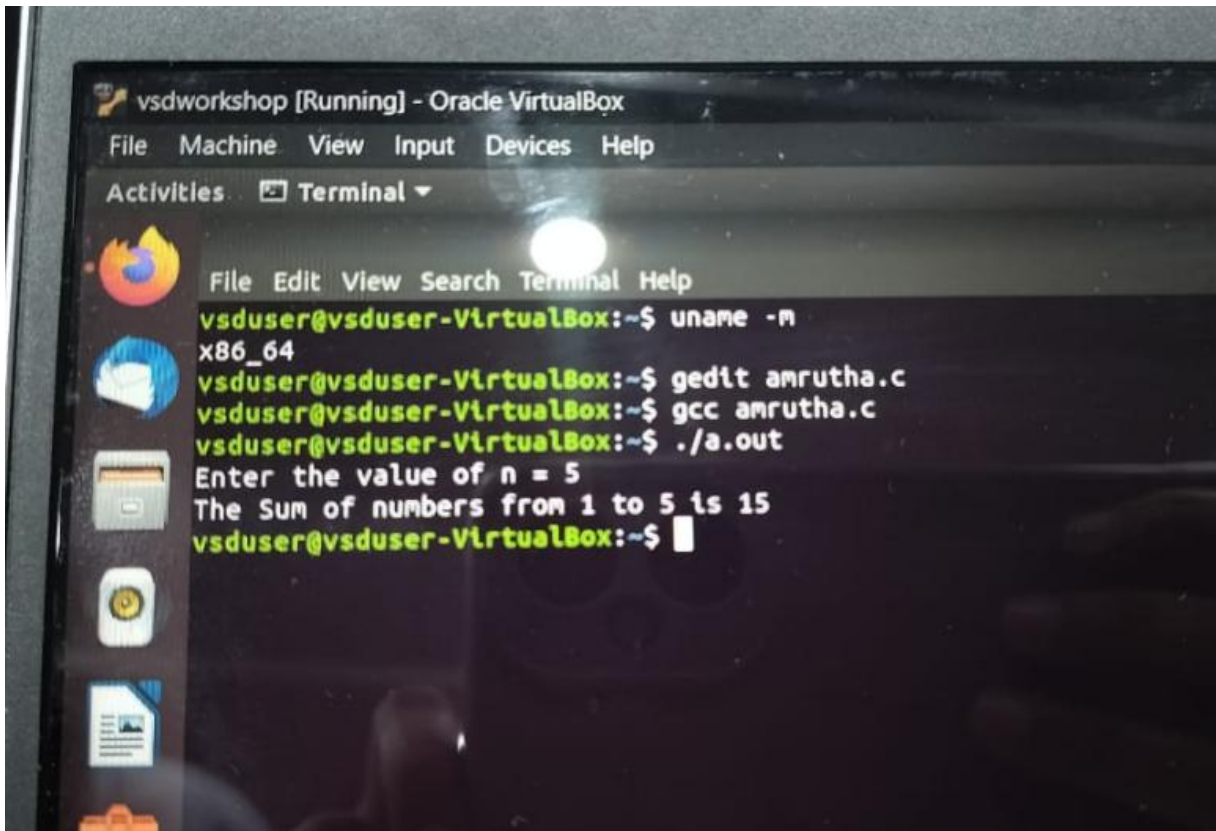
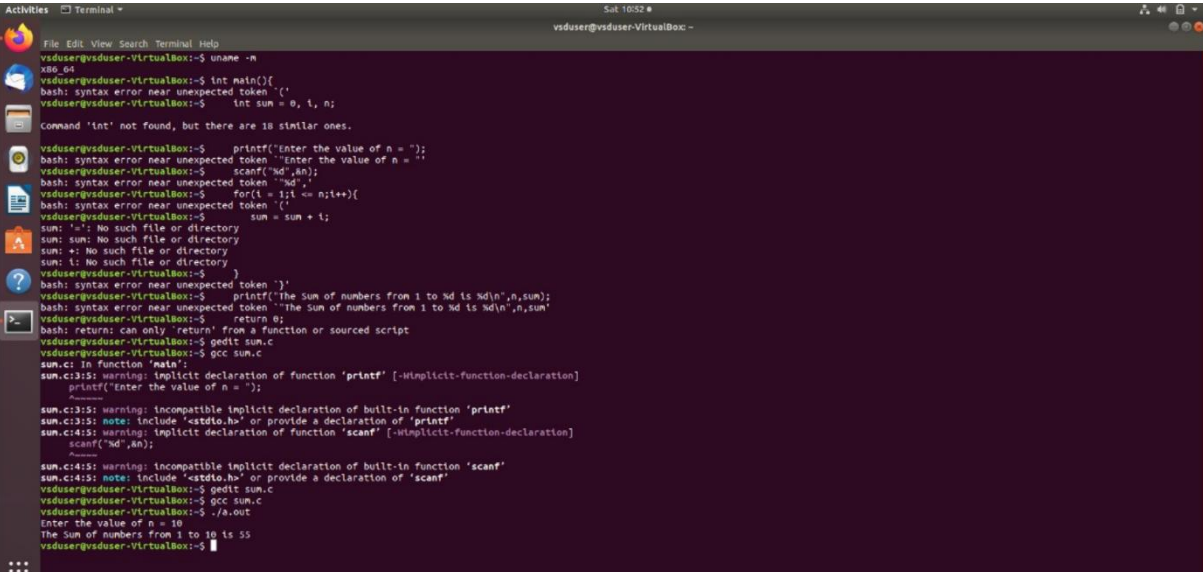
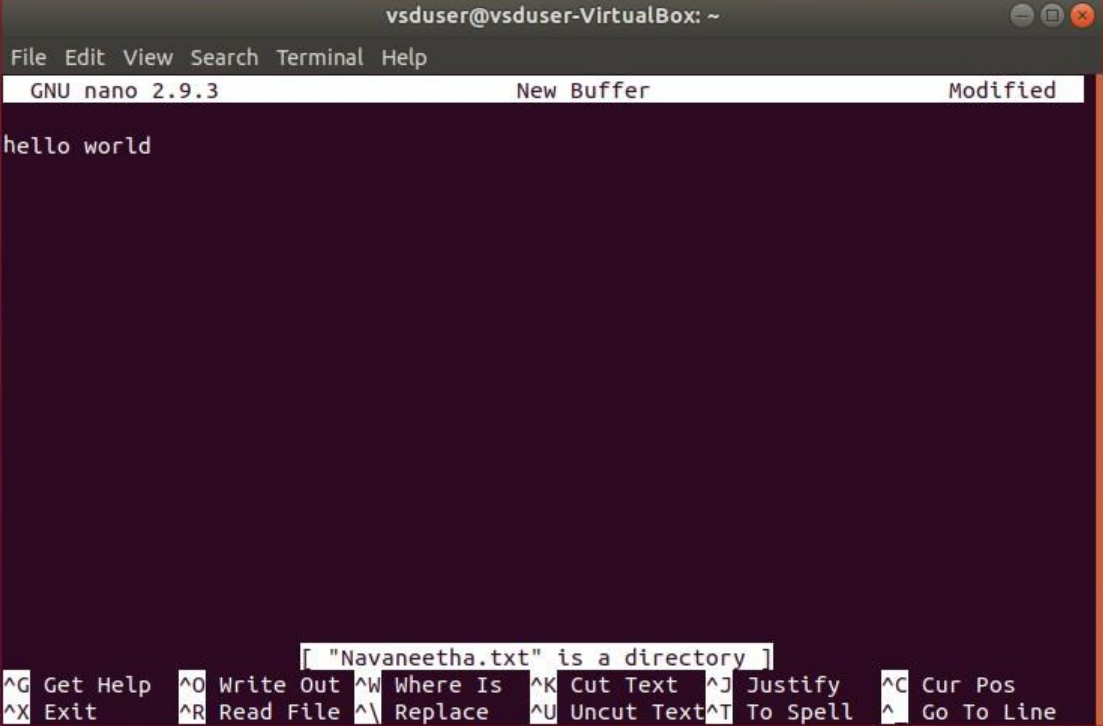
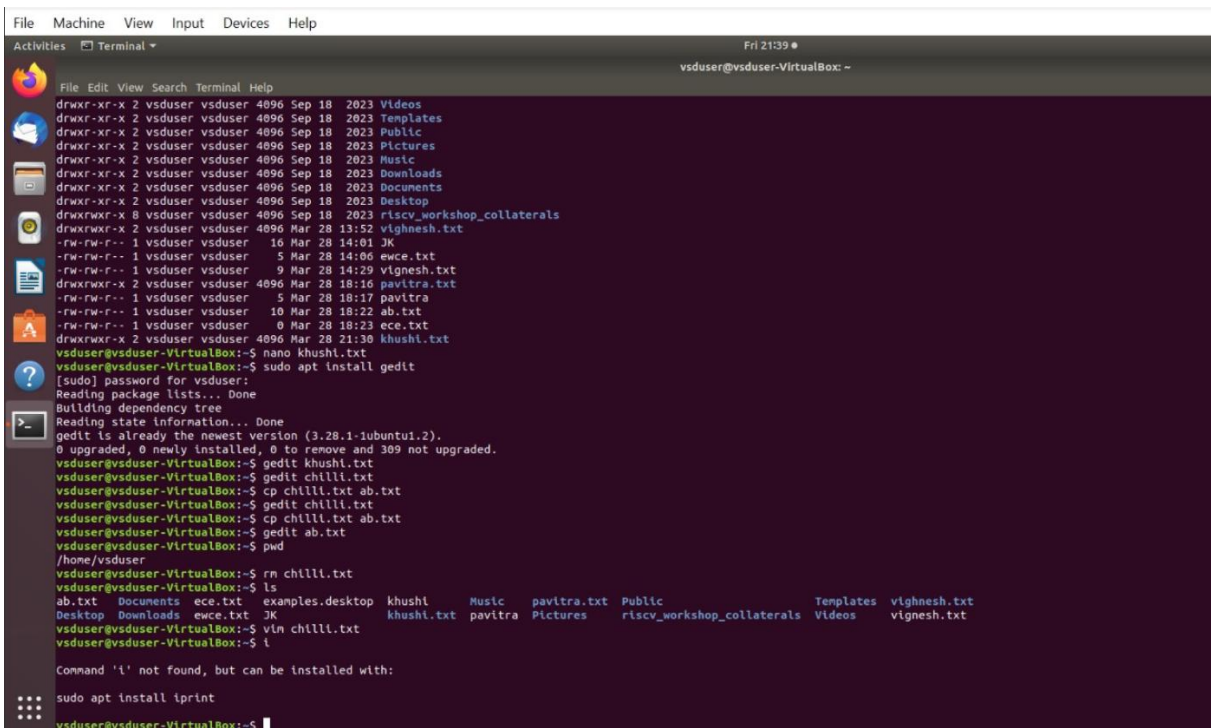


```
File Machine View Input Devices Help
Activities Terminal v
vdsuser@vdsuser-VirtualBox: ~
vdsuser@vdsuser-VirtualBox:~$ mkdir khushi.txt
vdsuser@vdsuser-VirtualBox:~$ ls
Desktop Downloads ewce.txt examples.desktop khushi.txt pavitra Pictures riscv_workshop_collaterals Videos vignesh.txt
vdsuser@vdsuser-VirtualBox:~$ cd Desktop
vdsuser@vdsuser-VirtualBox:~/Desktop$ ls
vdsuser@vdsuser-VirtualBox:~/Desktop$ ls -ltr
total 0
vdsuser@vdsuser-VirtualBox:~/Desktop$ cd ..
