Folder Monitoring

Savvas Rostantis

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INSTRUCTIONS FOR USE

Enter the following command line to run the program:

./sniffer –k [path]

Where [path]: The complete directory address for editing e.g. If the folder is File_Monitor then we don't add '/' at the end of the path.

e.g.

➔ **/Users/Savvas/Desktop/Samples/File_Monitor**
➔ (**NO** /Users/Savvas/Desktop/Samples/File_Monitor/ !!!!!) 🡐

For the Bash Script :

./Bash_Script_TLD [total tld for search] (is located in folder : Workers_Results)

DESCRIPTION OF FILES

The project contains:

- Source:
  - Manager.cpp
  - Worker.cpp
  - Listener.cpp
  - List.cpp
  - Worker_List.cpp
- Header:
  - Libraries.h
  - Worker.h
  - List.h
  - Worker_List.h
  - Listener.h
- Ready Compiled Program:
  - Inotifywait

Description: In the Manager.cpp file we have all the functions necessary to create and manage (existing) workers, as well as to create appropriate communication channels for his children, to which he sends the appropriate data to the right destinations. At Listener.cpp, in partnership with Listener.h library, we run the Inotifywait executable to receive alerts for new files in the folder. In Worker.cpp (Worker.h) we have the job of workers receiving files through the channels from the Manager and processing the files according to the requirements of the job, creating new files in this Workers_Results folder. We use three lists: two from List.cpp and one from Worker_List.cpp, for the Manager and Worker respectively, for storing data such as: child identities , available children, and output file data. Libraries.h contains the necessary libraries for the programs.

DESCRIPTION OF PROGRAM IMPLEMENTATION

After selecting the folder for editing, the Manager activates a simple communication channel with the listener, where it will read every file that will be downloaded is created in the folder. If there are no workers available, he will create, otherwise use existing ones, and connect channels of communication with his children. These channels will pass the path of each file. Each worker processes the file and prints its results in new files in the predefined folder. He is then put on standby until his father activates him. When the Ctrl ^ C signal is given, the Manager terminates all communication channels and his children as well as releases all resources that were committed during the execution of the program.

