

Lab 3 – Linker/Loader

Linker/Loader Testing Plan

CSE 3903

Spring 2023

Group: Worst Name Ever

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Date of Submission: 04/19/2023

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Introduction

To test the linker/loader, the test was primarily composed of system tests. Since each method serves the purpose of creating the final output file, system tests were chosen to test from edge cases to routine tests.

System tests

Test 1

Prompt	Result
Purpose of the test:	Routine test to check if the linker/loader produces an output for two files with one external symbol.
Start address:	0x3BD0
Input file(s):	<div>Input 1:</div> <pre>HMain 00000002 Next1=1 T00004000X9ext2 T00012000 E0000</pre> <div>Input 2:</div> <pre>HEX1_2 00000002 Next2=1 T00004000X9ext1 T00012000 E0000</pre>
Expected output (explained):	Each modification record is replaced with the external symbol value
Actual output (object file):	<pre>HMain 3BD00004 T3BD041d3 T3BD12000 T3BD241d1 T3BD32000 E3BD0</pre>

Test 2

Prompt	Result
Purpose of the test:	Testing when an external symbol is not defined, but used in the assembly
Start address:	0x3BD0
Input file(s):	<p>Input 1:</p> <pre>HMain 00000002 Next1=1 T00004000X9ext2 T00012000 E0000</pre> <p>Input 2:</p> <pre>HEX1_2 00000002 T00004000 T00012000 E0000</pre>
Expected output (explained):	An error is thrown saying a symbol is not defined
Actual output (object file):	<pre>Error: Symbol "ext2" not defined Exception in thread "main" java.lang.RuntimeException: Linker exit: -1 at lab3_integrated.linker.LinkerApp.cleanAndExit(Li nkerApp.java:77) at lab3_integrated.linker.LinkerApp.main(LinkerApp. java:63)</pre>

Test 3

Prompt	Result
Purpose of the test:	Testing when the text records are more than the page number defined by the IPLA given by the user

Start address:	0x1FE
Input file(s):	<p>Input 1:</p> <pre>HMain 00000007 T00000000X9ext2 T00010000X9ext2 T00020000X9ext2 T00030000X9ext2 T00040000X9ext2 T00050000X9ext2 T00060000X9ext2 E0000</pre> <p>Input 2:</p> <pre>Hnomain00000002 Next2=1 T00004000 T00015000 E0000</pre>
Expected output (explained):	An error thrown saying the program does not fit within a page
Actual output (object file):	<pre>Error: Program must fit in one page, it currently does not. Exception in thread "main" java.lang.RuntimeException: Linker exit: -1 at lab3_integrated.linker.LinkerApp.cleanAndExit(Li nkerApp.java:77) at lab3_integrated.linker.LinkerApp.main(LinkerApp. java:53)</pre>