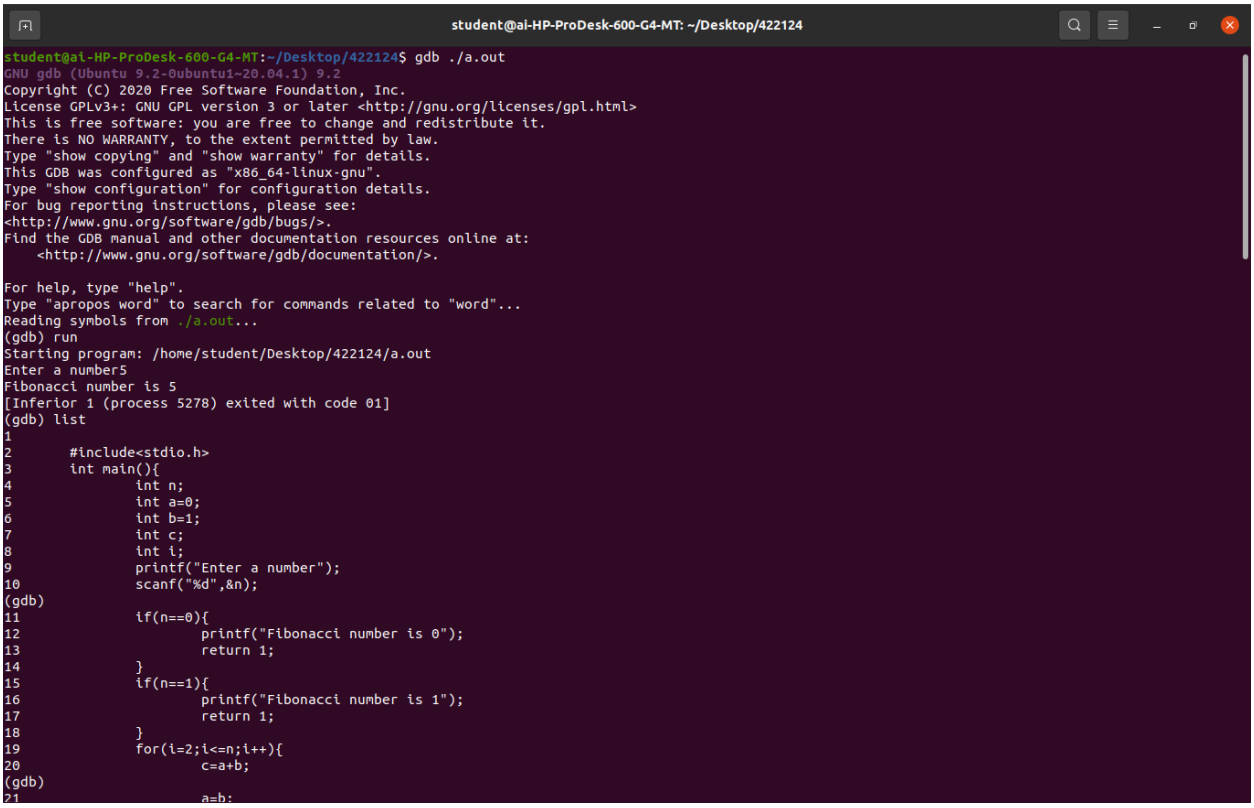
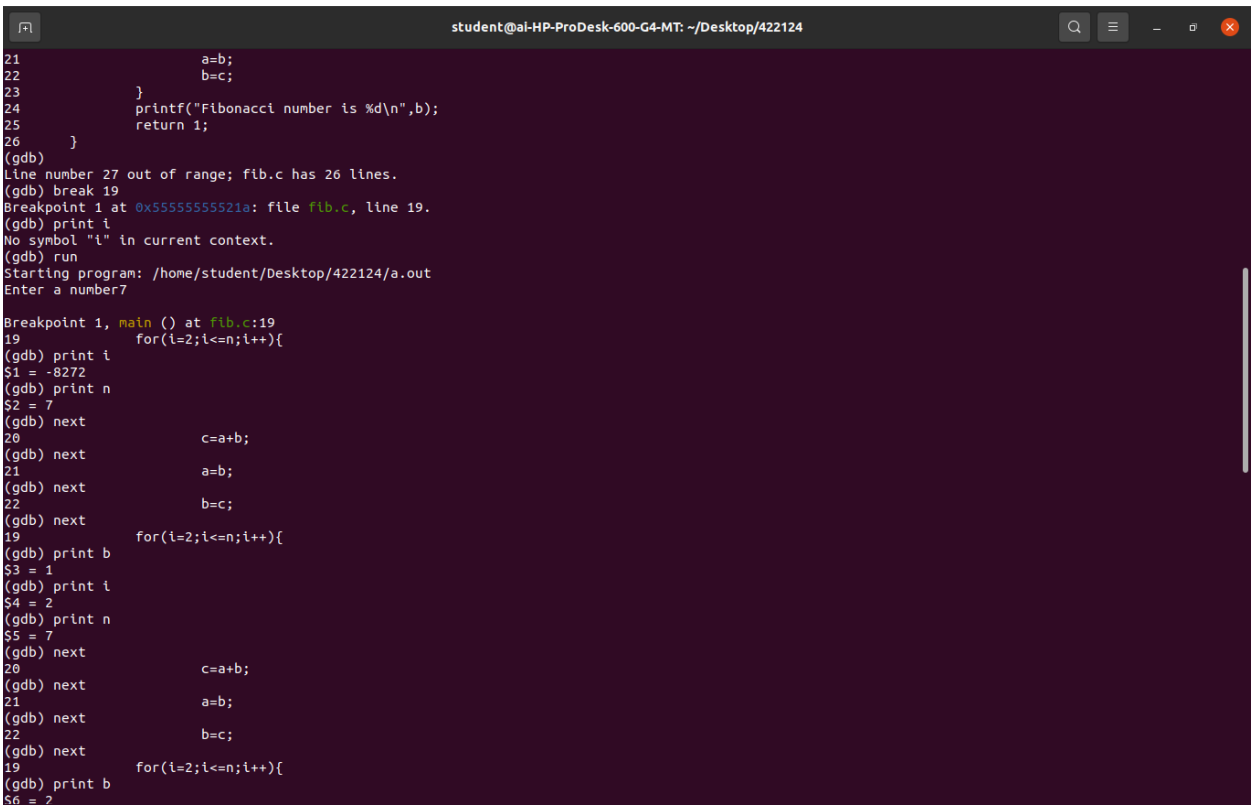
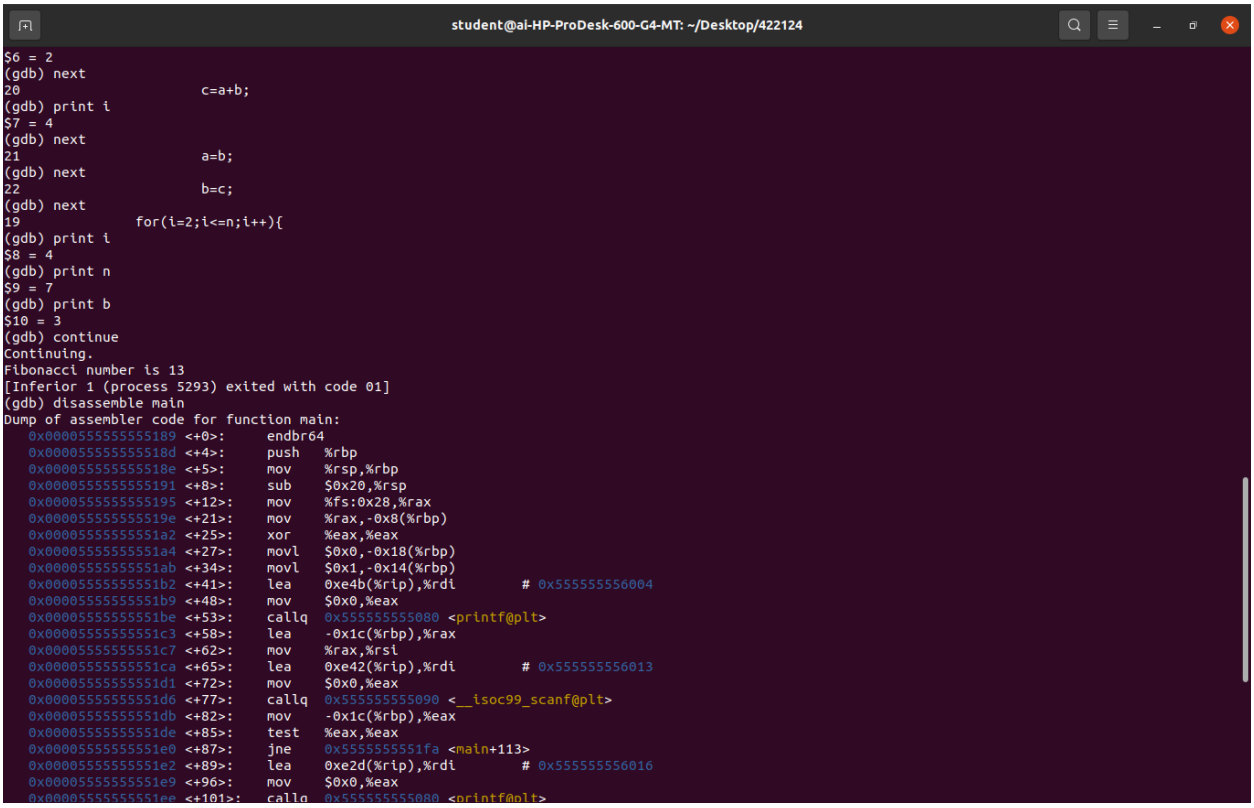
