


MIPS Simulator - MARS

1

1

Download MARS

- <https://courses.missouristate.edu/KenVollmar/mars/download.htm>

 Mars4_5.jar

Make sure you have installed
JDK for running .jar file.



2

Download OpenJDK

- <https://www.azul.com/downloads/?package=jdk>
(Recommend)



- <https://jdk.java.net/>

OpenJDK JDK 18.0.1.1 General-Availability Release

This page provides production-ready open-source builds of the Java Development Kit, version 18, an implementation of the Java SE 18 Platform under the GNU General Public License, version 2, with the Classpath Exception.

Commercial builds of JDK 18.0.1.1 from Oracle, under a non-open-source license, can be found at the Oracle Technology Network.

Documentation

- Features
- Release notes
- API Javadoc

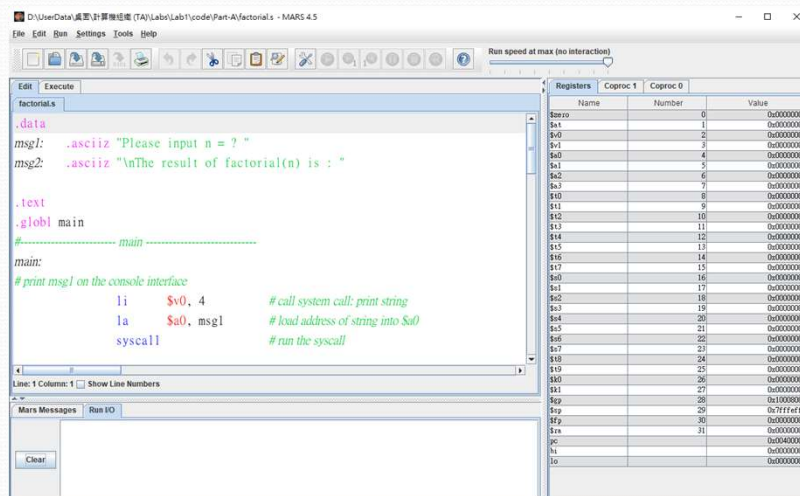
Buils

Linux/AArch64	tar.gz (sha256)	187052695 bytes
Linux/x64	tar.gz (sha256)	188244346
macOS/AArch64	tar.gz (sha256)	183267676
macOS/x64	tar.gz (sha256)	185423668
Windows/x64	zip (sha256)	187769502

