

SUMMVIII Integration

User's Guide

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Introduction

The Gemini Integration package converts an assembly language program into machine language, converts a relocatable machine language in absolute machine language and runs the machine language. This software was developed by Gemini and is intended for all users who wish to convert SUMMVIII assembly language into SUMMVIII machine language, convert SUMMVIII relocatable machine language into SUMMVIII absolute machine language or run SUMMVIII absolute machine language. It requires the user to have a basic understanding of the SUMMVIII machine.

Quick Guide

1. Place the Integration folder into your Solaris home directory using winscp or equivalent.
2. Go into the Integration directory

```
>> cd Integration
```

3. Move your input file into the src directory
4. To compile the program, type the following command:

```
>> javac *.java
```

5. To start the program, type the following command:

(Note: where it says Lab2EG.txt, substitute with the name of your input file)

```
>> java Pass1 Lab2EG.txt
```

6. The object file Lab2EGObject.txt will appear, now type the following command:

(Note: where it says Lab3EG, substitute with the name of your program)

(Note: if the program is absolute this step can be skipped)

```
>> java Lab3Pass1 Lab2EGObject.txt
```

7. Now type the following command to run your program.

```
>> java Loader object.txt
```

For more in-depth instructions on setting up and running this software, please refer to the sections “Getting Started – Installing the Program” (page 4) and “Running the Program” (page 10).

Getting Started – Installing the Program

Place the Integration folder into your Solaris home directory using winscp.

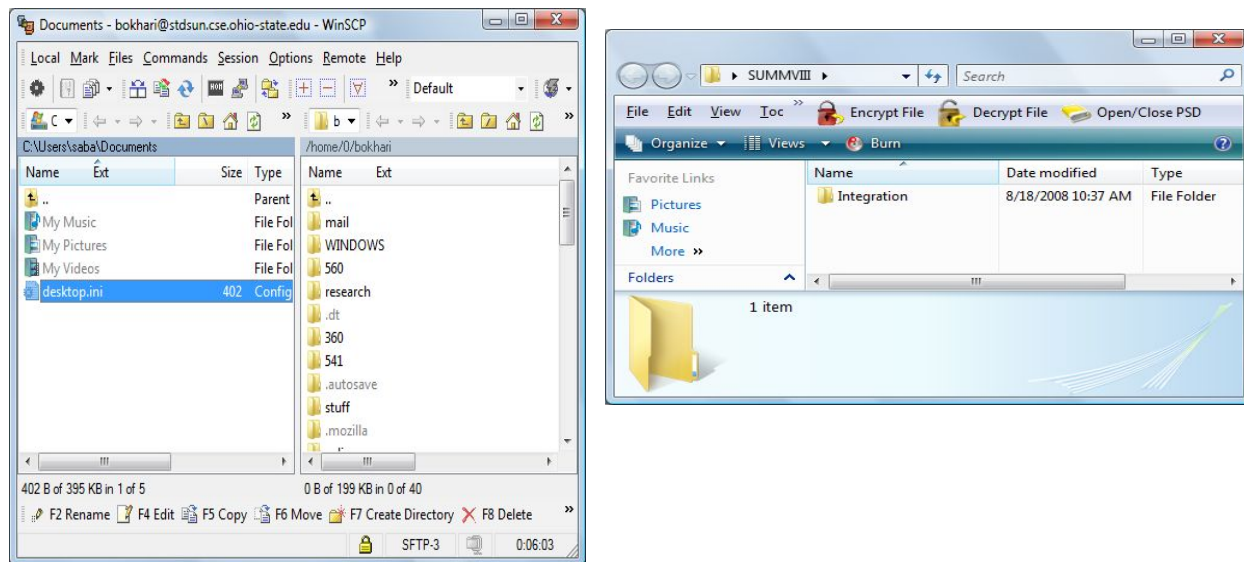


Figure 1: Put Integration into your home directory

For information on how to compile and run the program, refer to the section “Running the Program” (page 10).