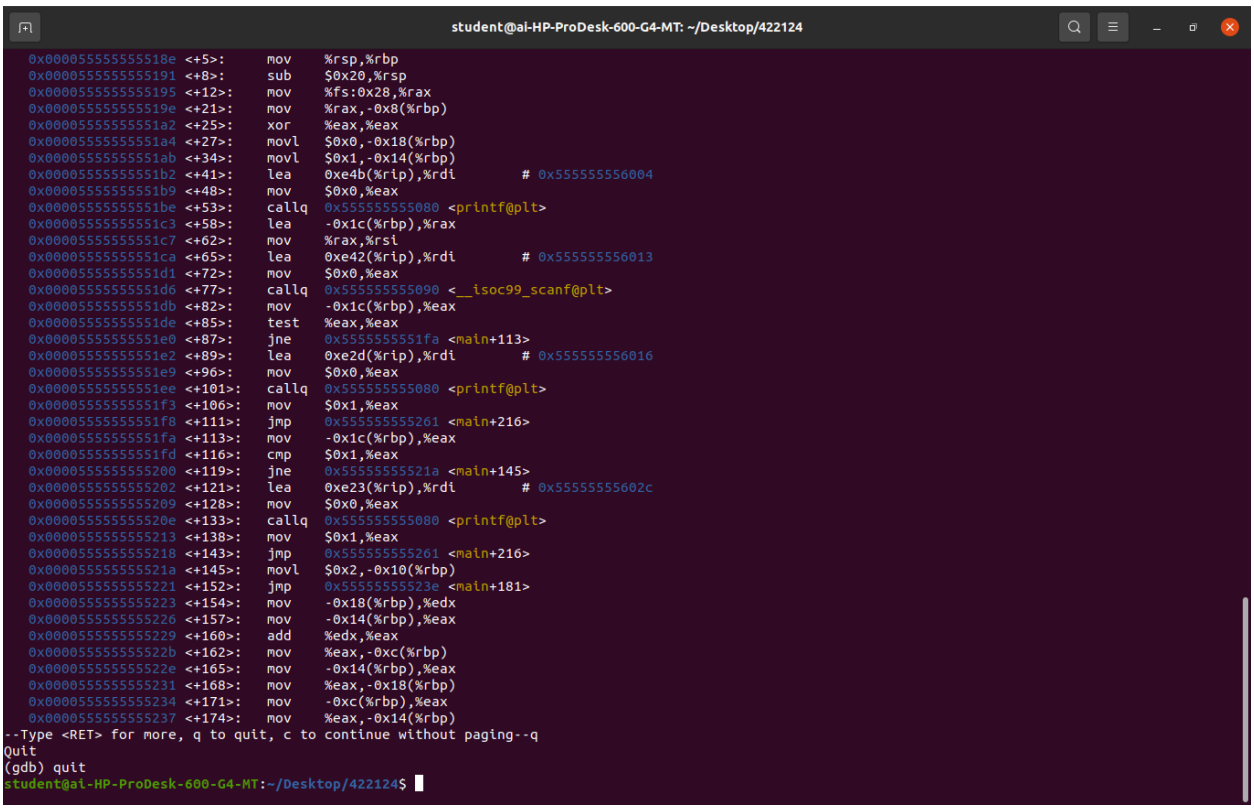
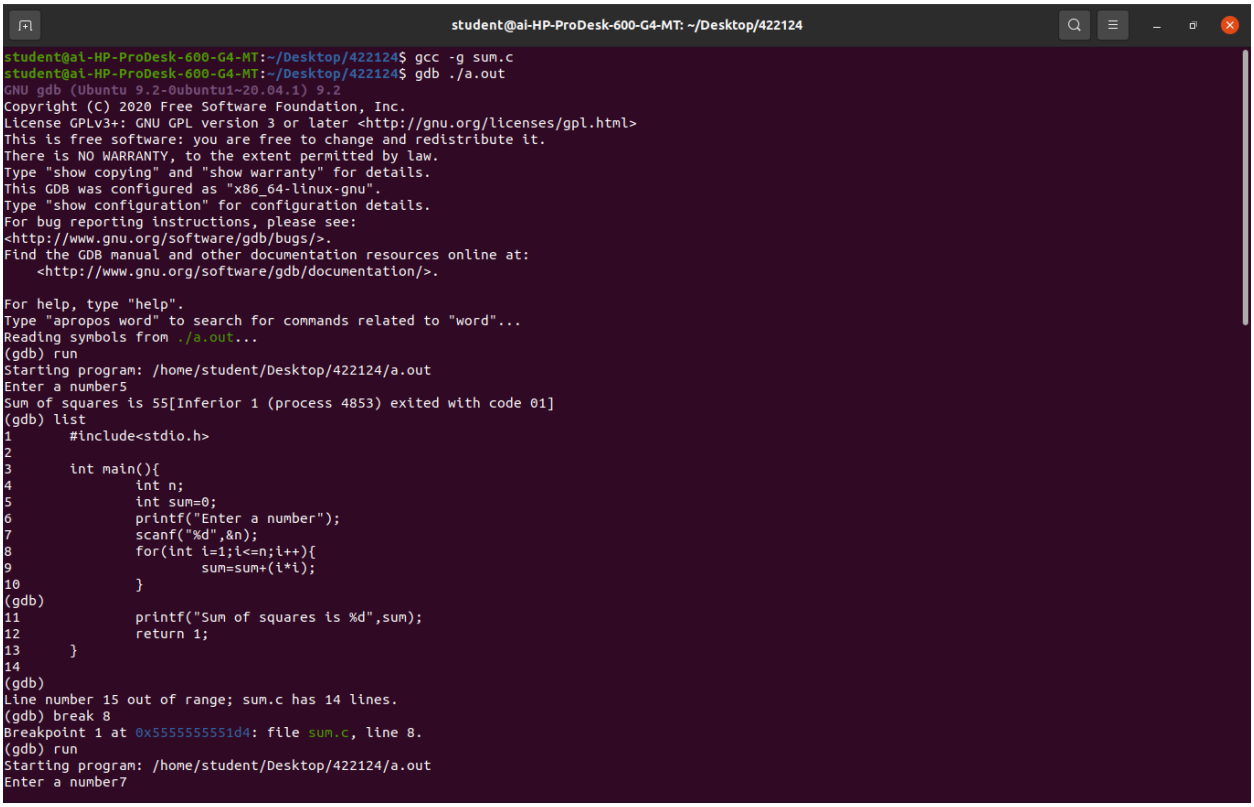
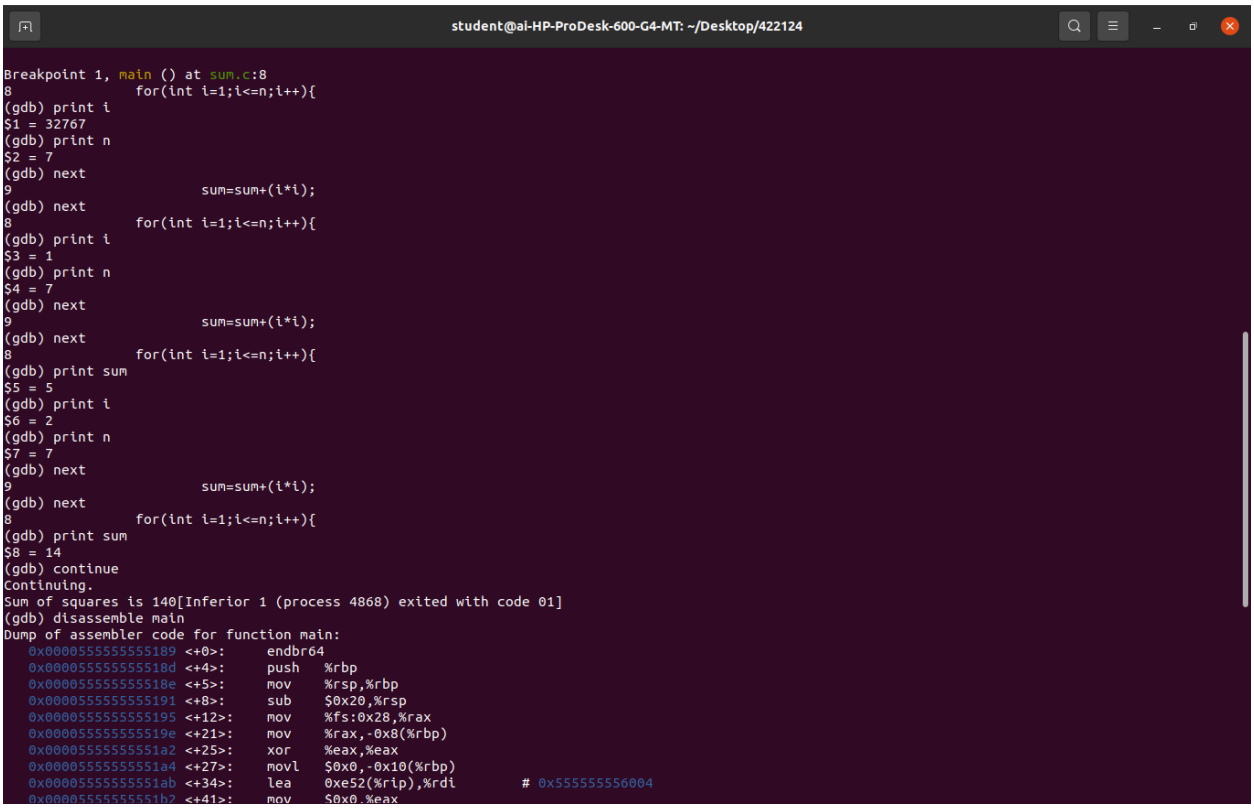

student@ai-HP-ProDesk-600-G4-MT: ~/Desktop/422124
student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422124$ gdb ./a.out
GNU gdb (Ubuntu 9.2-0ubuntu1~20.04.1) 9.2
Copyright (C) 2020 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.
