Minor Project- Report

Apr 2021-Jul 2021

Course Faculty: Prameetha Pai Course Name & code: System Software 18CS6DCSSW

Semester: 6 Date: 31-08-2021

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| TITLE OF THE PROJECT | One Pass Assembler Implementation | | | |
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| STUDENT NAME | Pollaggari Gnana Pranav Reddy | Prajwal Kumar B R | Prajwal Ponnana | Pratheek M |
| USN | 1DS18CS091 | 1DS18CS092 | 1DS18CS093 | 1DS18CS094 |
| INDIVIDUAL  CONTRIBUTION | Designing and working of the assembler code | Designing and working of the assembler code | Designing and working of the assembler code | Designing and working of the assembler code |
| GUIDE | Prof. Prameetha Pai | | | |
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| PROJECT ABSTRACT : | A single pass assembler scans the program only once and creates the equivalent binary program. The assembler substitutes all of the symbolic instruction with machine code in one pass. The difficult part is to resolve future label references and assembly code in one pass. This problem is known as forward referencing and can be solved without using two pass assemblers. We will be implementing this project using C programming. | | | |
| PLATFORM USED  (H/W & S/W TOOLS TO BE USED | Python ,C, Visual Studio Code, Pycharm, Code Blocks | | | |
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| INTRODUCTION | An assembler is a program that accepts an assembly language program (source) as input and produces its machine language equivalent (object code) along with the information for the loader. There are two types of assemblers, one pass and two pass. In this project we will be dealing with one pass assembler.  Single Pass Assembler:  –Does everything in single pass  –need to resolve the forward referencing  The ability to compile in a single pass is often seen as a benefit because it simplifies the job of writing a compiler and one pass compilers generally compile faster than multi-pass compilers. Many languages were designed so that they could be compiled in a single pass . | | | |
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| DESIGN |  | | | |
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| PROJECT SOURCE CODE LINK (GITHUB/ GOOGLE DRIVE) | [ppo004/onePassAssemblerPython (github.com)](https://github.com/ppo004/onePassAssemblerPython) | | | |
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| CONCLUSION /FUTURE ENHANCEMENT | We have successfully implemented the one pass assembler from scratch in python.  We will work on implementing a GUI to make the assembler much more convenient to use. | | | |
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| UI SCREENSHOTS | Input text file containing source program    Output file containing object program. | | | |