

MIPS Environment Setup

Install QtSpim MIPS Simulator

- (1) Goto: <http://spimsimulator.sourceforge.net/>
Press "Download Spim"
Download the latest version listed for your computer.
(If you have issues, try to install an older version.)
- (2) Upon launch, you should see this interface:

```
QtSpim
File Simulator Registers Text Segment Data Segment Window Help

Int Regs [16]
PC = 0
EPC = 0
Cause = 0
BadVAddr = 0
Status = 3000ff10
HI = 0
LO = 0
R0 [r0] = 0
R1 [at] = 0
R2 [v0] = 0
R3 [v1] = 0
R4 [a0] = 1
R5 [a1] = 7ffff17c
R6 [a2] = 7ffff184
R7 [a3] = 0
R8 [t0] = 0
R9 [t1] = 0
R10 [t2] = 0
R11 [t3] = 0
R12 [t4] = 0
R13 [t5] = 0
R14 [t6] = 0
R15 [t7] = 0
R16 [s0] = 0
R17 [s1] = 0
R18 [s2] = 0
R19 [s3] = 0
R20 [s4] = 0

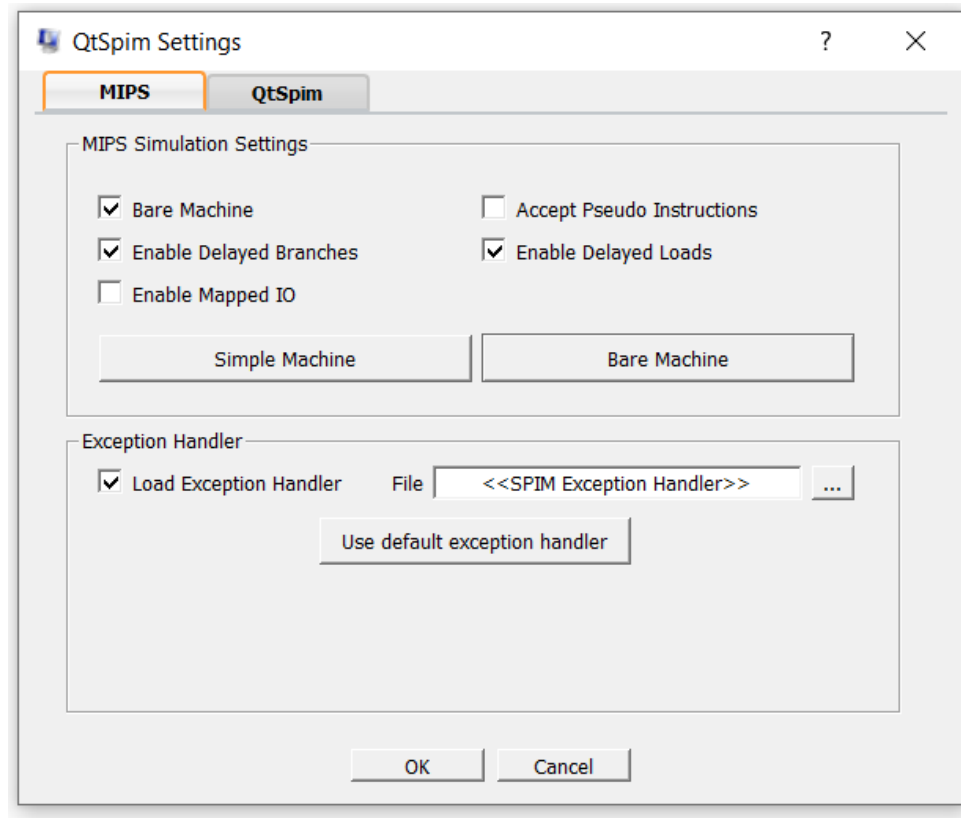
Text
User Text Segment [00400000]..[00440000]
[00400000] 8fa40000 lw $4, 0($29) ; 183: lw $a0 0($sp) # argc
[00400004] 27a50004 addiu $5, $29, 4 ; 184: addiu $a1 $sp 4 # argv
[00400008] 24a60004 addiu $6, $5, 4 ; 185: addiu $a2 $a1 4 # envp
[0040000c] 00041080 sll $2, $4, 2 ; 186: sll $v0 $a0 2
[00400010] 00c23021 addu $6, $6, $2 ; 187: addu $a2 $a2 $v0
[00400014] 0c000000 jal 0x00000000 [main] ; 188: jal main
[00400018] 00000000 nop ; 189: nop
[0040001c] 3402000a ori $2, $0, 10 ; 191: li $v0 10
[00400020] 0000000c syscall ; 192: syscall # syscall 10
(exit)

Kernel Text Segment [80000000]..[80010000]
[80000180] 0001d821 addu $27, $0, $1 ; 90: move $k1 $at # Save $at
[80000184] 3c019000 lui $1, -28672 ; 92: sw $v0 $1 # Not re-
entrant and we can't trust $sp
[80000188] ac220200 sw $2, 512($1) ; 93: sw $a0 $2 # But we need
[8000018c] 3c019000 lui $1, -28672 ; 95: mfc0 $k0 $13 # Cause
to use these registers ; 96: srl $a0 $k0 2 # Extract
[80000190] ac240204 sw $4, 516($1) ; 97: andi $a0 $a0 0x1f
[80000194] 401a6800 mfc0 $26, $13 ; 101: li $v0 4 # syscall 4
register ; 102: la $a0 __m1_
[80000198] 001a2082 srl $4, $26, 2 ; 103: syscall
[8000019c] 3084001f andi $4, $4, 31 ; 105: li $v0 1 # syscall 1
[800001a0] 34020004 ori $2, $0, 4
(print_str)
[800001a4] 3c049000 lui $4, -28672 [__m1_]
[800001a8] 0000000c syscall
[800001ac] 34020001 ori $2, $0, 1

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See the file README for a full copyright notice.
QtSPIM is linked to the Qt library, which is distributed under the GNU Lesser General Public License version 3 and version 2.1.
```

