`
`  int a[]={10, 20, 30};`
`  // write your code here`
`  }`
`}`
	10
	20
	30

Task 3

Modify your solution of Task 2 and complete the following program.

Program	Expected Output

`class Lab10Task03{`
`  public static void main(String[] args){`
`  String a[]={"40", "50", "60"};`
`  // write your code here`
`  }`
`}`
	40
	50
	60

Task 4

Using Dr. Java, modify your solution of Task 3,

- Delete the line: **`String a[]={"40", "50", "60"};`**
- Rename all **a.length** to **args.length**
- Rename all **a[i]** to **args[i]**

Compile

Run your program using both

- Dr. Java (After compiling, write **java YourClassNameHere 70 80 90** at the interaction pane)
- cmd Console (After compiling, write **java YourClassNameHere 100 110 120** at the cmd console)
- Dr. Java (After compiling, write **java YourClassNameHere Eid Mubarak** at the interaction pane)

- cmd Console (After compiling, write **java YourClassNameHere I did not work on Applets** at the cmd console)

Task 5

Modify your solution of Task 4 so that the following happens

If the program is run using	Then it gives these outputs
java YourClassNameHere 130 140 150	Content of args[0] is 130 Content of args[1] is 140 Content of args[2] is 150
java YourClassNameHere learn applet	Content of args[0] is learn Content of args[1] is applet

Run Task 5 using following command and investigate what happened.

java YourClassNameHere Learn to "guard" yourselves. "Your suffering" was indeed "a great trial" for you.

Part D: Learning to use files (if java complains, use try catch blocks to handle exceptions or throw those)

Task 6

- Create a file named **a.txt** in your C drive root
- Write three numbers (14 15 16) on three separate lines
- Modify your solution of Task 1 (See rightmost column) by
    - Adding import **java.io.*;** at the top (needed for the **File** class)
    - Replacing **Scanner s = new Scanner (System.in);**
      with **String amarFileNameAndLocation = "c:\\a.txt";**
      File amarFile = new File (amarFileNameAndLocation);
      Scanner s =new Scanner (amarFile));
      Or, in short
      with **Scanner s =new Scanner (new File("c:\\a.txt"));**

    - Replacing **each** **int x = s.nextInt()**
      with **String ektaLine;**
      ektaLine = s.nextLine();
      int x = Integer.parseInt(ektaLine);
- Run your program. It should give 45 as output.

Hint: Following two lines prints 12 on the screen:

```
int x=Integer.parseInt("5");
int y=Integer.parseInt("7");
System.out.println(x+y);
```

Further reading:

http://192.168.0.84/bucc/javadoc/api/java/lang/Integer.html#parseInt(java.lang.String)

HW 1

Modify your **Task 6** so that if a.txt file contains any number of lines each with one number, your program should sum all numbers and give correct output. **Hint:** hasNextLine() method tells if the file has any line left. For more, read http://192.168.0.84/bucc/javadoc/api/java/util/Scanner.html

Example:

```
String line;
while(s.hasNextLine()){
   line = s.nextLine();
```

```
        System.out.println( line );
    }
```

HW 2
Modify your **Task 6** or HW1 so that your program takes input from b.txt file. That file will contain three numbers (16 17 18) but on the same line. Output should be 51. **Hint:** use the method **next() and hasNext()** instead of **nextLine()** and **hasNextLine();**

HW 3
Modify your **Task 6** or HW1 so that your program takes input from b.txt file. That file will contain three numbers (16 17 18) but on the same line. Output should be 51. **Hint:** use the method **nextInt() and hasNextInt()** instead of **nextLine()** and **hasNextLine();**

HW 4
Write a program that asks the user for file name. Then prints the whole file on screen line by line. Hint: read each line and immediately print that line.

HW5
Given a file name, delete that file. **Hint:** read
http://192.168.0.84/bucc/javadoc/api/java/io/File.html#delete()
http://www.java2s.com/Code/Java/File-Input-Output/DeletefileusingJavaIOAPI.htm

HW6 (Encryption)
Given a line as keyboard input in small letters, print the next alphabet in sequence for each alphabet found in the input
Sample Input 1:
abcd
Sample output 1:
bcde

Sample Input 2:
the cowz
Sample output 2:
uif dpxa

HW7 (Decryption)
Given a line as keyboard input in small letters, do the opposite of HW5
Sample Input 1:
bcde
Sample output 1:
abcd

Sample Input 2:
uif dpx
Sample output 2:
the cow

Optional/Bonus Task 998
One of my GRE (Graduate Record Exam.) question was about “Too much emphasis is placed on role models. Instead of copying others, people should learn to think and act independently and thus make the choices that are best for them.”. I answered that role models are necessary but instead of acting like them, we have to learn what contributed to their success (thoughts, education, exploration) and what did not (e.g. life style)

I came to know about Dr. Regina Dugan from MSA probably during Spring 2009. She is the director of Defense Advanced Research Projects Agency (DARPA), US Military. To inspire yourself towards self learning, read on her from

- http://www.darpa.mil/directorbio.html
- http://www.duganventures.com/team.html
- http://topics.nytimes.com/topics/reference/timestopics/people/d/regina_e_dugan/index.html

Optional/Bonus Task 999

Learning

- command line I/O (Input and output) redirection using >, >>
- usage of batch files (extensions bat or cmd)