Unix - Shell

This is a simple shell implemented using C++.

Commands

- The internal shell command "exit" which terminates the shell

  - **Concepts**: shell commands, exiting the shell.

- A command with no arguments

  - **Example**: ls, cp, rm ...etc
  - Shell must block until the command completes.
  - **Concepts**: Forking a child process, waiting for it to complete and synchronous execution.

- A command with arguments

  - **Example**: ls –l
  - **Details**: Argument 0 is the name of the command.
  - **Concepts**: Command-line parameters.

- A command, with or without arguments, executed in the background using &.

  - **Example**: firefox &
  - **Details**: In this case, Shell executes the command and return immediately, not blocking until the command finishes.
  - **Concepts**: Background execution, signals, signal handlers, processes and asynchronous execution.

```
semsem@shell™ -> firefox &
semsem@shell™ -> ls -l
total 40
drwxr-xr-x 3 smsm smsm 4096 ٹ23 07:23 bin
-rw-r--r-- 1 smsm smsm   20 ٹ24 16:40 file.txt
-rw-r--r-- 1 smsm smsm  504 ٹ26 19:12 log.txt
-rw-r--r-- 1 smsm smsm 5244 ٹ26 19:07 main.cpp
drwxr-xr-x 3 smsm smsm 4096 ٹ23 07:23 obj
-rw-rw-r-- 1 smsm smsm 1071 ٹ23 07:21 simple_shell.cbp
-rw-rw-r-- 1 smsm smsm  199 ٹ25 19:55 simple_shell.depend
-rw-rw-r-- 1 smsm smsm  408 ٹ25 21:35 simple_shell.layout
drwxr-xr-x 2 smsm smsm 4096 ٹ25 19:56 smsom
semsem@shell™ -> 
```