vdsuser@vdsuser-VirtualBox:~$ ls -ltr
total 80
-rw-r--r-- 1 vdsuser vdsuser 8980 Sep 18 2023 examples.desktop
drwxr-xr-x 2 vdsuser vdsuser 4096 Sep 18 2023 Videos
drwxr-xr-x 2 vdsuser vdsuser 4096 Sep 18 2023 Templates
drwxr-xr-x 2 vdsuser vdsuser 4096 Sep 18 2023 Public
drwxr-xr-x 2 vdsuser vdsuser 4096 Sep 18 2023 Pictures
drwxr-xr-x 2 vdsuser vdsuser 4096 Sep 18 2023 Music
drwxr-xr-x 2 vdsuser vdsuser 4096 Sep 18 2023 Downloads
drwxr-xr-x 2 vdsuser vdsuser 4096 Sep 18 2023 Documents
drwxr-xr-x 2 vdsuser vdsuser 4096 Sep 18 2023 Desktop
drwxrwxr-x 8 vdsuser vdsuser 4096 Sep 18 2023 riscv_workshop_collaterals
drwxrwxr-x 2 vdsuser vdsuser 4096 Mar 28 13:52 vignesh.txt
-rw-r--r-- 1 vdsuser vdsuser 10 Mar 28 14:01 JK
-rw-r--r-- 1 vdsuser vdsuser 5 Mar 28 14:06 ewce.txt
-rw-r--r-- 1 vdsuser vdsuser 9 Mar 28 14:29 vignesh.txt
drwxrwxr-x 2 vdsuser vdsuser 4096 Mar 28 18:16 pavitra.txt
-rw-r--r-- 1 vdsuser vdsuser 5 Mar 28 18:17 pavitra
-rw-r--r-- 1 vdsuser vdsuser 10 Mar 28 18:22 ab.txt
-rw-r--r-- 1 vdsuser vdsuser 0 Mar 28 18:23 ewce.txt
drwxrwxr-x 2 vdsuser vdsuser 4096 Mar 28 21:29 khushi.txt
vdsuser@vdsuser-VirtualBox:~$ ls -l
total 80
-rw-r--r-- 1 vdsuser vdsuser 10 Mar 28 18:22 ab.txt
drwxr-xr-x 2 vdsuser vdsuser 4096 Sep 18 2023 Desktop
drwxr-xr-x 2 vdsuser vdsuser 4096 Sep 18 2023 Documents
drwxr-xr-x 2 vdsuser vdsuser 4096 Sep 18 2023 Downloads
-rw-r--r-- 1 vdsuser vdsuser 0 Mar 28 18:23 ewce.txt
-rw-r--r-- 1 vdsuser vdsuser 5 Mar 28 14:06 ewce.txt
-rw-r--r-- 1 vdsuser vdsuser 8980 Sep 18 2023 examples.desktop
-rw-r--r-- 1 vdsuser vdsuser 10 Mar 28 14:01 JK
