**Koc University**

**COMP304 – Operating Systems**

**Project 1: SeaShell**

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**Part 1:**

In this part, we have used execv() system call rather than executing with execvp in order to execute the common Linux programs and user programs by the child process. In the implementation part, we have find the path of the command by its name.Also, we have used ‘which’ command in the implementation part, so that we can easily find the path of the ‘name’ that we have provided.

**Part 2:**

In this part, we have implemented a new command,shortdir, this command reach a path with a short name instead of typing the whole path. While doing this, we have used strcmp in order to look at the defined shortdir and other supportive functions on the command line. After getting the required commands that is defined on the project part 2 description, we have used some of the functionalities in the base linux command line(cat, rm,strcat,access : set, list,clear,jump ).

For the part ,lives across shell sessions, we have created a txt file so that we can store the pre-recorded names in the txt and we can delete it, clear it,and list it accordingly.

**Part 3:**

In this part, we have implemented the highlight command that takes a word-color pair and a text file as an input. Same as part 2 , we have used strcmp to approve the required command in the seashell. For the implementation part, we have search the txt file line by line and then if the searched word is find then we highlight this word with the specified color.

**Part 4:**

In this part, we have implemented a new command for seashell,Good Morning. For the implementation part we have get a time and a music file which is provided with its path.

**Part 5:**

In this part, we have implemented the ‘kdiff’ utility to compare two files in given paths. The implementation supported by two modes. The first one is -a and the second one is -b.

**Part 6:**

In this part, we have implemented the game of the Rock,Paper,Scissors.While entering the command line, the user should enter the options of the Rock,paper, and scissors by using I/O operations on C . The computer will select these options randomly as well. For this we have created a method which will be generated a random option chooser by using current time. Then the result of the game (who wins) displayed.

**Websites that we have looked:**

<https://stackoverflow.com/questions/3501338/c-read-file-line-by-line>

<https://www.youtube.com/watch?v=iB4EOLYr67c&ab_channel=SouthBridge>

<https://www.programiz.com/c-programming/library-function/string.h/strcmp>

<https://www.geeksforgeeks.org/cat-command-in-linux-with-examples/>

<https://www.programiz.com/c-programming/library-function/string.h/strcat>

<https://www.geeksforgeeks.org/crontab-in-linux-with-examples/#:~:text=The%20crontab%20is%20a%20list,the%20Greek%20word%20for%20time>.

<https://opensource.com/article/17/11/how-use-cron-linux>

<http://manpages.ubuntu.com/manpages/hirsute/en/man1/rhythmbox-client.1.html>

<https://www.computerhope.com/unix/ucrontab.htm>

<https://www.geeksforgeeks.org/diff-command-linux-examples/>

<https://github.com/git/git/blob/master/diff.c>

<https://help.ubuntu.com/community/Rhythmbox#:~:text=Rhythmbox%20includes%20such%20features%20as,and%20support%20for%20streaming%20audio>.

<https://way2usefulinfo.blogspot.com/2012/12/simple-trick-on-how-to-play-audio-or.html>

<https://www.theurbanpenguin.com/4184-2/>

<https://stackoverflow.com/questions/3585846/color-text-in-terminal-applications-in-unix>

<https://dev.to/tenry/terminal-colors-in-c-c-3dgc>

<https://www.geeksforgeeks.org/which-command-in-linux-with-examples/#:~:text=which%20command%20in%20Linux%20is,commands%20are%20found%20and%20executable>.

<https://linux.die.net/man/3/execv>

<https://stackoverflow.com/questions/32142164/how-to-use-execv-system-call-in-linux>

<https://www.cppbuzz.com/program-to-read-text-file-line-by-line-in-c>

<https://www.javatpoint.com/c-program-to-compare-the-two-strings#:~:text=We%20take%20the%20user%20input,the%20strings%20are%20not%20equal>.

<https://www.youtube.com/watch?v=95ubwOnyYmQ&ab_channel=Aticleworld>

<https://aticleworld.com/c-program-to-compare-two-files/>

<https://stackoverflow.com/questions/38032506/comparing-two-txt-files-in-c>

<https://www.linuxquestions.org/questions/programming-9/how-to-compare-two-files-line-by-line-and-print-the-line-which-is-same-883466/>

<https://stackoverflow.com/questions/20688258/compare-two-files-byte-by-byte>

<https://codereview.stackexchange.com/questions/171003/python-code-that-compares-two-files-byte-by-byte>

<https://www.howtoforge.com/linux-cmp-command/>