Input files:

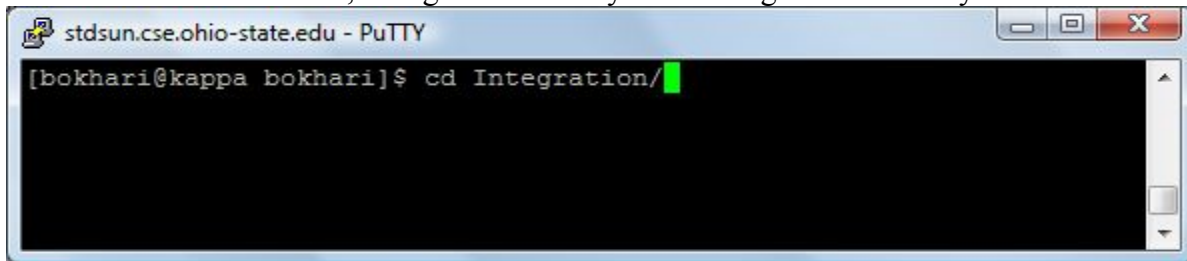
For the description of what to write in the input files for the Assembler see Assembler User's Guide.

For the description of what to write in the input files for Linker/Loader see Linker/Loader User's Guide.

For the description of what to write in the input files for the Simulator see Simulator User's Guide.

Running the Program

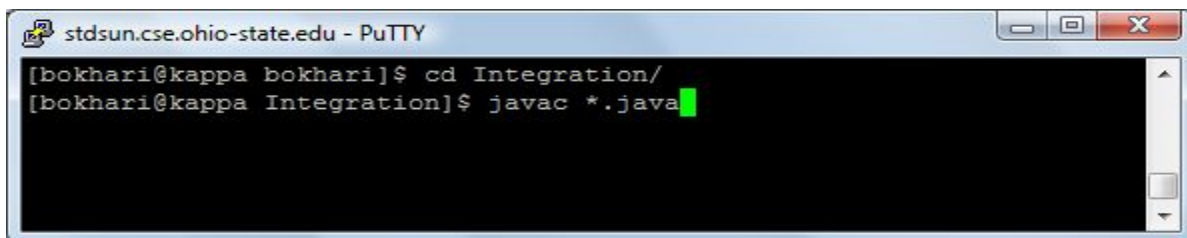
1. In a terminal window, change the directory to the Integration directory as shown.

A screenshot of a PuTTY terminal window titled 'stdsun.cse.ohio-state.edu - PuTTY'. The prompt is '[bokhari@kappa bokhari]\$' and the command 'cd Integration/' has been entered, with a green cursor at the end of the line.

```
stdsun.cse.ohio-state.edu - PuTTY
[bokhari@kappa bokhari]$ cd Integration/
```

Figure 2: *Change Directory*

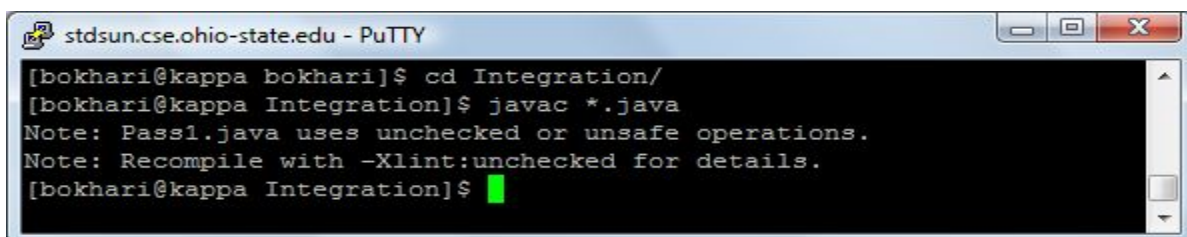
2. To compile the program type `javac *.java`

A screenshot of a PuTTY terminal window titled 'stdsun.cse.ohio-state.edu - PuTTY'. The prompt is '[bokhari@kappa Integration]\$' and the command 'javac *.java' has been entered, with a green cursor at the end of the line.

```
stdsun.cse.ohio-state.edu - PuTTY
[bokhari@kappa Integration]$ javac *.java
```

