Project 1 - Report

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Q1. We get the current path using getenv() and tokenize the path into tokens because it is not in the right format. We create a string to store the full path. We add the token to the full path and if it is not the last character, we concatenate “/” to the full path. Then we add the command name given by the user to this full path. Finally, execv() uses this full path as the first argument.

Q2. We first take the name of the user and concatenate it to the home directory to save the associations file which stores the name-directory associations. When setting a name to a specific directory, we first check whether this name or path has already been associated with something. Then if it has not been, we append the name and the current path to the "associations.txt" file. To jump to the directory associated with the given name, we read the associations file to check if it exists. If this name is in the file, we get this path and change the directory using chdir(). To delete a name-directory association, we store the other existing associations to another file and rename it to the associations and delete the old file. To clear all associations, we remove the associations.txt and open a new empty file called associations.txt. We read the file line by line with fgets() and print the name-directory associations when the command is “list”.

Q3. To highlight a word, we first change the searched word to lowercase. Then we read the text file line by line and change it to the lowercase as well. We split the line from spaces between words and compare it to the searched word. If we find this word, we check the second argument after the command "highlight" representing the color. If this argument is not “r”, “g” or “b”, we print the "Unknown color" warning as many times as the searched word appears in the text. If the color is appropriate, we print the word with this color. If the line does not contain this word, we do not print this line.

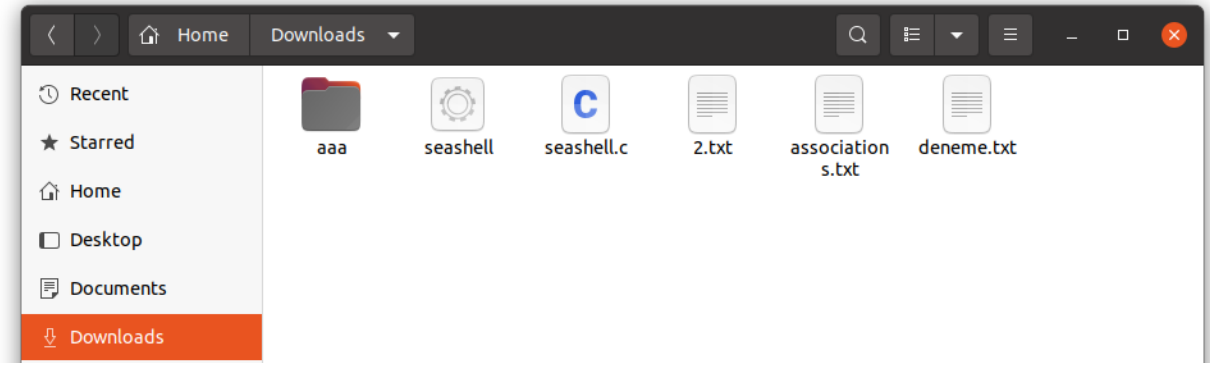
Q4. We first get the hour and minute by tokenizing the input argument. Then write a temporary txt file to store the command to be executed; which is play the given song in the rhythmbox and stop playing it after 1 minute. Then we execute it using execlp and remove the temporary txt file.

Q5. We check if the first argument of the command is -a or -b.
If **a**, we first check if the extension is txt by tokenizing from “.”, then we check if the given file exists. If any of the checks fail we notify the user. Then, we compare the txt

files line by line and any of them are different, we print the different lines along with the line number.
Note: We assume both files are of the same length.
If **b**, we check if the given files exist. If not, notify the user. If they exist, compare character by character and print the total number of different characters at the end.
If nothing is specified (a or b) or if something different then a and b is specified we assume it is a and carry out the same process described for -a.
Note: Each time we notify the user, we exit.

Q6. We have implemented a move command. It takes the file name as the first argument and the second argument is the path of the directory which the given file will be moved to.
First we get the current directory and check if the given path also belongs to the same directory. If so, we notify the user that the file cannot be moved to the same directory. If not, we check if the given file exists and again if not we notify the user. Then, we change our current directory to the given path (the one provided by the user). We open a new file with the same name. If a file with the same name already exists in the directory that we will move the file to, we notify the user.
Then, we transfer each character in the original file to the newly opened one by reading from the original and writing to the new one.
After all the content has been transferred, we close the newly opened file and delete the original one. Thus, in the end the file is moved to the provided path.
Note: Each time we notify the user, we exit.

Here is how it works:
Before executing the command, “2.txt” file was in downloads.



Then, here is how we executed it.

```
dilara@dilara:~/Downloads$ ./seashell
dilara@dilara:/home/dilara/Downloads seashell$ move 2.txt /home/dilara/Desktop
dilara@dilara:/home/dilara/Downloads seashell$
```

Finally, it is in Desktop