drwxrwxr-x 2 vdsuser vdsuser 4096 Mar 28 21:29 khushi.txt
drwxr-xr-x 2 vdsuser vdsuser 4096 Sep 18 2023 Music
-rw-r--r-- 1 vdsuser vdsuser 5 Mar 28 18:17 pavitra
drwxrwxr-x 2 vdsuser vdsuser 4096 Mar 28 18:16 pavitra.txt
drwxr-xr-x 2 vdsuser vdsuser 4096 Sep 18 2023 Pictures
drwxr-xr-x 2 vdsuser vdsuser 4096 Sep 18 2023 Public
```







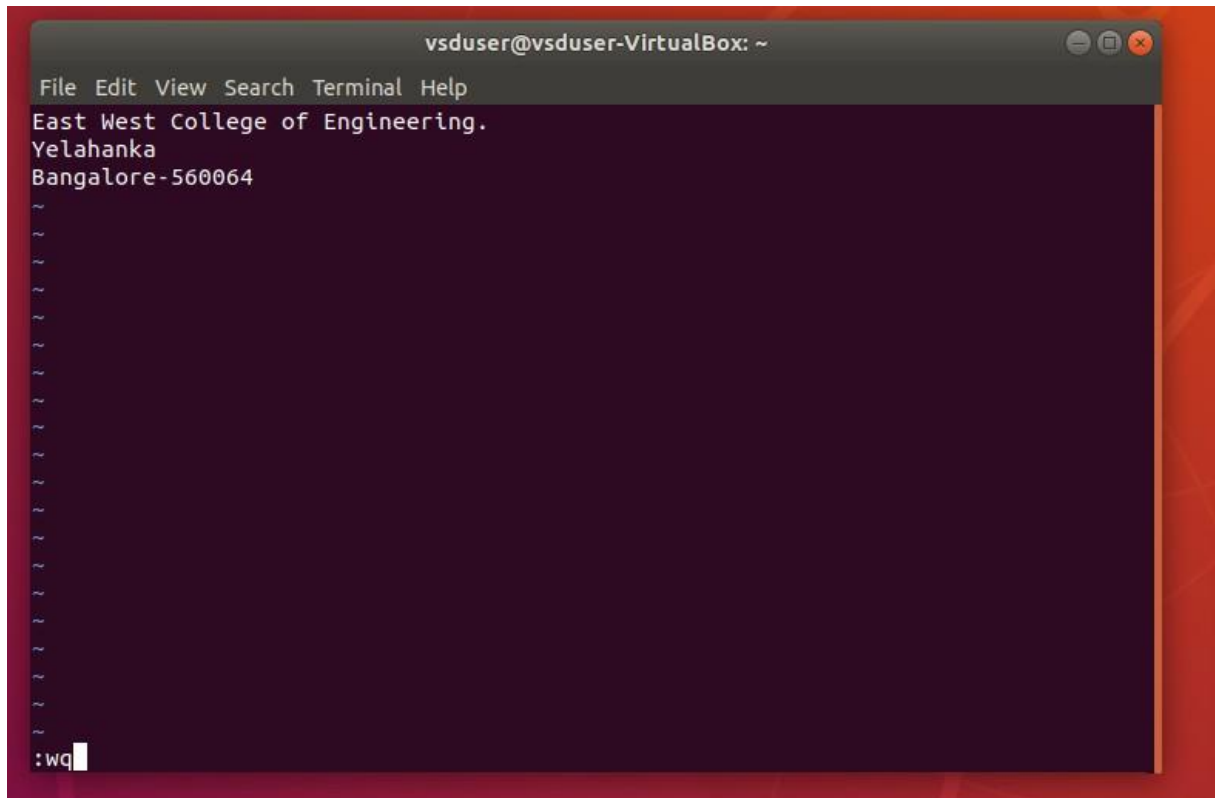
```
Activities  File Edit View Search Help  Sat 10:58
vdsuser@vdsuser-VirtualBox: ~

7af: c3                                retq

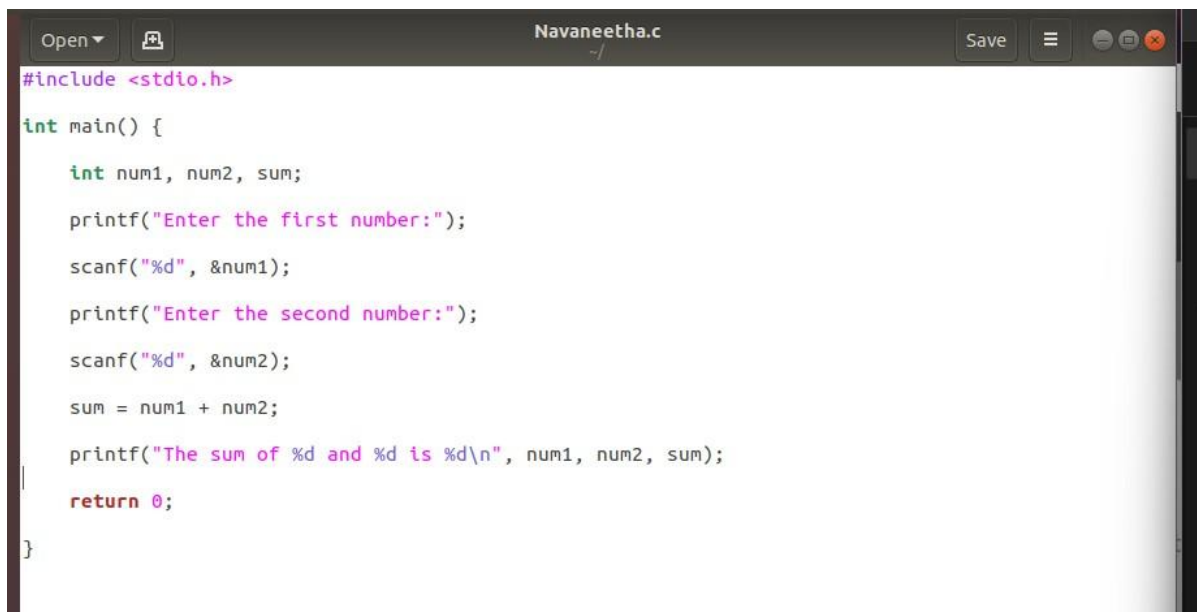
00000000000007b0 <__libc_csu_init>:
7b0: 41 57                                push %r15
7b2: 41 56                                push %r14
7b4: 49 89 d7                            mov %rdx,%r15
7b7: 41 55                                push %r13
7b9: 41 54                                push %r12
7bb: 4c 8d 25 e6 05 20 00                lea 0x2005e0(%rip),%r12
7c2: 55                                push %rbp
7c3: 48 8d 2d e6 05 20 00                lea 0x2005e0(%rip),%rbp
7ca: 53                                push %rbx
7cb: 41 89 fd                            mov %edi,%r13d
7ce: 49 89 f6                            mov %rsi,%r14
7d1: 4c 29 e5                            sub %r12,%rbp
7d4: 48 83 ec 08                        sub $0x8,%rsp
7d8: 48 c1 fd 03                        sar $0x3,%rbp
7dc: e8 c7 fd ff ff                    callq 5a8 <_init>
7e1: 48 85 ed                            test %rbp,%rbp
7e4: 74 20                                je 806 <__libc_csu_init+0x56>
