CodeRunner

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CodeRunner

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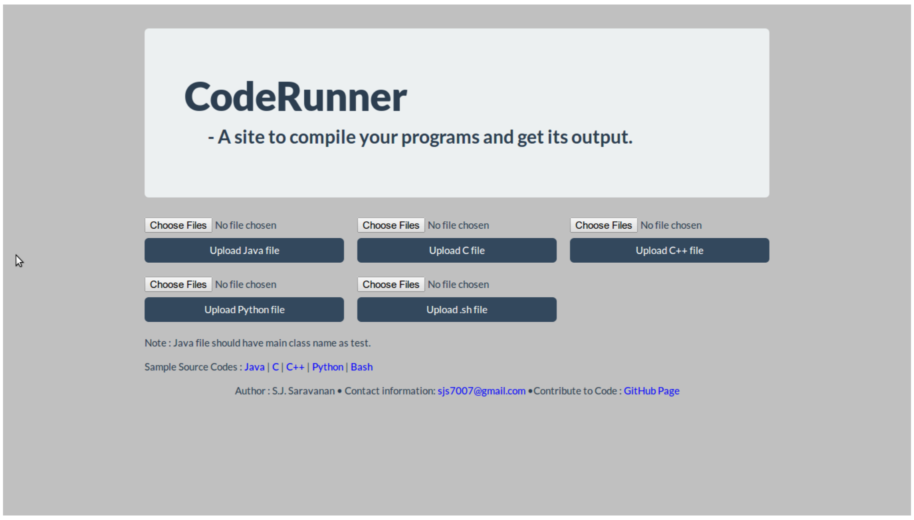

CodeRunner

- A site to compile your programs and get its output.

Choose Files No file chosen
Upload Java file
Choose Files No file chosen
Upload C file
Choose Files No file chosen
Upload C++ file
Choose Files No file chosen
Upload Python file
Choose Files No file chosen
Upload .sh file

Note : Java file should have main class name as test.

Sample Source Codes : Java | C | C++ | Python | Bash

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Class : TE - 3

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Part I

CODERUNNER

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INTRODUCTION

1.1 WHAT IS IT?

CodeRunner is a web application made using Node.js,Bootstrap and Html that allows you to compile your programs on the cloud and get it's output back on the browser. Currently it has support for the following languages :

- Java
- Python
- C
- C++
- Shell Script

This project has been Open Sourced and all it's code is available here : https://github.com/sjs7007/CodeRunner
The web application has also been deployed online at this url : http://agile-atoll-2083.herokuapp.com/

1.2 WHY USE IT?

The inspiration behind CodeRunner is to be able to compile and run your programs from anywhere as long as you have a browser and a text editor. This can come especially in handy when you don't have access to a compiler and a computer and want to make changes to your program and test out something quickly from devices that are typically not used for programming, like a tablet/mobile phone.