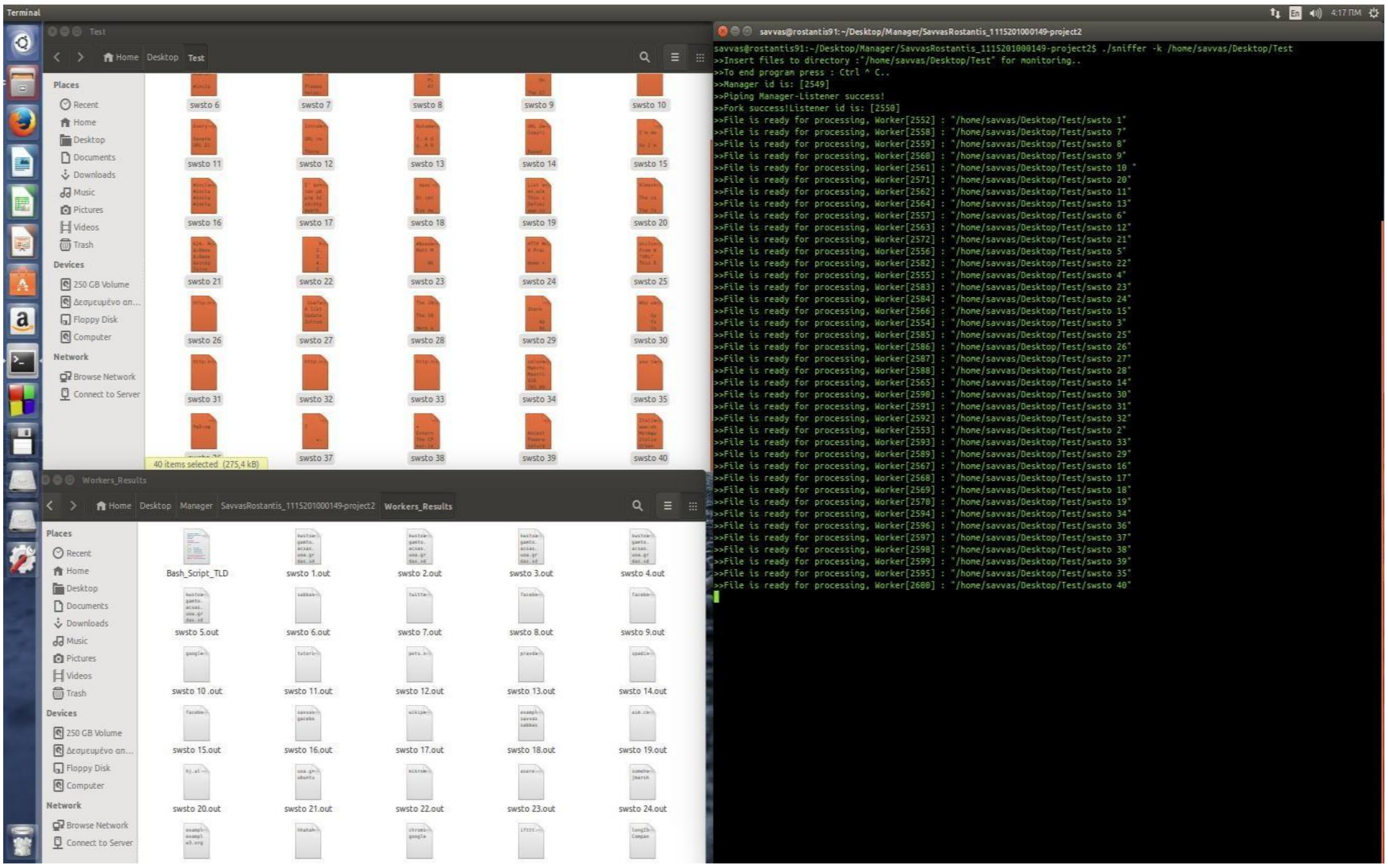
DESCRIPTION OF STRUCTURES

LIST

The program contains three lists. Two for the Manager and one for each Worker. Specifically for the Manager, a list contains the identities of all the children he created and the channels of communication with the Manager (named pipes). The second list contains the same information but is used for available workers that can be restarted. Each Worker has a list containing the domains and their numbers, from the files read by the Manager, which they need for output files.

