# **NodeJS Developer Internship at Atri Labs**

Assignment deadline: December 5

## **About the company**

Atri Labs is a New-York based early-stage startup. It has been co-founded by graduate school dropouts of MIT and Columbia University. We are creating a new full-stack web development framework to build Progressive Web Apps.

## **Before starting the assignment**

1. Visit our GitHub repository to get acquainted with the full-stack framework you will be using in this assignment: <https://github.com/Atri-Labs/atrilabs-engine>

If you like what we are building, please support us by giving us a ⭐star on GitHub. It helps us in getting in front of more open-source contributors.

## **Assignment**

You have to create a bash like shell. When the shell is started, it should have default working directory set to user’s home directory. The term spawned process refers to the child processes created by the shell.js that you are going to write as part of this assignment.

**In this shell, following command must work**

1. **cd <directory\_name>** -Should work same as bash shell.
2. **pwd** - Prints current working directory.
3. **ls <directory\_name>** - Should work same as bash shell. Support for flags is not required.
4. **<path\_to\_binary> <args>-** When path to a binary is provided, that binary should be spawned as a child process. The binary must receive all the arguments passed as space separated like arg1 arg2 ….
5. **fg <pid>** - Brings the background process with process id <pid> to foreground.
6. **exit** - Closes the shell.

**Following key combination should work the same as in shell:**

1. **Ctrl + C** - Sends a SIGINT to the spawned process.
2. **Ctril + Z** - Sends spawned process that is currently in foreground to the background. Prints it’s pid after setting the current process as background process.

Shell must start with the following command:

```

> node shell.js

```

**Test cases:**

1. `<path\_to\_node> app.js` - Should run a NodeJS script named app.js in the current working directory of the app.

**Guidelines:**

1. Taking reference from anywhere on the internet or any book is allowed, however, you must cite them in the README.md file of your repo.
2. Submit your github repository. The root of the repository must have the entry file called `shell.js`.

**Relevant Concepts:**

1. Process
2. Thread
3. Inter process communication

## **Judging criteria**

Almost everything you need to complete this assignment is included in this Google doc or linked here. We will judge you on how well you are at following items:

* Understanding of processes
* Understanding of threads
* Understanding of inter process communication
* Understanding of shell
* Code quality in NodeJS

**Assignment completed. What next?**

1. Upload your assignment solution to your GitHub.
2. Submit your repo link by filling [this Google Form](https://docs.google.com/forms/d/e/1FAIpQLSei8TsCPoaOYCdT5NHBAc6SOsAyaWmfc3QsVe6VQj4uh0-hew/viewform?usp=sf_link)

**Want to contribute to open-source?**

- Let us know if you have any feedback for us (any feature request, suggestions for improving developer experience, etc.). We can add you as an open-source contributor for sharing a new idea. 😊

- You can find all other ways of contributing here: <https://github.com/Atri-Labs/atrilabs-engine#how-to-contribute>