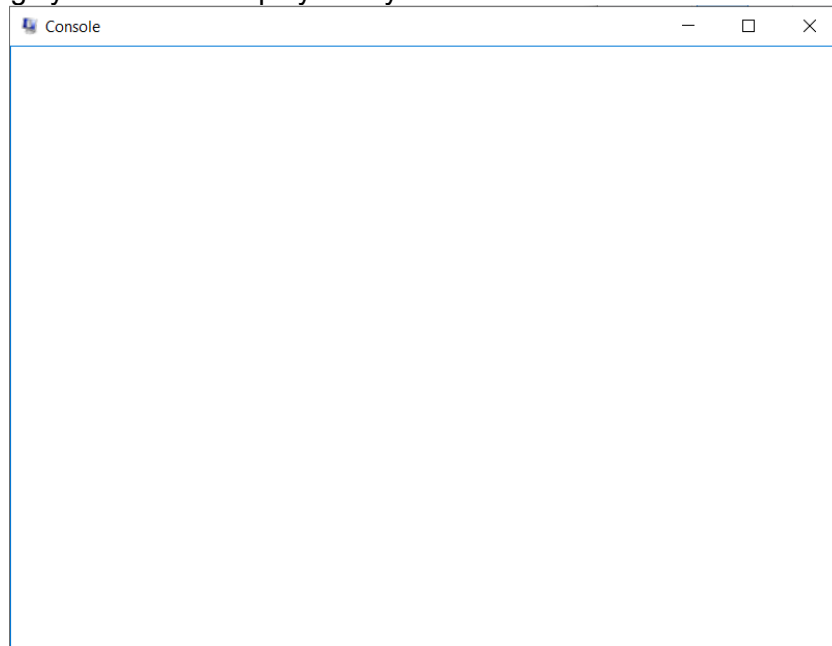
Configuration

From the menus, choose Simulator -> Settings, choose the MIPS tab and click on "Bare Machine", "Enable Delayed Branches", "Enable Delayed Loads" This is the configuration we will be using throughout the course.