7e6: 31 db                                xor %ebx,%ebx
7e8: 0f 1f 84 00 00 00 00                nopl 0x0(%rax,%rax,1)
7ef: 00
7f0: 4c 89 fa                            mov %r15,%rdx
7f3: 4c 89 f6                            mov %r14,%rsi
7f6: 44 89 ef                            mov %r13d,%edi
7f9: 41 ff 14 dc                        callq *(%r12,%rbx,8)
7fd: 48 83 c3 01                        add $0x1,%rbx
801: 48 39 dd                            cmp %rbx,%rbp
804: 75 ea                                cmp %rbx,%rbp
806: 48 83 c4 08                        jne 7f0 <__libc_csu_init+0x40>
808: 5b                                add $0x8,%rsp
80a: 5d                                pop %rbx
80b: 5d                                pop %rbp
80c: 41 5c                                pop %r12
80e: 41 5d                                pop %r13
810: 41 5e                                pop %r14
812: 41 5f                                pop %r15
814: c3                                retq
815: 90                                nop
816: 66 2e 0f 1f 84 00 00                nopw %cs:0x0(%rax,%rax,1)
81d: 00 00 00

0000000000000820 <__libc_csu_fini>:
820: f3 c3                                repz retq

***
*** Disassembly of section .fini:
***
```

A screenshot of a terminal window titled "vsduser@vsduser-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The terminal content shows the text "East West College of Engineering.", "Yelahanka", and "Bangalore-560064" on separate lines. Below these are several tilde (~) characters. At the bottom left, the prompt ":wq" is visible with a cursor.

