**Cse3033 Project2**

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In this project we tried to build a terminal using c programming language.

In order to achieve that we tried to build an algorithm using processes.

There are several attributes that our terminal should have like having its own history beside Ubuntus’ terminal.

We tried to solve that problem in the following steps;

1-)Get all paths of executable files inside PATH enivorment variable.

2-)Since path variable contains all paths seppareted by “:” parse all of them into an array or a linked list.

3-)After parsing all paths check for given input wheter it is a executable file or not and check wheter given command is desired to execute in background or foreground.

4-)If it is executable get full path of given input in order to use it inside execv() funtion in c.

5-)After execution add the written command to the history.

6-)Since history has at most 10 command keep it less than or equal 10

The file io part is not done in our project so we will skip that part.

**Code**

There is two type of struct. First one is Path it stores the “:” separated paths in linked list.

Second one is History in order to save the history of given code.

**1-)void decide\_exectuable\_type(char \* first\_line,char \* args[],int size)**

The first function that starts program is decide\_exectuable\_type() which is called from setup() function.

The main purpose of this function is check the given command input if there is “&” it sets flag to 1 and 0 otherwise this “&” is important for wheter the code will be executed in foreground or in background.

**2-) char \* get\_executable\_\_path(path \*\*root,char \* input)**

Before execution of code we need to get the exact path of given input because we have to use execv() function in order to execute the given command input. The root should the address of path linked list and input is the first string of argument given. It than returns the exact path of given input.

**3-) char \* is\_executable(char \*path,char \*input)**

This functions check if the given input exist in the enviroment variable if it than next function will execute it will not otherwise.

**4-) void execute(char \* path, char \* args[],int flag)**

After getting the exact path execute() function starts. The path is the result of function 2 that we called before and args is the input that user entered. The flag is either 1 or 0 if it is 0 program should execute foreground and vice versa.

**5-)void init()**

This function initialize the all necesarry data like adding all paths to path linked list in order reusablity of data.

**6-)Linked list related codes**

There are several functions which are related to linked list like adding to linked list or listing the data of linked list.

**7-)History**

As we mentioned above there should be a history that keep last 10 input. We used again a linked list for that problem. But there the addition is just adding at the first element of linked list.

**Conclusion**

We tried our best in order to gave its right and do all problems but we could not manage it. Because the file part is not done and history part is not working properly because we could not manage reexecute the history from linked list. However it was instructive for us and we learned a lot of thing. Thanks for everything.