

Day-1 (Workshop MYTH-2025): RIS-V ISA Architecture (C-Program)

File Name: sum1ton.c

```
#include <stdio.h>

int main() {
int i, sum = 0, n = 100;
for (i=1; i<=n; i++) {
    sum += i;
}
printf("sum of numbers from 1 to %d is %d\n", n, sum);
return 0;
}
```

Command Window Task & Execution Status (Terminal-1):

```
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
gcc sum1ton.c
sum1ton.c:1:10: fatal error: stdio.com: No such file or directory
#include <stdio.com>
      ^~~~~~
compilation terminated.
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
gcc sum1ton.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
ls
a.out sum1ton.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
.ls
```

Command '.ls' not found, did you mean:

- command 'rls' from snap rustup (1.27.1)
- command 'als' from deb atool
- command 'ls' from deb coreutils
- command 'ols' from deb speech-tools
- command 'jls' from deb sleuthkit
- command 'bls' from deb bacula-sd
- command 'ils' from deb sleuthkit
- command 'hls' from deb hfsutils
- command 'fls' from deb sleuthkit

See 'snap info <snapname>' for additional versions.

```
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
ls .ltr
```

```

ls: cannot access '.ltr': No such file or directory
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
./ls
bash: ./ls: No such file or directory
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
ls .lts
ls: cannot access '.lts': No such file or directory
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
ls -ltr
total 16
-rw-rw-r-- 1 vsduser vsduser 160 Apr 24 13:33 sum1ton.c
-rwxrwxr-x 1 vsduser vsduser 8304 Apr 24 13:33 a.out
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
./a.out
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
./a.outCV-MYTH_Workshop/Day1_2$ ./a.o
bash: ./a.o: No such file or directory
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
./a.out
sum of numbers from 1 to 5 is
15vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/
Day1_2$
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
gcc sum1ton.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
./a.out
sum of numbers from 1 to 5 is 15
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
gcc sum1ton.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
./a.out
sum of numbers from 1 to 100 is 5050
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
cat sum1ton.c
#include <stdio.h>

int main() {
int i, sum = 0, n = 100;
for (i=1; i<=n; i++) {
    sum += i;
}
printf("sum of numbers from 1 to %d is %d\n", n, sum);
return 0;
}

vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
riscv64-unknown-elf -O1 -mabi=lp64 march=rv64i sum1ton.c
riscv64-unknown-elf: command not found
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
riscv64-unknown-elf-gcc -O1 -mabi=lp64 march=rv64i sum1ton.c
riscv64-unknown-elf-gcc: error: march=rv64i: No such file or directory

```

```

vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
riscv64-unknown-elf-gcc -O1 -mabi=lp64 -march=rv64i sum1ton.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
riscv64-unknown-elf-gcc -O1 -mabi=lp64 -march=rv64i -o sum1ton.o sum1ton.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
ls .ltr sum1ton.o
ls: cannot access '.ltr': No such file or directory
sum1ton.o
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
ls -ltr sum1ton.o
-rwxrwxr-x 1 vsduser vsduser 167512 Apr 24 13:55 sum1ton.o
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
riscv64-unknown-elf-gcc -Ofast -mabi=lp64 -march=rv64i -o sum1ton.o sum1ton.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
ls -ltr sum1ton.o
-rwxrwxr-x 1 vsduser vsduser 167512 Apr 24 14:06 sum1ton.o
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
riscv64-unknown-elf-gcc -Ofast -mabi=lp64 -march=rv64i -o sum1ton.o sum1ton.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
gcc sum1ton.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
./a.out
sum of numbers from 1 to 100 is 5050
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
riscv64-unknown-elf-gcc -Ofast -mabi=lp64 -march=rv64i -o sum1ton.o sum1ton.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
spike pk sum1ton.o
bbl loader
sum of numbers from 1 to 100 is 5050
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
spike -d pk sum1ton.o
(spike)
core 0: 0x0000000000001000 (0x00000297) auipc  t0, 0x0
(spike)
core 0: 0x0000000000001004 (0x02028593) addi  a1, t0, 32
(spike)
core 0: 0x0000000000001008 (0xf1402573) csrr  a0, mhartid
(spike) exit
Unknown command exit
(spike) until pc 0 100b0
bbl loader
(spike) reg 0 a2
0x0000000000000000
(spike)
core 0: 0x000000000000100b0 (0x00001637) lui   a2, 0x1
(spike)
core 0: 0x000000000000100b4 (0x00021537) lui   a0, 0x21
(spike)
core 0: 0x000000000000100b8 (0xff010113) addi  sp, sp, -16
(spike)
core 0: 0x000000000000100bc (0x3ba60613) addi  a2, a2, 954
(spike)