Figure 3: *Compile Program*

3. The following errors may appear, please ignore them

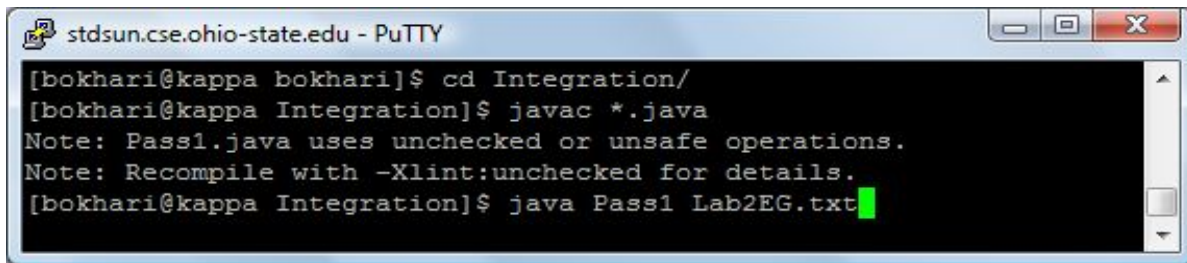
A screenshot of a PuTTY terminal window titled 'stdsun.cse.ohio-state.edu - PuTTY'. It shows the previous command and two compiler warnings from the Java compiler. The prompt is '[bokhari@kappa Integration]\$' with a green cursor.

```
stdsun.cse.ohio-state.edu - PuTTY
[bokhari@kappa Integration]$ javac *.java
Note: Pass1.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.
[bokhari@kappa Integration]$
```

Figure 4: *Ignore these errors*

4. To run the Assembler type **java Pass1 Lab2EG.txt**

(Note: where it says Lab2EG.txt, substitute with the name of your input file)

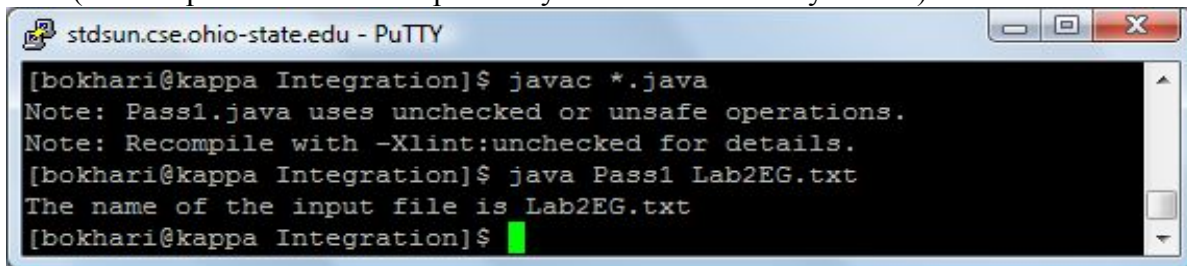


```
stdsun.cse.ohio-state.edu - PuTTY
[bokhari@kappa bokhari]$ cd Integration/
[bokhari@kappa Integration]$ javac *.java
Note: Pass1.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.
[bokhari@kappa Integration]$ java Pass1 Lab2EG.txt
```