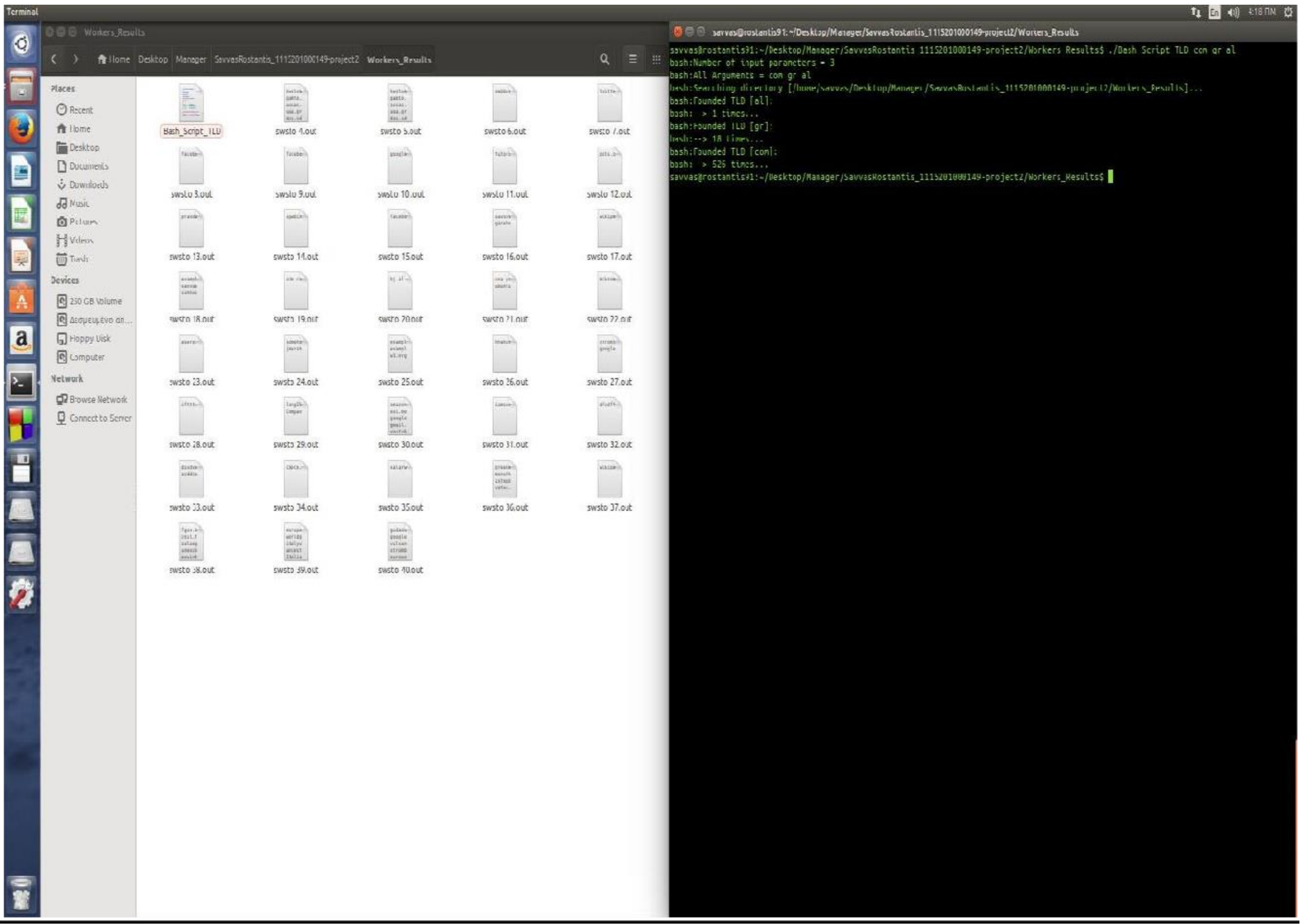
EXAMPLES OF IMPLEMENTATION

Indicative execution



```
savvas@rostantis91:~/Desktop/Manager/SavvasRostantis_1115201000149-project2$ ./sniffer -k /home/savvas/Desktop/Test
>>Insert files to directory :"/home/savvas/Desktop/Test" for monitoring..
>>To end program press : Ctrl ^ C..
>>Manager id is: [2549]
>>Piping Manager-Listener success!
>>Fork success!Listener id is: [2550]
>>File is ready for processing, Worker[2552] : "/home/savvas/Desktop/Test/swsto 1"
>>File is ready for processing, Worker[2558] : "/home/savvas/Desktop/Test/swsto 7"
>>File is ready for processing, Worker[2559] : "/home/savvas/Desktop/Test/swsto 8"
>>File is ready for processing, Worker[2560] : "/home/savvas/Desktop/Test/swsto 9"
>>File is ready for processing, Worker[2561] : "/home/savvas/Desktop/Test/swsto 10 "
>>File is ready for processing, Worker[2571] : "/home/savvas/Desktop/Test/swsto 20"
>>File is ready for processing, Worker[2562] : "/home/savvas/Desktop/Test/swsto 11"
>>File is ready for processing, Worker[2564] : "/home/savvas/Desktop/Test/swsto 13"
>>File is ready for processing, Worker[2557] : "/home/savvas/Desktop/Test/swsto 6"
>>File is ready for processing, Worker[2563] : "/home/savvas/Desktop/Test/swsto 12"
>>File is ready for processing, Worker[2572] : "/home/savvas/Desktop/Test/swsto 21"
>>File is ready for processing, Worker[2556] : "/home/savvas/Desktop/Test/swsto 5"
>>File is ready for processing, Worker[2582] : "/home/savvas/Desktop/Test/swsto 22"
>>File is ready for processing, Worker[2555] : "/home/savvas/Desktop/Test/swsto 4"
>>File is ready for processing, Worker[2583] : "/home/savvas/Desktop/Test/swsto 23"
>>File is ready for processing, Worker[2584] : "/home/savvas/Desktop/Test/swsto 24"
>>File is ready for processing, Worker[2566] : "/home/savvas/Desktop/Test/swsto 15"
>>File is ready for processing, Worker[2554] : "/home/savvas/Desktop/Test/swsto 3"
>>File is ready for processing, Worker[2585] : "/home/savvas/Desktop/Test/swsto 25"
>>File is ready for processing, Worker[2586] : "/home/savvas/Desktop/Test/swsto 26"
>>File is ready for processing, Worker[2587] : "/home/savvas/Desktop/Test/swsto 27"