```

```

core 0: 0x000000000000100c0 (0x06400593) li    a1, 100
(spike)
core 0: 0x000000000000100c4 (0x18050513) addi   a0, a0, 384
(spike)
core 0: 0x000000000000100c8 (0x00113423) sd     ra, 8(sp)
(spike)
core 0: 0x000000000000100cc (0x340000ef) jal    pc + 0x340
(spike)
core 0: 0x0000000000001040c (0x75818313) addi   t1, gp, 1880
(spike)
core 0: 0x00000000000010410 (0x00033303) ld     t1, 0(t1)
(spike)
core 0: 0x00000000000010414 (0xfa010113) addi   sp, sp, -96
(spike)
core 0: 0x00000000000010418 (0x02c13823) sd     a2, 48(sp)
(spike)
core 0: 0x0000000000001041c (0x02d13c23) sd     a3, 56(sp)
(spike)
core 0: 0x00000000000010420 (0x04f13423) sd     a5, 72(sp)
(spike)
core 0: 0x00000000000010424 (0x02b13423) sd     a1, 40(sp)
(spike)
core 0: 0x00000000000010428 (0x04e13023) sd     a4, 64(sp)
(spike)
core 0: 0x0000000000001042c (0x05013823) sd     a6, 80(sp)
(spike)
core 0: 0x00000000000010430 (0x05113c23) sd     a7, 88(sp)
(spike)
core 0: 0x00000000000010434 (0x01033583) ld     a1, 16(t1)
(spike)

```

Terminal-2:

sum1ton.o: file format elf64-littleriscv

.....

```

11ee0: 36078a63      beqz  a5,12254 <_vfprintf_r+0x1de8>
11ee4: 0ffb7b13      andi  s6,s6,255
11ee8: 00e13823      sd    a4,16(sp)
11eec: 00048a13      mv    s4,s1
11ef0: 00100793      li    a5,1
11ef4: 8c5fe06f      j     107b8 <_vfprintf_r+0x34c>
11ef8: 2004f793      andi  a5,s1,512
11efc: 34078063      beqz  a5,1223c <_vfprintf_r+0x1dd0>
11f00: 01013783      ld    a5,16(sp)
11f04: 00048a13      mv    s4,s1
11f08: 00e13823      sd    a4,16(sp)
11f0c: 00078b03      lb    s6,0(a5)
11f10: 000b0793      mv    a5,s6
11f14: dd1fe06f      j     10ce4 <_vfprintf_r+0x878>
11f18: 2004f793      andi  a5,s1,512