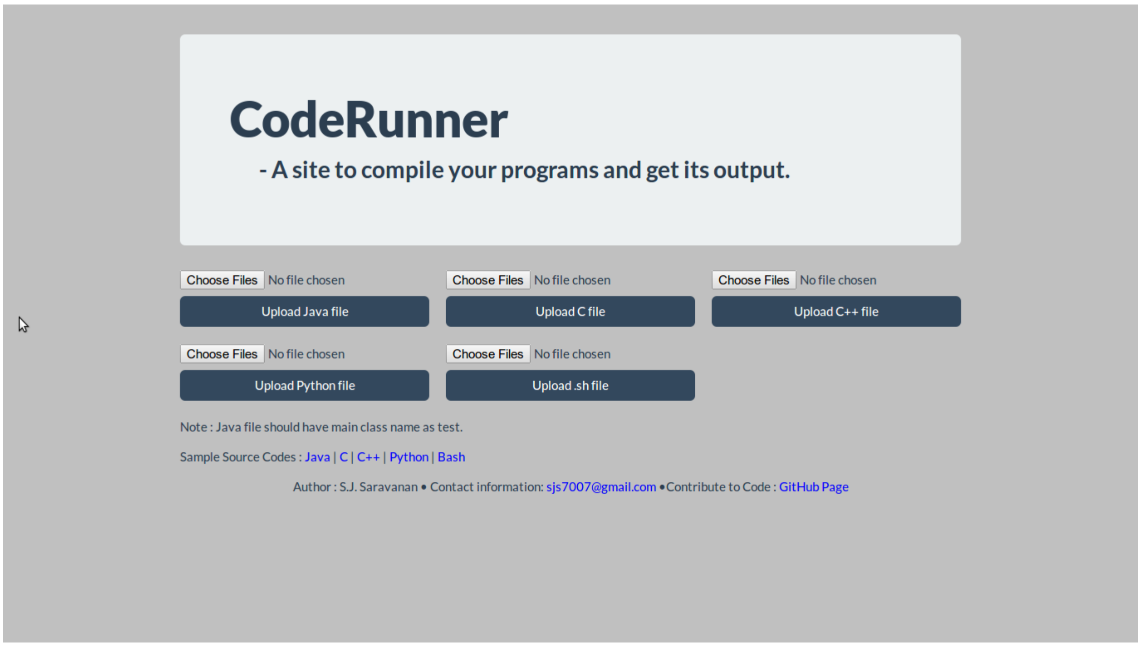

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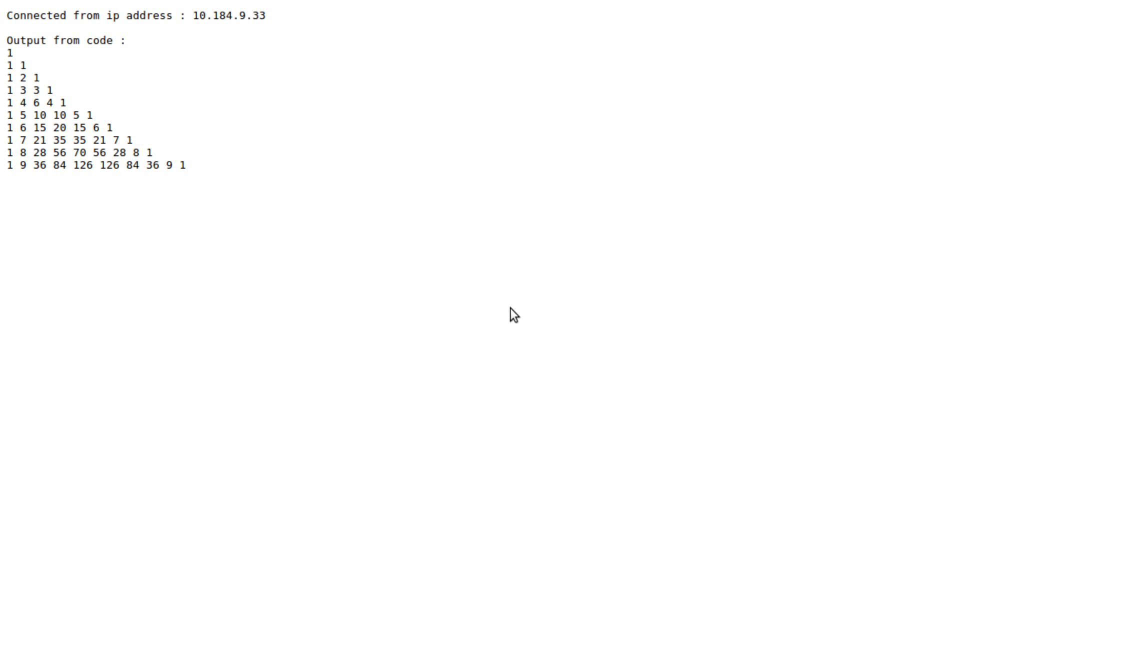
Figure 1.: Home page of the site



```
Connected from ip address : 10.184.9.33

Output from code :
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
1 5 10 10 5 1
1 6 15 20 15 6 1
1 7 21 35 35 21 7 1
1 8 28 56 70 56 28 8 1
1 9 36 84 126 126 84 36 9 1
```

Figure 2.: Output page for a Pascal's triangle C program

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MAKING OF CODERUNNER

The web application can broadly be divided into two parts : the front end and the back end. The back end(server side) code is implemented using Node.js and deployed on Heroku(a PaaS platform). The front end is implemented using basic html along with Bootstrap for improving it's looks.

The code is deployed to Heroku using Git. A brief introduction to the various languages and services used for the project is given in the further sections.

2.1 NODE.JS

Node.js is a software platform that is used to build scalable network (especially server-side) applications. Node.js utilizes JavaScript as its scripting language, and achieves high throughput via non-blocking I/O and a single-threaded event loop. Node.js contains a built-in HTTP server library, making it possible to run a web server without the use of external software, such as Apache or Lighttpd, and allowing more control of how the web server works.

2.2 HEROKU

Heroku is a cloud platform as a service (PaaS) supporting several programming languages. Heroku was acquired by Salesforce.com in 2010. Heroku, one of the first cloud platforms, has been in development since June 2007, when it supported only the Ruby programming language, but has since added support for Java, Node.js, Scala, Clojure and Python and (undocumented) PHP and Perl. The base operating system is Debian or, in the newest stack, the Debian-based Ubuntu.

2.3 BOOTSTRAP

Bootstrap is a free collection of tools for creating websites and web applications. It contains HTML and CSS-based design templates for typography, forms, buttons, navigation and other interface components, as well as optional JavaScript extensions. It is the most popular project on GitHub and has been used by NASA and MSNBC among others.

2.4 GIT

Git is a distributed revision control and source code management (SCM) system with an emphasis on speed. Git was initially designed and developed by Linus Torvalds for Linux kernel development in 2005. Based on a recent survey of Eclipse IDE users, Git is reported to have 30 percent adoption as of 2013 Every Git working directory is a full-fledged repository with complete history and full version tracking capabilities, not dependent on network access or a central server. Git is free software distributed under the terms of the GNU General Public License version 2.

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APPLICATION

This application along with being deployed on a webserver can be deployed on the LAN as well. This can be of particular use in Colleges where students can be provided with access to multiple languages irrespective of what OS they are working on and without having the need of an internet connection.

Part II

APPENDIX

A

SOURCE CODE

The web application consists of the following files :

- index.js
- router.js
- server.js
- requestHandlers.js
- index.html

We start the application by running index.js. It will start the server. When the server receives a request, the router gets called. If it is a valid request, it is satisfied using the corresponding handler in the requestHandlers.js file otherwise a 404 error page is shown.The source code of each file is attached at the end.