>>File is ready for processing, Worker[2588] : "/home/savvas/Desktop/Test/swsto 28"
>>File is ready for processing, Worker[2565] : "/home/savvas/Desktop/Test/swsto 14"
>>File is ready for processing, Worker[2590] : "/home/savvas/Desktop/Test/swsto 30"
>>File is ready for processing, Worker[2591] : "/home/savvas/Desktop/Test/swsto 31"
>>File is ready for processing, Worker[2592] : "/home/savvas/Desktop/Test/swsto 32"
>>File is ready for processing, Worker[2553] : "/home/savvas/Desktop/Test/swsto 2"
>>File is ready for processing, Worker[2593] : "/home/savvas/Desktop/Test/swsto 33"
>>File is ready for processing, Worker[2589] : "/home/savvas/Desktop/Test/swsto 29"
>>File is ready for processing, Worker[2567] : "/home/savvas/Desktop/Test/swsto 16"
>>File is ready for processing, Worker[2568] : "/home/savvas/Desktop/Test/swsto 17"
>>File is ready for processing, Worker[2569] : "/home/savvas/Desktop/Test/swsto 18"
>>File is ready for processing, Worker[2570] : "/home/savvas/Desktop/Test/swsto 19"
>>File is ready for processing, Worker[2594] : "/home/savvas/Desktop/Test/swsto 34"
>>File is ready for processing, Worker[2596] : "/home/savvas/Desktop/Test/swsto 36"
>>File is ready for processing, Worker[2597] : "/home/savvas/Desktop/Test/swsto 37"
>>File is ready for processing, Worker[2598] : "/home/savvas/Desktop/Test/swsto 38"
>>File is ready for processing, Worker[2599] : "/home/savvas/Desktop/Test/swsto 39"
>>File is ready for processing, Worker[2595] : "/home/savvas/Desktop/Test/swsto 35"
>>File is ready for processing, Worker[2600] : "/home/savvas/Desktop/Test/swsto 40"
```

__Indicative Bash Script execution__



```
savvas@rostantis91:~/Desktop/Manager/SavvasRostantis_1115201000149-project2/Workers_Results$ ./Bash_Script_TLD com gr al
bash:Number of input parameters = 3
bash:All Arguments = com gr al
bash:Searching directory [/home/savvas/Desktop/Manager/SavvasRostantis_1115201000149-project2/Workers_Results]...
bash:Founded TLD [al]:
bash:  > 1 times...
bash:Founded TLD [gr]:
bash:--> 18 times...
bash:Founded TLD [com]:
bash:  > 526 times...
savvas@rostantis91:~/Desktop/Manager/SavvasRostantis_1115201000149-project2/Workers_Results$
```