Figure 5: Run the Assembler

5. The program will say the “The name of the input file is Lab2EG.txt”

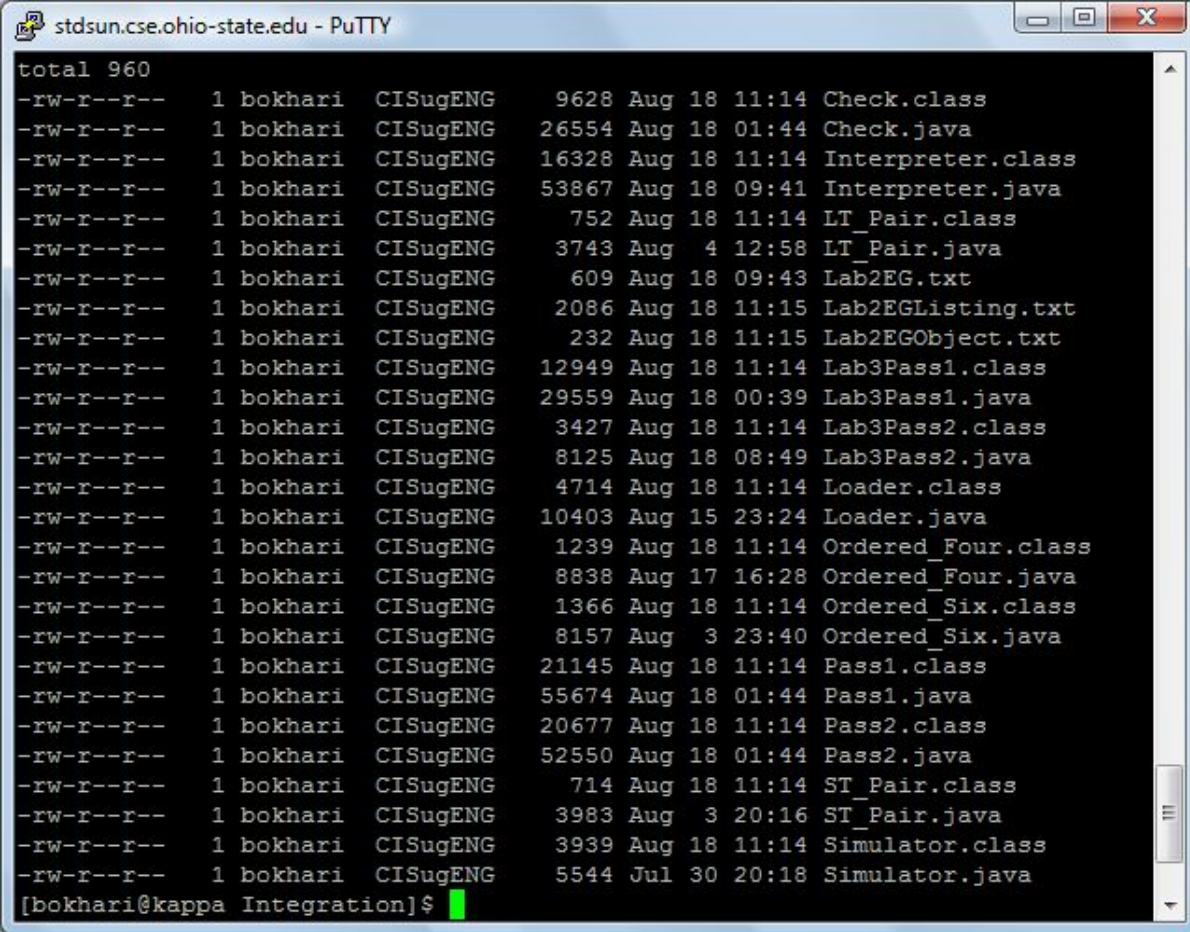
(Note: input.txt should be replaced by the actual name of your file)



```
stdsun.cse.ohio-state.edu - PuTTY
[bokhari@kappa Integration]$ javac *.java
Note: Pass1.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.
[bokhari@kappa Integration]$ java Pass1 Lab2EG.txt
The name of the input file is Lab2EG.txt
[bokhari@kappa Integration]$
```

Figure 6: Show the name of the input file

6. The files Lab2EGobject.txt and Lab2EGlisting.txt will appear in the Integration directory. The file Lab2EGobject.txt will contain the machine code will the file Lab2EGlisting.txt will contain the listing file.
(Note where it says Lab2EG, substitute with the name of your program)