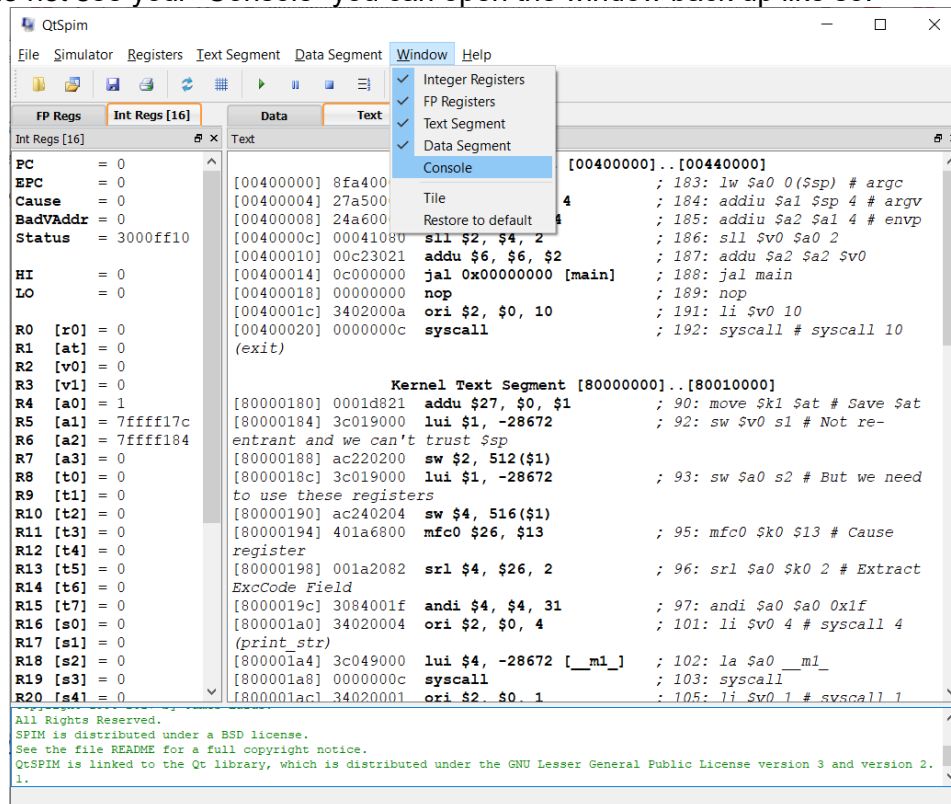


Using QtSpim

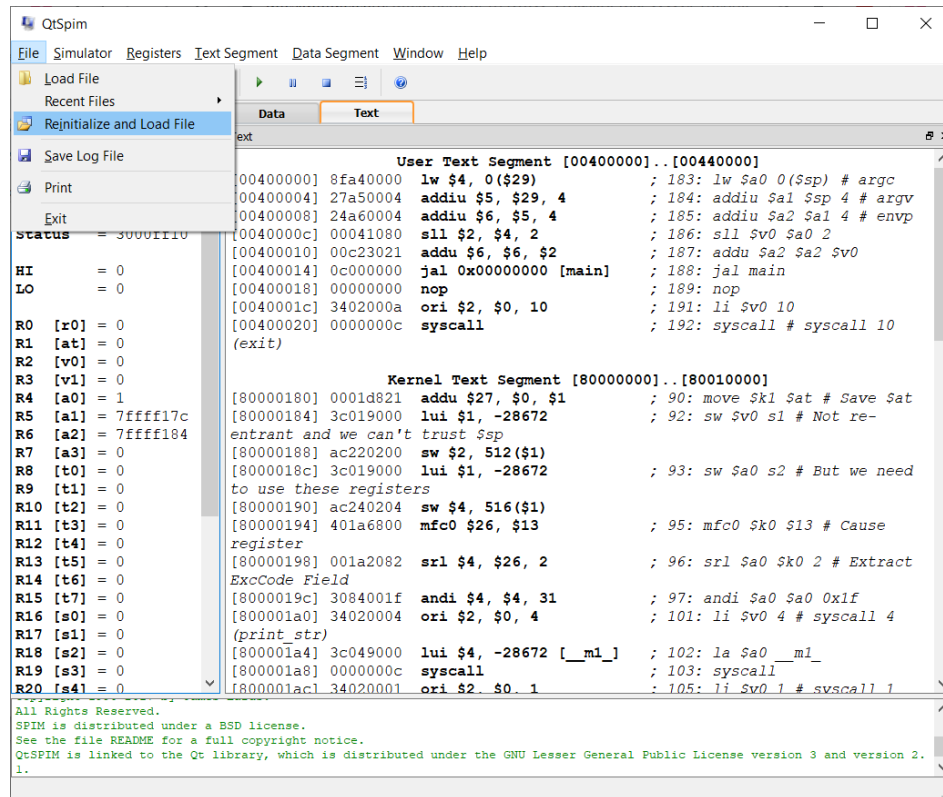
(1) Outputs using syscall will be displayed in your “Console” window.



(2) If you do not see your “Console” you can open the window back up like so:



(3) In order to run files, you must be sure to “reinitialize and load file” from your directory. Files must be in “.s” format.



(4) Then you hit the play button to run your code.

