Glen Issac

200499313

Lab Assignment 3

Design Question 1 : Children

Code:

```c
#include <stdlib.h>
#include <unistd.h>
#include <sys/types.h>
#include <stdio.h>
#include <sys/wait.h>

int main(){
        printf("Parent PID: %d\n", getpid());
        pid_t pid1, pid2;
        pid1 = fork();
        if (pid1<0){
                printf("Forking error.");
                exit(1);}
        else if (pid1==0){
                printf("I am child one, my pid is: %d\n", getpid());
                exit(2);}
        else {
                pid2 = fork();
                if (pid2<0){
                        printf("Second Forking Error");
                        exit(1);}
                else if (pid2==0){
                        printf("I am child two, my pid is: %d\n", getpid());
                        exit(3);}
                else{
                        printf("Parent has created two children\n");
                        //WAIT FOR CHILD TO END
                        wait(NULL);
                        //WAIT FOR CHILD TO END
                        wait(NULL);
                        printf("Both children are done, Parent is now exiting.\n");
                }
        }
        return 0;
}
```

```
                                          [ Read 35 lines ]
^G Help      ^O Write Out  ^W Where Is   ^K Cut      ^T Execute  ^C Location   M-U Undo    M-A Set Mark  M-] To Bracket  M-C Previous  ^B Back
^X Exit      ^R Read File  ^\ Replace    ^U Paste    ^J Justify  ^/ Go To Line M-E Redo    M-6 Copy      ^Q Where Was    M-W Next      ^F Forward
```

Output:

```
ubuntu@ip-10-0-0-234:~/lab3$ ./child
Parent PID: 14912
I am child one, my pid is: 14913
Parent has created two children
I am child two, my pid is: 14914
Both children are done, Parent is now exiting.
ubuntu@ip-10-0-0-234:~/lab3$
```

Design question 2

Code: Submitted as .c file

Output:

```
ubuntu@ip-10-0-0-144:~/lab3$ ./myshell
Enter from one of the following:
help
new
edit
display
delete
exit
help
You selected help.
Available commands:
  help     - Show this help message
  new      - Create a new file (a.txt)
  edit     - Overwrite contents of a.txt
  display  - Show contents of a.txt
  delete   - Delete a.txt
  exit     - Exit the program
Enter from one of the following:
help
new
edit
display
delete
exit
new
You selected new.
File 'a.txt has been created.
File has been closed.
```

```
Enter from one of the following:
help
new
edit
display
delete
exit
edit
You selected edit.
Editing 'a.txt'...
Enter new content (one line only): Hello Glen!
File updated successfully.
Enter from one of the following:
help
new
edit
display
delete
exit
display
You selected display.
--- Contents of 'a.txt' ---
Hello Glen!
--- End of File ---
Enter from one of the following:
help
new
edit
display
delete
exit
delete
You selected delete.
File 'a.txt' deleted successfully.
```

```
Enter from one of the following:
help
new
edit
display
delete
exit
exit
Exiting myshell. Goodbye!
ubuntu@ip-10-0-0-144:~/lab3$
```

Design question 3

Code: Submitted as .c file

Output:

```
ubuntu@ip-10-0-0-144:~/lab3$ ./car
[Parent] My PID is 10359. Waiting for signals from child 10360...
[Child] My PID is 10360, my parent's PID is 10359
[Child] Sending SIGUSR1 to parent...
The president's car is coming. Take security measures.
[Child] Sending SIGUSR2 to parent...
The president's car is gone. You may relax
[Parent] Terminating.
ubuntu@ip-10-0-0-144:~/lab3$
```