Type "show copying" and "show warranty" for details.
This GDB was configured as "x86_64-linux-gnu".
Type "show configuration" for configuration details.
For bug reporting instructions, please see:
<http://www.gnu.org/software/gdb/bugs/>.
Find the GDB manual and other documentation resources online at:
<http://www.gnu.org/software/gdb/documentation/>.
For help, type "help".
Type "apropos word" to search for commands related to "word"...
Reading symbols from ./a.out...
(gdb) run
Starting program: /home/student/Desktop/422124/a.out
Enter a number5
Fibonacci number is 5
[Inferior 1 (process 5278) exited with code 01]
(gdb) list
1
2 #include<stdio.h>
3 int main(){
4 int n;
5 int a=0;
6 int b=1;
7 int c;
8 int i;
9 printf("Enter a number");
10 scanf("%d",&n);
(gdb)
11 if(n==0){
12 printf("Fibonacci number is 0");
13 return 1;
14 }
15 if(n==1){
16 printf("Fibonacci number is 1");
17 return 1;
18 }
19 for(i=2;i<=n;i++){
20 c=a+b;
(gdb)
21 a=b;

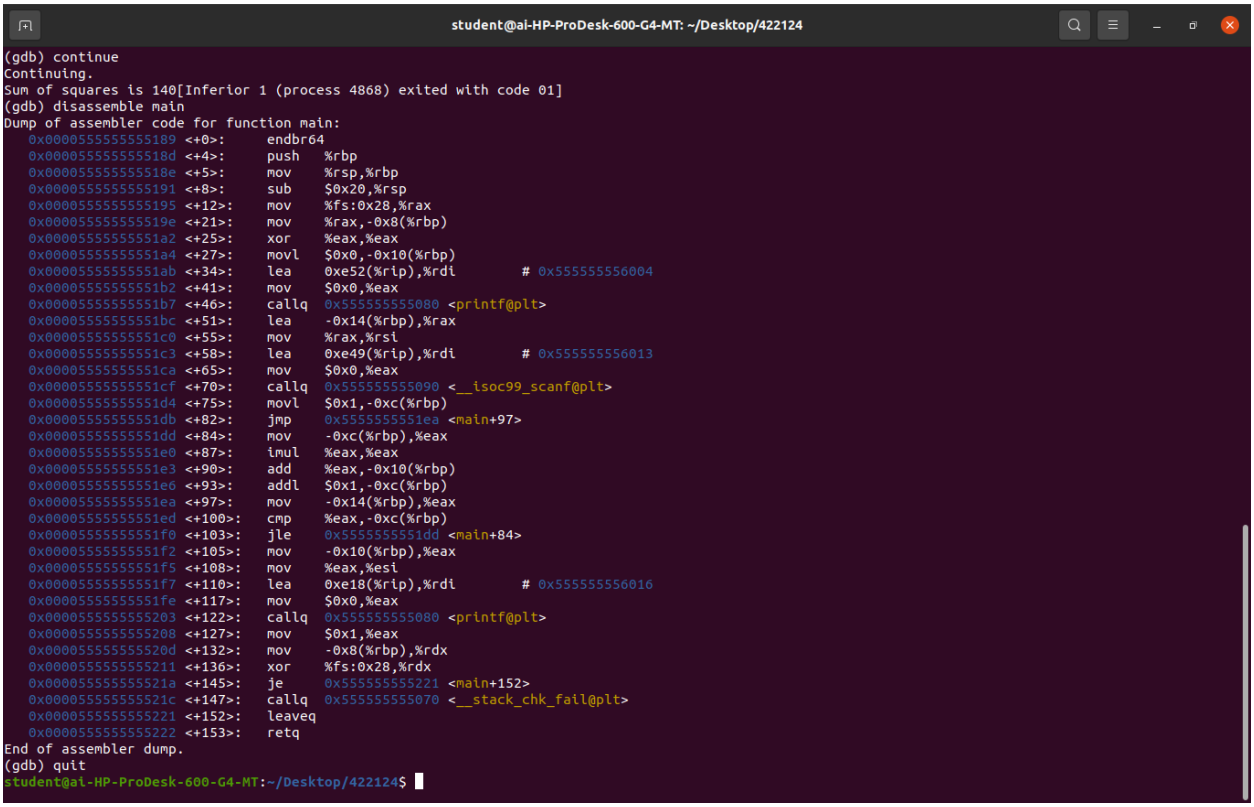

student@ai-HP-ProDesk-600-G4-MT: ~/Desktop/422124
21 a=b;
22 b=c;
23 }
24 printf("Fibonacci number is %d\n",b);
25 return 1;
26 }
(gdb)
Line number 27 out of range; fib.c has 26 lines.