```
vsduser@vsduser-VirtualBox: ~
File Edit View Search Terminal Help
East West College of Engineering.
Yelahanka
Bangalore-560064
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
:wq
```

A screenshot of a code editor window titled "Navaneetha.c" with a file icon and a "Save" button. The code is a C program that takes two numbers as input and prints their sum. The code is as follows:

```
Navaneetha.c
~/
#include <stdio.h>

int main() {
    int num1, num2, sum;
    printf("Enter the first number:");
    scanf("%d", &num1);
    printf("Enter the second number:");
    scanf("%d", &num2);
    sum = num1 + num2;
    printf("The sum of %d and %d is %d\n", num1, num2, sum);
    return 0;
}
```



```

7f3: 4c 89 f6      mov     %r14,%r11
7f6: 44 89 ef      mov     %r13d,%edi
7f9: 41 ff 14 dc    callq   *(%r12,%rbx,8)
7fd: 48 83 c3 01    add     $0x1,%rbx
801: 48 39 dd      cmp     %rbx,%rbp
804: 75 ea        jne     7f0 <__libc_csu_init+0x40>
806: 48 83 c4 08    add     $0x8,%rsp
80a: 5b          pop     %rbx
80b: 5d          pop     %rbp
80c: 41 5c        pop     %r12
80e: 41 5d        pop     %r13
810: 41 5e        pop     %r14
812: 41 5f        pop     %r15
814: c3          retq
815: 90          nop
816: 66 2e 0f 1f 84 00 00  nopw    %cs:0x0(%rax,%rax,1)
81d: 00 00 00

0000000000000820 <__libc_csu_fini>:
820: f3 c3      repz retq

Disassembly of section .fini:

0000000000000824 <_fini>:
824: 48 83 ec 08    sub     $0x8,%rsp
828: 48 83 c4 08    add     $0x8,%rsp
82c: c3          retq

vdsuser@vdsuser-VirtualBox:~$ uname -m
x86_64
vdsuser@vdsuser-VirtualBox:~$ riscv64-unknown-elf-gcc-o1-mabi-lp64-march=rv64i-osum_iton.o sun_iton.c
riscv64-unknown-elf-gcc-o1-mabi-lp64-march=rv64i-osum_iton.o: command not found
vdsuser@vdsuser-VirtualBox:~$ riscv64-unknown-elf-
riscv64-unknown-elf-addr2line      riscv64-unknown-elf-elfedit      riscv64-unknown-elf-gcov      riscv64-unknown-elf-gprof      riscv64-unknown-elf-ranlib
riscv64-unknown-elf-ar            riscv64-unknown-elf-g++      riscv64-unknown-elf-gcov      riscv64-unknown-elf-id        riscv64-unknown-elf-readelf
riscv64-unknown-elf-as            riscv64-unknown-elf-gcc      riscv64-unknown-elf-gcov-dump riscv64-unknown-elf-id.bfd    riscv64-unknown-elf-size
riscv64-unknown-elf-c++           riscv64-unknown-elf-gcc-8.3.0 riscv64-unknown-elf-gcov-tool riscv64-unknown-elf-nm        riscv64-unknown-elf-strings
riscv64-unknown-elf-c++filt       riscv64-unknown-elf-gcc-ar    riscv64-unknown-elf-gdb       riscv64-unknown-elf-objcopy   riscv64-unknown-elf-strip
riscv64-unknown-elf-cpp           riscv64-unknown-elf-gcc-nm    riscv64-unknown-elf-gdb-add-index riscv64-unknown-elf-objdump