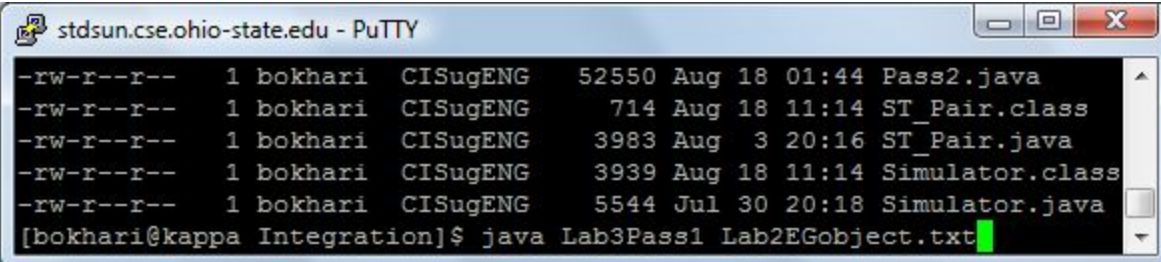
```

stdsun.cse.ohio-state.edu - PuTTY
total 960
-rw-r--r--  1 bokhari  CISugENG   9628 Aug 18 11:14 Check.class
-rw-r--r--  1 bokhari  CISugENG 26554 Aug 18 01:44 Check.java
-rw-r--r--  1 bokhari  CISugENG 16328 Aug 18 11:14 Interpreter.class
-rw-r--r--  1 bokhari  CISugENG 53867 Aug 18 09:41 Interpreter.java
-rw-r--r--  1 bokhari  CISugENG   752 Aug 18 11:14 LT_Pair.class
-rw-r--r--  1 bokhari  CISugENG  3743 Aug  4 12:58 LT_Pair.java
-rw-r--r--  1 bokhari  CISugENG   609 Aug 18 09:43 Lab2EG.txt
-rw-r--r--  1 bokhari  CISugENG  2086 Aug 18 11:15 Lab2EGListing.txt
-rw-r--r--  1 bokhari  CISugENG   232 Aug 18 11:15 Lab2EGObject.txt
-rw-r--r--  1 bokhari  CISugENG 12949 Aug 18 11:14 Lab3Pass1.class
-rw-r--r--  1 bokhari  CISugENG 29559 Aug 18 00:39 Lab3Pass1.java
-rw-r--r--  1 bokhari  CISugENG  3427 Aug 18 11:14 Lab3Pass2.class
-rw-r--r--  1 bokhari  CISugENG  8125 Aug 18 08:49 Lab3Pass2.java
-rw-r--r--  1 bokhari  CISugENG  4714 Aug 18 11:14 Loader.class
-rw-r--r--  1 bokhari  CISugENG 10403 Aug 15 23:24 Loader.java
-rw-r--r--  1 bokhari  CISugENG  1239 Aug 18 11:14 Ordered_Four.class
-rw-r--r--  1 bokhari  CISugENG  8838 Aug 17 16:28 Ordered_Four.java
-rw-r--r--  1 bokhari  CISugENG  1366 Aug 18 11:14 Ordered_Six.class
-rw-r--r--  1 bokhari  CISugENG  8157 Aug  3 23:40 Ordered_Six.java
-rw-r--r--  1 bokhari  CISugENG 21145 Aug 18 11:14 Pass1.class
-rw-r--r--  1 bokhari  CISugENG 55674 Aug 18 01:44 Pass1.java
-rw-r--r--  1 bokhari  CISugENG 20677 Aug 18 11:14 Pass2.class
-rw-r--r--  1 bokhari  CISugENG 52550 Aug 18 01:44 Pass2.java
-rw-r--r--  1 bokhari  CISugENG   714 Aug 18 11:14 ST_Pair.class
-rw-r--r--  1 bokhari  CISugENG  3983 Aug  3 20:16 ST_Pair.java
-rw-r--r--  1 bokhari  CISugENG  3939 Aug 18 11:14 Simulator.class
-rw-r--r--  1 bokhari  CISugENG  5544 Jul 30 20:18 Simulator.java
[bokhari@kappa Integration]$

```

Figure 7: *Lab2EGobject.txt* and *Lab2EGListing.txt* are in the *Integration* directory