(gdb) break 19
Breakpoint 1 at 0x55555555521a: file fib.c, line 19.
(gdb) print i
No symbol "i" in current context.
(gdb) run
Starting program: /home/student/Desktop/422124/a.out
Enter a number7
Breakpoint 1, main () at fib.c:19
19 for(i=2;i<=n;i++){
(gdb) print i
$1 = -8272
(gdb) print n
$2 = 7
(gdb) next
20 c=a+b;
(gdb) next
21 a=b;
(gdb) next
22 b=c;
(gdb) next
19 for(i=2;i<=n;i++){
(gdb) print b
$3 = 1
(gdb) print i
$4 = 2
(gdb) print n
$5 = 7
(gdb) next
20 c=a+b;
(gdb) next
21 a=b;
(gdb) next
22 b=c;
(gdb) next
19 for(i=2;i<=n;i++){
(gdb) print b
$6 = 2


student@ai-HP-ProDesk-600-G4-MT: ~/Desktop/422124
$6 = 2
(gdb) next
20   c=a+b;
(gdb) print i
$7 = 4
(gdb) next
21   a=b;
(gdb) next
22   b=c;
(gdb) next
19   for(i=2;i<=n;i++){
(gdb) print i
$8 = 4
(gdb) print n
$9 = 7
(gdb) print b
$10 = 3
(gdb) continue
Continuing.
Fibonacci number is 13
[Inferior 1 (process 5293) exited with code 01]
(gdb) disassemble main
Dump of assembler code for function main:
0x0000555555555189 <+0>: endbr64
0x000055555555518d <+4>: push %rbp
0x000055555555518e <+5>: mov %rsp,%rbp
0x0000555555555191 <+8>: sub $0x20,%rsp
0x0000555555555195 <+12>: mov %fs:0x28,%rax
0x000055555555519e <+21>: mov %rax,-0x8(%rbp)
0x00005555555551a2 <+25>: xor %eax,%eax
0x00005555555551a4 <+27>: movl $0x0,-0x18(%rbp)
0x00005555555551ab <+34>: movl $0x1,-0x14(%rbp)
0x00005555555551b2 <+41>: lea 0xe4b(%rip),%rdi # 0x555555556004
0x00005555555551b9 <+48>: mov $0x0,%eax
0x00005555555551be <+53>: callq 0x555555555080 <printf@plt>
0x00005555555551c3 <+58>: lea -0x1c(%rbp),%rax
0x00005555555551c7 <+62>: mov %rax,%rsi
0x00005555555551ca <+65>: lea 0xe42(%rip),%rdi # 0x555555556013
0x00005555555551d1 <+72>: mov $0x0,%eax
0x00005555555551d6 <+77>: callq 0x555555555090 <__isoc99_scanf@plt>
0x00005555555551db <+82>: mov -0x1c(%rbp),%eax
0x00005555555551de <+85>: test %eax,%eax
0x00005555555551e0 <+87>: jne 0x5555555551fa <main+113>
0x00005555555551e2 <+89>: lea 0xe2d(%rip),%rdi # 0x555555556016
0x00005555555551e9 <+96>: mov $0x0,%eax
0x00005555555551ee <+101>: callq 0x555555555080 <printf@plt>


student@ai-HP-ProDesk-600-G4-MT: ~/Desktop/422124
0x000055555555518e <+5>: mov %rsp,%rbp
0x0000555555555191 <+8>: sub $0x20,%rsp
0x0000555555555195 <+12>: mov %fs:0x28,%rax
0x000055555555519e <+21>: mov %rax,-0x8(%rbp)
0x00005555555551a2 <+25>: xor %eax,%eax
0x00005555555551a4 <+27>: movl $0x0,-0x18(%rbp)
0x00005555555551ab <+34>: movl $0x1,-0x14(%rbp)
0x00005555555551b2 <+41>: lea 0xe4b(%rip),%rdi # 0x555555556004
0x00005555555551b9 <+48>: mov $0x0,%eax
0x00005555555551be <+53>: callq 0x555555555080 <printf@plt>
0x00005555555551c3 <+58>: lea -0x1c(%rbp),%rax
0x00005555555551c7 <+62>: mov %rax,%rsi
0x00005555555551ca <+65>: lea 0xe42(%rip),%rdi # 0x555555556013
0x00005555555551d1 <+72>: mov $0x0,%eax
