[piatnitskaiag@delmar Ch13]$ cat sampleSession

Script started on Tue 30 Oct 2018 03:33:47 PM CDT

[piatnitskaiag@delmar Ch13]$ cat hanoi2.c

/\* hanoi2.c

\* print the steps moving n disks

\*/

#include <stdio.h>

#include <stdlib.h>

void move(int disk, char src, char dest, char additional)

{

/\* Base case \*/

if (disk == 1)

{

printf("move disk 1 from %c to %c\n", src, dest);

return;

}

/\* Recursive case \*/

move(disk - 1, src, additional, dest);

printf("move disk %d from %c to %c\n", disk, src, dest);

move(disk - 1, additional, dest, src);

}

int main(int argc, char \* argv[])

{

int n;

if (argc < 2)

{

printf("need one positive integer.\n");

return EXIT\_FAILURE;

}

n = (int) strtol(argv[1], NULL, 10);

if (n <= 0)

{

printf("need one positive integer.\n");

return EXIT\_FAILURE;

}

move(n, 'A', 'B', 'C');

return EXIT\_SUCCESS;

}

[piatnitskaiag@delmar Ch13]$ gcc -g hanoi2.c

[piatnitskaiag@delmar Ch13]$ gdb

GNU gdb (GDB) Red Hat Enterprise Linux 7.6.1-110.el7

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and "show warranty" for details.

This GDB was configured as "x86\_64-redhat-linux-gnu".

For bug reporting instructions, please see:

<http://www.gnu.org/software/gdb/bugs/>.

(gdb) file a.out

Reading symbols from /accounts/facstaff/piatnitskaiag/CS2750/CProgr/Ch13/a.out...done.

(gdb) list 10

5 #include <stdlib.h>

6 void move(int disk, char src, char dest, char additional)

7 {

8 /\* Base case \*/

9 if (disk == 1)

10 {

11 printf("move disk 1 from %c to %c\n", src, dest);

12 return;

13 }

14 /\* Recursive case \*/

(gdb) br 11

Breakpoint 1 at 0x4005ca: file hanoi2.c, line 11.

(gdb) list 20

15 move(disk - 1, src, additional, dest);

16 printf("move disk %d from %c to %c\n", disk, src, dest);

17 move(disk - 1, additional, dest, src);

18 }

19

20 int main(int argc, char \* argv[])

21 {

22 int n;

23 if (argc < 2)

24 {

(gdb) br 16

Breakpoint 2 at 0x4005fe: file hanoi2.c, line 16.

(gdb) list 30

25 printf("need one positive integer.\n");

26 return EXIT\_FAILURE;

27 }

28 n = (int) strtol(argv[1], NULL, 10);

29 if (n <= 0)

30 {

31 printf("need one positive integer.\n");

32 return EXIT\_FAILURE;

33 }

34 move(n, 'A', 'B', 'C');

(gdb) br 34

Breakpoint 3 at 0x400692: file hanoi2.c, line 34.

(gdb) run 3

Starting program: /accounts/facstaff/piatnitskaiag/CS2750/CProgr/Ch13/a.out 3

Breakpoint 3, main (argc=2, argv=0x7fffffffe4f8) at hanoi2.c:34

34 move(n, 'A', 'B', 'C');

Missing separate debuginfos, use: debuginfo-install glibc-2.17-222.el7.x86\_64

(gdb) display n

1: n = 3

(gdb) bt

#0 main (argc=2, argv=0x7fffffffe4f8) at hanoi2.c:34

(gdb) cont

Continuing.

Breakpoint 1, move (disk=1, src=65 'A', dest=66 'B', additional=67 'C') at hanoi2.c:11

11 printf("move disk 1 from %c to %c\n", src, dest);

(gdb) display disk

2: disk = 1

(gdb) whatis disk

type = int

(gdb) bt

#0 move (disk=1, src=65 'A', dest=66 'B', additional=67 'C') at hanoi2.c:11

#1 0x00000000004005fe in move (disk=2, src=65 'A', dest=67 'C', additional=66 'B')

at hanoi2.c:15

#2 0x00000000004005fe in move (disk=3, src=65 'A', dest=66 'B', additional=67 'C')

at hanoi2.c:15

#3 0x00000000004006ab in main (argc=2, argv=0x7fffffffe4f8) at hanoi2.c:34

(gdb) cont

Continuing.

move disk 1 from A to B

Breakpoint 2, move (disk=2, src=65 'A', dest=67 'C', additional=66 'B') at hanoi2.c:16

16 printf("move disk %d from %c to %c\n", disk, src, dest);

2: disk = 2

(gdb) bt

#0 move (disk=2, src=65 'A', dest=67 'C', additional=66 'B') at hanoi2.c:16

#1 0x00000000004005fe in move (disk=3, src=65 'A', dest=66 'B', additional=67 'C')

at hanoi2.c:15

#2 0x00000000004006ab in main (argc=2, argv=0x7fffffffe4f8) at hanoi2.c:34

(gdb) cont

Continuing.

move disk 2 from A to C

Breakpoint 1, move (disk=1, src=66 'B', dest=67 'C', additional=65 'A') at hanoi2.c:11

11 printf("move disk 1 from %c to %c\n", src, dest);

2: disk = 1

(gdb) display n

No symbol "n" in current context.

(gdb) bt

#0 move (disk=1, src=66 'B', dest=67 'C', additional=65 'A') at hanoi2.c:11

#1 0x0000000000400633 in move (disk=2, src=65 'A', dest=67 'C', additional=66 'B')

at hanoi2.c:17

#2 0x00000000004005fe in move (disk=3, src=65 'A', dest=66 'B', additional=67 'C')

at hanoi2.c:15

#3 0x00000000004006ab in main (argc=2, argv=0x7fffffffe4f8) at hanoi2.c:34

(gdb) cont

Continuing.

move disk 1 from B to C

Breakpoint 2, move (disk=3, src=65 'A', dest=66 'B', additional=67 'C') at hanoi2.c:16

16 printf("move disk %d from %c to %c\n", disk, src, dest);

2: disk = 3

(gdb) cont

Continuing.

move disk 3 from A to B

Breakpoint 1, move (disk=1, src=67 'C', dest=65 'A', additional=66 'B') at hanoi2.c:11

11 printf("move disk 1 from %c to %c\n", src, dest);

2: disk = 1

(gdb) cont

Continuing.

move disk 1 from C to A

Breakpoint 2, move (disk=2, src=67 'C', dest=66 'B', additional=65 'A') at hanoi2.c:16

16 printf("move disk %d from %c to %c\n", disk, src, dest);

2: disk = 2

(gdb) cont

Continuing.

move disk 2 from C to B

Breakpoint 1, move (disk=1, src=65 'A', dest=66 'B', additional=67 'C') at hanoi2.c:11

11 printf("move disk 1 from %c to %c\n", src, dest);

2: disk = 1

(gdb) cont

Continuing.

move disk 1 from A to B

[Inferior 1 (process 23239) exited normally]

(gdb) quit

[piatnitskaiag@delmar Ch13]$ exit

Script done on Tue 30 Oct 2018 03:38:30 PM CDT