7. To run the Linker/Loader type the command `java Lab3Pass1 Lab2EGobject.txt`
 (Note where it says Lab2EG, substitute with the name of your program)
 (Note if the program is absolute this command can be skipped)



```

stdsun.cse.ohio-state.edu - PuTTY
-rw-r--r--  1 bokhari  CISugENG 52550 Aug 18 01:44 Pass2.java
-rw-r--r--  1 bokhari  CISugENG   714 Aug 18 11:14 ST_Pair.class
-rw-r--r--  1 bokhari  CISugENG  3983 Aug  3 20:16 ST_Pair.java
-rw-r--r--  1 bokhari  CISugENG  3939 Aug 18 11:14 Simulator.class
-rw-r--r--  1 bokhari  CISugENG  5544 Jul 30 20:18 Simulator.java
[bokhari@kappa Integration]$ java Lab3Pass1 Lab2EGobject.txt

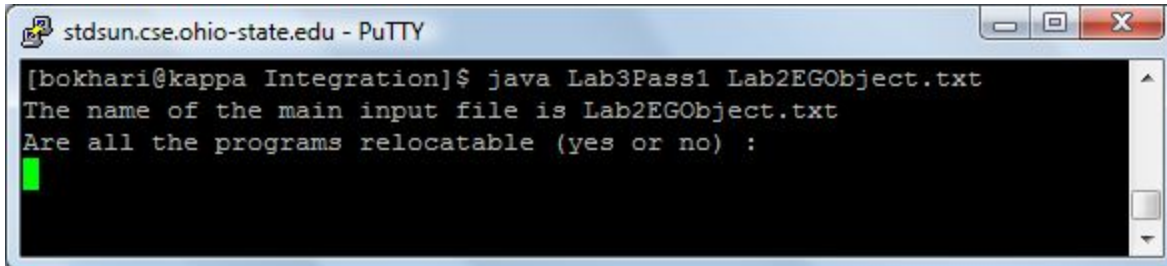
```

Figure 8: *Run the Linker/Loader*

8. The program will say the “The name of the input file is Lab2EGObject.txt” and ask if all the inputted files are relocatable. Please answer accordingly and follow the prompts.

(Note: Lab2EGObject.txt should be replaced by the actual name of your file)