0x00005555555551d6 <+77>: callq 0x555555555090 <__isoc99_scanf@plt>
0x00005555555551db <+82>: mov -0x1c(%rbp),%eax
0x00005555555551de <+85>: test %eax,%eax
0x00005555555551e0 <+87>: jne 0x5555555551fa <main+113>
0x00005555555551e2 <+89>: lea 0xe2d(%rip),%rdi # 0x555555556016
0x00005555555551e9 <+96>: mov $0x0,%eax
0x00005555555551ee <+101>: callq 0x555555555080 <printf@plt>
0x00005555555551f3 <+106>: mov $0x1,%eax
0x00005555555551f8 <+111>: jmp 0x555555555261 <main+216>
0x00005555555551fa <+113>: mov -0x1c(%rbp),%eax
0x00005555555551fd <+116>: cmp $0x1,%eax
0x0000555555555200 <+119>: jne 0x55555555521a <main+145>
0x0000555555555202 <+121>: lea 0xe23(%rip),%rdi # 0x55555555602c
0x0000555555555209 <+128>: mov $0x0,%eax
0x000055555555520e <+133>: callq 0x555555555080 <printf@plt>
0x0000555555555213 <+138>: mov $0x1,%eax
0x0000555555555218 <+143>: jmp 0x555555555261 <main+216>
0x000055555555521a <+145>: movl $0x2,-0x10(%rbp)
0x0000555555555221 <+152>: jmp 0x55555555523e <main+181>
0x0000555555555223 <+154>: mov -0x18(%rbp),%edx
0x0000555555555226 <+157>: mov -0x14(%rbp),%eax
0x0000555555555229 <+160>: add %edx,%eax
0x000055555555522b <+162>: mov %eax,-0xc(%rbp)
0x000055555555522e <+165>: mov -0x14(%rbp),%eax
0x0000555555555231 <+168>: mov %eax,-0x18(%rbp)
0x0000555555555234 <+171>: mov -0xc(%rbp),%eax
0x0000555555555237 <+174>: mov %eax,-0x14(%rbp)
--Type <RET> for more, q to quit, c to continue without paging--q
Quit
(gdb) quit
student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422124$


student@ai-HP-ProDesk-600-G4-MT: ~/Desktop/422124
student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422124$ gcc -g sum.c
student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422124$ gdb ./a.out
GNU gdb (Ubuntu 9.2-0ubuntu1~20.04.1) 9.2
Copyright (C) 2020 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.
Type "show copying" and "show warranty" for details.
This GDB was configured as "x86_64-linux-gnu".
Type "show configuration" for configuration details.
For bug reporting instructions, please see:
<http://www.gnu.org/software/gdb/bugs/>.
Find the GDB manual and other documentation resources online at:
<http://www.gnu.org/software/gdb/documentation/>.
For help, type "help".
Type "apropos word" to search for commands related to "word"...
Reading symbols from ./a.out...
(gdb) run
Starting program: /home/student/Desktop/422124/a.out
Enter a number5
Sum of squares is 55[Inferior 1 (process 4853) exited with code 01]
(gdb) list
1 #include<stdio.h>
2
3 int main(){
4 int n;
5 int sum=0;
6 printf("Enter a number");
7 scanf("%d",&n);
8 for(int i=1;i<=n;i++){
9 sum=sum+(i*i);
10 }
(gdb)
11 printf("Sum of squares is %d",sum);
12 return 1;
13 }
14
(gdb)
Line number 15 out of range; sum.c has 14 lines.
(gdb) break 8
Breakpoint 1 at 0x5555555551d4: file sum.c, line 8.