```

| | | |
|--------|----------|--|
| 11f1c: | 30078a63 | beqz a5,12230 <_vfprintf_r+0x1dc4> |
| 11f20: | 0ffb7b13 | andi s6,s6,255 |
| 11f24: | 865fe06f | j 10788 <_vfprintf_r+0x31c> |
| 11f28: | 10813783 | ld a5,264(sp) |
| 11f2c: | 3407c863 | bltz a5,1227c <_vfprintf_r+0x1e10> |
| 11f30: | 0df14783 | lbu a5,223(sp) |
| 11f34: | 04700693 | li a3,71 |
| 11f38: | 0000fd97 | auipc s11,0xf |
| 11f3c: | 458d8d93 | addi s11,s11,1112 # 21390 <zeroes.4539+0x58> |
| 11f40: | f086d6e3 | bge a3,s0,11e4c <_vfprintf_r+0x19e0> |
| 11f44: | 0000fd97 | auipc s11,0xf |
| 11f48: | 454d8d93 | addi s11,s11,1108 # 21398 <zeroes.4539+0x60> |
| 11f4c: | f01ff06f | j 11e4c <_vfprintf_r+0x19e0> |
| 11f50: | 0016861b | addiw a2,a3,1 |
| 11f54: | 008787b3 | add a5,a5,s0 |
| 11f58: | 01833023 | sd s8,0(t1) |
| 11f5c: | 00833423 | sd s0,8(t1) |
| 11f60: | 12f13023 | sd a5,288(sp) |
| 11f64: | 10c12c23 | sw a2,280(sp) |
| 11f68: | 00700693 | li a3,7 |
| 11f6c: | 01030313 | addi t1,t1,16 |
| 11f70: | 9cc6d2e3 | bge a3,a2,11934 <_vfprintf_r+0x14c8> |
| 11f74: | 00013583 | ld a1,0(sp) |
| 11f78: | 11010613 | addi a2,sp,272 |
| 11f7c: | 000a8513 | mv a0,s5 |
| 11f80: | 584090ef | jal ra,1b504 <__sprint_r> |
| 11f84: | 00050463 | beqz a0,11f8c <_vfprintf_r+0x1b20> |
| 11f88: | f74fe06f | j 106fc <_vfprintf_r+0x290> |
| 11f8c: | 12013783 | ld a5,288(sp) |
| 11f90: | 19010313 | addi t1,sp,400 |

sum1ton.o: file format elf64-littleriscv

Disassembly of section .text:

00000000000100b0 <main>:

| | | |
|--------|----------|--|
| 100b0: | 00001637 | lui a2,0x1 |
| 100b4: | 00021537 | lui a0,0x21 |
| 100b8: | ff010113 | addi sp,sp,-16 |
| 100bc: | 3ba60613 | addi a2,a2,954 # 13ba <main-0xecf6> |
| 100c0: | 06400593 | li a1,100 |
| 100c4: | 18050513 | addi a0,a0,384 # 21180 <__clzdi2+0x44> |
| 100c8: | 00113423 | sd ra,8(sp) |
| 100cc: | 340000ef | jal ra,1040c <printf> |
| 100d0: | 00813083 | ld ra,8(sp) |
| 100d4: | 00000513 | li a0,0 |
| 100d8: | 01010113 | addi sp,sp,16 |
| 100dc: | 00008067 | ret |

00000000000100e0 <register_fini>:

```

100e0: ffff0797      auipc a5,0xffff0
100e4: f2078793      addi a5,a5,-224 # 0 <main-0x100b0>
100e8: 00078863      beqz a5,100f8 <register_fini+0x18>
100ec: 00000517      auipc a0,0x0
100f0: 11050513      addi a0,a0,272 # 101fc <__libc_fini_array>
100f4: 0c00006f      j 101b4 <atexit>
100f8: 00008067      ret

```

00000000000100fc <_start>:

```

100fc: 00013197      auipc gp,0x13
10100: 90c18193      addi gp,gp,-1780 # 22a08 <__global_pointer$>
10104: 77018513      addi a0,gp,1904 # 23178 <_edata>
10108: 00013617      auipc a2,0x13
1010c: 10060613      addi a2,a2,256 # 23208 <__BSS_END__>
10110: 40a60633      sub a2,a2,a0
10114: 00000593      li a1,0
10118: 1d4000ef      jal ra,102ec <memset>
1011c: 00000517      auipc a0,0x0
10120: 0e050513      addi a0,a0,224 # 101fc <__libc_fini_array>
10124: 090000ef      jal ra,101b4 <atexit>
10128: 130000ef      jal ra,10258 <__libc_init_array>
1012c: 00012503      lw a0,0(sp)
10130: 00810593      addi a1,sp,8
10134: 00000613      li a2,0