3

3

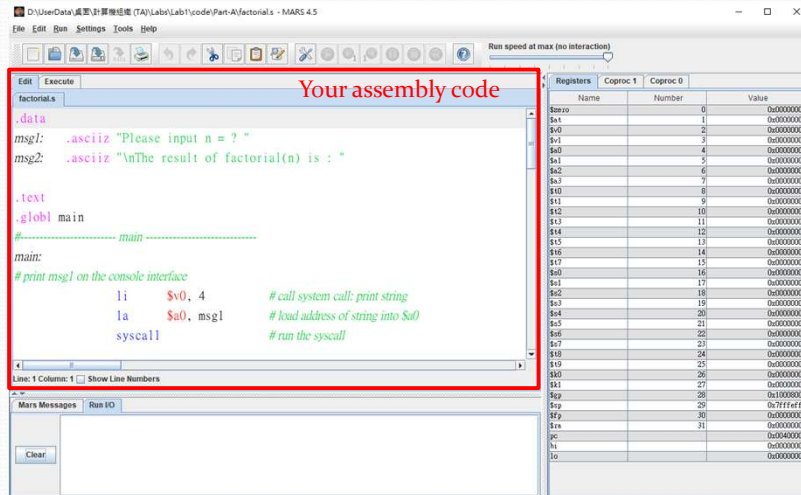
GUI of MARS



4

4

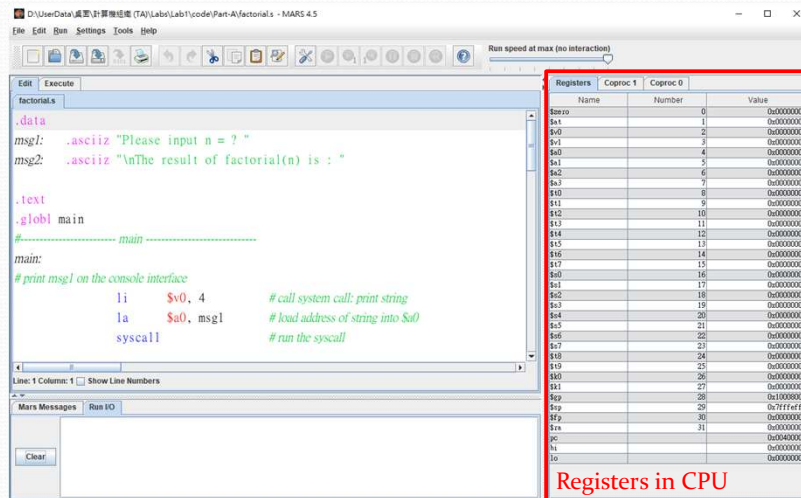
GUI of MARS - Edit Section



5

5

GUI of MARS - Register Section

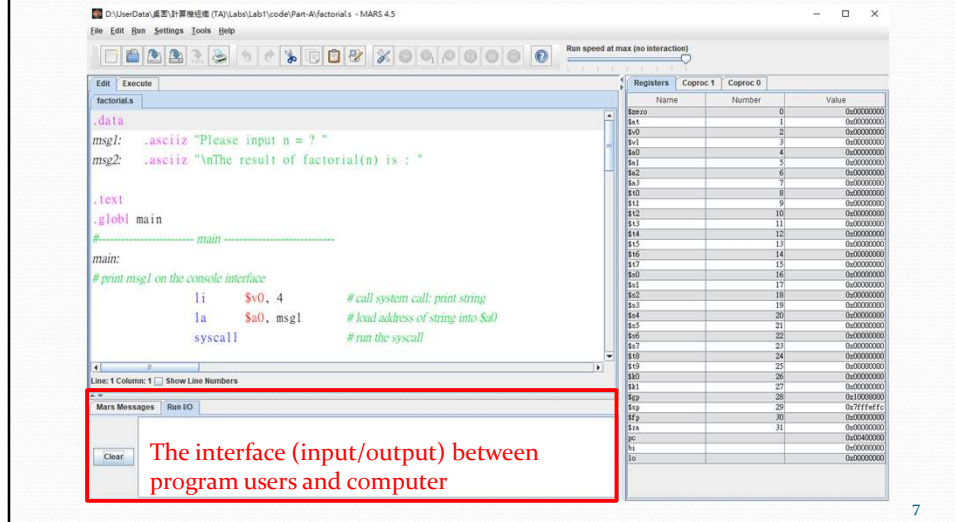


Registers in CPU

6

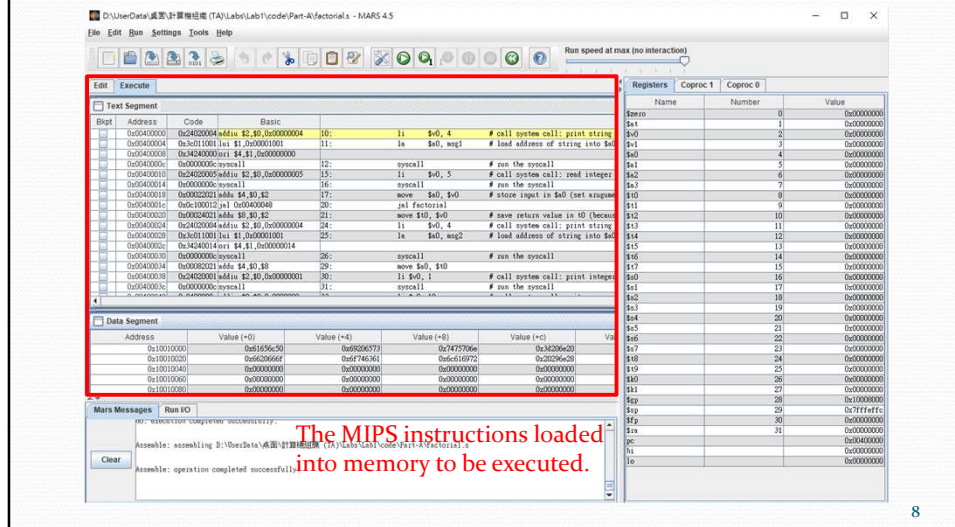
6

GUI of MARS – Run I/O Section



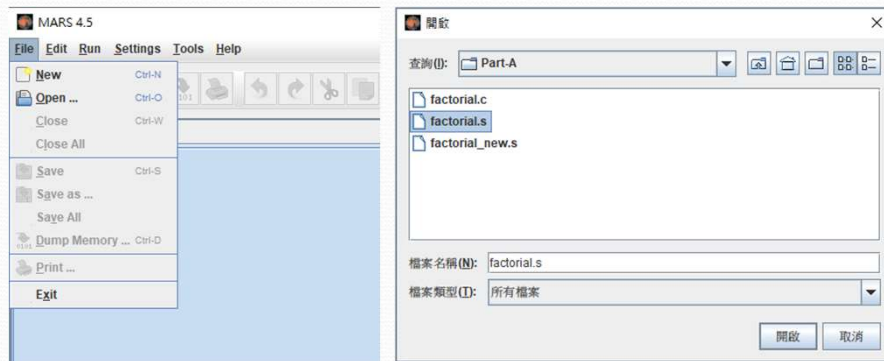
7

GUI of MARS - Execute Section



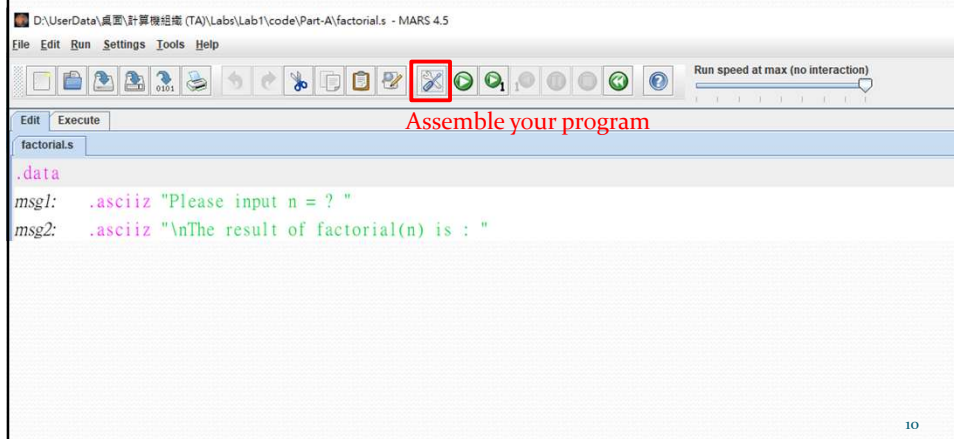
8

Load File



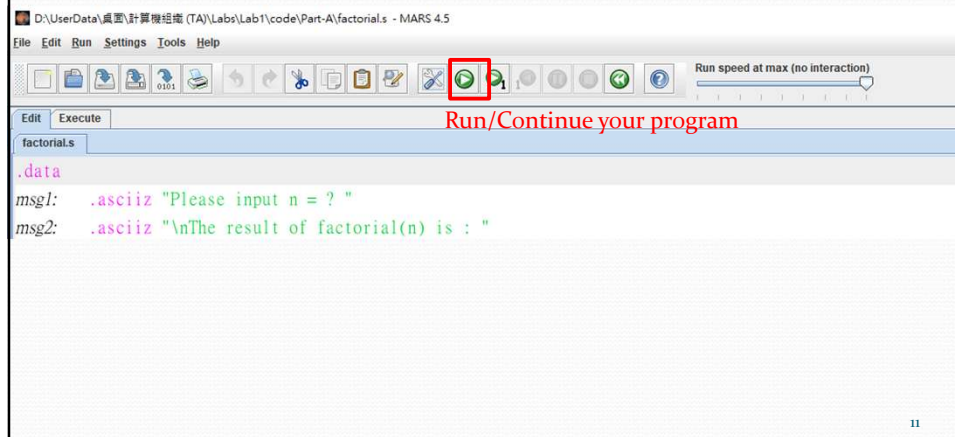
9

Run MIPS code

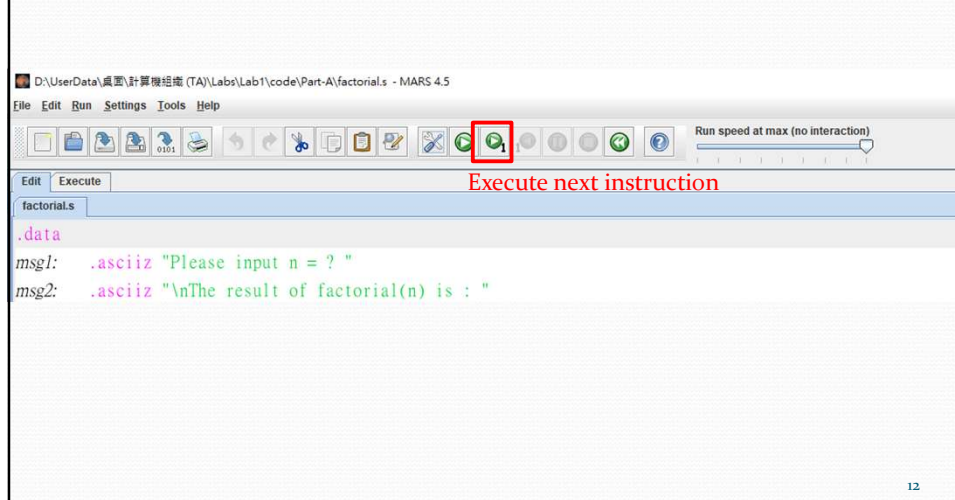


10

Run MIPS code



Run MIPS code



Set Breakpoints

Mark the "Bkpt" of a specific memory address to set a breakpoint.

Run your program, then it will stop at the breakpoints you set.

Edit		Execute	
Text Segment			
Bkpt	Address	Code	Basic