(gdb) run
Starting program: /home/student/Desktop/422124/a.out
Enter a number7


student@ai-HP-ProDesk-600-G4-MT: ~/Desktop/422124
Breakpoint 1, main () at sum.c:8
8 for(int i=1;i<=n;i++){
(gdb) print i
$1 = 32767
(gdb) print n
$2 = 7
(gdb) next
9 sum=sum+(i*i);
(gdb) next
8 for(int i=1;i<=n;i++){
(gdb) print i
$3 = 1
(gdb) print n
$4 = 7
(gdb) next
9 sum=sum+(i*i);
(gdb) next
8 for(int i=1;i<=n;i++){
(gdb) print sum
$5 = 5
(gdb) print i
$6 = 2
(gdb) print n
$7 = 7
(gdb) next
9 sum=sum+(i*i);
(gdb) next
8 for(int i=1;i<=n;i++){
(gdb) print sum
$8 = 14
(gdb) continue
Continuing.
Sum of squares is 140[Inferior 1 (process 4868) exited with code 01]
(gdb) disassemble main
Dump of assembler code for function main:
0x0000555555555189 <+0>: endbr64
0x000055555555518d <+4>: push %rbp
0x000055555555518e <+5>: mov %rsp,%rbp
0x0000555555555191 <+8>: sub $0x20,%rsp
0x0000555555555195 <+12>: mov %fs:0x28,%rax
0x000055555555519e <+21>: mov %rax,-0x8(%rbp)
0x00005555555551a2 <+25>: xor %eax,%eax
0x00005555555551a4 <+27>: movl $0x0,-0x10(%rbp)
0x00005555555551ab <+34>: lea 0xe52(%rip),%rdi # 0x555555556004
0x00005555555551b2 <+41>: mov $0x0,%eax


student@ai-HP-ProDesk-600-G4-MT: ~/Desktop/422124
(gdb) continue
Continuing.
Sum of squares is 140[Inferior 1 (process 4868) exited with code 01]
(gdb) disassemble main
Dump of assembler code for function main:
0x0000555555555189 <+0>: endbr64
0x000055555555518d <+4>: push %rbp
0x000055555555518e <+5>: mov %rsp,%rbp
0x0000555555555191 <+8>: sub $0x20,%rsp
0x0000555555555195 <+12>: mov %fs:0x28,%rax
0x000055555555519e <+21>: mov %rax,-0x8(%rbp)
0x00005555555551a2 <+25>: xor %eax,%eax
0x00005555555551a4 <+27>: movl $0x0,-0x10(%rbp)
0x00005555555551ab <+34>: lea 0xe52(%rip),%rdi # 0x555555556004
0x00005555555551b2 <+41>: mov $0x0,%eax
0x00005555555551b7 <+46>: callq 0x555555555080 <printf@plt>
0x00005555555551bc <+51>: lea -0x14(%rbp),%rax
0x00005555555551c0 <+55>: mov %rax,%rsi
0x00005555555551c3 <+58>: lea 0xe49(%rip),%rdi # 0x555555556013
0x00005555555551ca <+65>: mov $0x0,%eax
0x00005555555551cf <+70>: callq 0x555555555090 <__isoc99_scanf@plt>
0x00005555555551d4 <+75>: movl $0x1,-0xc(%rbp)
0x00005555555551db <+82>: jmp 0x5555555551ea <main+97>
0x00005555555551dd <+84>: mov -0xc(%rbp),%eax
0x00005555555551e0 <+87>: imul %eax,%eax
0x00005555555551e3 <+90>: add %eax,-0x10(%rbp)
0x00005555555551e6 <+93>: addl $0x1,-0xc(%rbp)
0x00005555555551ea <+97>: mov -0x14(%rbp),%eax
0x00005555555551ed <+100>: cmp %eax,-0xc(%rbp)
0x00005555555551f0 <+103>: jle 0x5555555551dd <main+84>
0x00005555555551f2 <+105>: mov -0x10(%rbp),%eax
0x00005555555551f5 <+108>: mov %eax,%esi
0x00005555555551f7 <+110>: lea 0xe18(%rip),%rdi # 0x555555556016
0x00005555555551fe <+117>: mov $0x0,%eax
0x0000555555555203 <+122>: callq 0x555555555080 <printf@plt>
0x0000555555555208 <+127>: mov $0x1,%eax
0x000055555555520d <+132>: mov -0x8(%rbp),%rdx
0x0000555555555211 <+136>: xor %fs:0x28,%rdx
0x000055555555521a <+145>: je 0x555555555221 <main+152>
0x000055555555521c <+147>: callq 0x555555555070 <__stack_chk_fail@plt>
0x0000555555555221 <+152>: leaveq
0x0000555555555222 <+153>: retq
End of assembler dump.
(gdb) quit
student@ai-HP-ProDesk-600-G4-MT:~/Desktop/422124$