```

:

Lab-3: C-Program for the following Lab Assignement

1. unsignedHighest.c

```

#include <stdio.h>
#include <math.h>
int main() {
    unsigned long long int max = (unsigned long long int) (pow(2,10) -1);
    printf("Highest number represented by unsigned long long int is %llu\n", max);
    return 0;
}

```

CW:

```

vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
spike pk unsignedHighest.c
bbl loader
couldn't open ELF program: unsignedHighest.c!
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
spike pk unsignedHighest.o
bbl loader

```

```

Highest number represented by unsigned long long int is 18446744073709551615
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
riscv64-unknown-elf-gcc -Ofast -mabi=lp64 -march=rv64i -o unsignedHighest.o
unsignedHighest.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
spike pk unsignedHighest.o
bbl loader
Highest number represented by unsigned long long int is 1023
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
clear
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
riscv64-unknown-elf-gcc -Ofast -mabi=lp64 -march=rv64i -o unsignedHighest.o
unsignedHighest.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
spike pk unsignedHighest.o
bbl loader
Highest number represented by unsigned long long int is 18446744073709551615
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
riscv64-unknown-elf-gcc -Ofast -mabi=lp64 -march=rv64i -o unsignedHighest.o
unsignedHighest.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
spike pk unsignedHighest.o
bbl loader
Highest number represented by unsigned long long int is 1125899906842623
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
riscv64-unknown-elf-gcc -Ofast -mabi=lp64 -march=rv64i -o unsignedHighest.o
unsignedHighest.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
spike pk unsignedHighest.o
bbl loader
Highest number represented by unsigned long long int is 1023
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
^C
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$

```

2. signedHighest.c

```

#include <stdio.h>
#include <math.h>
int main() {
    long long int max = (long long int) (pow(2,63) -1);
    long long int min = (long long int) (pow(2,63) * -1);
    printf("Highest number represented by long long int is %lld\n", max);
    printf("Lowest number represented by long long int is %lld\n", min);
    return 0;
}

```

CW:

```

vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
riscv64-unknown-elf-gcc -Ofast -mabi=lp64 -march=rv64i -o signedHighest.o signedHighest.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
spike pk signedHighest.o
bbl loader
Highest number represented by long long int is 18446744073709550592
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
clear
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
riscv64-unknown-elf-gcc -Ofast -mabi=lp64 -march=rv64i -o signedHighest.o signedHighest.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
spike pk signedHighest.o
bbl loader
Highest number represented by long long int is -1024
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
riscv64-unknown-elf-gcc -Ofast -mabi=lp64 -march=rv64i -o signedHighest.o signedHighest.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
spike pk signedHighest.o
bbl loader
Highest number represented by long long int is -9223372036854775808
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
riscv64-unknown-elf-gcc -Ofast -mabi=lp64 -march=rv64i -o signedHighest.o signedHighest.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
spike pk signedHighest.o
bbl loader
Highest number represented by long long int is 9223372036854775807
Lowest number represented by long long int is -9223372036854775808
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$

```

3. DataTypes.c

```

#include <stdio.h>
#include <math.h>
int main() {

    unsigned int max1 = (unsigned int) (pow(2,32) -1);
    unsigned int min1 = (unsigned int) (pow(2,32) * -1);
    printf("Highest number represented by unsigned int is %u\n", max1);
    printf("Lowest number represented by unsigned int is %u\n", min1);

    int max2 = (int) (pow(2,32) -1);
    int min2 = (int) (pow(2,32) * -1);
    printf("Highest number represented by int is %d\n", max2);
    printf("Lowest number represented by int is %d\n", min2);

    unsigned long long int max3 = (unsigned long long int) (pow(2,64) -1);
    unsigned long long int min3 = (unsigned long long int) (pow(2,64) * -1);
    printf("Highest number represented by unsigned long long int is %llu\n", max3);
}