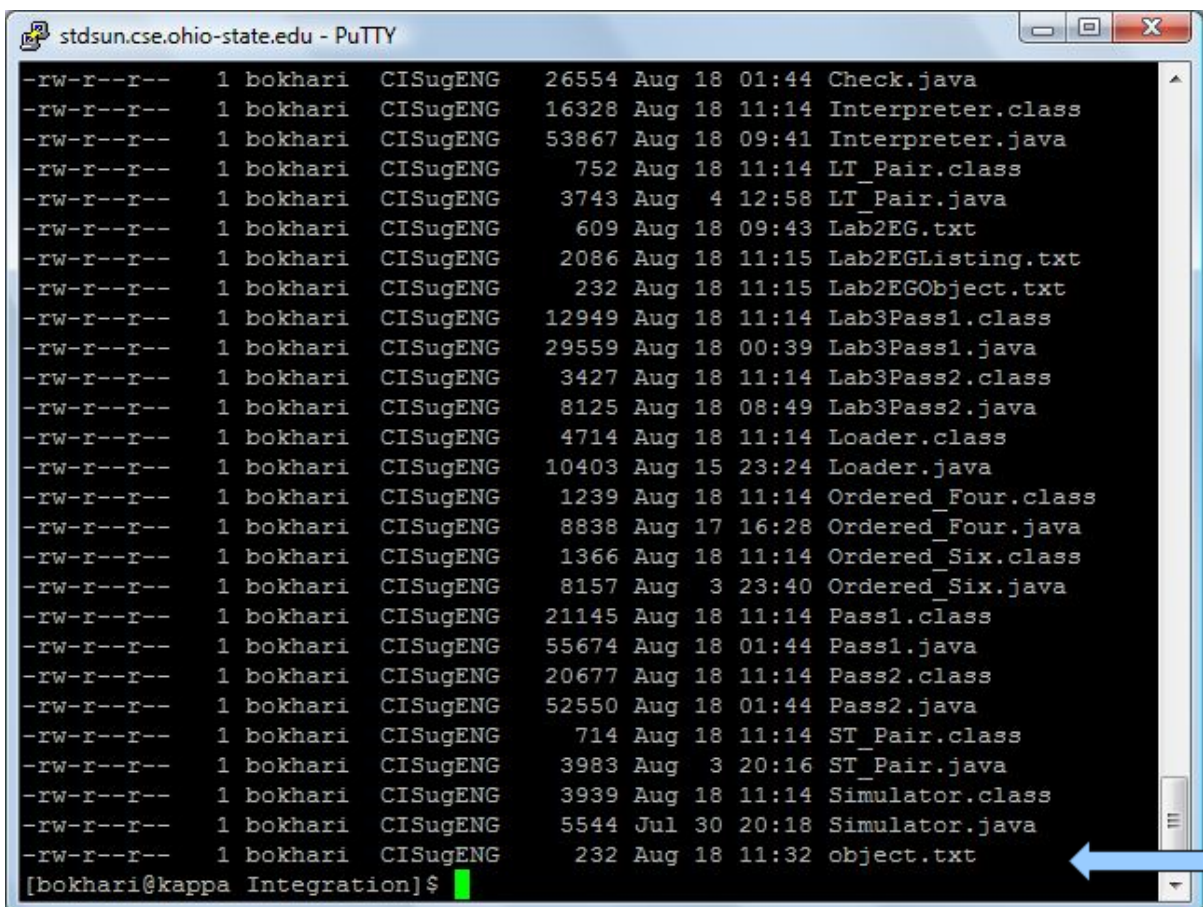
(Note: please see the Linker/Loader Users Guide to see how to follow the prompts)



```
stdsun.cse.ohio-state.edu - PuTTY
[bokhari@kappa Integration]$ java Lab3Pass1 Lab2EGObject.txt
The name of the main input file is Lab2EGObject.txt
Are all the programs relocatable (yes or no) :
█
```

Figure 9: show what the input file is and ask if it is relocatable.

