CSC 413 Project Documentation

Fall 2019

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413.02

https://github.com/csc413-02-spring2020/csc413-p3-clairebear11213

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1 Introduction

1.1 Project Overview

For this project, I created a program that interprets a mock language X into Java. The examples it reads computes the nth Fibonacci number and the nth factorial.

1.2 Technical Overview

For this project, I implemented an interpreter for the mock language X. The interpreter is responsible for processing byte codes that are created from source code files with extension x. The interpreter works with a Virtual Machine to run a program written in X. It reads files with extension x.cod (two sample files are computing the nth Fibonacci number and computing the nth factorial).

1.3 Summary of Work Completed

In the bytecode folder, I added the AddressLabel interface, and the following classes: ArgsCode, BopCode, ByteCode, CallCode, DumpCode, FalseBranchCode, GotoCode, HaltCode, LabelCode, LitCode, LoadCode, PopCode, ReadCode, ReturnCode, StoreCode, WriteCode. I also added to and created additional methods in ByteCodeLoader, Program, RunTimeStack, and VirtualMachine. I did not change CodeTable nor Interpreter.

2 Development Environment

IntelliJ IDEA Community Edition 2019.2.2

3 How to Build/Import your Project

To import, clone the git repository into IntelliJ (or other IDE).

4 How to Run your Project

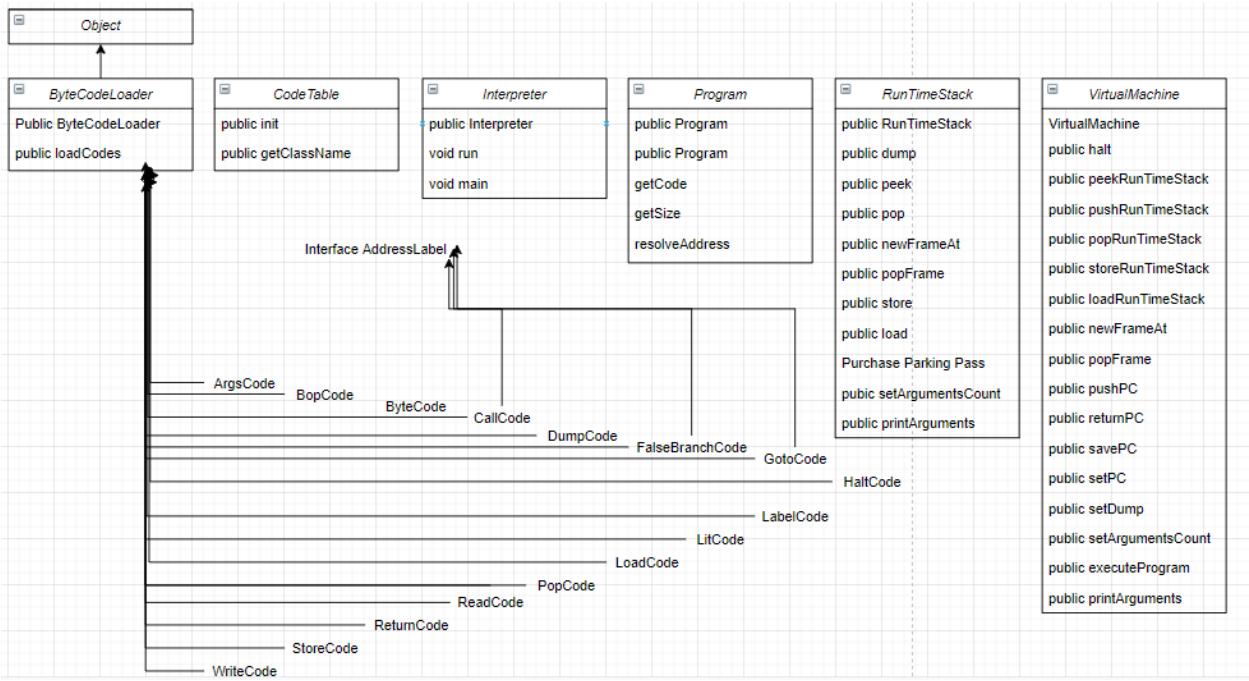
Set the configuration to whichever .x.cod file you wish to test in order to run.

5 Assumption Made

I made assumptions on where to put the Code classes.

6 Implementation Discussion

6.1 Class Diagram



7 Project Reflection

I really struggled with starting this project, and only started to understand it after Googling extensively. I found a similar project that I used as a guideline (note: I did not copy and I hope you do not think I did): https://github.com/blai30/interpreter-java. I did not give myself enough time to complete this project (due to other classwork).

8 Project Conclusion/Results

In conclusion, I did not start early enough, and I relied on Google, rather than the in-class discussions.