```



```
printf("Lowest number represented by unsigned long long int is %llu\n", min3);

long long int max4 = (long long int) (pow(2,64) -1);
long long int min4 = (long long int) (pow(2,64) * -1);
printf("Highest number represented by long long int is %lld\n", max4);
printf("Lowest number represented by long long int is %lld\n", min4);
return 0;
}
```

CW:

```
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
riscv64-unknown-elf-gcc -Ofast -mabi=lp64 -march=rv64i -o DataTypes.o DataTypes.c
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
spike pk DataTypes.o
bbl loader
Highest number represented by unsigned int is 4294967295
Lowest number represented by unsigned int is 0
Highest number represented by int is 2147483647
Lowest number represented by int is -2147483648
Highest number represented by unsigned long long int is 18446744073709551615
Lowest number represented by unsigned long long int is 0
Highest number represented by long long int is 9223372036854775807
Lowest number represented by long long int is -9223372036854775808
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/Day1_2$
```

Day-2 (MYTH): RISC-V RV32I Verification through set of files:

```
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/
riscv_workshop_collaterals/labs$ ls -ltr
total 1420
-rw-rw-r-- 1 vsduser vsduser 2877 Apr 25 05:05 testbench.v
-rw-rw-r-- 1 vsduser vsduser 1803 Apr 25 05:05 syscalls.c
-rw-rw-r-- 1 vsduser vsduser 943 Apr 25 05:05 start.S
-rw-rw-r-- 1 vsduser vsduser 71 Apr 25 05:05 start.ld
-rwxrwxrwx 1 vsduser vsduser 856 Apr 25 05:05 rv32im.sh
-rw-rw-r-- 1 vsduser vsduser 7481 Apr 25 05:05 riscv.ld
-rw-rw-r-- 1 vsduser vsduser 94437 Apr 25 05:05 picorv32.v
-rw-rw-r-- 1 vsduser vsduser 581 Apr 25 05:05 load.S
-rw-rw-r-- 1 vsduser vsduser 781 Apr 25 05:05 hex8tohex32.py
-rw-rw-r-- 1 vsduser vsduser 94 Apr 25 05:05 hello.c
-rw-rw-r-- 1 vsduser vsduser 210 Apr 25 05:05 1to9_custom.c
-rw-rw-r-- 1 vsduser vsduser 1116 Apr 25 05:21 1to9_custom.o
-rw-rw-r-- 1 vsduser vsduser 680 Apr 25 05:21 load.o
-rw-rw-r-- 1 vsduser vsduser 2664 Apr 25 05:21 syscalls.o
```

```
-rw-rw-r-- 1 vsduser vsduser 254124 Apr 25 05:21 firmware.elf
-rw-rw-r-- 1 vsduser vsduser  4672 Apr 25 05:21 start.elf
-rw-rw-r-- 1 vsduser vsduser 272044 Apr 25 05:21 firmware.hex
-rw-rw-r-- 1 vsduser vsduser 195884 Apr 25 05:21 firmware32.hex
-rw-r--r-- 1 vsduser vsduser 560526 Apr 25 05:21 testbench.vvp
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/
riscv_workshop_collaterals/labs$ ./rv32im.sh
Sum of number from 1 to 2 is 3
TRAP
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/
riscv_workshop_collaterals/labs$ less firmware
firmware: No such file or directory
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/
riscv_workshop_collaterals/labs$ less firmware.hex
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/
riscv_workshop_collaterals/labs$ less firmware32.hex
vsduser@vsduser-VirtualBox:~/Desktop/RAJAMOHAN_RISCV-MYTH_Workshop/
riscv_workshop_collaterals/labs$
```