vdsuser@vdsuser-VirtualBox:~$ riscv64-unknown-elf-
riscv64-unknown-elf-addr2line      riscv64-unknown-elf-elfedit      riscv64-unknown-elf-gcov      riscv64-unknown-elf-gprof      riscv64-unknown-elf-ranlib
riscv64-unknown-elf-ar            riscv64-unknown-elf-g++      riscv64-unknown-elf-gcov      riscv64-unknown-elf-id        riscv64-unknown-elf-readelf
riscv64-unknown-elf-as            riscv64-unknown-elf-gcc      riscv64-unknown-elf-gcov-dump riscv64-unknown-elf-id.bfd    riscv64-unknown-elf-size
riscv64-unknown-elf-c++           riscv64-unknown-elf-gcc-8.3.0 riscv64-unknown-elf-gcov-tool riscv64-unknown-elf-nm        riscv64-unknown-elf-strings
riscv64-unknown-elf-c++filt       riscv64-unknown-elf-gcc-ar    riscv64-unknown-elf-gdb       riscv64-unknown-elf-objcopy   riscv64-unknown-elf-strip
riscv64-unknown-elf-cpp           riscv64-unknown-elf-gcc-nm    riscv64-unknown-elf-gdb-add-index riscv64-unknown-elf-objdump
vdsuser@vdsuser-VirtualBox:~$ riscv64-unknown-elf-

```

```
Open ▾ Navaneetha1.c Save
#include <stdio.h>
int main() {
    printf("Hello World\n");
    return 0;
}
```

```
gcc: error: /usr/bin/ld: No such file or directory
gcc: fatal error: no input files
compilation terminated.
vsduser@vsduser-VirtualBox:~$ riscv32-unknown-elf-gc
riscv32-unknown-elf-gc: command not found
vsduser@vsduser-VirtualBox:~$ riscv64-unknown-elf-gcc -O1 -mabi=lp64 -march=rv64i -o
riscv64-unknown-elf-gcc: command not found
vsduser@vsduser-VirtualBox:~$ riscv64-unknown-elf-gcc -O1 -mabi=lp64 -march=rv64i -o
vsduser@vsduser-VirtualBox:~$ spike pk sum_1ton.o
bbl loader
couldn't open ELF program: sum_1ton.o!
vsduser@vsduser-VirtualBox:~$ spike pk ananya.o
bbl loader
Enter the value of n = 04
The Sum of numbers from 1 to 4 is 10
vsduser@vsduser-VirtualBox:~$
```

```
vsduser@vsduser-VirtualBox:~$ spike pk sum_abn.o
couldn't open ELF program: sum_abn.o!
vsduser@vsduser-VirtualBox:~$ spike pk abn.o
bbl loader
couldn't open ELF program: abn.o!
vsduser@vsduser-VirtualBox:~$ spike pk abn.o
bbl loader
couldn't open ELF program: abn.o!
vsduser@vsduser-VirtualBox:~$ spike pk abn.c
bbl loader
couldn't open ELF program: abn.c!
vsduser@vsduser-VirtualBox:~$ spike pk abn.o
bbl loader
couldn't open ELF program: abn.o!
vsduser@vsduser-VirtualBox:~$ spike abn.o
terminate called after throwing an instance of 'std::runtime_error'
what():  could not open abn.o; searched paths:
. (current directory)
/home/vsduser/riscv_workshop_collaterals/riscv_toolchain/riscv64-unknown-elf-gcc-8.3.0-2019.08.0-x86_64-linux-u
vsduser@vsduser-VirtualBox:~$ ls
ab  abn.o  abn2.txt  abn.c  abn.txt  a.out  Desktop  Documents  Downloads  examples.desktop  gg  g.txt  Music  nj.txt
vsduser@vsduser-VirtualBox:~$
```