Assignment 1: Design

October 18th - Fall Quarter - 2017

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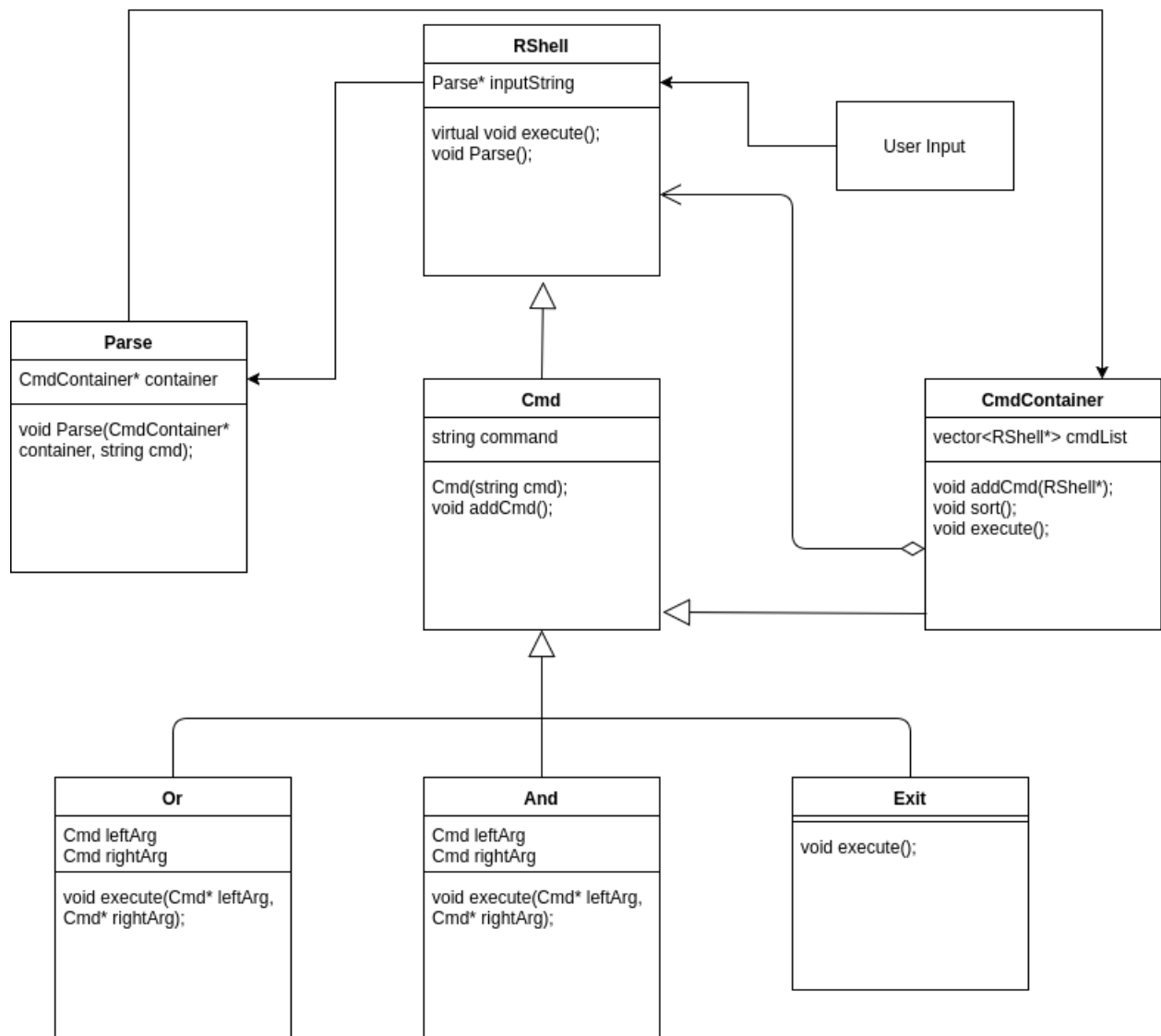
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Introduction

For assignment two, we will be designing the first few functions of our own functional shell environment. It will print out a command prompt and parse the command line. We will use syscalls and include functions such as exit, ls, and mkdir by using class inheritance.

Diagram

Classes/Class Groups

For our design, we will implement many different classes and class groups.

- R'shell, Parse, and CmdContainer are classes associated with one another.
- <u>R'shell</u> contains the virtual version of execute, which is used in other classes.
- <u>Parse</u> will parse the command line strings as well as contain commands and return the results in a CmdContainer.
- <u>CmdContainer</u> stores Cmd class instances. CmdContainer will take the individual commands and begin executing them in order.
- There is the command group Cmd, Or, And, and Exit.
  - The base class is Cmd, which takes in a string cmd.
  - The Or, And, Exit are inherited classes from Cmd, which all use the exit function.
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Coding Strategy

We will split teamwork by giving portions of class development to each other. Josh will handle implementing the Cmd class and the children under it, while Carlos will develop the Parse class which will return items in a CmdContainer. We will communicate what function and header files we are currently working on. We will put it all together by coordinating commits and building every night with test cases to show that the work is functional. We will get together weekly as well to manage our merges and all of the errors that come along with it.

Roadblocks

Roadblocks that we will encounter will be our ability to parse the input string and create the different commands. Parsing effectively will be difficult and especially with the use of ANDs and ORs. Figuring out our system calls will provide a roadblock for the Cmd class. Using system calls would be of a great use to help us out in finishing the RShell. Some roadblocks that may be encountered will include expanding our design to increase functionality. Other roadblocks may be implementation problems, and other small bugs.