<input type="checkbox"/>	0x00400000	0x24020004 addiu \$2,\$0,0x00000004	10: li \$v0, 4
<input type="checkbox"/>	0x00400004	0x3c011001 lui \$1,0x00001001	11: la \$a0, msg1
<input type="checkbox"/>	0x00400008	0x34240000 ori \$4,\$1,0x00000000	
<input type="checkbox"/>	0x0040000c	0x0000000c syscall	12: syscall
<input type="checkbox"/>	0x00400010	0x24020005 addiu \$2,\$0,0x00000005	15: li \$v0, 5
<input type="checkbox"/>	0x00400014	0x0000000c syscall	16: syscall
<input type="checkbox"/>	0x00400018	0x00022021 addu \$4,\$0,\$2	17: move \$a0, \$v0
<input checked="" type="checkbox"/>	0x0040001c	0x0c100012 jal 0x00400048	20: jal factorial
<input type="checkbox"/>	0x00400020	0x00024021 addu \$8,\$0,\$2	21: move \$t0, \$v0
<input type="checkbox"/>	0x00400024	0x24020004 addiu \$2,\$0,0x00000004	24: li \$v0, 4
<input type="checkbox"/>	0x00400028	0x3c011001 lui \$1,0x00001001	25: la \$a0, msg2
<input type="checkbox"/>	0x0040002c	0x34240014 ori \$4,\$1,0x00000014	
<input type="checkbox"/>	0x00400030	0x0000000c syscall	26: syscall
<input type="checkbox"/>	0x00400034	0x00082021 addu \$4,\$0,\$8	29: move \$a0, \$t0
<input type="checkbox"/>	0x00400038	0x24020001 addiu \$2,\$0,0x00000001	30: li \$v0, 1
<input type="checkbox"/>	0x0040003c	0x0000000c syscall	31: syscall
<input type="checkbox"/>	0x00400040	0x2402000a addiu \$2,\$0,0x0000000a	33: li \$v0, 10
<input type="checkbox"/>	0x00400044	0x0000000c syscall	34: syscall
<input type="checkbox"/>	0x00400048	0x23bffff8 addi \$29,\$29,0xfffffff8	39: factorial: addi \$sp,\$sp,-8
<input type="checkbox"/>	0x0040004c	0xafbf0004 sw \$31,0x00000004(\$29)	40: sw \$ra, 4(\$sp)
<input type="checkbox"/>	0x00400050	0xafaf4000 sw \$4,0x00000000(\$29)	41: sw \$a0, 0(\$sp)