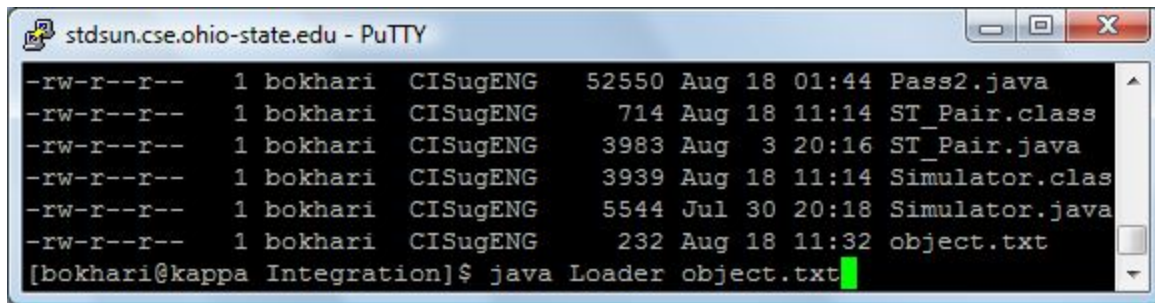
9. After the Linker/Loader is finished, the file object.txt will appear in the integration directory.



```
stdsun.cse.ohio-state.edu - PuTTY
-rw-r--r-- 1 bokhari CISugENG 26554 Aug 18 01:44 Check.java
-rw-r--r-- 1 bokhari CISugENG 16328 Aug 18 11:14 Interpreter.class
-rw-r--r-- 1 bokhari CISugENG 53867 Aug 18 09:41 Interpreter.java
-rw-r--r-- 1 bokhari CISugENG 752 Aug 18 11:14 LT_Pair.class
-rw-r--r-- 1 bokhari CISugENG 3743 Aug 4 12:58 LT_Pair.java
-rw-r--r-- 1 bokhari CISugENG 609 Aug 18 09:43 Lab2EG.txt
-rw-r--r-- 1 bokhari CISugENG 2086 Aug 18 11:15 Lab2EGListing.txt
-rw-r--r-- 1 bokhari CISugENG 232 Aug 18 11:15 Lab2EGObject.txt
-rw-r--r-- 1 bokhari CISugENG 12949 Aug 18 11:14 Lab3Pass1.class
-rw-r--r-- 1 bokhari CISugENG 29559 Aug 18 00:39 Lab3Pass1.java
-rw-r--r-- 1 bokhari CISugENG 3427 Aug 18 11:14 Lab3Pass2.class
-rw-r--r-- 1 bokhari CISugENG 8125 Aug 18 08:49 Lab3Pass2.java
-rw-r--r-- 1 bokhari CISugENG 4714 Aug 18 11:14 Loader.class
-rw-r--r-- 1 bokhari CISugENG 10403 Aug 15 23:24 Loader.java
-rw-r--r-- 1 bokhari CISugENG 1239 Aug 18 11:14 Ordered_Four.class
-rw-r--r-- 1 bokhari CISugENG 8838 Aug 17 16:28 Ordered_Four.java
-rw-r--r-- 1 bokhari CISugENG 1366 Aug 18 11:14 Ordered_Six.class
-rw-r--r-- 1 bokhari CISugENG 8157 Aug 3 23:40 Ordered_Six.java
-rw-r--r-- 1 bokhari CISugENG 21145 Aug 18 11:14 Pass1.class
-rw-r--r-- 1 bokhari CISugENG 55674 Aug 18 01:44 Pass1.java
-rw-r--r-- 1 bokhari CISugENG 20677 Aug 18 11:14 Pass2.class
-rw-r--r-- 1 bokhari CISugENG 52550 Aug 18 01:44 Pass2.java
-rw-r--r-- 1 bokhari CISugENG 714 Aug 18 11:14 ST_Pair.class
-rw-r--r-- 1 bokhari CISugENG 3983 Aug 3 20:16 ST_Pair.java
-rw-r--r-- 1 bokhari CISugENG 3939 Aug 18 11:14 Simulator.class
-rw-r--r-- 1 bokhari CISugENG 5544 Jul 30 20:18 Simulator.java
-rw-r--r-- 1 bokhari CISugENG 232 Aug 18 11:32 object.txt
[bokhari@kappa Integration]$ █
```

Figure 10: object.txt is in the Integration directory

10. To run the Simulator type the command `java Loader object.txt`



The screenshot shows a PuTTY terminal window titled "stdsun.cse.ohio-state.edu - PuTTY". The terminal displays a file listing with permissions, user, group, size, date, time, and filename. The files listed are Pass2.java, ST_Pair.class, ST_Pair.java, Simulator.clas, Simulator.java, and object.txt. Below the listing, the command `[bokhari@kappa Integration]$ java Loader object.txt` is entered, with a green cursor at the end of the command.

```
stdsun.cse.ohio-state.edu - PuTTY
-rw-r--r--  1 bokhari  CISugENG  52550 Aug 18 01:44 Pass2.java
-rw-r--r--  1 bokhari  CISugENG   714 Aug 18 11:14 ST_Pair.class
-rw-r--r--  1 bokhari  CISugENG  3983 Aug  3 20:16 ST_Pair.java
-rw-r--r--  1 bokhari  CISugENG  3939 Aug 18 11:14 Simulator.clas
-rw-r--r--  1 bokhari  CISugENG  5544 Jul 30 20:18 Simulator.java
-rw-r--r--  1 bokhari  CISugENG   232 Aug 18 11:32 object.txt
[bokhari@kappa Integration]$ java Loader object.txt
```

Figure 11: Run the Simulator

11. Follow the prompts given, please refer to the Simulator User's Guide for more information.