**Program 1J Report**

In Figure 1, it shows how I designed my algorithm of Shell.java by showing the functions I used and how they interact with each other. It is a rough idea of what each function does and how each function is used in shell.java. You can see that our main function is run, which does all the work to run the shell. generateCmd is more of a helper function that helps generate a single command for execution in a string array. IsEven and IsInt is also helper functions that is implemented in geenrateCmd to make sure we are generating the right commands.

A diagram of a shell java

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**Figure 1 – Flowchart of how each function interact with each other to run shell.java**

How to test:

To test my Shell.java, you simply have to execute your Boot file to power on ThreadOS. Once you do that you should have the loader executed. Type “l Shell” into the loader to open the shell and type any PingPong command with “&” and “;” after the command as shown below. The PingPong command should execute the PingPong executable file provided. If you click the Enter key it brings you right back to the shell and when you want to exit simply type “exit” in the command line of the shell. You should be exited right back to the loader.

Important note: It is important to note that if we have two or more commands and a command that is not first in line is invalid then we will run the ones that are valid until we find the invalid one. If the valid one is ran, then you might have to click the Enter key to go to another shell. You know a command is invalid when you get a message saying “Input not accepted”.

Outputs and steps for my shells program:

1. Initiated Shell program from loader.

A black screen with white text

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1. Result of calling “PingPong abc 4 & PingPong 123 4 ; PingPong xyz 4 ;” command.

A screen shot of a computer

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Note: Next page is a continuation of the outputs of shell.java

1. Result of calling “PingPong abc 4 ; PingPong 123 4 & Pingpong xyz 4 ;” command.

A screen shot of a computer

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1. Result of calling “PingPong abc 10000 & PingPong xyz 10000 & PingPong 123 10000 ;” command.

A screenshot of a computer program

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Note: Next page is a continuation of the outputs of shell.java

1. Result of clicking Enter key and then exit in the shell.

A screen shot of a computer

Description automatically generated

1. Here are some invalid results.

A screen shot of a computer

Description automatically generated

A black screen with white text

Description automatically generated